

Statement of Case.

Land North of Barkby Road, Syston.

Appeal against non-determination of an outline planning application for up to 195 dwellings with all matters reserved except access, reference P/21/2639/2.

On behalf of Taylor Wimpey UK Ltd.

Date: 11 July 2023 | Pegasus Ref: P20-3155

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Appendix A – Other Supporting Documents List

Supporting documents not submitted with the appeal application in line with the Planning Inspectorate 'How to Complete your Planning Appeal Form' Guidance which support this Statement of Case

Appendix B – Local Highway Authority Correspondence March 2023

Appendix C (i) – Pre-Submission Draft Charnwood Local Plan

Appendix C (ii) – Pre-Submission Draft Charnwood Policies Map

Appendix D – Local Development Scheme April 2023

Appendix E – Wavendon Properties v SSHCLG v MKC 2019 EWHC 1524 Admin

Appendix F – Leicester and Leicestershire Statement of Common Ground June 2022

Appendix G – Inspectors' Post Hearing Letter on Unmet Need November 2022

Appendix H – Charnwood Settlement Hierarchy Assessment 2020

Appendix I – Leicester and Leicestershire Housing and Economic Needs Assessment June 2022

Appendix J – Charnwood Five Year Housing Land Supply Statement 2023

Appendix K – Examination Document 58A Housing Trajectory February 2023

Appendix L – DTA Response to Local Highway Authority June 2022

Appendix M – DTA Response to Local Highway Authority December 2022

Appendix N – Local Highway Authority Comments January 2023

Appendix O – Note of Meeting held with Local Highway Authority 16 March 2023

Appendix P – DTA Response to Local Highway Authority March 2023

Appendix Q – Note of Meeting held with Local Highway Authority 24 March 2023

Appendix R – Email from Highways Authority dated 13 April 2023

Appendix S – Transport Technical Note June 2023



1. Introduction

- 1.1. Pegasus Group is instructed by Taylor Wimpey UK Limited ('the Appellant') to act on its behalf in respect of an appeal against the non-determination of an outline planning application for up to 195 residential dwellings at Land North of Barkby Road, Syston, Leicestershire ('the site') by Charnwood Borough Council ('the Council').
- 1.2. This Statement of Case is submitted pursuant to the Town and Country Planning (Inquiry Procedure) (England) Rules 2000, as amended by the Town and Country Planning (Hearings and Inquiries Procedures) (England) (Amendment) Rules 2009 and by the Town and Country Planning (Hearings and Inquiries Procedure) (England) (Amendment) Rules.
- 1.3. This Statement should be read alongside the planning application documents submitted with this appeal, particularly the Planning Statement and Transport Assessment.
- 1.4. Appendix A sets out a list of all the other supporting documents which are relied upon in this Statement of Case which have not been submitted with the appeal, in line with the Planning Inspectorate appeal guidelines.

Appeal Site

- 1.5. The site is located east of the settlement of Syston, adjacent to the limits to development defined in the saved policies of the Borough of Charnwood Local Plan.
- 1.6. The site extends to approximately 8.29 hectares and consists of two arable fields. The site lies to the north of Barkby Road, and is bounded by Queniborough Road to the east, existing residential development along Hallaton Drive, John Frear Drive and Empingham Drive to the west, and open countryside to the north. To the south lies Barkby Road, open countryside and the Liberty Gardens development recently built by Taylor Wimpey (149 dwellings, application reference number: P/13/O925/2).
- 1.7. A Public Right of Way (J37) bisects the site from west to east, crossing the site from the existing residential development at the site's western boundary linking to Hallaton Drive, across to Queniborough Road at the eastern boundary. At its highest point the site is circa 62m Above Ordnance Datum, and slopes gently down to the south, towards Barkby Road.
- 1.8. The site is located on the edge of the existing built up area of Syston, a sustainable Service Centre on the edge of the Leicester Urban Area. Syston, is the third largest settlement within Charnwood Borough, after Loughborough and Shepshed. It is located east of the A607 and A46 and is proposed to be defined as part of the Leicester Urban Area in the emerging Local Plan.

Planning Application

- 1.9. An application, reference P/21/2639/2, was submitted to the Council on 20 December 2021 with the following description of development:

Outline application for up to 195 dwellings with all matters reserved except access.



- 1.10. The application was supported by a full set of supporting documents and plans. This included a Concept Masterplan which demonstrates how the site might come forward for 195 homes, including 30% affordable homes.
- 1.11. The site would be accessed from Barkby Road and be supported by a new children's play area and other on-site open space provision. The site includes the potential for on-site biodiversity net gain of approximately 14.94% for habitats and 48.18% for hedgerows.
- 1.12. The application was validated on 28 February 2022.
- 1.13. During the determination of the application, amended plans and additional supporting documents were provided to address consultee comments. The final list of documentation supporting the application is set out in the draft Statement of Common Ground and submitted as part of this appeal.
- 1.14. The Highway Authority has yet to provide final highway advice on this application. There have been various requests for additional information which the applicant has responded positively to, with the provision of the requested information. There has also been a number of meetings which the applicant has initiated, and positively engaged in, with the Highway Authority.
- 1.15. None of the other statutory consultee responses raised any technical objections. Further information was requested by the Environmental Health Officer on air quality, and this was provided and was found to be satisfactory. The Lead Local Flood Authority (LLFA) requested that a second consultant be procured to provide assurance that the pluvial flood modelling study was accurate. BWB Consulting provided a revised modelling study document which included an assessment of JBA Consulting's original model methodology and the LLFA found this to be acceptable. Additional information was also provided in relation to biodiversity in response to comments from the Council's Ecologist.
- 1.16. The application was due to be reported to Planning Committee in April 2023, following confirmation from the Local Highway Authority that they would be able to issue their final response by the end of March following two meetings in the same month.
- 1.17. The indication from officers at the Council was that they were likely to recommend the site for approval, subject to receiving the anticipated highway comments. It remains unclear, however, what the Council's position would have been. The report was not published, and Members of the Planning Committee have not had an opportunity to review, discuss and come to a view on the issues.
- 1.18. On 13th April 2023, Leicestershire County Council ('LCC') confirmed via email that the agreed approach would not be acceptable without the submission of further detail and before LCC had finalised their wider strategic approach to the provision of further transport contributions. The email is provided at Appendix B.
- 1.19. These additional details have been provided but final highways comments have not been received in order for the Council to present the site to Planning Committee.
- 1.20.

2. Local Planning Authority Engagement

- 2.1. Throughout the course of the planning application, the appellant has developed a positive working relationship with the Case Officers at Charnwood Borough Council and Highways Officers at Leicestershire County Council (LCC). The Appellant has worked proactively to resolve any issues raised by consultees before the application was considered by Planning Committee and this is reflected in the fact that there are no technical objections.
- 2.2. The LCC response is the only outstanding issue preventing the site being presented to Planning Committee for positive determination. The first response was received from LCC in May 2022, two months after the end of the consultation period, and since then the applicant has made continued efforts, for a period of over 12 months, to work constructively with LCC and provide all necessary requested information to inform their response.
- 2.3. Despite this, further new requests for information have continued to be made and no progress has been made in resolution of LCC's outstanding concerns. An appeal against non-determination has therefore reluctantly been identified as the only appropriate way forward.

3. Development Plan and Material Considerations

- 3.1. In accordance with Section 38 of the Planning and Compulsory Purchase Act (PCPA), applications for planning permission must be determined in accordance with the Development Plan unless material considerations indicate otherwise.
- 3.2. The Development Plan comprises the Borough of Charnwood Local Plan Saved Policies (adopted 2004) and the Local Plan Core Strategy (adopted November 2015).
- 3.3. Material considerations for any proposal are national policy and guidance contained within the National Planning Policy Framework (the Framework), Planning Practice Guidance (PPG) and National Design Guide. Relevant Supplementary Planning Documents (SPDs), guidance and statements prepared by the Local Planning and Highways Authorities are also material.
- 3.4. In addition, the emerging Local Plan represents a material consideration in the determination of planning applications, commensurate with the stage of its preparation and the extent to which there remains unresolved objections to those relevant parts of the plan.

Development Plan

- 3.5. It is considered that the following policies are relevant to this appeal:

Borough of Charnwood Local Plan Saved Policies

- Policy ST/2: Limits to Development
- Policy EV/1: Design
- Policy CT/1: General Principles for Areas of Countryside, Green Wedge and Local Separation
- Policy CT/2: Development in the Countryside
- Policy TR/18: Parking in New Development

Charnwood Core Strategy

- Policy CS1: Development Strategy
- Policy CS2: High Quality Design
- Policy CS3: Strategic Housing Requirements
- Policy CS11: Landscape and Countryside
- Policy CS13: Biodiversity and Geodiversity
- Policy CS14: Heritage
- Policy CS15: Open Spaces, Sports and Recreation

- Policy CS16: Sustainable Construction and Energy
- Policy CS17: Sustainable Travel
- Policy CS18: The Local and Strategic Road Network
- Policy CS25: Presumption in Favour of Sustainable Development

Material Considerations

Pre-Submission Draft Charnwood Local Plan 2021–2037 (July 2021)

- 3.6. The emerging Charnwood Local Plan sets out the Council's strategic and detailed policies for the Borough for the period 2021–37. Pre-Submission consultation under Regulation 19 (Town and Country Planning (Local Planning) (England) Regulations 2012, as amended) took place in July and August 2021. The Pre-Submission Draft Local Plan and Policies Map are included at Appendix C (i) and (ii).
- 3.7. The emerging plan was submitted to Secretary of State for Levelling Up, Housing and Communities for Examination in Public pursuant to Regulation 22 on the 3 December 2021, with hearing sessions closing in February 2023.
- 3.8. The site is a draft allocation, identified as HA3 Land north of Barkby Road, Syston and allocated for 195 homes. The following emerging policies are considered relevant to this application:
- Policy DS1: Development Strategy
 - Policy DS3: Housing Allocations
 - Policy DS5: High Design Quality
 - Policy SC1: Service Centres
 - Policy H1: Housing Mix
 - Policy H2: Housing for Older People and People with Disabilities
 - Policy H3: Internal Space Standards
 - Policy H4: Affordable Housing
 - Policy T3 Car Parking Standards
 - Policy CC1: Flood Risk Management
 - Policy CC2: Sustainable Drainage Systems
 - Policy CC4: Sustainable Construction
 - Policy CC5: Sustainable Transport

- Policy EV1: Landscape
- Policy EV6: Conserving and Enhancing Biodiversity and Geodiversity
- Policy EV7: Tree Planting
- Policy EV8: Heritage
- Policy EV9: Open Spaces, Sport and Recreation
- Policy EV10: Indoor Sports Facilities
- Policy EV11: Air Quality
- Policy INF1: Infrastructure and Developer Contributions
- Policy INF2: Local and Strategic Road Network

- 3.9. The Examination Inspectors issued a letter setting out that further work is needed to update the transport and viability evidence and that there should be a period of consultation on the outcome of that work, and in connection with a limited number of other matters in advance of the formal consultation on main modifications.
- 3.10. The latest Local Development Scheme, published in April 2023 (Appendix D), anticipated that the Local Plan would be adopted in September 2023, this however pre-dates the delayed letter from the Inspectors so this is likely to be delayed until at least the end of this year.
- 3.11. In terms of weight that can be attributed to the emerging Plan, the Framework at paragraph 48 states that Local Planning Authorities may give weight to emerging plans according to the stage of preparation they have reached, the extent to which there are unresolved objections and the degree of consistency with the Framework. The emerging plan and, in particular, the site's allocation, can therefore be given significant weight as a relevant material consideration.

Other Relevant Documents and Guidance

- 3.12. It is considered that the following documents and guidance are also relevant to this appeal:
- National Planning Policy Framework
 - Planning Practice Guidance
 - National Design Guide
 - Charnwood Design Supplementary Planning Document (2020)
 - Leicestershire Highways Design Guide (2022)
 - Charnwood Housing Supplementary Planning Document (2017)
 - Borough of Charnwood Landscape Character Assessment (2012)



- Planning Guidance for Biodiversity (2022)
- Leicester & Leicestershire Housing and Employment Needs Assessment (June 2022)
- Leicester & Leicestershire Statement of Common Ground (June 2022)
- Charnwood Five Year Supply at April 2022 (May 2023).
- Charnwood Local Development Scheme (April 2023)

4. Development Plan Compliance

- 4.1. Section 38(6) of the Planning and Compulsory Purchase Act 2004 and S70(2) of the Town and Country Planning Act 1990 requires that applications for planning permission must be determined in accordance with the Development Plan unless material considerations indicate otherwise.
- 4.2. The proposed development is not in accordance with the Development Plan. The Charnwood Local Plan Core Strategy and Borough of Charnwood Local Plan Saved Policies identify the land as Countryside and restrict new development. There are, however, material considerations which indicate that this development should be permitted.
- 4.3. The key material considerations are the provisions of the Framework, the presumption in favour of sustainable development and the emerging and advanced Draft Local Plan which proposes to allocate this site for 195 homes.

5. Presumption in Favour of Sustainable Development & Tilted Balance

- 5.1. Paragraph 11 (d) of the Framework sets out a presumption in favour of sustainable development. Where there are no relevant development plan policies, or the policies which are most important for determining the application are out-of-date, the decision-maker should grant planning permission unless the adverse impacts of doing so would significantly and demonstrably outweigh the benefits, when assessed against the policies in the Framework taken as a whole.
- 5.2. This 'tilted balance' is engaged in this case on two counts:
1. The policies most important to the determination of the appeal are out of date, and in the case of the Borough of Charnwood Local Plan policies, are substantially out of date. The current Development Plan policies are based on an historic assessment of need that cannot deliver the scale of development required and a development strategy which does not represent what has happened on the ground in the Borough.
 2. Charnwood Borough Council is unable to demonstrate a five-year supply of deliverable housing sites against their identified local housing needs, which in accordance with Footnote 8 of the Framework, renders the most important policies automatically out of date.

Out of Date Development Plan Policies

- 5.3. The High Court judgement in *Wavendon Properties v SSHCLG v MKC [2019] EWHC 1524 (Admin)* (Appendix E) has provided clarification as to precise meaning of "the policies most important for determining the application", in the context of Paragraph 11 (d).
- 5.4. At Paragraph 58 of his decision, Lord Justice Dove indicated that:
- "In my view the plain words of the policy clearly require that having established which are the policies most important for determining the application, and having examined each of them in relation to the question of whether or not they are out of date applying the current framework ... an overall judgment must be formed as to whether or not taken as a whole these policies are to be regarded as out-of-date for the purpose of the decision."*
- 5.5. This ruling indicates that there is a two stage process in assessment of the most important policies in determination of an application/appeal. Firstly, in identification of those policies most important to the application/appeal and, secondly, in assessment as to whether those policies are collectively out of date.
- 5.6. The appellant will argue that the most important policies in determination of this appeal are the following:
- Core Strategy Policies CS1: Development Strategy, CS3: Strategic Housing Requirements, CS17: Sustainable Travel and CS18: The Local and Strategic Road Network.

- Borough of Charnwood Local Plan Policies ST/2: Limits to Development, CT/1: General Principles for Areas of Countryside, Green Wedge and Local Separation and CT/2: Development in the Countryside.

Borough of Charnwood Local Plan Policies

- 5.7. The Borough of Charnwood Local Plan Policies ST/2: Limits to Development, CT/1: General Principles for Areas of Countryside, Green Wedge and Local Separation and CT/2: Development in the Countryside seek to safeguarding the Countryside beyond the settlement boundaries. These boundaries were identified in the context of the land needed to meet housing needs identified in the Leicestershire Structure Plan for the period 1991–2006.
- 5.8. The Borough of Charnwood Local Plan policies were adopted in 2004 and no longer reflect the position on the ground or take account of an up-to-date assessment of need. The Borough of Charnwood Local Plan policies are substantially out of date.

Core Strategy Policy CS1: Development Strategy

- 5.9. Core Strategy Policy CS1: Development Strategy sets out the spatial strategy for growth between 2011 and 2028. The policy identifies Syston as one of seven Service Centres with a good range of services and facilities and good transport links which allows them to provide for the daily needs of the people living there as well as supporting nearby communities.
- 5.10. The policy sets out to positively plan for the role of Service Centres by providing for at least 3,000 new homes and approximately 7 hectares of employment land within and adjoining our Service Centres between 2011 and 2028 and responding positively to sustainable development which contributes towards meeting our development needs, supports the strategic vision and makes effective use of land.
- 5.11. The housing provision figure of 3,000 homes for Service Centres set out in Policy CS1 has been exceeded since the adoption of the Core Strategy. This is due to the Council being unable to demonstrate a five-year supply for a period immediately following the adoption of the Core Strategy and since November 2020 when the Core Strategy became five years old and supply started to be measured against the standard method figure in accordance with para. 74 of the Framework.
- 5.12. The initial lack of five-year supply, immediately following adoption reflected the significantly slower than anticipated delivery of the three Sustainable Urban Extensions, which underpinned the spatial strategy for the Borough. The Core Strategy plan period comes to an end in the next five years and based on the current housing trajectory will have delivered only a third of the homes planned for that period at the three Sustainable Urban Extensions. Despite this, strong delivery rates have been achieved in the Borough, in large part due to planning permissions being approved for development outside settlement limits, exceeding the Core Strategy housing figures for individual Service Centres and other smaller settlements.
- 5.13. Policy CS1 is set within the context of the Core Strategy making provision for at least 13,940 homes between 2011 and 2028, the equivalent of 820 homes a year over 17 years. This housing requirement is derived from the Leicester and Leicestershire Strategic Housing Market Assessment published in 2014 which evidenced the need for homes across the market area to 2031. This assessment identified an Objectively Assessed Need for 820

homes a year in Charnwood to meet demographic needs and accommodate new jobs and economic growth.

- 5.14. This assessment of housing needs was updated in 2017 by the Leicester & Leicestershire Housing and Economic Development Needs Assessment which identified an Objectively Assessed Need for 994 homes a year between 2011–2036. Then in 2018 the Government introduced the Standard Methodology to replace the need to prepare Strategic Housing Market Assessments. The latest Local Housing Need figure from the standard method for Charnwood Borough is 1,105 homes per annum (taking account of the latest affordability ratio data published in March 2023). This is an additional 285 homes per annum compared to the Core Strategy target of 820 homes.
- 5.15. The Pre-Submission Draft Local Plan is based on an earlier Local Housing Need figure of 1,111 new homes a year for the period 2021–2037, reflecting the standard method figure at the point of submission. The Examination in Public has also considered the issue of unmet need from Leicester, with hearings in June 2022 paused to allow participants to make representations on this matter. Hearing sessions were held in October 2022 to specifically examine this issue and consider the apportionment of 78 homes a year of Leicester’s unmet need to Charnwood in the Leicester and Leicestershire Statement of Common Ground (Appendix F).
- 5.16. The Inspectors concluded in a Post Hearing Session Letter (Appendix G) that the minimum local housing need figure to 2036 for Charnwood is 1,189 homes a year – i.e. 1,111 homes to address Local Housing Need plus 78 homes a year to meet the unmet need from Leicester. The letter noted the need for further testing of this figure at the subsequent hearing sessions, held in February 2023. This minimum requirement is 369 homes a year more than the adopted Charnwood Local Plan Core Strategy makes provision for in Core Strategy Policy CS1.
- 5.17. A Settlement Hierarchy Assessment undertaken in 2020 (Appendix H) to support the emerging Charnwood Local Plan also highlights that Syston functions as part of the Leicester Urban Area and is distinct from the other Service Centres due to the level of choice of services and facilities. The evidence re-categorises Syston as an Urban Settlement alongside Shepshed, Thurmaston and Birstall. This settled evidence moves it up the settlement hierarchy to the second rung, below only Loughborough as the main urban area.
- 5.18. Core Strategy Policy CS1 is therefore substantially out of date, with a housing requirement which does not reflect up to date assessments of need, a strategy focused on three Sustainable Urban Extensions which have been slow to deliver and a settlement hierarchy which does not reflect an up-to-date assessment of the role and function of Syston as an Urban Settlement rather than a Service Centre.

Core Strategy Policy CS3: Strategic Housing Requirements

- 5.19. Core Strategy Policy CS3 seeks an appropriate mix of homes having regard to identified housing needs. It sets out an affordable housing target based on the 2014 Strategic Housing Market Assessment and a viability assessment prepared before the adoption of the Core Strategy, which have since been updated, most recently by the Leicester and Leicestershire Housing and Economic Needs Assessment published in 2022 (Appendix I) and viability assessments to inform the emerging Local Plan. It is therefore also out of date.

Core Strategy Policies CS17: Sustainable Travel and CS18: The Local and Strategic Road Network

- 5.20. Core Strategy Policies CS17 and CS18 are consistent with the Framework and up to date.
- 5.21. Taken as a whole, the appellant will demonstrate that the policies most important for this decision are out of date and the tilted balance is therefore engaged.
- 5.22. In accordance with the presumption in favour of sustainable development set out in paragraph 11 (d) of the Framework, the appellant will further show that most important policies in assessment of the appeal proposal are out of date and that planning permission should be granted unless those policies in the Framework that protect areas or assets of particular importance provides a clear reason for refusal or any adverse impacts of doing so would significantly and demonstrably outweigh the benefits, when assessed against the policies in the Framework taken as a whole.
- 5.23. Through evidence the appellant will seek to demonstrate that there are no technical, procedural or other adverse impacts associated with the appeal proposal that would engage the proviso identified at paragraph 11 (d) of the Framework and therefore the proposal should be granted permission..

Housing Land Supply

- 5.24. In addition to the above, footnote 8 to Paragraph 11 (d) of the Framework also confirms that the policies which are most important in the determination of the appeal will be out-of-date where the local planning authority cannot demonstrate a five-year supply of deliverable housing sites.
- 5.25. The Charnwood Five Year Supply Statement published in June 2023 for the period 1 April 2023 – 31 March 2028 (Appendix J) identifies that the Council is only able to demonstrate 4.27 years of supply. This is a substantial shortfall of 1,161 homes. This lack of five year supply automatically and further renders the policies most important in determination of the appeal out of date.
- 5.26. It has not yet been possible to fully interrogate the newly published Charnwood Five Year Supply Statement, but an initial review finds the supply position is exaggerated. Evidence will be presented at the Public Inquiry to demonstrate that the deliverable housing land supply position is materially and significantly less than 4.27 years.

6. Emerging Local Plan Allocation

- 6.1. Charnwood Borough Council published the Regulation 19 Pre-Submission Draft Local Plan 2021 – 2037 for consultation in July 2021, and consultation took place until 23rd August 2021. Once adopted, the new Local Plan will form part of the development plan and replace the Core Strategy (2015) and the saved policies of the Local Plan (2004).
- 6.2. Consultation on the Pre-Submission Draft Local Plan was the fourth stage of consultation on the emerging Local Plan; the first on the scope of the Local Plan took place in July 2016, the second on the key issues and options took place in April 2018 entitled 'Towards a Local Plan for Charnwood', and the third on an earlier draft of the Local Plan took place in November/December 2019.
- 6.3. Draft Policy DS1: Development Strategy sets out the overall spatial strategy of urban concentration and intensification, with some limited dispersal to other areas of the Borough. The most environmentally sensitive areas are to be protected, and the proposed pattern of development will provide a balance between homes, jobs and facilities.
- 6.4. A housing requirement of at least 17,776 homes between 2021 and 2037 is set out with provision made for at least 19,461 new homes. Of these 7,358 homes are directed to the Leicester Urban Area (Birstall, Syston and Thurmaston), a total of 38%, with 31% directed to Loughborough and the remaining to Service Centres and Other Settlements.
- 6.5. Draft Policy DS3: Housing Allocations allocates the appeal site, land north of Barkby Road, Syston for 195 dwellings, under Draft Policy Reference HA3. The policy supports development that is cohesive and integrated with other allocations set out in this plan including in relation to the provision of new schools and other infrastructure and in accordance with the site-specific requirements set out.
- 6.6. Policy DS3 (HA3) sets out the site-specific requirement for land north of Barkby Road and confirms that development proposals at site HA3 will be supported, where they are accompanied by a Flood Risk Assessment which responds to the evidence of flood risk on the site and demonstrates how mitigation of those risks, including securing appropriate site access arrangements, can be satisfactorily achieved so as to meet the Exception Test. It also sets out that development will be supported where a contribution to the reasonable costs of the provision of a new 2 form entry primary school located at Site HA1.
- 6.7. The proposed development is fully policy compliant with the emerging draft allocation. The application was supported by a Flood Risk Assessment and Drainage Strategy which demonstrates how the requirements of Policy DS3 (HA3) are satisfied and there are no technical objections from the Lead Local Flood Authority. Contributions to primary education have also been agreed with the Local Education Authority with flexibility built into the request for this to contribute towards the construction of a new school.
- 6.8. The latest emerging Local Plan Housing Trajectory prepared to support examination hearings in February 2023 (Appendix K) includes the site and shows it delivering a total of 80 dwellings in the five years between 2023 and 2028. This appeal relates to a planning application submitted in support of the emerging Local Plan.

7. Charnwood Borough Council's Recent Appeal History

- 7.1. There have been four recent relevant appeals that have related to major residential development, both on land adjoining the urban area of Loughborough, urban area of Shepshed and Service Centre of Sileby.
- 7.2. The most recent, allowed in May 2023, was an appeal against a decision to refuse planning consent, where the Officer's recommendation was to approve the application. This related to an outline application for 30 dwellings on land off Leconfield Road, Loughborough (Ref: APP/X2410/W/22/3304644).
- 7.3. In November 2022, a further appeal was allowed against the non-determination of an outline application for housing on land proposed for allocation in the emerging Local Plan, as is the case with this proposal. This related to a proposal for up to 120 homes on land at Main Street, Woodthorpe, Loughborough (Ref: APP/X2410/W/21/3289048).
- 7.4. In July 2022, an appeal was allowed against a refusal of an outline application for up to 50 dwellings on land to the west of Iveshead Road, Shepshed (Ref: APP/X2410/W/21/3281964).
- 7.5. In June 2022, an appeal was allowed against a refusal of planning permission in accordance with the Officer's recommendation. This related to an outline application for up to 170 homes on Land off Cossington Road, Sileby (Ref: APP/X2410/W/21/3287864). Sileby is defined in the Core Strategy as a Service Centre like Syston.
- 7.6. In all four appeals it was established that the Council was not able to demonstrate a 5-year housing land and that the titled balance was engaged.
- 7.7. In all of these appeal cases, the Inspector concludes that the potential adverse impacts of granting planning permission would not significantly and demonstrably outweigh the benefits when assessed against the policies in the Framework taken as a whole. Accordingly, the relevant Inspector's found that the other material considerations were of sufficient weight to indicate that the appeals should be determined otherwise than in accordance with the development plan.

8. Representations from Consultees and Interested Parties

Local Highway Authority Engagement

- 8.1. David Tucker Associates (DTA), on behalf of Taylor Wimpey, prepared a Transport Assessment to support the application.
- 8.2. The Transport Assessment assessed the following junctions, previously agreed with LCC:
- Site Access/ Barkby Road Junction
 - Melton Road/ Barkby Road/ High Street
 - Barkby Road/ Queniborough Road
 - Barkby Road/ Greetham Way
 - Goodes Lane/ Melton Road
 - Queniborough Road/ Barkby Road/ Rearsby Road/ Syston Road
 - Queniborough Road/ Main Street
 - Fosse Way/ High Street
 - Barkby Road/ Pembroke Avenue
- 8.3. The junction assessments did not identify any issues with regard to junction operation and on this basis, there were no specific off-site highway mitigation measures required. The assessments found that any increase in delay with the addition of development traffic was negligible and there were no issues with overall junction operation.
- 8.4. Initial comments were received by LCC on 13th May 2022 and DTA responded in June 2022. The response includes LCC comments and can be seen at Appendix L.
- 8.5. Additional comments were then made by LCC on 3rd October 2022 and DTA provided a response to these comments on 13th December 2022, the response is set out at Appendix M and LCC's comments are appended to this response.
- 8.6. Further LCC comments were issued on 27th January 2023 (Appendix N) and at the appellant's request a meeting was held on 16th March 2023. Appendix O shows DTA's note of the meeting and Appendix P shows the full response to LCC's comments provided in response to the discussion. A second meeting was held on Friday 24th March 2023 and the notes of that are provided at Appendix Q and show that LCC confirmed that they would be able to issue their final response by 29th March 2023.
- 8.7. However, on 13th April 2023 LCC then confirmed via email that the agreed approach would not be acceptable without further detail at this stage and before LCC had finalised their approach in the future provision of strategic transport contributions (Appendix R).

- 8.8. The further information requested was provided on 29th June 2023 in a technical note shown at Appendix S.
- 8.9. All matters relating to the physical access arrangements to the site are agreed. Contributions have been requested by LCC in respect of improved public transport provision to the site and these are also agreed. The outstanding issue relates to the need for off-site mitigation.
- 8.10. The transport evidence prepared in support of the application shows that the scale of the impact from the proposed development is not sufficient to warrant mitigation and / or trigger any severe impact.

Other Statutory Consultees

- 8.11. The planning application to which this appeal relates has received no objections from statutory consultees and no issues have been raised by the following statutory consultees that could not be addressed via condition or financial contributions:

- Local Lead Flood Authority
- Leicestershire County Council – Local Education Authority
- Leicestershire County Council – Minerals
- Leicestershire County Council – Waste
- Leicestershire County Council – Libraries
- Leicester, Leicestershire & Rutland Integrated Care Board (NHS)
- Leicestershire Police
- Charnwood Environmental Health
- Charnwood Strategic Housing

- 8.12. The appellant has not seen comments from the following consultees, but the Case Officer has indicated that the following have been received and no issues have been raised that cannot be addressed via condition or financial contributions:

- Charnwood Open Spaces
- Charnwood Ecology
- Charnwood Landscape and Trees

Interested Parties

- 8.13. Ten letters of objection were received from member of the public which focused primarily on the traffic and drainage impacts, highway safety, loss of views and privacy and the pressures that would be placed on infrastructure such as schools and health facilities.



Concerns are also raised about the development causing coalescence and impacting on ecology.

- 8.14. Barkby and Barkby Thorpe Parish Council and BABTAG (Barkby and Barkby Thorpe Action Group) also objected to the application on the grounds that it is premature ahead of the new Local Plan, there is little local support for it, the location compromises the separation of Syston, Barkby and Queniborough, it will place further pressure on local infrastructure and add to existing congestion. The Parish Council and BABTAG set out that approving the application would be a breach of faith with the local community which, at the time of the borough's approval of the Sustainable Urban Extension of 4500 houses were assured that other piecemeal encroachment on the villages would not gain approval.
- 8.15. No comments have been received by Syston Town Council
- 8.16. The application was supported by a full range of evidence addressing these matters including a Transport Assessment, Travel Plan, Planning Statement, Design and Access Statement, Ecological Impact Assessment and Flood Risk Assessment which was supplemented by a Flood Risk and Drainage Technical Report during the Council's consideration of the application.
- 8.17. The issues raised by members of the public, BABTAG and the Parish Council were found to be addressed satisfactorily by statutory consultees for each area of expertise, with the exception of the local highway authority, as set out above.

9. Conditions and Planning Obligations

9.1. The following conditions and planning obligations suggested by the Local Planning Authority in the process of preparing a report to Committee would be acceptable to the appellant:

Suggested Conditions

1	<p>Application for approval of reserved matters shall be made within three years of the date of this permission and the development shall be begun not later than two years from the final approval of the last of the reserved matters.</p> <p>REASON: In order to comply with the requirements of Section 92 of the Town and Country Planning Act 1990, as amended by Section 51 of the Planning and Compulsory Purchase Act 2004.</p>
2	<p>Details of the layout, scale, appearance and landscaping (hereafter referred to as 'the reserved matters') shall be submitted to and approved in writing by the Local Planning Authority before any development takes place and the development shall be carried out as approved.</p> <p>REASON: To comply with the provisions of Section 92 of the Town and Country Planning Act 1990, as amended by Section 51 of the Planning and Compulsory Purchase Act 2004, and Article 6 of the Town and Country Planning (Development Management Procedure) (England) Order 2015 (as amended).</p>
3	<p>The development hereby permitted shall be carried out in accordance with the following approved plans and details:</p> <ul style="list-style-type: none"> • P20-3155 001 Sheet No: 1 (Site Location Plan) • P20-3155 003 Sheet No: 1 Rev: F (Illustrative Masterplan) • 20060-02 Rev F (Site Access Plan) <p>unless a revised planning application is submitted and approved by the Council in substitution for any part of the approved development. If such further planning application is approved, any remaining development may still be developed as approved in this Planning Permission, it being intended that this Planning Permission should permit such further approved development separately and severably from the other</p> <p>REASON: To provide certainty and define the terms of the permission in accordance with Development Plan policy CS2 of Charnwood Development Plan (2011-2028), Saved Policies EV/1 of Charnwood Local Plan (2004), Design SPD and the NPPF.</p>
4	<p>The details submitted pursuant to condition 2 above shall include full details of existing and proposed ground levels and finished floor levels of all buildings relative to the proposed ground levels. The development shall thereafter be carried out in accordance with the approved details.</p>

	<p>REASON: To ensure the development is in character with its landscape and surroundings and to ensure amenity of new residents is protected in accordance with policies CS2 and CS11 of the Core Strategy and policy EV/1 of the Local Plan.</p>
5	<p>No development for any phase of the development must commence until a Construction Management Plan for that phase has been submitted to and approved in writing by the Local Planning Authority. Construction of the permitted development must be undertaken in accordance with the approved Construction Management Plan.</p> <p>The Plan must include, but not be limited, to arrangements for the following in respect of each phase of the works:</p> <ul style="list-style-type: none"> • details of any temporary construction access to the site including measures for removal following completion of construction works; • wheel and chassis underside washing facilities on site to ensure that mud and debris is not spread onto the adjacent public highway; • the parking of contractors' site operatives and visitor's vehicles; • areas for storage of plant and materials used in constructing the development clear of the highway; • measures to manage the delivery of materials and plant to the site including routing and timing of deliveries and loading and unloading areas; • details of the routes to be used by HGV construction traffic and highway condition surveys on these routes; • protection of carriageway and footway users at all times during demolition and construction; • protection of contractors working adjacent to the highway; • details of site working hours; • erection and maintenance of hoardings including decorative displays, security fencing and scaffolding on/over the footway & carriageway and facilities for public viewing where appropriate; • means of minimising dust emissions arising from construction activities on the site, including details of all dust suppression measures and the methods to monitor emissions of dust arising from the development; • measures to control and monitor construction noise; • an undertaking that there must be no burning of materials on site at any time during construction; • removal of materials from site including a scheme for recycling/disposing of waste resulting from demolition and construction works; • details of the measures to be taken for the protection of trees; • details of external lighting equipment; • details of ditches to be piped during the construction phases; • a detailed method statement and programme for the building works;

	<ul style="list-style-type: none"> • contact details for the responsible person (site manager/office) who can be contacted in the event of any issue arising. <p>REASON: To ensure a satisfactory means of access to the site from the public highway in the interests of highway safety and the convenience of all highway users, and in the interest of public safety and amenity.</p>
6	<p>The layout and landscaping submitted details pursuant to condition 2 shall include:</p> <ul style="list-style-type: none"> • Indication of hedgerow removal required to enable the access road and its visibility splays hereby approved, or to provide potential connections to the on-site Public Right of Way, the retention of all existing hedgerows; • Green corridor along the public right of way within the site; • Planting to areas of public open space • Tree lined main access road <p>REASON: To minimise the landscape and visual impact of the development in accordance with the Landscape and Visual Assessment (EDP, December 2021) to integrate and connect the development into the landscape and to the village and to comply with policies CS2 and CS11 of the Charnwood Local Plan 2011-2028 Core Strategy (2015)</p>
7	<p>The landscaping details submitted pursuant to condition 2 above shall include:-</p> <ol style="list-style-type: none"> i. the treatment proposed for all ground surfaces, including hard surfaced areas; ii. planting schedules across the site, noting the species, sizes, numbers and densities of plants and trees; including tree planting within the planting belt to the east of the site; iii. finished levels or contours within any landscaped areas; iv. any structures to be erected or constructed within any landscaped areas including play equipment, street furniture and means of enclosure. v. functional services above and below ground within landscaped areas; and vi. all existing trees, hedges and other landscape features, indicating clearly any to be removed. vii. all proposed boundary treatments viii. position and type of bins to be provided. <p>REASON: To make sure that a satisfactory landscaping scheme for the development is provided so that it integrates into the landscape and surrounding area and complies with policies CS2 and CS11 of the Charnwood Local Plan 2011-2028 Core Strategy (2015) and saved policy EV/1 of the Borough of Charnwood Local Plan.</p>
8	<p>The details submitted pursuant to condition 2 above shall include the following minimum amounts and typologies of open space:</p> <ul style="list-style-type: none"> • Multi-function green space (minimum 0.66Ha) • Natural open space (minimum 0.94Ha)

	<ul style="list-style-type: none"> • A LEAP facility <p>REASON: To ensure that the open space needs of future residents are met at a level that complies with Policy CS15 of the Charnwood Local Plan 2011-2028 Core Strategy (2015).</p>
9	<p>The details to be submitted pursuant to condition 2 shall include a housing mix for market and affordable homes in reflect up to date evidence of housing need in the Borough.</p> <p>REASON: To secure the development provides an appropriate mix of homes having regard to the identified housing needs of the area in accordance with policy CS3 of the Core Strategy and the NPPF.</p>
10	<p>The details to be submitted pursuant to condition 2 shall show all units in compliance with the Nationally Described Space Standards.</p> <p>REASON: To secure a high standard of amenity for future residents in accordance with emerging Policy H3 of the Charnwood Local Plan 2021- 37 and paragraph 130 of the NPPF.</p>
11	<p>The details to be submitted pursuant to condition 2 shall include that 10% of new market homes will meet the Building Regulations Part M4(2) standard for being accessible and adaptable. The affordable homes on the site shall meet the M4(2) and/or M4(3) standards for being suitable for wheelchair users, subject to assessment of viability and/or site-specific constraints.</p> <p>REASON: To meet the needs to the ageing population and people with disabilities and to secure a high standard of amenity for future residents in accordance with emerging Policy H2 of the Charnwood Local Plan 2021- 37 and paragraph 130 of the NPPF.</p>
12	<p>The details submitted pursuant to condition 2 shall include a Arboricultural Impact Assessment of the proposed layout to show how the development will mitigate impacts on existing trees and include new tree planting.</p> <p>REASON: To ensure the development accords with the recommendations of the Arboricultural Impact Assessment (TEP, v4.0 March 2021) and in accordance with Policies CS2, CS11, CS13 and CS15 of the Charnwood Local Plan 2011-2028 Core Strategy (2015) and the NPPF and saved policy EV/1 of the Borough of Charnwood Local Plan.</p>
13	<p>Prior to commencement of the development hereby approved, a Landscape and Ecology Management Plan (LEMP) shall be submitted to and approved in writing by the Local Planning Authority. The LEMP shall include a landscape management plan, including long term design objectives, management responsibilities and maintenance schedules for all public open spaces, ecological mitigation areas and surface water drainage system. Thereafter, the LEMP shall be carried out in accordance with the approved details.</p> <p>REASON: To ensure that public areas are maintained at good quality and that drainage systems retain full function and to protect habitats of importance to biodiversity conservation on the site from any loss or damage in accordance with Policies CS2, CS11, CS13, CS15 and CS16 of the Charnwood Local Plan 2011-2028</p>

	Core Strategy (2015) and the NPPF and saved policy EV/1 of the Borough of Charnwood Local Plan.
14	<p>No development shall take place until the existing trees on the site and all existing hedgerows have been protected in accordance with a Tree and Hedgerow Protection Plan that has been submitted to and approved in writing by the Local Planning Authority. The barriers shall be erected before any equipment, machinery or materials are brought onto the site for the purposes of development and shall be maintained until all equipment machinery and surplus material has been removed from the site. Nothing shall be stored or placed within the areas protected by the barriers erected in accordance with this condition and the ground levels within those areas shall not be altered, nor shall any excavations be made, without the written consent of the Local Planning Authority.</p> <p>REASON: To ensure the continued health of retained trees and hedgerows to ensure that they are not adversely affected by the construction works, in the interests of the visual amenity of the area, to ensure the integration of the development into the existing landscape and to comply with policies CS2 and CS11 of the Charnwood Local Plan 2011–2028 Core Strategy (2015).</p>
15	<p>No development approved by this planning permission shall take place until such time as a surface water drainage scheme has been submitted to, and approved in writing by the Local Planning Authority. The development must be carried out in accordance with these approved details and completed prior to first occupation.</p> <p>REASON: To prevent flooding by ensuring the satisfactory storage and disposal of surface water from the site.</p>
16	<p>No development approved by this planning permission shall take place until such time as details in relation to the management of surface water on site during construction of the development has been submitted to, and approved in writing by the Local Planning Authority. The construction of the development must be carried out in accordance with these approved details.</p> <p>REASON: To prevent an increase in flood risk, maintain the existing surface water runoff quality, and to prevent damage to the final surface water management systems though the entire development construction phase.</p>
17	<p>No occupation of the development approved by this planning permission shall take place until such time as details in relation to the long-term maintenance of the surface water drainage system within the development have been submitted to and approved in writing by the Local Planning Authority. The surface water drainage system shall then be maintained in accordance with these approved details in perpetuity.</p> <p>REASON: To establish a suitable maintenance regime that may be monitored over time; that will ensure the long-term performance, both in terms of flood risk and water quality, of the surface water drainage system (including sustainable drainage systems) within the proposed development.</p>
18	<p>No development approved by this planning permission shall take place until such time as infiltration testing has been carried out (or suitable evidence to preclude testing) to confirm or otherwise, the suitability of the site for the use of infiltration</p>

	<p>as a drainage element, has been submitted to and approved in writing by the Local Planning Authority.</p> <p>REASON: To demonstrate that the site is suitable (or otherwise) for the use of infiltration techniques as part of the drainage strategy.</p>
19	<p>Prior to approval of reserved matters, revised modelling against the proposed layout demonstrating sufficient flood risk mitigation is to be submitted to and approved in writing by the Local Planning Authority.</p> <p>REASON: To demonstrate that the surface water model's results and conclusions are maintained once detailed proposed level information and plot layouts are included.</p>
20	<p>No work shall commence to clear the site in preparation for the development hereby permitted until a Construction Environmental Management Plan (CEMP: Biodiversity) has been submitted and approved by the Local Planning Authority. The CEMP: Biodiversity shall include the following:</p> <ul style="list-style-type: none"> a) risk assessment of potentially damaging construction activities; b) identification of biodiversity protection zones; c) practical measures to avoid or reduce impacts during construction; d) the location and timing of sensitive works to avoid harm to biodiversity; e) the requirements for when an ecological clerk of works (ECoW) or similarly competent person is needed to oversee works; f) the use of protective fences, exclusion barriers and warning signs. The approved CEMP should be implemented throughout the construction process unless agreed otherwise with the Local Planning Authority. <p>REASON: To conserve and enhance our natural environment, in accordance with Policy CS13 in Charnwood Local Plan 2011-28 Core Strategy.</p>
21	<p>A minimum of eight bird boxes, of varying model types, on suitable mature trees (retained or planted) and buildings should be installed to provide additional bird nesting opportunities. Details of the new planting and locations and types of bird boxes should be included in the CEMP.</p> <p>REASON: To conserve and enhance our natural environment, in accordance with Policy CS13 in Charnwood Local Plan 2011-28 Core Strategy (2015).</p>
22	<p>Works must not commence within the bird breeding season (March to August inclusive) unless first checked for breeding birds by a suitably qualified ecologist within 48 hours of works commencing. Any nests found must be left undisturbed until chicks fledge, and the nest is abandoned.</p> <p>REASON: To conserve and enhance our natural environment, in accordance with Policy CS13 in Charnwood Local Plan 2011-28 Core Strategy.</p>
23	<p>No external lighting shall be installed in the development hereby permitted until details of lighting have been submitted to and approved in writing by the Local</p>

	<p>Planning Authority. The lighting scheme proposed should relate to the CEMP, and impact on protected species.</p> <p>REASON: To conserve and enhance our natural environment, in accordance with Policy CS13 in Charnwood Local Plan 2011-28 Core Strategy (2015), and to conserve protected and Priority species and allow the LPA to discharge its duties under the Conservation of Habitats and Species Regulations 2017 (as amended), the Wildlife & Countryside Act 1981 (as amended) and s40 of the Natural Environment and Rural Communities Act 2006 (Priority habitats & species).</p>
24	<p>The details to be submitted pursuant to condition 2 shall include a detailed design report, as described in the submitted Ground Gas Risk Assessment (RSK May 2018). The report shall be submitted to, and approved by the local planning authority prior to the construction of any dwellings. The report shall be in accordance with BS8485, and shall include as a minimum:</p> <p>Ground conditions and gas conceptualisation (severity of gas regime and sensitivity of proposed end-use)</p> <p>Building and construction related details pertinent to the design of gas mitigation system/measures including, but not limited to; foundation type, floor slab, wall construction and any complex detailing.</p> <p>Gas protection system design that is sufficient to mitigate the gas risk and be practically installed given the building and construction related details. This is likely to include venting calculations (to demonstrate air exchange of one volume per day), specification details for products and components suitable for constructing the system, installation methodology and installer qualifications/experience.</p> <p>A verification plan (prepared in accordance with CIRIA C735 and as discussed below).</p> <p>REASON: To ensure that future residents will be safe and to ensure that the site is suitable for the proposed use, to comply with Policy CS2 of the Core Strategy and the NPPF.</p>

Suggested Planning Obligations Heads of Terms

Affordable Housing	30% of dwellings to be affordable housing, 77% rent and 23% shared ownership
Leicestershire County Council Education	<p>£151,419 towards funding Early Years Education provision, improvement, remodelling or enhancement of education facilities at Merton Primary School or at other schools or other early learning provision within the locality of the development.</p> <p>£458,900 towards provision, improvement, remodelling or enhancement of Primary education facilities at Merton Primary School or any other school within the locality of the development.</p> <p>£0 towards provision, improvement, remodelling or enhancement of education facilities at Wreake Valley Academy or at other schools within the locality of the development for secondary school (11-16) sector.</p> <p>£0 towards provision, improvement, remodelling or enhancement of education facilities at Wreake Valley Academy or at other schools within the locality of the development for Post 16 sector.</p> <p>£110,074.44 towards provision, improvement, remodelling or enhancement of education facilities at Ashmount School or any other school within the locality of the development improving capacity at SEN school.</p>
Open Space	<p>Parks and amenity green space: on site 0.66Ha multi-functional green space areas.</p> <p>Natural and semi-natural green space: on site 0.94Ha defined habitat areas should be identified and created.</p> <p>Combined provision for children: 1 facility on-site. Equipment and design to be approved by CBC prior to commencement of development. Alternatively, a contribution of £51,998 toward an off-site provision at Chestnuts Play Area or other suitable location.</p> <p>Combined provision for young people: 1 facility on-site. Equipment and design to be approved by CBC prior to commencement of development. Alternatively, a contribution of £186,028 toward new or enhanced provision within Syston.</p>

	<p>Outdoor sports facilities; 1.22Ha on-site, but recommend off-site contribution of £64,227 to be used toward implementation of the recommendations in the Charnwood PPS 2018</p> <p>Allotments; 0.15Ha on-site, or alternatively off-site contribution of £22,020 for the creation of additional allotments within Syston</p> <p>Indoor Sport: off-site contributions to be used toward 29 additional swimming pool visits per week (this equates to an additional 4.73 sq m pool space at a cost of £88,566), 0.13 indoor courts (at a cost of £85,576) and 0.03 Indoor Bowls Rinks (at a cost of £12,636).</p>
Leicestershire County Council Sustainable Transport	A maximum contribution of £450,000 towards public transport enhancements.
Biodiversity	<p>To submit the Biodiversity Mitigation and Enhancement Scheme to the Council for its written approval with any Reserved Matters Application.</p> <p>To submit an updated Biodiversity Impact Assessment with the reserved matters</p> <p>To provide the Biodiversity Net Gain on Site in accordance with the Approved Biodiversity Mitigation and Enhancement Scheme.</p> <p>Where the provision of the Biodiversity Net Gain on site cannot be achieved to provide the mitigation measures off Site pursuant to the Approved Biodiversity Mitigation and Enhancement Scheme and pay the Biodiversity Impact Compensation to the Council</p>
Leicester, Leicestershire & Rutland Integrated Care Board (NHS)	£63,952.32 additional clinical accommodation for additional patients at the County Practice, and the Jubilee Medical Practice, both based at Syston Health Centre
Leicestershire County Council Library Services	£5,890 contribution towards the enhancement of Syston Library
Leicestershire County Council Waste Management	£10,076 to contribute towards Mountsorrel Waste and Recycling Centre



- 9.2. This list of the conditions and planning obligations will also be set out in a draft Statement of Common Ground and agreement sought where possible with the Council ahead of the statement being finalised.

10. The Appellant's Case

- 10.1. This section of the Statement of Case sets out the Appellant's position in relation to the key issues it is anticipated the Council would raise in objection to the appeal proposal.
- 10.2. As the appeal relates to a planning application that has not been determined, the Council's position is unclear. In principle, the Inspector will therefore need to consider the full range of issues raised by the application and the Inspectorate's decision on the appropriate procedure will necessarily have to reflect this. The key planning issues identified in the Planning Statement for this application and those that have arisen through the consideration of the application by statutory consultees are addressed below.

Principle of Development

- 10.3. The Charnwood Local Plan Core Strategy Policy CS1: Development Strategy sets out the Council will plan positively for the role of Service Centres like Syston. The policy states this will be done by providing for at least 3,000 new homes within and adjoining the six identified Service Centres between 2011-2028.
- 10.4. This is a minimum requirement and does cap the number of homes that can be delivered within and adjoining the Service Centres. The minimum provision provides flexibility for the plan to deal with unforeseen circumstances including under delivery on allocated sites. The provision of additional housing on the appeal site would assist the Council in meeting the more up to date standard method local housing need figure for the Borough which has replaced housing requirement set out in Policy CS1 and significantly increased the scale of housing need.
- 10.5. The emerging Local Plan responds to the latest local housing needs identified through the standard method. The Pre-Submission Draft Charnwood Local Plan 2021 – 2037 was subject to consultation in July – August 2021 under Regulation 19. It includes the appeal site as draft allocation H3: Land north of Barkby Road, Syston for 195 dwellings, under Policy Draft Policy DS3 Housing Allocations.
- 10.6. Policy DS3 (HA3) supports development proposals on the application site that are accompanied by a Flood Risk Assessment which responds to the evidence of flood risk on site and demonstrates how mitigation of those risks, including appropriate site access arrangements, can be satisfactorily achieved so as to meet the Exception Test, and contribute to the reasonable costs of the provision of a new 2 form entry primary school located at Site HA1.
- 10.7. The planning application for the appeal site was submitted in support of the emerging local plan and was accompanied by a Flood Risk Assessment prepared in accordance with the draft policy requirements.

Sustainability

- 10.8. The site is sustainable located on the edge of Syston. Syston is identified as a Service Centre in the Local Plan. The Core Strategy defines Service Centres as home to at least 3,000 people and the good range of services and facilities and good transport links allow them to provide for the daily needs of the people living there as well as supporting nearby

communities. Syston has a wide range of services and facilities and has good transport connections into Leicester.

10.9. The emerging Local Plan proposes to move the settlement of Syston up the hierarchy and identify it as an urban settlement in recognition of its close physical and functional relationship with the City and the choice of services and facilities available compared to other Service Centres.

10.10. The site itself is sustainable located in close proximity to a range of local facilities and services within Syston. This includes:

- Merton Primary School (500–700m from site)
- Wreake Valley Academy Secondary School
- Aldi and Tesco Supermarkets
- Medical facilities including Jubilee Medical Centre, a number of pharmacies and Syston Dental Care.
- Syston Train Station
- Syston Post Office
- Syston Library
- Places of Worship
- Selection of restaurants, fast food outlets and public houses.

10.11. Leicester is approximately 12 km to the south west of the site where an extensive range of facilities and services can be found along with employment opportunities.

Flood Risk and Drainage

10.12. The site is located within Flood Zone 1 being at low risk of fluvial flooding.

10.13. The accompanying Flood Risk Assessment confirms that site levels, including dwellings and access, are to be elevated to ensure that they are not at risk of flooding from surface water, without compromising overland flood routes back to the watercourse, should the development drainage system fail.

10.14. To offset the potential loss of floodplain volume, resulting from raising site levels, the development proposals also provide low lying areas for flood compensation, whereby public open space and landscaped areas of the site are able to flood in a controlled manner. These measures ensure that emergency access will be available for vehicles at all times. A secondary pedestrian point of access for the northern part of the site is also provided, by upgrading and improving the pedestrian link to the existing residential development west of the site.

10.15. The Flood Risk Assessment undertaken by Travis Baker was peer reviewed by BWB at the request of the Local Lead Flood Authority. The peer reviewed assessment confirms that

the increase in risk of surface water flooding from the development can be mitigated through a surface water drainage system, design features, the removal of debris and intrusive vegetation from the existing watercourse and a flood compensation scheme. The Lead Local Flood Authority raised no objections subject to conditions.

Ecology

- 10.16. There are no overriding ecological interests that would preclude development and no statutory designations within the application site, and none nearby that would be materially affected by the proposals. The site is capable of being developed with suitable mitigation and enhancement, resulting in significant net gains for biodiversity.
- 10.17. The habitats recorded during the baseline survey were found to comprise predominately those of low intrinsic ecological importance (site-level importance or less). As a result, the loss of these habitats is not considered to be significant.
- 10.18. The Ecological Appraisal sets out a mitigation strategy which will safeguard the status of protected and notable species.
- 10.19. The construction of areas of open space onsite presents an opportunity to enhance the biodiversity. The Biodiversity Impact Assessment identified the potential for 14.94% net gain in habitats and 48.18% net gain in hedgerows.

Landscape and Arboriculture

- 10.20. The site is not a 'valued landscape' for the purposes of Paragraph 174 of the Framework. The site does not lie within a Green Wedge or Local Area of Separation and is not the subject of any national or local landscape designations. The site is not unique or remarkable for any landscape purposes.
- 10.21. The proposed development is located beyond (but directly adjacent to) the settlement boundary of Syston as defined in the Borough of Charnwood Local Plan. The proposed development, in this context, would result in limited localised harm to the countryside through the urban development of an existing arable field.
- 10.22. The proposed development would result in some adverse landscape effects however the effects of the proposed development would be localised due to the level of physical containment by Syston to the west, undulating topography and Queniborough to the north, and high ground to the east and south beyond Barkby Lane. Visibility of the site is further restricted by the strongly treed/wooded character of the landscape to the east of Queniborough Road and around Barkby.
- 10.23. The overall harm to the landscape character of the local area is considered to be minor to moderate, due to the relatively contained nature of the application site which is set against the existing residential context.
- 10.24. The Arboricultural Impact Assessment found that whilst the proposed development would result in the partial loss of three low quality trees, this will be more than compensated for through the provision of new trees and hedgerows, as well as hedgerow reinforcement, across the site. The addition of new tree and hedgerow stock will contribute towards improving the quality of green infrastructure in the area.

Archaeology and Heritage

- 10.25. There are no designated or non-designated heritage assets on, or within, the application site itself.
- 10.26. The proposed development will not result in an adverse impact on, harm to, or loss of significance from any of the identified designated heritage assets.
- 10.27. The development will result in no adverse effects to locally listed buildings.
- 10.28. The archaeological assessment confirms there is no further archaeological work required.

Highways and Transportation

- 10.29. All the detailed technical matters raised by the LCC in relation to the site access have been addressed. The outstanding issue relates to the need for off-site mitigation. On this matter the Appellant case is best expressed in three parts.
- 10.30. Firstly, the Appellant case is that the original Transport Assessment appropriately assessed the cumulative impacts of the proposed development and other commitments, and the evidence did not identify the need for any off-site mitigation.
- 10.31. LCC's request for draft allocations to be included in the assessment of cumulative impacts is not appropriate and is not in line with the PPG. The PPG states that it is the cumulative impacts of development that is consented or allocated where there is a reasonable degree of certainty will proceed within the next 3 years that should be assessed (PPG 42-014). The PPG goes on to state, that at the decision-taking stage, assessing cumulative transport impacts may require the developer to carry out an assessment of the impact of those adopted Local Plan allocations which have the potential to impact on the same sections of transport network as well as other relevant local sites.
- 10.32. The additional development which LCC wished to include in the cumulative assessment neither has consent nor is allocated in an adopted local plan and therefore their inclusion would be contrary to the PPG and the wider terms of the Framework.
- 10.33. Secondly, even if these draft allocations were included in the cumulative assessment, the evidence shows that the cause of the significant impact on the identified junctions is due to the other draft allocation sites, not the cumulative effects of being combined with the appeal site. The development proposed at the appeal site does not contribute towards the cumulative impacts identified.
- 10.34. Thirdly, if it is concluded that the Appellant should make a proportionate financial contribution, to allow LCC to undertake the improvement works if and when the other developments come forward, this can be sought conditionally through the Section 106 Agreement. On the basis that should these developments obtain planning permission then pro rata contributions would be payable.
- 10.35. A draft Section 106 Agreement will be submitted and set out how this can be secured, in the event that it is concluded the contributions are necessary and directly related to the appeal site, leaving no reason to refuse this application or further defer a positive determination.

Air Quality

- 10.36. The impacts of the development on air quality have been assessed in response to a request from the Council's Environmental Health Officer and have been found not to be significant. The impact of the construction activities on existing residents can be sufficiently mitigated subject to conditions requiring the submission of a Construction Management Plan.

Land Contamination

- 10.37. There is moderate/low risk from ground gas contamination which can be mitigated through ground gas protection measures secured through condition. There are no other land contamination risks.

Housing Land Supply

- 10.38. As noted above, there is likely to be a significant material dispute between the parties in relation to the extent of the Council's 5 year housing land supply. It has not yet been possible to fully interrogate the newly published Charnwood Five Year Supply Statement, but an initial review finds the supply position is exaggerated. Evidence will be presented at the Public Inquiry to demonstrate that the deliverable housing land supply position is materially and significantly less than 4.27 years.

Section 106 Agreement

- 10.39. The Appellant has agreed to enter into a Section 106 Agreement to secure the delivery of affordable housing, public open space and other identified financial contributions, which would resolve this concern.
- 10.40. Taylor Wimpey proposed 30% affordable housing as part of the application in accordance with Core Strategy Policy CS3. The Appellant agreed with the Council's Affordable Housing Officer that this would include 77% provided as rented homes and 23% as shared ownership.
- 10.41. In accordance with Core Strategy Policy CS15: Open Spaces, Sports and Recreation, the application included Equipped Children's Play Space and other forms of open space within the Illustrative Masterplan and anticipated the need for maintenance arrangements and off-site contributions for some typologies of open space as set out in the planning obligations table above.
- 10.42. The Appellant has agreed to contribute towards the provision and maintenance of necessary infrastructure to mitigate the impact of additional development on community services and facilities.
- 10.43. The necessary obligations are set out in the planning obligations table above meet the requirements identified in the Community Infrastructure Levy Regulations 2010 (CIL). All requests are agreed and found to meet the three tests of being necessary to make the development acceptable in planning terms, directly related to the development and fairly and reasonably related in scale and kind to the development.

Planning Balance

- 10.44. The Appellant will demonstrate through detailed technical evidence that the proposed development constitutes sustainable development.
- 10.45. The Appellant will further show that the policies most important to the determination of the appeal are collectively out of date. They are based on a quantum of development and a settlement hierarchy which reflect a historic housing need. The Council is also unable to demonstrate a five-year supply of deliverable sites.
- 10.46. Accordingly, the tilted balance set out in Paragraph 11 (d) of the Framework's presumption in favour of sustainable development is engaged. For decision-taking this means that planning permission should be granted, unless any adverse impacts of doing so would significantly and demonstrably outweigh the benefits, when assessed against the policies in the Framework taken as a whole.

Benefits of Development

- 10.47. The NPPF sets out three dimensions to sustainable development which the proposed development should be assessed against.

Social benefits

- 10.48. This development would deliver substantial social benefits, including providing a mix of market properties and affordable homes.
- 10.49. This development will contribute towards meeting the wider housing needs arising within the Borough, and in the context of a shortfall in deliverable housing land supply and an on-going need to compensate for slower than planned delivery of the three Sustainable Urban Extensions which underpinned the Council's spatial strategy. The Appellant is a housebuilder with the intention of delivering the site within the next five years.
- 10.50. The provision of 30% affordable housing on this site will make a substantial contribution to the Council's annual affordable housing requirement.
- 10.51. The Core Strategy seeks to deliver 3,060 affordable homes during the plan period (2011 to 2028), 180 homes a year. The Council's Authority Monitoring Report (1 April 2021 – 31 March 2022) identifies that, as of 1st April 2022, a total of 1,898 affordable dwellings have been completed over the plan period since 2011. This represents 62% of the target of 3,060 and an average delivery rate of 173 homes per year.
- 10.52. The remaining 38% of affordable homes accordingly need to be completed in the remaining 6 years of the plan (to 2028). This will require an uplift in affordable housing delivery to an average of 194 homes a year for the final six years for the target of 3,060 affordable homes to be met.
- 10.53. The Leicester and Leicestershire Housing and Employment Needs Assessment dated June 2022 (Appendix I) provides the most up to date consideration of affordable housing needs within the Borough and identifies an on-going need for affordable homes. Taking account of the Framework definition of affordable housing and the latest information, including on housing costs it finds a need for 455 rented affordable homes per year and 372 affordable home ownership homes. This is a total of 827 affordable homes a year.

- 10.54. This is significantly higher than the levels of affordable housing currently being delivered within the Borough. The provision of affordable housing is a substantial benefit of the scheme. The proposed development would deliver 30% affordable housing, a total of 59 homes. This will be made up of 45 Affordable Rent (77%) and 14 Shared Ownership (23%).
- 10.55. Whilst Core Strategy CS1 is out of date, it recognises the importance of the local service and facilities available in Syston. The latest Settlement Hierarchy Assessment evidence (Appendix H) highlights that the choice of services and facilities is far greater in Syston than for any of the other Service Centres. These services and facilities make Syston a highly sustainable location for new development and the proposed development accords with Policy CS1 insofar as it relates to housing adjoining a Service Centre. The target in the policy for Service Centres is not a ceiling requirement and there is no evidence to suggest that going beyond the stated figure is unacceptable, particularly when there is an identified need to do so. Additional housing allocations for Syston are proposed in the emerging Local Plan including the appeal site.
- 10.56. The contribution this site can make to the supply of deliverable housing land, meeting housing needs and the delivery of affordable housing should each be afforded substantial weight. The benefits of this scheme in terms of the provision of open space, children's play area, homes in a sustainable location supporting the retention of services and facilities should also be afforded moderate weight.

Economic benefits

- 10.57. A number of economic benefits will be created by the proposed scheme, notably:
- Construction employment opportunities.
 - Contribution of the construction phase to economic output.
 - Contribution of the permanent jobs to economic output.
 - Household expenditure associated with residents of the new dwellings.
 - Contribution to Council Tax.
 - Affordability: 30% of the proposed dwellings will be affordable.
- 10.58. These benefits cascade down the supply chain through indirect and induced effects during the construction phase.
- 10.59. Paragraph 8 (a) of the Framework sets out an economic objective 'to help build a strong, responsive and competitive economy, by ensuring that sufficient land of the right type is available in the right places and at the right time to support growth...'. This includes sufficient land for housing which is a key contributor to a successful economy. Paragraph 81 of the Framework states 'Significant weight should be placed on the need to support economic growth and productivity, taking into account both local business needs and wider opportunities for development'.
- 10.60. Once the construction phase is over, economic spend and investment both directly (from residents) and indirectly (from Council Tax and new Homes Bonus) assists with the

retention and development of accessible local services and community facilities such as local shops supporting the rural economy.

10.61. These economic benefits should be afforded significant weight.

Environmental benefits

10.62. The proposed development seeks to make the most efficient use of this greenfield site whilst providing environmental benefits incorporated into the significant areas of open space within the proposed layout, including retaining and strengthening existing hedgerows and planting new trees and providing suitable habitats for breeding birds, foraging and commuting bats and reptiles.

10.63. An Illustrative Layout Plan has been submitted in support of this application, which demonstrates that the site can be developed to an appropriate density, whilst retaining the natural assets of the site and delivering a significant biodiversity net gain. It is currently estimated that this could be 15% for habitats and 48% for hedgerows, with exact figures to be confirmed through the reserved matters process.

10.64. The site is sustainably located close to existing services and facilities reducing the need to rely on the private car.

10.65. The potential for significant biodiversity net gain on this site should be afforded significant weight. The other environmental benefits should be afforded moderate weight.

Adverse Impacts of Development

10.66. It is acknowledged that the proposed development would result in a degree of landscape change within the immediate context of the site. However, the impact of the proposal would be comparable to any greenfield development around the settlement, with effects being limited and localised. This impact is not considered to be significant and is supported by the Council's proposed allocation of the appeal site in the emerging Local Plan.

10.67. Similarly, whilst the proposed development would result in increased vehicular movements, these are not so significant to result in a severe impact upon the highway network, highway safety or residential amenity to warrant refusal of the application.

Planning Balance

10.68. It is accepted that the proposal is not in accordance with the Development Plan taken as a whole. However, it will be demonstrated through the Appellant's evidence that the policies most important to the appeal proposal are out of date and that the 'tilted balance' identified in the Framework is engaged.

10.69. The site will be shown to promote a sustainable pattern of development, as recognised by the Core Strategy Policy CS1 and the emerging Local Plan which includes the site as a draft allocation.

10.70. The development would have social, economic and environmental benefits including making a substantial contribution towards boosting the supply of much needed market and affordable housing. The site is in single ownership on the edge of Syston, a sustainable



settlement. The site is therefore suitable, available and achievable, making it deliverable within the next five years.

- 10.71. It will therefore be demonstrated that the benefits of the appeal proposal outweigh any adverse impacts in the planning balance and therefore planning permission should be granted.

11. Conclusion

- 11.1. This Statement of Case has been prepared by Pegasus Group on behalf of Taylor Wimpey UK Ltd in respect of an appeal against the non-determination by Charnwood Borough Council of a planning application (reference: P/21/2639/2) for outline planning permission for up to 195 dwellings with all matters reserved except access.
- 11.2. The application was due to be considered at Planning Committee in April 2023, but LCC's comment have continued to delay the determination of the application, despite on-going efforts over a period of a year to address the concerns raised.
- 11.3. The access arrangements have been found to be acceptable by LCC leaving only the potential need for off-site mitigation as the only outstanding issue preventing the site being considered by Planning Committee.
- 11.4. It will be demonstrated through detailed technical expert evidence that the impact of the proposed development would be acceptable in terms of highways and transportation. Whilst the development will also impact on other infrastructure, this can be mitigated by condition or through appropriate obligations that the Appellant has agreed to.
- 11.5. As an undetermined application, the position of the Council is unclear on the key planning issues. It will be demonstrated through evidence that the development is sustainable development.
- 11.6. It will be demonstrated that the policies most important for determination of the application are out of date and the 'tilted balance' as identified at paragraph 11(d) of the Framework is engaged.
- 11.7. It will be shown that this is a sustainable site and can deliver much-needed housing growth. The benefits of this proposal will be shown to outweigh any adverse impacts in the planning balance and therefore that planning permission should be granted.

Appendix A – Other Supporting Documents List

Supporting documents not submitted with the appeal application in line with the Planning Inspectorate ‘How to Complete your Planning Appeal Form’ Guidance which support this Statement of Case

Development Plan Documents

- Charnwood Local Plan Core Strategy (2015)
- Borough of Charnwood Local Plan (2004)

National Policy and Guidance

- National Planning Policy Framework
- Planning Practice Guidance
- National Design Guide
- Manual for Streets, and Manual for Streets 2

Local Guidance

- Charnwood Design Supplementary Planning Document (2020)
- Leicestershire Highways Design Guide
- Charnwood Housing Supplementary Planning Document (2017)
- Planning Guidance for Biodiversity (2022)

Local Evidence Documents

- Borough of Charnwood Landscape Character Assessment (2012)

Other

- Consultee Responses to Application P/21/2639/2
- Appeal Decisions referenced in this report

**Appendix B – Local Highway Authority
Correspondence March 2023**

**Appendix C (i) – Pre-Submission Draft Charnwood
Local Plan**

**Appendix C (ii) – Pre-Submission Draft Charnwood
Policies Map**

Appendix D – Local Development Scheme April 2023

**Appendix E – Wavendon Properties v SSHCLG v MKC
2019 EWHC 1524 Admin**

**Appendix F – Leicester and Leicestershire Statement
of Common Ground June 2022**

**Appendix G – Inspectors’ Post Hearing Letter on
Unmet Need November 2022**

**Appendix H – Charnwood Settlement Hierarchy
Assessment 2020**

**Appendix I – Leicester and Leicestershire Housing and
Economic Needs Assessment June 2022**

**Appendix J – Charnwood Five Year Housing Land
Supply Statement 2023**

**Appendix K – Examination Document 58A Housing
Trajectory February 2023**



Appendix L – DTA Response to Local Highway Authority June 2022

Appendix M – DTA Response to Local Highway Authority December 2022

Appendix N – Local Highway Authority Comments January 2023

Appendix O – Note of Meeting held with Local Highway Authority 16 March 2023

Appendix P – DTA Response to Local Highway Authority March 2023

Appendix Q – Note of Meeting held with Local Highway Authority 24 March 2023

Appendix R – Email from Highways Authority dated 13 April 2023

Appendix S – Transport Technical Note June 2023

Town & Country Planning Act 1990 (as amended)
Planning and Compulsory Purchase Act 2004

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From: [Suraj Dave](#)
To: [Nichola Willder - TW Strategic Land](#)
Cc: [Gary Tucker - TW Strategic Land](#); [Liam Ward](#); [Simon Tucker](#); [Adrian Whiteman](#)
Subject: RE: HA3 - Land North of Barkby Road (LPA Ref: P/21/2639/2)
Date: 13 April 2023 11:50:27
Attachments: [image001.png](#)
[image002.png](#)
[image003.png](#)
[image004.jpg](#)

Good Morning Nichola,

We have now had an opportunity to discuss this application with colleagues and it has been concluded that we do not consider the suggested 'improvement' conditions approach to be acceptable on the basis that without additional information being provided at application stage, it is not clear if the necessary mitigation is deliverable. To provide further advice to CBC (either condition or contribution) we will need to see evidence of site specific schemes i.e. detailed design (taking on board any previous LHA comments), supporting junction modelling, RSA and Designer's Response for the following junctions:

- High Street/Melton Road/Barkby Road;
- Goodes Lane/Melton Road (taking into consideration the LHA's design comments); and
- Fosse Way/High Street

This site specific mitigation is considered necessary to make the development acceptable, alongside a wider highway and transport contribution as identified in the CBC emerging Local Plan.

Kind Regards,

Suraj Dave

Senior Transport Planner

Highway Development Management
Leicestershire County Council

Tel: 0116 305 5682

Email: suraj.dave@leics.gov.uk

Please note that the contents of this email including any attachments are offered as my officer opinion and will not prejudice any future decision the Highway Authority may make in relation to this matter.

From: Nichola Willder - TW Strategic Land <Nichola.Willder@taylorwimpey.com>

Sent: 06 April 2023 17:29

To: Adrian Whiteman <Adrian.Whiteman@leics.gov.uk>; Suraj Dave <Suraj.Dave@leics.gov.uk>

Cc: Gary Tucker - TW Strategic Land <Gary.Tucker@taylorwimpey.com>; Liam Ward <Liam.Ward@charnwood.gov.uk>; Simon Tucker <SJT@dtatransportation.co.uk>

Subject: RE: HA3 - Land North of Barkby Road (LPA Ref: P/21/2639/2)

Afternoon Adrian/Suraj

Further to our email exchanges last week I wondered if you had issued your response as I don't think I have seen anything come through and it's the bank holiday tomorrow.

Kind Regards

Nichola Willder | Senior Strategic Land & Planning Manager | Taylor Wimpey Strategic Land

Mobile: 07977190776 | e: nichola.willder@taylorwimpey.com

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From: Adrian Whiteman <Adrian.Whiteman@leics.gov.uk>

Sent: 31 March 2023 10:31

To: Nichola Willder - TW Strategic Land <Nichola.Willder@taylorwimpey.com>

Cc: Gary Tucker - TW Strategic Land <Gary.Tucker@taylorwimpey.com>; Suraj Dave <Suraj.Dave@leics.gov.uk>; Liam Ward <Liam.Ward@charnwood.gov.uk>; Simon Tucker <SJT@dtatransportation.co.uk>

Subject: RE: HA3 - Land North of Barkby Road (LPA Ref: P/21/2639/2)

Importance: High

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Hi Nichola,

I respond on Suraj's behalf.

I note all of your comments, however clearly the LHA will only issue highway observations that it is comfortable with. That being said, I don't have any significant issues with the condition as worded, just tweaks.

Liam has advised that, given the LHA currently anticipates being able issue observations advising approval subject to conditions and obligations, he is comfortable that we issue our observations by the end of next week. This is also on the basis that it will give Suraj a bit more time to try and resolve some of the issues, mainly with regard to the Melton Road / High Street / Barkby Road Junction.

Our observations, whilst fairly advanced, will not therefore be issued today.

Regards,

Adrian

Adrian Whiteman (he/him)
Principal Transport Planner
Highway Development Management
Highways & Transport Commissioning Service
Leicestershire County Council

Tel: (0116) 305 0001
DD: (0116) 305 5461
Email: adrian.whiteman@leics.gov.uk

****Please note that the contents of this email including any attachments are offered as my officer opinion and will not prejudice any future decision the Highway Authority may make in relation to this matter****



From: Nichola Willder - TW Strategic Land <Nichola.Willder@taylorwimpey.com>
Sent: 31 March 2023 09:53
To: Suraj Dave <Suraj.Dave@leics.gov.uk>; Liam Ward <Liam.Ward@charnwood.gov.uk>; Simon Tucker <SJT@dtatransportation.co.uk>
Cc: Adrian Whiteman <Adrian.Whiteman@leics.gov.uk>; Gary Tucker - TW Strategic Land <Gary.Tucker@taylorwimpey.com>
Subject: RE: HA3 - Land North of Barkby Road (LPA Ref: P/21/2639/2)
Importance: High

Dear Suraj

Thank you for your email. I will just like to take the opportunity to set out TW's position.

For expediency we provided without prejudice improvements to two junctions. The outputs of the junction modelling confirms that whilst these junctions may be approaching capacity with the development the change in junction operation is not material. In accordance with Para 110d of the NPPF, mitigation need only be considered where there are "significant impacts". That is clearly not the case here in our view and there is case law which supports that conclusion. However clearly the County have reached a different conclusions as they are requesting mitigation. In principle that could be accepted provided it is reasonable in kind and scale (NPPF Para 57). The schemes and conditions need to reflect that test.

We suggest that the following conditions with regards Goodes Lane / Melton Road and Fosse Road / High Street junctions

1. Prior to development commencing, a scheme for the improvements relating to the XXXX junction shall be submitted and agreed in writing with the Local Planning Authority. The scheme shall include the following:

- a. Detailed design for the improvements;
 - b. Road Safety Audit; and
 - c. Informed by phased junction modelling, the trigger that the works are required to be implemented by.
2. The improvements to the junction of XXXX shall be implemented in full, in accordance with the scheme agreed with the Local Planning Authority' pursuant to Condition [1] above.

In terms of the second point you raise Suraj on the Melton Road / High Street / Barkby Road Junction, I am hoping by now that a decision has been made in line with what we discussed in the meeting as set out in the minutes below. I think the point was made at the meeting that the wider modelling for the Local Plan confirms that the flows in Syston are likely to decrease and that works to improve capacity here would conflict with wider strategic objectives and therefore mitigation was not considered appropriate or necessary. If that is now not LCC's view and contributions are being sought for all three junction this could only be achieved by requesting an off-site commuted sum through S106 agreement and the costs per scheme is split proportionally across the three allocations in Syston (HA1, HA2 and HA3). To suggest an approach that would mean that HA3 alone would have to bear the costs for improving all three junctions through a condition is not reasonable, necessary or proportionate and as such would not in our view meet the CIL tests.

Please do contact myself or Simon if you would like to discuss. I know you have a lot on so thank you again for prioritising the response to this application and I look forward to seeing your final response later today.

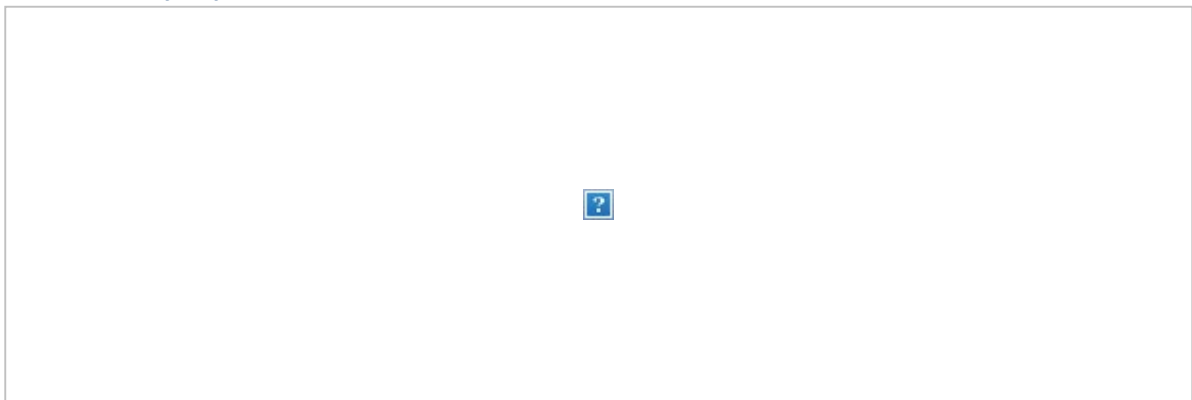
Kind Regards

Nichola Willder | Senior Strategic Land & Planning Manager | Taylor Wimpey Strategic Land

Mobile: 07977190776 | e: nichola.willder@taylorwimpey.com

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From: Suraj Dave <Suraj.Dave@leics.gov.uk>

Sent: 30 March 2023 15:11

To: Liam Ward <Liam.Ward@charnwood.gov.uk>; Simon Tucker <SJT@dtatransportation.co.uk>

Cc: Adrian Whiteman <Adrian.Whiteman@leics.gov.uk>; Nichola Willder - TW Strategic Land

<Nichola.Willder@taylorwimpey.com>; Gary Tucker - TW Strategic Land

<Gary.Tucker@taylorwimpey.com>

Subject: FW: HA3 - Land North of Barkby Road (LPA Ref: P/21/2639/2)

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or links.

Afternoon Liam,

Please see an example draft condition below for the junction mitigations where there is no scheme.

'No Part of the development hereby permitted shall be occupied until such time as improvements to the junction of XXXX have been agreed in writing with the Local Planning Authority and implemented in full.'

Reason: To mitigate the impact of the development in the general interests of highway safety and in accordance with the National Planning Policy Framework (2021).'

If you have any concerns, please let us know by mid-morning tomorrow.

@Simon Tucker in relation to point 7 in your email below, we haven't been able to resolve this matter yet, so may have to offer a similar condition to the above if we are unable to resolve it tomorrow.

Thanks,

Kind Regards,

Suraj Dave

Senior Transport Planner

Highway Development Management

Leicestershire County Council

Tel: 0116 305 5682

Email: suraj.dave@leics.gov.uk

Please note that the contents of this email including any attachments are offered as my officer opinion and will not prejudice any future decision the Highway Authority may make in relation to this matter.

From: Simon Tucker <SJT@dtatransportation.co.uk>

Sent: 27 March 2023 16:55

To: Suraj Dave <Suraj.Dave@leics.gov.uk>; Adrian Whiteman <Adrian.Whiteman@leics.gov.uk>

Cc: Liam Ward <Liam.Ward@charnwood.gov.uk>; Gary Tucker - TW Strategic Land <Gary.Tucker@taylorwimpey.com>; Nichola Willder - TW Strategic Land <nichola.willder@taylorwimpey.com>

Subject: HA3 - Land North of Barkby Road (LPA Ref: P/21/2639/2)

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Adrian / Suraj (and Liam),

Thank you for your time on Friday, I have set out my notes of our discussion below for agreement:

1. Deadline for final consultation response from LCC to application – Friday 31st March.
2. Site Access arrangements (DTA Drawing 20060-02 F and 20060-02-2 F) are agreed and will be

- secured by planning condition.
3. TW proposals for public transport contribution is agreed. This amounts to £450,000 in total, payable in 6 x £75,000 annual instalments commencing prior to 50th occupation. Whilst this is based on costs of enhancing Service 100, LCC would like flexibility within the wording to spend funds on other measures (for example DRT). This is agreeable to TW and precise details can be covered at S106 drafting stage.
 4. LCC welcome the sensitivity tests provided by TW. ST confirmed that these were particularly robust because the strategic Transport Assessment evidence base for the local plan confirms traffic flows will reduce through Syston as a result of wider interventions included in the IDP.
 5. LCC consider mitigation is required at two locations as a result of the development and are seeking a commitment (under 278 / condition) for these to be provided by the development.
 - a. Goodes Lane / Melton Road. ST explained the without prejudice scheme involved creating a right turn pocket to ease blocking by right turners into Goodes Lane. LCC consider the scheme needs further detailed review, design and RSA (comments received from SD on 24th and under review by DTA).
 - b. Fosse Road / High Street. ST explained the without prejudice scheme involved localised widening to provide more stop line capacity at the signals. LCC consider the scheme needs further detailed review, design and RSA.
 6. In the meantime, LCC advised that to support the planning application they would be proposing a condition that would secure the refinement and implementation of the scheme. GT advised that it would be TWs intention to agree the detailed design of the junction improvements with LCC in the period post committee and prior to signing the S106 in order to have clarity of associated costs. GT suggested that if the off-site schemes were agreed with LCC prior to the S106 being signed there may be no requirement for a condition and the works can be secured through the S106 or the drawing numbers added to drafted conditions.
 7. In relation to the Melton Road / High Street / Barkby Road Junction, ST explained that works to improve capacity here would conflict with wider strategic objectives and therefore none was considered necessary. LCC to review position and confirm by 29th March 2023.
 8. Strategic Contribution. LCC confirmed that a contribution towards strategic improvements would be sought from the development. The method for arriving at this figure is still being discussed by officers at LCC and Charnwood (with a meeting being held on Wednesday 29th March), so it was likely that the final response from LCC would refer the need for a payment with the details "TBC". TW seek a firmer commitment on scale of costs – LCC to confirm.
 9. LCC to share proposed conditions with Liam Ward who would share with TW for discussion.

Simon

Kind regards

Simon Tucker



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Charnwood Local Plan 2021-37

Pre-Submission Draft
July 2021

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Charnwood

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Foreword

Welcome to the Charnwood Local Plan. This is Charnwood Borough Council's vision of where and how new development should come forward in Charnwood over the next 16 years to 2037.

We are very fortunate to live and work in a place as beautiful as Charnwood. Our borough contains great towns and attractive villages, nestled in and around the Charnwood Forest and in the Wolds, as well as the river valleys of the Soar and the Wreake. These places are cherished for their wildlife, heritage and beauty and we have a role in ensuring future generations can benefit from them.

Charnwood's location at the heart of the three cities of Leicester, Derby and Nottingham, together with its attractive scenery combines to create great pressure for new homes and new places for people to work. Planning to meet this need, as we are required to do by national planning policy, is very challenging given the sensitivity of our environment and the shared desire to protect it. We have therefore carefully balanced the need for growth against our responsibilities to protect the natural and built environment, and where new development is required, we will seek to minimise its impact.

We have already set in place much of the development required for the future with new communities being delivered through urban extensions to Leicester and Loughborough. Our new local plan provides for the remaining housing and employment needs of the Borough to 2037.

Preparing this local plan has required difficult decisions to be made about the areas which will be developed and those that will not. These decisions have been informed by the views of residents, businesses, interest groups as well as infrastructure providers and others that will be involved in delivering and implementing the plan.

Representations are invited on this Pre-Submission Draft of the Charnwood Local Plan between 12th July and 5pm 23rd August 2021. This is your opportunity to make your views known on the Local Plan. Any representations received will be considered by an independent planning inspector, as part of the formal examination of the Local Plan.

Councillor Richard Bailey
Cabinet Lead Member for Planning
Charnwood Borough Council



Chapter 1 Introduction

- 1.1. The Charnwood Local Plan Core Strategy was adopted in November 2015 and provides a development strategy to 2028 setting out where and how new development should take place in the Borough. Whilst the Council is working with its partners to deliver that plan, work has taken place on the preparation of a plan for a longer period to 2037 to align with the new Strategic Growth Plan for Leicester and Leicestershire and new evidence of the need for homes and jobs. This approach is in accordance with the national policy requirement to keep plans up to date and reviewed at least every five years.
- 1.2. This new local plan sets out a vision and a framework for the future pattern, scale and quality of development in Charnwood. It addresses needs and opportunities in relation to housing, the economy, community facilities and infrastructure as well as conserving and enhancing the natural and historic environment, mitigating and adapting to climate change, and achieving well designed places that contribute to healthy communities. The majority of policies in this plan are considered to be strategic policies which address the priorities for development and use of land in Charnwood. A small number of non-strategic policies are also included to guide decision making and to guide the promotion of sustainable development.
- 1.3. The plan consists of three distinct sections: overall development strategy, place-based policies and topic-based policies. The place-based policies relate to specific locations in Charnwood: Leicester Urban Area, Loughborough Urban Centre, Shepshed, Service Centres, Other Settlements and the Countryside. They incorporate several policies for these places to provide a more coherent approach to planning for our communities.
- 1.4. The new local plan, once adopted, will form part of the development plan and replace the Charnwood Local Plan Core Strategy (2015) and the saved policies from the Borough of Charnwood Local Plan (2004). The development plan is at the heart of the planning system with a requirement set in law that planning decisions must be made in line with the development plan unless material considerations indicate otherwise.

Preparation of the Pre-Submission Draft Local Plan

- 1.5. This Pre-Submission Draft Local Plan reflects the Government's requirements as set out in the National Planning Policy Framework (NPPF). It has been developed to support and deliver the Council's Corporate Plan and is informed by the Council's vision and local priorities. It reflects the evidence that has been prepared to understand the roles of different settlements, what land is available for development, constraints to development and the options for delivering homes and jobs.
- 1.6. The plan has been developed through engagement with the public and key stakeholders such as infrastructure providers, parish and town councils, residents' groups, interest groups and the development industry. This has ensured the plan and the evidence underpinning it have been shaped by an understanding of the key local issues.

- 1.7. The Council has undertaken three consultations to help prepare this plan and engagement with stakeholders has also taken place to inform the preparation of our evidence. The first local plan consultation concerned the scope of the plan and took place in July 2016. The second consultation in April 2018 focussed on the key issues and options, with the Council publishing a discussion paper titled 'Towards a Local Plan for Charnwood'. Informed by these consultations, the 'Draft Charnwood Local Plan', was published for consultation in November 2019. This proposed our preferred development strategy for Charnwood and presented draft policies which responded to the representations to date and our evidence. The representations made during this consultation process have been considered and informed the preparation of this Pre-Submission Draft Local Plan.
- 1.8. The Charnwood Local Development Scheme 2021-2024 sets out the programme for the next stages in preparing the new local plan and identifies this consultation on the Pre-Submission Draft Local Plan in July 2021 and then the subsequent Examination in Public of the plan in spring 2022.

Status of the Pre-Submission Draft Local Plan

- 1.9. We have prepared this Pre-Submission Draft Local Plan to provide a framework for the future pattern, scale and quality of development in Charnwood. We must submit the draft plan to the Secretary of State for Housing, Communities and Local Government for independent Examination in Public before it can become part of the development plan for Charnwood. Before we submit the draft plan, we are undertaking a consultation for a period of six weeks and the main issues raised will be considered as part of the examination of the plan.

Sustainability Appraisal

- 1.10. Sustainable development is a key principle which underpins the planning system. It means ensuring a better quality of life, now and for future generations. This means considering all three aspects of sustainable development: the community, the economy and the environment.
- 1.11. A separate sustainability appraisal report accompanies each stage of the preparation of the local plan. Prior to this consultation, there have been sustainability appraisal reports on the scope of the local plan (January 2017) and 'Towards a Local Plan for Charnwood' (April 2018). A sustainability appraisal report of the alternative options was then undertaken to assess the impact of the draft policies on sustainability principles and this was published in October 2019 to accompany the 'Draft Charnwood Local Plan'.
- 1.12. At the current stage, a full Pre-Submission Sustainability Appraisal Report has been prepared which appraises the Pre-Submission Draft Local Plan and brings together all previous stages of the sustainability appraisal. It summarises the sustainability appraisal work carried out to date and how it has influenced the plan; the report is published as part of this consultation and views on it are invited.

Consultation

- 1.13. This Pre-Submission Draft of the Local Plan is published for consultation for six weeks from Monday 12th July 2021 and is available to view on our website, along with the supporting evidence base, at www.charnwood.gov.uk/localplan.
- 1.14. Following on from the earlier consultations, this pre-submission consultation concerns the 'soundness' of the plan, a test that a Planning Inspector will apply to it at an Examination in Public following its submission to the Secretary of State.
- 1.15. You are invited to make comments on the Pre-Submission Draft Local Plan and the Sustainability Appraisal and other supporting evidence which accompanies it. Comments should be made during the six-week consultation period which commences on Monday 12th July 2021 and ends on Monday 23rd August 2021 at 5pm.
- 1.16. We encourage all our consultees to make comments using the online response form which can be found using the above weblink during the consultation period.
- 1.17. We understand that some people may prefer to submit comments in a different format by email or by letter. If you are unable to make your comments using the online response form, return your comments to localplans@charnwood.gov.uk or write to Local Plans Team, Charnwood Borough Council, Southfields Road, Loughborough, LE11 2TX.
- 1.18. Please contact the Local Plans team using the above email if you have any questions in relation to this consultation. We will keep your details and what you say on our consultation database. Please note that your contact details will be protected under Data Protection legislation but your name and any comments you make will be publicly viewable.

Profile

- 1.19. Charnwood is one of seven districts in Leicestershire. The Borough is situated in the north of the county, adjoining the city of Leicester to the south. Our Borough benefits from being centrally located between the three cities of Leicester, Nottingham and Derby. We have proximity to excellent connections including the M1 motorway, the Midland Mainline railway and East Midlands Airport.
- 1.20. The city of Leicester is the key destination for work and leisure for residents in the south of the Borough whilst in the north of the Borough the university and market town of Loughborough provides the economic, cultural and social focus. To the west of Loughborough is the town of Shepshed and to the south are a string of larger villages along the Soar Valley and A6 corridor. These villages act as Service Centres to the more rural parts of the Borough. Distinctive components of Charnwood's local economy include two enterprise zone sites, Loughborough University and College, a nationally significant science and enterprise park, a rural area supporting agriculture, and a growing tourism sector.

- 1.21. To the west of the Soar Valley is Charnwood Forest, which extends to the west of Coalville in North West Leicestershire. The Forest is recognised as a Regional Park, providing a focus for leisure and conservation. To the north east of the Borough is the Wolds, a rural area with strong links to Nottinghamshire. To the east of the Borough is the Wreake Valley corridor which contains several villages and extends towards Melton Mowbray. To the south of the Wreake Valley is High Leicestershire, a predominately rural area with strong links to the city of Leicester and the district of Harborough.
- 1.22. The profile below provides key information about Charnwood.

PROFILE OF CHARNWOOD

Location

Charnwood is located in the East Midlands region, centrally between the three cities of Derby, Leicester and Nottingham.

Settlements

Loughborough is the main town in Charnwood and is the largest settlement in Leicestershire outside the city of Leicester. Loughborough has been a regionally significant market town since 1221 and is home to the world-renowned Loughborough University which has been a centre of learning since 1909. The Borough also has larger urban settlements of Shepshed, Syston, Birstall and Thurmaston and smaller service centres of Anstey, Barrow upon Soar, Mountsorrel, Quorn, Rothley and Sileby. The Borough has over 30 smaller settlements in the form of villages and hamlets. Settlements in Charnwood are concentrated along the corridors of the Soar and Wreake Rivers and the suburban boundary with the city of Leicester, with minor concentrations in the Wolds and the fringes of Charnwood Forest.

Area

The area of the Borough is 27,906 hectares

People and society

The population of Charnwood is 185,851 of which 16.9% is aged under 16 and 18.1% is aged 65 and over (ONS Mid-year estimates, 2019). The number of people aged over 65 years old is projected to increase by 78% between 2011 and 2036 whilst the number of people aged over 85 is projected to increase by 157% (HEDNA, 2017). The black and minority ethnic population is 12.6% (Census, 2011)

In 2016, births exceeded deaths by 393, international immigration exceeded emigration by 879 and intranational immigration (within UK) exceeded emigration by 1,863 (ONS datasets on registered births and deaths and local area migration indicators, 2018/2019)

Housing

There are an estimated 74,461 households in 2019 (ONS Household Projections, 2014-2039)

Average household size is 2.37 persons (ONS Household Projections, 2014-2039)

Accommodation type (Council Tax data, April 2019):

Detached	30%
Semi-detached	33%
Terrace	22%
Flat	11%
Other	4%

In 2019 Charnwood had a dwelling stock of 75,581 dwellings under with the following tenures (MHCLG, 2020):

Local Authority Owned	7%
Private Register Provider	5%
Privately Owned	88%

In 2019/20 Charnwood had 432 cases of homelessness presented to the Council. (MHCLG 2020).

Loughborough University expected student numbers of 15,600 in 2020/21 with approximately 5,600 student accommodation beds (excluding HMOs) in the Borough (HEDNA, 2017)

Average house prices (Land Registry, August 2020)

Detached	£344,791
Semi-detached	£214,295
Terraced	£171,361
Flat and maisonette	£121,351

The ratio of median house prices to median earnings has risen from 4.34 in 2002 to 6.96 in 2019 (ONS, 2020)

Accessibility and Transport

43% of the working population living in Charnwood also work within the Borough. Outside the Borough, the largest proportion of employment is in the city of Leicester (20% of working population). However, there is a net commuter outflow of 11,589 daily from the Borough. Car/van ownership in Charnwood is 536 per 1000 residents with 81.9% of households owning a car (Census 2011).

Charnwood has 18.3 electronic vehicle public charging devices per 100,000 residents (Department for Transport, 2020).

Loughborough has high quality bus infrastructure although this is variable elsewhere in the Borough particularly in rural areas. Leicestershire averaged 20 bus uses per head per year which was the lowest in the East Midlands in 2018/19. (Charnwood Sustainable Transport Study, 2020)

Charnwood has a well-developed transport network:

M1 motorway is a 5 minutes' drive from Loughborough

The Midland Mainline railway serves Syston, Sileby, Barrow upon Soar and Loughborough

Proximity to East Midlands Airport

A6 road links Loughborough to Leicester

A60 road links Loughborough to Nottingham

A46 road links the east of the Borough to Leicester and Lincolnshire.

Bus, rail, cycle and footpath networks link Loughborough to the larger settlements

National Cycle Routes 6 and 48 run through the Borough as do the Leicester and Loughborough cycle networks

Grand Union Canal/ River Soar Navigation links the Borough to the wider inland waterway network.

Jobs and Prosperity

64.9% of the population are aged 16-64 (ONS Mid-year estimates, 2019)

84.9% aged 16-64 are economically active (ONS Mid-year estimates, 2020)

15.1% aged 16-64 are unemployed (ONS, 2020)

88.4% of businesses employ less than 10 employees (ONS, 2020)

Average (mean) gross annual earnings are £27,800 (ONS, 2020)

Charnwood residents generally travel to work by car (67%), active travel such as walking or cycling (15.0%) or public transport (5%) – with 13% homeworking or other (pre Covid-19) (Census, 2011)

4.5% of young people aged 16-19 in 2011 were not in education, employment or training (NEET) in Charnwood, which is below the national average of 6.1%.

Loughborough and Leicester Science and Innovation Enterprise Zone sites at Charnwood Campus and Loughborough Science and Enterprise Park

Charnwood has a Gross Value Added (GVA) per head of £18,712 (ONS, 2016)

Charnwood's tourism sector grew by 38% between 2011-16 with opportunities including the expansive countryside, Charnwood Forest and enhancements to Loughborough town centre and heritage quarter (Charnwood Blueprint for Tourism) The Borough has 279 square kilometres of countryside whereby agriculture is an important component of the local economy.

Environment - Historic, Natural and Recreation

784 statutory Listed Buildings

Over 200 locally listed buildings of interest

38 Conservation Areas

21 Scheduled Monuments

5 Registered Parks and Gardens

236 Local Wildlife Sites (4.57% of the Borough in 2019)

18 Sites of Special Scientific Interest (4.38% of the Borough in 2019)

5 Regionally Important Geological Sites

In 2017, Charnwood had the following open space provision (Charnwood Open Spaces Strategy 2018):

Parks and Gardens 47.5 ha

Amenity Green Space 167.9 ha

Natural and Semi Natural Green Space 937.9 ha

Green Corridors 41.3 ha

Allotments 36.2 ha

Cemeteries & Churchyards 42.8 ha

Civic Spaces 3.5 ha

Children's Play Sites and Youth Provision 12.6ha

Climate Change and Sustainability

61% of the river length in Charnwood has a moderate overall ecological status (Environment Agency, 2016)

44.9% of household waste recycled/reused/composted (Letsrecycle.com, 2018/19)

Average annual domestic consumption per household of electricity is 3,578 kWh per household (DBEIS, 2018)

Average carbon footprint is 6.7 tCO_{2e}/year (DBEIS, 2015)

2,758 properties are at risk of flooding from watercourses in a 1 in 100-year flood event and 6,724 in a 1 in 1,000-year flood event (Strategic Flood Risk Assessment, 2018)

Charnwood has four Air Quality Management Areas at Loughborough, Syston, Great Central Railway, and Mountsorrel (Charnwood ASR, 2020)

The Borough has significant 'technical' potential for wind, solar, energy from waste, district heating, biomass and microgeneration development (Charnwood Renewable and Low Carbon Study, 2018)

Health and Care

In Charnwood, the life expectancy for males is 80.8 and for female its 83.8. (Public Health England, 2017-19)

6.7% of people consider their day to day activities to be limited a lot by their health or disability and 4.2% consider their health to be bad or very bad (Census, 2011)

17,127 people provide unpaid care to a relative or neighbour (Census, 2011)

Between 2011 and 2036, Charnwood's population aged 65 and above is projected to increase by 78% (HEDNA, 2017)

Number of people experiencing dementia is projected to double between 2011 and 2036 from 1,964 to 4,107 (+109%)

Number of people experiencing mobility problems projected to increase from 5,087 to 9,893 (+94%) between 2011 and 2036

An increase of 13,909 in the number of people with a Limiting Long-Term Health Problem or Disability between 2011 and 2036 (+54%). The vast majority of this increase is likely to be found amongst people aged 65 and older but it will also include working age people.

In terms of the level of sport activity per week by Charnwood residents, 65.0% undertake at least 150 minutes; 14.1% undertake 30-149 minutes; and 20.9% undertake less than 30 minutes (Active Lives Survey 2018/19, Sport England).

Charnwood has 23 GP practices with an average of 8,567 patients per practice.

Deprivation

Charnwood is ranked 244 out of 317 local authorities (where 317 is the least deprived) based on average rank deprivation scores (English Indices of Deprivation, 2019)

Approximately 13% of children (3,905) lived in low-income families in 2018/19 (Public Health England, 2020)

Charnwood's Priority Neighbourhoods for deprivation include Loughborough East, Loughborough West, Mountsorrel and South Charnwood.

Students, Education, Skills and Training

Charnwood has 49 primary and 11 secondary schools, and 22,668 pupils attend these schools (LCC School Health Profile, 2018/19).

47.0% of the population have qualifications at NVQ4 level and above and 91.1% have qualifications at NVQ1 and above (ONS, 2019).

Safety and Protection

In 2017/18, there were 11,965 total crimes (excluding fraud) recorded in the Borough.

Vision

- 1.23. The profile highlights that Charnwood is already an attractive place to live, work and visit for many but that there are several challenges for the plan period. The key challenges include:
- a growing population with a range of housing needs including specialist homes for older people, students and those unable to get onto the housing ladder;
 - a number of deprived communities in the Borough with lower than average incomes, poor health and lower levels of educational attainment;
 - increasing volumes of traffic and pressure on infrastructure including schools, health centres, open spaces and utilities;
 - the changing retail market with an increase in online shopping and the impact this and other structural economic and social changes are having on the vitality and appearance of Loughborough town centre;
 - pressure on open land as settlements grow to accommodate the population which impacts on the separation and identity of settlements;
 - climate change impacting on the wider environment with localised issues such as increased flood risk or water quality and quantity pressures; and
 - the reduction in biodiversity and the fragmentation of habitats.
- 1.24. An understanding of the Borough and our key opportunities and challenges has informed the vision for the Borough to 2037. The vision also reflects the spatial elements of the Charnwood Borough Council corporate vision, setting out the local priorities which have influenced the approach to future development in the Borough alongside national policy and the Strategic Growth Plan for Leicester and Leicestershire.

A VISION FOR CHARNWOOD 2037

In 2037 Charnwood will be one of the most desirable places to live, work and visit in the East Midlands.

Development will have been managed to improve the economy, quality of life and the environment.

Charnwood will be recognised for the role Loughborough plays in the region's knowledge-based economy.

Our strong and diverse economy will provide more employment opportunities for local people including higher skilled, better paid jobs in high technology research and manufacturing, sports, tourism, creative and cultural industry clusters.

Growing businesses will have been retained, new investment secured and entrepreneurialism encouraged. The Loughborough Science and Enterprise Park and Loughborough University will be at the heart of Loughborough's brand as a centre for excellence. Business and technological links with the city of Leicester will have been strengthened through major employment developments in the south of the borough.

Our landscape and the special buildings, heritage and biodiversity it contains will be in a good state. Our picturesque villages will have retained their strong sense of identity. Charnwood will be known for its natural and built environment which provides a place that people want to visit and explore.

Our communities will have access to a range of green spaces, leisure and recreational facilities across Charnwood and new parkland in Loughborough and Thurmaston will be provided. Charnwood Forest will be recognised as a Regional Park. Our water environment, including the River Soar and River Wreake, will be improved for wildlife and people, including continued mitigation of flood risk, and a regenerated Watermead area will bring environmental benefits to its surrounding communities and welcome visitors. We will work with nature to provide a more resilient response to climate change and associated flooding and will provide a more sustainable environment for all to enjoy. Charnwood will be recognised for delivering growth to a high design quality that provides healthy, inclusive and safe places for our communities. Charnwood will be a place that promotes health by design with developments that have the connectivity and open spaces where active travel is desirable.

The demand for housing will be focused on Loughborough to support its role as the social, cultural and economic focus for the Borough, on the edge of Leicester to support the centrally located city and on Shepshed to support its continued regeneration. This will include sustainable urban extensions at Loughborough and Leicester, as well as other planned areas of growth, which will incorporate good quality design and reflect our strong local distinctiveness.

Our communities will have access to homes to suit their needs. There will be provision of affordable housing including in rural communities. Issues previously associated with houses in multiple occupation will have been managed and social cohesion will have improved.

Growth at Loughborough will be managed to respond to its rich history and relationship with Charnwood Forest whilst supporting the town centre as the main economic, social and cultural heart of the Borough. The town will have benefitted from regeneration which capitalises on our industrial heritage including the Great Central Railway and the Grand Union Canal. The town centre will be an attractive, compact and walkable destination for shopping, leisure, entertainment and culture. It will be a town for all ages, providing an attractive place to live as well as visit.

Growth at Shepshed will support the Leicester and Leicestershire Strategic Growth Plan's proposal for the Leicestershire International Gateway, secure regeneration that enhances the physical fabric of the town and makes the most of the surrounding forest and natural environment. Settlements located within and adjacent to the Charnwood Forest will be known for their intrinsic connection with that special landscape. Our other settlements will have an attractive provision of local shops, culture and leisure facilities and will have retained their individual identity.

Our communities will have better access to jobs and services, with a choice to safely and conveniently walk or cycle. For longer trips, Charnwood will be known for its excellent connections by public transport. Some trips will no longer be necessary as an expansive broadband network will make Charnwood one of the best connected semi-rural boroughs in the country. In turn this will improve local air quality by reducing car emissions.

Our communities will enjoy a cleaner and greener environment. Charnwood will be safe and resilient to the impacts of climate change and will be playing its part in reducing greenhouse gas emissions, particularly through its woodland and forest character of a mosaic of (internationally important) geology, outcrops, remnants of heathland and heath grassland.

Our communities will have a sense of ownership and increased pride in development within their local areas through their engagement with neighbourhood planning. Communities will feel empowered to engage with planning.

Objectives

- 1.25. To achieve this vision the Council has identified the following objectives for the local plan, which have been informed by the principles of sustainable development.

Development Strategy

1. To respond to the demand for housing and employment land by focusing growth at:
 - Loughborough, to capitalise on its rich history, to support the town centre, and for the town to continue to be the main economic, social and cultural heart of the Borough and an attractive, compact and walkable destination for shopping, leisure, entertainment and culture;
 - the edge of Leicester, to support Leicestershire's central city; and
 - Shepshed, in its role in supporting the Leicestershire International Gateway, to secure its regeneration and make the most of its location on the edge of Charnwood Forest.
2. To reduce the need to travel by car, and the distance travelled, and increase the use of walking, cycling and public transport to access jobs, key services and facilities.
3. To create distinctive and attractive places for people to live in by requiring high quality design that enhances a place's individual identity and seeking high environmental standards in all development.

Society: Supporting strong, vibrant and healthy communities

1. To provide our communities with access to homes to suit their needs and providing affordable homes, including for rural communities.
2. To ensure that there is a network of vibrant local centres so residents have good access to a range of shops, services and facilities.
3. To increase access to a wide range of services and facilities for all people, having regard for their needs.
4. To promote health and well-being, by ensuring that residents have access to health care, wildlife rich local parks and other green spaces, the countryside and facilities for sport and recreation, creative and community activities, and by promoting healthy and active lifestyles in the Borough.
5. To promote strong, cohesive and balanced communities and improve social cohesion. This will include responding to changes in demographics, for example in influencing the type of housing provision that is required, and managing the issues associated with concentrations of houses in multiple occupation.

6. To reduce poverty and deprivation, particularly in those parts of the Borough identified as areas of relatively higher need, for example the Priority Neighbourhoods of Loughborough East, Loughborough West, Mountsorrel and South Charnwood.
7. To protect and reassure our communities through the reduction of crime, anti-social behaviour and the fear of crime.
8. To assist our communities in their engagement with neighbourhood planning and use neighbourhood plans as appropriate to inform planning decisions.

Environment: Contributing to protecting and enhancing our natural, built and historic environment

1. To promote the prudent use of resources and reduction of waste through patterns of development, design, transport measures, reducing the use of minerals, energy and water, minimising waste and encouraging recycling.
2. To reduce net greenhouse gas emissions, in support of achieving a carbon neutral Borough, and reduce and adapt to the impacts of climate change.
3. To protect and enhance the range of habitats and species found in Charnwood, seek to deliver biodiversity gain, reverse habitat fragmentation and encourage the recovery of ecological networks.
4. To protect and enhance the historic environment and its setting and the identity of the Borough's locally distinctive towns, villages and neighbourhoods.
5. To protect the special and distinctive qualities of all landscapes, maintaining local distinctiveness and sense of place, and paying special attention to impacts on Charnwood Forest, supporting the National Forest Strategy and tree planting and natural regeneration throughout the Borough. This includes the initiative to establish the Charnwood Forest Regional Park.
6. To protect the Borough's soil resources, ensure the sustainable management of the Borough's mineral resources and protect the Borough's geodiversity.
7. To improve local air quality, protect and improve the quality and quantity of the water in the Borough's surface and groundwaters and reduce other forms of pollution in the Borough.
8. To reduce the risk to people and properties from flooding, particularly in vulnerable locations such as parts of Loughborough and the villages of the Soar and Wreake Valleys.
9. To make efficient use of land, to limit the need for greenfield development and encourage the re-use of brownfield land and underused buildings.

Economy: Helping build a strong, responsive and competitive economy

1. To support a strong and diverse economy that will provide more employment opportunities for local people including higher skilled, better paid jobs in the knowledge-based sector including high technology research and manufacturing, sports, tourism, low carbon industry, and creative and cultural industry clusters.
 2. To develop new, and enhance connections to existing, transport infrastructure and integrated transport schemes that support growth and include measures to improve safety and reduce the adverse environmental and other impacts of traffic on local communities.
 3. To sustain and enhance Loughborough town centre as a prosperous, attractive and vibrant destination for shopping, entertainment and leisure as well as a place to live.
 4. To capitalise on the benefits to the Borough of Loughborough University, especially those associated with its reputation as a centre of sporting excellence and for research into new technologies and sustainability.
 5. To strengthen business and technological links with the city of Leicester through Thurmaston and the area around Watermead Country Park.
 6. To regenerate Shepshed town centre and support its future prosperity.
 7. To encourage thriving and diverse sustainable rural enterprises and farming, and the promotion of local foods and local energy sources.
- 1.26 In order to achieve sustainable development we have prepared policies that meet our economic, social and environmental objectives. We see these objectives as interdependent and therefore it is important the local plan is read as a whole

Chapter 2 Development Strategy

A Strategy for Charnwood's Future Development

- 2.1. Our development strategy sets out the scale and pattern of development in the Borough. It flows from the vision and objectives and our understanding of the Borough and the key opportunities and challenges it faces.
- 2.2. We want to meet the development needs of our communities, create a strong and lasting economy and protect our environmental assets to create a good quality of life for all our residents.
- 2.3. Our strategy aims to guide new development to the most suitable locations in the Borough, avoid development in our most environmentally sensitive locations and reduce the Borough's contribution to global warming. This means having regard to:
 - the role of Loughborough as the economic, cultural and social focus of the Borough;
 - our relationship with the city of Leicester;
 - the separate strong identity and character of our settlements;
 - our valued landscapes, biodiversity and heritage;
 - the impacts of and contributions to climate change, including the risk of flooding; and
 - access to jobs, services, infrastructure and sustainable travel options.
- 2.4. Our development strategy aims to direct development to locations that provide access to jobs, services, infrastructure and where there are alternatives to the private car. Successful planning should lead to the creation of healthy places in the Borough. Our evidence shows that Charnwood is already a healthy place to live compared with other places in the East Midlands and the rest of the country. However, there is recognition that encouraging more people to adopt active lifestyles is an important public health objective. We want well-designed places that consider people's well-being and encourage walking and cycling as physically active modes of transport and enable people to have convenient access to open spaces and other facilities for active recreation and play, the natural environment and health care facilities.
- 2.5. Our strategy also takes account of the Strategic Growth Plan for Leicester and Leicestershire, which provides a long-term vision for the housing market area to address the challenges and opportunities in the area to 2050. The Growth Plan promotes developing Leicester's role as the central city. It also includes an A46 priority growth corridor around the south and east of Leicester terminating in the south east of Charnwood and an International Gateway in the area around the junction of the A42 and the M1 motorway. It encourages managed growth at Loughborough and other market towns, an A5 improvement corridor and Melton Mowbray as a key centre for regeneration and growth.

- 2.6. The development strategy in the local plan takes account of all these social, economic and environmental factors in identifying an appropriate spatial pattern of homes, jobs and facilities. It has been prepared having considered the reasonable alternative options for development and should be used to understand whether individual proposals are acceptable in principle.

Amount of Development Needed

- 2.7. Both the UK's and the Borough's populations are increasing with people living longer, birth rates exceeding death rates and more people moving in than leaving the Borough. As a consequence, we have growing and changing communities which need homes, jobs, shops and services. The role of the local plan is to make provision for the right amount of development to meet our communities' needs for housing, employment shops and services.

Local Housing Needs

- 2.8. The Local Housing Need for Charnwood has been calculated using the standard methodology set out in the National Planning Practice Guidance. This shows there is a need for 1,111 new homes a year for the period 2021-2037. This is a total of 17,776 homes.
- 2.9. We have considered whether the Local Housing Need figure needs to be adjusted to take account of economic circumstances in the Borough. Our evidence on local housing needs and economic needs indicates that our Local Housing Need figure does not need to be adjusted for economic circumstances.
- 2.10. In addition, we have considered whether our Local Housing Need figure needs to be adjusted to take account of the delivery of affordable housing. Our evidence shows that provision of new affordable housing is an important and pressing issue in the Borough. It does not however conclude that there is a need to consider a housing requirement greater than our Local Housing Need figure in order to enable the delivery of more affordable housing. This is because some of the affordable housing need is already counted in the Local Housing Need figure as this measures the total number of new households that will form, including those in need of affordable housing. Identifying this group again in our housing need evidence does not therefore demonstrate an additional overall need for housing above that identified. In addition, many households with a need for affordable housing will already be living in housing and so providing an affordable housing option will release another home meaning there is no overall net increase in the need.
- 2.11. Charnwood forms part of the wider housing market of Leicester and Leicestershire and the city of Leicester has declared an unmet housing and employment need. Charnwood Borough has been actively engaged with its partners in the Housing Market Area to accommodate this need in the most sustainable way. A Statement of Common Ground is advanced between partners setting out the process by which unmet need will be distributed. Policy DS2 provides a clear mechanism for the local plan to be reviewed, and then updated if necessary once the Statement of Common Ground is agreed by all partners.

2.12. A significant proportion of our housing need will be met through existing planning permissions including for three Sustainable Urban Extensions (SUEs) that will deliver homes throughout the local plan period, and in the case of North East of Leicester beyond 2037 as well:

- North East of Leicester at Thurmaston known as Thorpebury (planning permission for 4,500 homes)
- West of Loughborough known as Garendon Park (planning permission for 3,200 homes); and
- North of Birstall known as Broadnook (planning permission for 1,950 homes).

2.13. The table below shows both the amount of homes needed and how many of the homes already have planning permission and are expected to be delivered by 2037. The table shows 7,185 homes are required to meet our needs for the longer plan period up to 2037 once commitments are considered.

Table 1: Housing Need and Supply 2021-37

Housing Need	Number
Local Housing Need 1,111 homes per year x 16 years	17,776
Housing Supply	Number
North East Leicester Sustainable Urban Extension	3,205
West of Loughborough Sustainable Urban Extension	3,200
North of Birstall Sustainable Urban Extension	1,950
Other planning permissions at 31 st March 2021	2,248
Supply Total	10,603

Flexibility

2.14. It is important to recognise that unforeseen changes can affect the delivery of sites and our plan includes sufficient flexibility to allow for such circumstances and enable delivery of housing to meet our needs over the plan period.

Table 2: Local Housing Need and Flexibility

Local Housing Need (LHN)	Flexibility (10%)	SUE Delivery 2021-37	Planning Permissions (commitments)	To be found (LHN + Flexibility - SUE and commitments)
17,776	+1,778	8,355	2,248	8,951

Employment Needs and Regeneration

- 2.15. We have worked with all the authorities in the Leicester and Leicestershire Functional Economic Market Area (FEMA) to understand our employment needs and tested this at a local level. Our evidence identifies a need for 55.47ha of employment land over the plan period. This need is made up of 11.92ha for offices and 43.55ha for general industrial and small-scale warehouse units. This identified need includes a 10ha contingency in the supply of general industrial land to address low vacancy rates, choice and market imbalance.
- 2.16. Charnwood forms part of the wider housing market of Leicester and Leicestershire and the city of Leicester has declared an unmet employment need. We have actively engaged with partners in the FEMA to accommodate this need in the most sustainable way. A Statement of Common Ground is advanced between partners setting out the process by which the unmet need will be distributed. Policy DS2 provides a clear mechanism for the local plan to be reviewed, and then updated if necessary once the Statement of Common Ground is agreed by all partners.
- 2.17. The scale of need for larger strategic distribution units in Leicestershire is being investigated with our partners, with most demand focussed in Harborough, North West Leicestershire, Hinckley and Bosworth, and Blaby. We are considering this at a Leicester and Leicestershire FEMA level to ensure a coordinated approach in addressing the needs of the sector, which operates at a sub-regional, regional and national level that requires significant cross boundary cooperation to meet their development needs. Our approach to strategic distribution is set out in our economy and regeneration chapter.
- 2.18. We have reviewed our existing employment commitments, and these continue to meet our needs and deliver our preferred strategy for economic growth. Our commitments include employment provision as part of the allocated Sustainable Urban Extensions and other allocations and planning permissions. We will carry forward the existing commitments and allocate these in the local plan which will provide sufficient supply to meet need over the plan period. Employment land is primarily built out in response to demand, with little speculative investor engagement in the market for industrial development; however, we have sought to ensure that our strategic employment land supply is available in a variety of locations, across the plan period to help meet our needs.
- 2.19. In order to provide flexibility in the supply of employment land and support the Council's objectives in relation to the Leicestershire International Gateway and the regeneration of Shepshed, an additional allocation of 5ha of employment land is identified close to existing areas of employment land in the town to support the availability of land in the short and medium term.
- 2.20. Our Employment Land Trajectory is set out at Appendix 2. We will use this trajectory as part of our consideration of proposals which are not allocated in the local plan

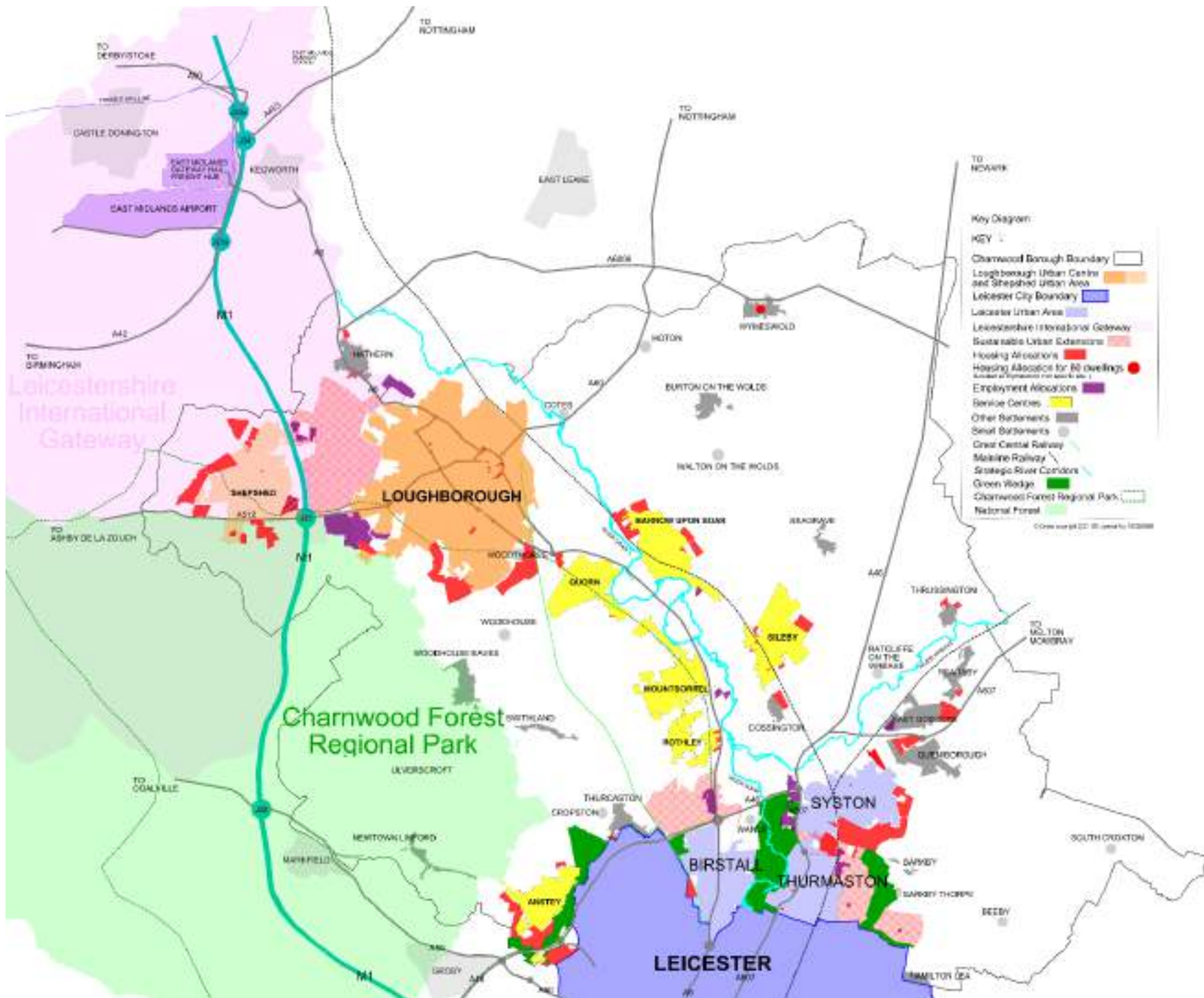
Table 3: Strategic Employment Need and Supply 2021 – 2037

	Office (ha)	General Industrial/ Small Warehousing (ha)
Employment Need	11.92	43.55
Employment Supply		
West of Loughborough Sustainable Urban Extension (total 16 ha)	4.0	12.0
North East of Leicester Sustainable Urban Extension (total 13 ha)	1.7	11.3
North of Birstall Sustainable Urban Extension (total 15 ha)	1.5	13.5
Dishley Grange, Loughborough	3.6	5.4
Watermead Business Park	2.5	9.5
Other Employment Land Supply at 31 March 2021	2.5	14.3
Total	15.8	66.0
Balance Need and Supply	3.88	22.45

- 2.21. Loughborough University and its Science and Enterprise Park provide a focus for innovative, leading edge companies in fields such as life sciences, pharmaceuticals and engineering. We have a long-standing commitment to the extension of the Loughborough Science and Enterprise Park to support growth in the high technology and knowledge economy. Our strategy makes provision for the continued extension of the Loughborough Science and Enterprise Park up to 73 (gross) hectares of land to the west of the existing site on the edge of Loughborough in a high-quality landscaped setting.

Town Centre and Retail Needs

- 2.22. Across the country the way people are using town centres is changing. In recent years, shoppers have been increasingly prepared to travel in order to access the greater choice of shops and leisure facilities that are more commonly available in larger towns and cities. The trend for shoppers to use larger centres and for a greater proportion of shopping to be done online presents a significant challenge to all retail centres but particularly those of smaller towns and villages. Our evidence tells us that despite these national trends, the proportion of spending on non-food shopping in Loughborough has remained stable since 2013. This suggests that, despite the challenging environment, Loughborough town centre continues to function well as a retail destination.
- 2.23. Taking account of developments that are already planned, and the amount of money that is expected to be available for spending on both food shopping and non-food shopping, in physical retail space there is no quantitative need for any new floorspace for food shopping in Charnwood up to 2037 and only a need post 2028 for between 3,000sqm and 4,500sqm for new non-food shopping. Our evidence tells us that the most appropriate site for accommodating this new non-food need is at Baxter Gate/Pinfold Gate in Loughborough. The Covid-19 pandemic has accelerated trends for more shopping to take place 'online' with the implications that future floor space needs are less predictable, and our policy response is therefore necessarily more flexible in this regard.



Regeneration Strategy

- 2.24. At the same time as planning for new homes, employment and retailing is the need to regenerate parts of our Borough in order to support deprived communities, to respond to rapidly changing economic conditions, and to support economic growth.
- 2.25. Our regeneration strategy focuses on Loughborough including the Town Centre, Bishop Meadow and the Industrial Heritage Quarter in the east of the Town, together with Loughborough Science and Enterprise Park to the west. Shepshed Town Centre and the area around Watermead Country Park are also areas of regeneration priority as part of wider regeneration of the Borough.
- 2.26. Significant progress has been achieved on regenerating the Borough since the Core Strategy was adopted in 2015 with major commercial development taking place on sites in and around Loughborough town centre and improvements to the public realm at Loughborough and Shepshed Town Centres now in progress. This progress will be further supported through the Loughborough Town Centre Masterplan (2018) and with the preparation of a Town Investment Plan for Loughborough, which aims to address challenges facing Loughborough including the hollowing out of the town centre, vacant land and buildings, poor public realm, flood risk and traffic congestion.
- 2.27. Regeneration of our urban areas is considered further in the place polices for Leicester Urban Area, Loughborough Urban Centre and Shepshed Urban Area. The need to support the regeneration of existing urban areas has been considered as part of the strategy for new development which is considered in the section below.

Location of Development

- 2.28. Our strategy identifies a pattern of development that seeks to support our economy, provide a balance between homes and jobs in the Borough and ensure access to services and facilities including education, health, shops, leisure and open space. It has been informed by an understanding of the Borough's environment and the relationship between our settlements and the countryside.
- 2.29. Our strategy is built on an understanding of our settlement hierarchy. We have assessed the services and facilities available within our settlements and the relationship each settlement has with the urban centres of Loughborough and Leicester. This has helped us to understand each settlement's role and function and which settlements might be capable of supporting new development. Our settlement hierarchy is shown in table 4.

Table 4: Charnwood Settlement Hierarchy

HIERARCHY CATEGORY	SETTLEMENT
Urban Centre <i>A settlement that has a range of employment opportunities and higher order services that meet all of the day to day needs of residents and are accessible to the surrounding area</i>	Loughborough

HIERARCHY CATEGORY	SETTLEMENT
<p>Urban Settlement</p> <p><i>A settlement that has a range and choice of services and facilities that meet the day to day needs of residents and physically or functionally forms part of a wider Leicester or Loughborough Urban Centre</i></p>	<p>Shepshed Birstall Syston Thurmaston</p>
<p>Service Centres</p> <p><i>A settlement that has a range of services and facilities to meet most of the day to day needs of residents and good accessibility to services not available within the settlement</i></p>	<p>Anstey Barrow upon Soar Mountsorrel Quorn Rothley Sileby</p>
<p>Other Settlements</p> <p><i>A settlement that has some of the services and facilities to meet the day to day needs of residents</i></p>	<p>Barkby Burton on the Wolds Cosstington East Goscote Hathern Newtown Linford Queniborough Rearsby Seagrave Swithland Thrussington Thurcaston Woodhouse Eaves Wymeswold</p>
<p>Small Villages or Hamlets in the Countryside</p> <p><i>A settlement that has limited services and facilities to meet the day to day needs of the residents.</i></p>	<p>Barkby Thorpe Beeby Cotes Cropston Hoton Prestwold Ratcliffe on the Wreake South Croxton Ulverscroft Walton on the Wolds Wanlip Woodhouse Woodthorpe</p>

- 2.30. Markfield lies within Hinckley and Bosworth Borough, but the built form of the village lies on the boundary with Charnwood. Markfield is considered to have a range of services and facilities that is consistent with a Service Centre, and our strategy has considered potential growth at Markfield within Charnwood's Borough boundary in this context.
- 2.31. Our development strategy has been informed by a sustainability appraisal and prepared in the context of the Strategic Growth Plan for Leicester and Leicestershire with local priorities expressed through the local plan vision.

- 2.32. Our development strategy results from detailed testing of reasonable alternative options which began in the 'Towards a Local Plan for Charnwood' discussion paper (April 2018). Reasonable options at this stage included different scales of growth across the Borough and also different amounts of development going to the different tiers in the settlement hierarchy. Consultation responses to the discussion paper did not highlight any further reasonable alternatives and did not provide any strong degree of consensus as to a preferred option.
- 2.33. Evidence, consultation responses and the sustainability appraisal informed the development strategy that was consulted on in the Draft Charnwood Local Plan Consultation (October 2019). At this stage the preferred strategy included 2,000 new homes at the edge of Leicester, 2,000 new homes at Loughborough, 2,000 at Shepshed, 1,000 at the Service Centres and 800 at Other Settlements. A detailed constraints assessment was undertaken for all sites in the Strategic Housing and Employment Land Availability Assessment (SHELAA) and the draft local plan included specific sites that were considered to best fit the overall strategy.
- 2.34. Consultation responses to the draft local plan led to refinements in the development strategy in two key ways:
- the scale of homes to be planned for, and
 - detailed responses from infrastructure providers indicating that the way homes are distributed needed further consideration.
- 2.35. Further sites were submitted during 2019 and 2020 which were also assessed to the same level as other SHELAA sites and formed part of the reconsideration of the development strategy. A sustainability appraisal was used to understand the point at which significant adverse impacts would be encountered for different amounts of growth in different tiers of the settlement hierarchy. Significant engagement was undertaken with the Local Education Authority and Clinical Commissioning Groups to understand the capacity of schools and medical centres and the options available for the expansion in provision. This more detailed consideration led to significant refinements to the development strategy, notably in the Service Centres.
- 2.36. Details of the alternative reasonable options considered are fully outlined in the sustainability appraisal that accompanies the local plan.

Overall Principles

- 2.37. The overall principle underlying the allocation of land for development has been to avoid significant adverse impacts on social, economic and environmental objectives. Wherever possible, alternative options which reduce or eliminate such impacts have been pursued. Where significant adverse impacts are unavoidable, suitable mitigation measures are set out.
- 2.38. Our strategy is to direct development to those locations where there is a genuine opportunity to walk, cycle or use public transport and which reduce the need to travel by private car. Reducing the need to travel by private car is one of the key ways in which the locational strategy can reduce contributions to climate change. In identifying sites in our development strategy, we have considered the accessibility of services and facilities by sustainable modes of transport.

- 2.39. Our development strategy is for urban concentration and intensification with some limited growth dispersed to other areas of the Borough. It focuses housing and employment at the edge of Leicester, proposes managed growth at Loughborough, directs some growth to Shepshed and smaller scale growth to the Service Centres and Other Settlements as set out in the table below.
- 2.40. Priority has been given to the development of sites within our urban areas and particularly within Loughborough town centre to support its vitality and viability. This includes new homes as well as town centre uses and employment opportunities, such as retail, offices, entertainment and leisure which are best suited to town centre locations.

Table 5: Development Strategy for Homes 2021-37

Settlement	Housing Supply	Distribution of New Homes	Total Homes
Leicester Urban Area	5,254	2,104	7,358
Loughborough Urban Centre	3,831	2,242	6,073
Shepshed Urban Area	453	1,878	2,331
Service Centres	928	1,819	2,747
Other Settlements	119	815	934
Small Villages/Hamlets	18	0	18
Total	10,603	8,858	19,461

- 2.41. Our development strategy includes a variety of sizes of sites in a variety of locations and includes both strategic sites, which have the benefit of supporting the provision of on-site infrastructure, and small sites which will help to support small builders, provide market choice and contribute to the supply of new homes. We will work with landowners, developers and our communities to bring forward additional small sites including through neighbourhood plans.

Leicester Urban Area

- 2.42. The focus of development at the edge of Leicester reflects our commitment to the economic and social focus of the city which is central to the success of the wider Housing and Economic Market Area of Leicester and Leicestershire. It is intended that development at the edge of the city reinforces our relationship with the city and the economic and social opportunities it presents.
- 2.43. It has been necessary to identify some housing sites in Green Wedges, with the strategic need for development, on balance, outweighing the loss of Green Wedge. Following consultation with local authority partners, there is recognition that in allocating development in Green Wedges, significant and coordinated mitigation will be required.
- 2.44. Most of our housing growth in the Leicester Urban Area will be delivered through two Sustainable Urban Extensions which will also provide employment land for the wider Leicester Urban Area. The regeneration of Thurmaston will continue to be supported by maximising the potential of Watermead Country Park and identifying land adjacent to A607 to help meet our need for jobs.

Loughborough Urban Centre

- 2.45. Our strategy for Loughborough gives priority to new development within the existing urban area including the areas in and closest to the town centre. This managed approach to growth will support the town's role as an Urban Centre and maintain it as the social, cultural and economic focus for the Borough. This will also support the regeneration of the town and its long-term vitality and viability. This has included allocating sites within the urban area where adverse impacts exist and this in recognition of our strategy of urban intensification and concentration.
- 2.46. This approach is complemented by new and committed extensions to the town. These have taken into account the key constraints of the wide River Soar flood plain to the east, sensitive Charnwood Forest landscapes to the south and west of the town, the heritage of Garendon Registered Park and Garden, the settlement identities of Quorn, Woodthorpe and Hathern, and transport constraints.
- 2.47. Our strategy also seeks to maintain strategically important links in the wildlife network, keeping them free from built form to ensure connectivity between the Charnwood Forest and River Soar, two of Leicestershire's most strategically important areas for biodiversity.

Shepshed Urban Area

- 2.48. The growth directed to Shepshed will complement the existing commitments and reflects the accessibility to services and facilities and evidence of landscape, ecological and transport capacity. Our strategy supports the Leicestershire International Gateway set out in the Leicester and Leicestershire Strategic Growth Plan.
- 2.49. Our strategy takes account of the sensitivity of the Black Brook and Charnwood Forest and the impact on air quality. Development in Shepshed will support the regeneration of the District Centre and improve access to jobs, services and facilities.

Service Centres and Other Settlements

- 2.50. The provision of accessible primary school education within the Service Centres and Other Settlements has been important to the development of an appropriate development strategy for Charnwood. Our strategy includes growth in our Service Centres and some of our Other Settlements where there is existing school capacity and ensures sufficient levels of development to support the provision of new or extended schools as necessary.
- 2.51. The growth dispersed to the Service Centres and Other Settlements provides housing in a variety of locations which improves the prospects for housing delivery whilst taking account of landscape and settlement identity constraints outlined in the overall vision and strategy.
- 2.52. The smaller amount of development directed to Other Settlements reflects the smaller range of services and facilities in these villages compared to urban areas and Service Centres within Charnwood.

Countryside

- 2.53. The Policies Map shows the Limits to Development for the Urban Centre, Urban Areas, Service Centres and Other Settlements in the Borough. These boundaries define the cohesive built form of settlements, taking account of development allocations made, and makes them distinct from the Countryside. Our small villages and hamlets do not have Limits to Development defined and will be treated as part of the Countryside. Countryside is the largely undeveloped land beyond the defined Limits to Development of our towns and villages and has its own intrinsic character and beauty.
- 2.54. The Limits to Development, and by extension the edge of the Countryside, are an integral part of our development strategy to guide development to sustainable locations.

Neighbourhood Areas

- 2.55. Charnwood has twelve designated neighbourhood areas – Anstey; Barrow upon Soar; Cossington; Thrussington; Thurcaston and Cropston; Queniborough; Quorn; Rearsby; Rothley; Sileby; the Wolds Villages; and Woodhouse. The National Planning Policy Framework includes a requirement to set out a housing requirement for designated neighbourhood areas, taking into account any relevant allocations.
- 2.56. The plan makes provision for a greater number of homes than the housing requirement for the Borough between 2021 and 2037 through allocations. Our development strategy has been strongly influenced by the need for sustainable development to be accompanied by the infrastructure that is required to support it, particularly primary school education. This has led development to be directed to certain settlements and not others at a strategic level. For these reasons we have chosen not to set out an additional housing requirement for designated neighbourhood areas for this time period.
- 2.57. We will continue to support neighbourhood planning groups that wish to meet more local housing needs. Where requested by a neighbourhood planning body, an indicative housing requirement figure will be provided taking account of the latest housing need and infrastructure evidence at that time, the delivery of allocated sites and the period that the neighbourhood plan would cover.
- 2.58. The parish of Wymeswold is not yet a designated neighbourhood area. There are a number of available sites that adjoin the village and are similar in size and character and capacity in the local primary school. A housing requirement figure of up to 60 homes has been set for that area should it be designated as a neighbourhood area in the future so that the most suitable site can be determined locally.

Policy DS1: Development Strategy

The overall spatial strategy for Charnwood between 2021 and 2037 is urban concentration and intensification with some limited dispersal to other areas of the Borough. The most environmentally sensitive areas will be protected, and the pattern of development will provide a balance between homes, jobs and facilities.

We will support sustainable development that:

- contributes towards meeting our needs for housing, employment and town centre uses within the defined Limits to Development and allocations defined in this plan;
- minimises the need to travel, particularly by private car, and prioritises public transport, walking and cycling;
- protects the intrinsic character of the Countryside;
- maintains the functions of Green Wedges and Areas of Local Separation;
- safeguards and delivers a net gain in biodiversity;
- supports Loughborough as the main social, economic and cultural focus within the Borough and its compact and walkable town centre;
- supports the vitality and viability of the Town Centre, District Centres and Local Centres to serve the day to day needs of their communities;
- supports the regeneration and economic success of urban areas;
- makes efficient use of land including using brownfield or underused land and buildings;
- safeguards services and facilities;
- contributes to local priorities identified in neighbourhood plans; and
- is in accordance with the policies in this plan.

New Homes

The housing requirement for Charnwood is 17,776 homes between 2021 and 2037 and provision for at least 19,461 new homes will be made. Land for new homes has been identified based on the optimum balance between social, environmental and economic considerations taking account of strategic and local priorities. The pattern of development for new homes in our spatial strategy is as follows:

	Number of Homes	Pattern of Development
Leicester Urban Area (Birstall, Syston, Thurmaston)	7,358	38%
Loughborough Urban Centre	6,073	31%
Shepshed Urban Area	2,331	12%
Service Centres (Anstey, Barrow upon Soar, Mountsorrel, Quorn, Rothley, Sileby)	2,747	14%
Other Settlements	934	5%
Small Villages and Hamlets	18	0%
Total	19,461	100%

New Employment and Retail

Provision is made for up to 81.8 hectares of employment land between 2021 and 2037. Employment land is identified to meet the economic and regeneration needs of our communities and support the economic success of Charnwood and Leicester. The majority of new employment will be delivered as part of Sustainable Urban Extensions and Watermead Business Park with a smaller proportion allocated in Shepshed, and, within and adjoining Service Centres and Other Settlements.

Provision is made for the extension to Loughborough Science and Enterprise Park of up to 73 hectares to support the continued role of Loughborough in the knowledge-based sector.

Provision will be made for up to 4,500sqm (net) of comparison retail floorspace (non-food) at the Baxter Gate/Pinfold Gate Opportunity Site in Loughborough, as part of a mixed-use development.

Environment

Development will be directed to those locations of the least environmental or amenity value and to locations within the Borough at the lowest risk of flooding, applying the Sequential Test where applicable, and if necessary, applying the Exception Test.

Development proposals should conserve and enhance the built and natural environment, protect biodiversity and mitigate and adapt to climate change in accordance with policies in this plan.

Areas designated as Countryside, Areas of Local Separation, Green Wedges and Charnwood Forest Regional Park are identified on the Policies Map. These designations are an integral part of the spatial strategy that have been identified to deliver growth in the context of the objective of conserving and protecting the character of our towns and villages and the intrinsic character and beauty of the countryside.

Implementation of Spatial Strategy

The effect of our spatial strategy is that new built development will be confined to sites allocated in this local plan and neighbourhood plans, and other land within the Limits to Development subject to specific exceptions set out in this plan. Development proposals which do not accord with this spatial strategy will not be considered compatible with the vision or to meet the objectives of the plan and will not be considered sustainable development, and as a result will not be supported.

In circumstances where a five-year supply of deliverable housing land cannot be demonstrated, proposals for development should only be refused where any adverse impacts of doing so would significantly and demonstrably outweigh the benefits. In these circumstances, proposals are only likely to be permitted where they:

- accord with the pattern of development set out in table above;
- adjoin the Limits to Development;
- do not prejudice the delivery of infrastructure set out at Appendix 3; and
- accord with other development plan policies.

If any one of the above criteria are not met, proposals will be considered to have significant adverse impacts.

Leicester and Leicestershire Unmet Needs

- 2.59. There is a long track record of effective joint working on strategic matters across Leicester and Leicestershire. The nine local authorities have continuously engaged with each other on strategic matters throughout the preparation of local plans across the area.
- 2.60. Leicester City Council has identified an unmet need for housing and employment through its draft local plan. The Leicester and Leicestershire authorities have been engaged in a process of testing reasonable alternative options for meeting Leicester's unmet need through a sustainability appraisal process with a view to agreeing an apportionment of the unmet need ahead of the submission of this local plan.
- 2.61. The change in Leicester's housing need on 16 December 2020 (resulting from Government changes to the standard method for calculating housing need) is so significant that additional work is now needed. We will continue to actively engage in the programme of work planned to address the scale and redistribution of unmet need in the Housing Market Area with the objective of agreeing a Statement of Common Ground with other authorities across Leicester and Leicestershire. We will do this whilst maintaining progress with the preparation of the Charnwood local plan.
- 2.62. Avoiding delays is critical to demonstrating and maintaining a five-year supply of deliverable housing sites in the Borough. Delay will lead to unplanned development and a lack certainty for communities and private and public sector investors in the intervening period. This certainty is also needed to ensure appropriate infrastructure is secured and to assist the economy in its recovery from the Covid-19 pandemic.
- 2.63. The Council will continue to work collaboratively with the Leicester & Leicestershire authorities to establish the scale and redistribution of unmet housing and employment needs in the Housing Market Area (HMA) and Functional Economic Market Area (FEMA). This will be achieved through a Statement of Common Ground addressing the scale and redistribution of unmet need arising in Leicester or elsewhere in the HMA/FEMA.

Policy DS2: Leicester and Leicestershire Unmet Needs

Within 6 months of the agreement by all partners of the Statement of Common Ground for the apportionment of unmet housing and employment need, the Council will publish a review of this local plan. Should a full or partial update be triggered by the review, the Council will commence the update (defined as being publication of an invitation to make representations in accordance with Regulation 18 of The Town and Country Planning (Local Planning) (England) Regulations 2012) within 12 months of the publication of the review. Once the update has commenced the Council will submit the Plan Update to the Planning Inspectorate for Examination within a further 36 months of the date of commencement of the update.

Housing Allocations

- 2.64. Our spatial strategy has identified the most appropriate locations for development to meet the Borough's housing needs while meeting our other strategic objectives and the wider aims of sustainable development. We have used a site selection process informed by a sustainability appraisal to identify the most suitable housing sites from those that are available to achieve the distribution of development set out in our spatial strategy. That process has also been informed by the need to secure the provision of the infrastructure necessary to support sustainable development.
- 2.65. For a number of sites, we have included site specific policies that are required to address specific constraints, wider objectives or other issues related to those sites. Site policies should be read in conjunction with the place-based and topic-based policies in the plan. If there is no site policy this means that the issues relating to that site are adequately addressed by applying place-based and topic-based policies in this local plan.

Policy DS3: Housing Allocations

We will make provision for homes in accordance with Policy DS1 and will support housing development on the sites listed in this policy. We will support development that:

- is cohesive and integrated with other allocations set out in this plan including in relation to the provision of new schools and other infrastructure; and
- in accordance with the other policies in this plan and the site-specific requirements set out in this policy below.

The following sites are allocated for housing, as outlined on the Policies Map:

Policy Ref	Site Name	Location	Number of Homes	Site Specific Policy
Sustainable Urban Extensions				
LUA2	North East of Leicester	Thurmaston	4,500	Page 80
LUA3	North of Birstall	Birstall	1,950	Page 85
LUC2	West of Loughborough	Loughborough	3,200	Page 104
Leicester Urban Area				
HA1	Land South East of Syston	Syston	960	Page 36
HA2	Barkby Road	Syston	270	Page 37
HA3	Land north of Barkby Road	Syston	195	Page 37
HA4	Queniborough Lodge	Syston	132	Page 38
HA5	Land at Melton Road	Syston	31	
HA6	Brook Street	Syston	15	
HA7	Land off Barkby Thorpe Lane	Thurmaston	105	Page 38
HA8	Woodgate Nurseries, Barkby Lane	Thurmaston	39	Page 39
HA9	Works opposite 46 Brook Street	Thurmaston	7	
HA10	Works adjacent 46 Brook Street	Thurmaston	5	

Policy Ref	Site Name	Location	Number of Homes	Site Specific Policy
HA11	Rear of Manor Medical Centre, Melton Road	Thurmaston	20	
HA12	Land at Gynsill Lane and Anstey Lane	Glenfield	260	Page 39
HA13	Park View Nursery Site off Gynsill Lane	Glenfield	30	Page 41
HA14	Land off Cliffe Road/Henson Close	Birstall	35	Page 41
			Total: 2,104	
Loughborough Urban Centre				
HA15	Land south of Loughborough	Loughborough	723	Page 42
HA16	Laburnum Way	Loughborough	422	Page 44
HA17	Moat Farm, Land south west of Loughborough	Loughborough	205	Page 46
HA18	Land to r/o Snells Nook Lane	Loughborough	120	Page 48
HA19	Park Grange Farm, Newstead Way	Loughborough	15	Page 49
HA20	Land off Beacon Road	Loughborough	30	Page 49
HA21	Part of Baxter Gate Opportunity Site	Loughborough	210	Page 49
HA22	Devonshire Square	Loughborough	39	Page 50
HA23	Market Street	Loughborough	72	Page 50
HA24	Southfields Council Offices	Loughborough	163	Page 50
HA25	138-144 Knighthorpe Road	Loughborough	13	
HA26	Former Limehurst Depot	Loughborough	138	Page 51
HA27	Former Main Post Office, Sparrow Hill	Loughborough	16	Page 51
HA28	Land off Derby Square	Loughborough	43	Page 51
HA29	Southfields Road Car Park	Loughborough	33	Page 52
			Total: 2,242	
Shepshed Urban Area				
HA30	Land off Fairway Road	Shepshed	100	Page 52
HA31	Land north of Ashby Road,	Shepshed	190	Page 53
HA32	Land off Tickow Lane (south)	Shepshed	300	Page 53
HA33	Land at Oakley Road	Shepshed	133	Page 54
HA34	Land off Tickow Lane (north)	Shepshed	394	Page 54
HA35	Land North of Hallamford Road and West of Shepshed	Shepshed	250	Page 54
HA36	20 Moscow Lane	Shepshed	49	Page 55
HA37	Land rear of 62 Iveshead Road	Shepshed	68	Page 55
HA38	Land to rear of 54 Iveshead Road	Shepshed	5	
HA39	Land fronting Ashby Road and Ingleberry Road	Shepshed	151	Page 55

Policy Ref	Site Name	Location	Number of Homes	Site Specific Policy
HA40	Land to the west of the B591/Ingleberry Rd & north of Iveshead Lane	Shepshed	174	Page 55
HA41	Land south of Ashby Road Central	Shepshed	49	Page 56
HA42	32 Charnwood Road	Shepshed	15	Page 56
			Total 1,878	
Service Centres				
HA43	Land west of Anstey	Anstey	600	Page 56
HA44	Fairhaven Farm	Anstey	47	Page 58
HA45	Land to south of Melton Road	Barrow upon Soar	130	Page 58
HA46	Land off Melton Road	Barrow upon Soar	120	Page 58
HA47	Land adjoining 84 Melton Road	Barrow upon Soar	18	Page 58
HA48	Land off Willow Road	Barrow upon Soar	215	Page 59
HA49	Land off Cotes Road	Barrow upon Soar	220	Page 59
HA50	East of Loughborough Road	Quorn	75	Page 60
HA51	Land south of Rothley	Rothley	40	
HA52	971 Loughborough Road	Rothley	9	
HA53	Land off Barnards Drive	Sileby	228	Page 60
HA54	Land off Homefield Road	Sileby	55	Page 60
HA55	Rear of The Maltings High Street	Sileby	13	Page 61
HA56	Land off Kendal Road (South of Butler Way and Gray Lane)	Sileby	24	Page 61
HA57	36 Charles Street	Sileby	11	Page 62
HA58	9 King Street	Sileby	14	Page 62
			Total 1,819	
Other Settlements				
HA59	Land to rear of Derry's Garden Centre	Cossington	124	Page 62
HA60	Land off Melton Road	East Goscote	223	Page 63
HA61	Land to the rear of 89 Loughborough Road,	Hathern	29	Page 64
HA62	The Leys	Hathern	6	
HA63	Land off Zouch Road	Hathern	50	Page 65
HA64	Land at Threeways Farm	Queniborough	100	Page 65
HA65	Land off Melton Road	Queniborough	55	Page 66
HA66	Land off Gaddesby Lane	Rearsby	47	
HA67	44 Hoby Road	Thrussington	30	Page 66
HA68	Land off Old Gate Road	Thrussington	60	Page 66

Policy Ref	Site Name	Location	Number of Homes	Site Specific Policy
HA69	The former Rectory and Land at Thurcaston	Thurcaston	31	Page 67
N/A	Wymeswold NP housing requirement		60	
			Total: 815	
			Grand Total: 8,858	

HA1 Land South East of Syston

- 2.66. Site HA1 Land South East of Syston is located in the area between Syston and Barkby that is important in maintaining the separate identities of these two places and extends close to the edge of the Barkby Conservation Area. A significant portion of the site is at higher risk of both fluvial and surface water flooding. The capacity of the site has been reduced to reflect the need to mitigate the impact of development on the settlement identity, Barkby Conservation Area and the risk of flooding to residents of the development. The site will provide the site for and contribute to the cost of providing a new primary school that will meet the needs of this development and other developments within a safe walking distance.
- 2.67. The following diagram provides a visual guide to assist with interpretation of the policy below. It also provides a concept masterplan for the site for illustrative purposes. We will work with our partners to refine the masterplan as more detailed evidence is prepared.



Policy DS3(HA1) Land South East of Syston

We will support development proposals at site HA1 that:

- **locate homes in those parts of the site that minimise the impact of development on the settlement identity of Barkby, and on the village’s heritage assets, and in the areas of lowest flood risk.**
- **are accompanied by a flood risk assessment which responds to the evidence of flood risk on the site and demonstrates how mitigation of those risks, including securing appropriate site access arrangements, can be satisfactorily achieved so as to meet the Exception Test;**
- **are accompanied by a Design and Access Statement, or similar document, that sets out how the development will maintain and enhance the significance of heritage assets and their setting including maintaining and enhancing the setting of the grounds of Barkby Hall through appropriate design of built form and landscaping on the eastern part of the site; and**
- **provide the site for a new 2 form entry primary school located on land within the allocated site boundaries and of a size and specification which meets Leicestershire County Council’s requirements. We will expect the reasonable costs of making this provision to be shared amongst the developments that it would serve.**

Before outline permission is granted for the site, or any part of the site, we will require:

- **a masterplan to be agreed which includes delivery and phasing arrangements for the whole allocation, in order to achieve comprehensive development; and**
- **a development brief, design code or equivalent to be prepared to inform decisions on detailed planning applications or reserved matters applications to ensure a cohesive approach to the design and impacts are satisfactorily mitigated.**

HA2 Barkby Road, Syston

Policy DS3(HA2) Barkby Road, Syston

We will support development proposals at site HA2 that contribute to the reasonable costs of the provision of a new 2 form entry primary school located at site HA1.

HA3 Land north of Barkby Road, Syston

- 2.68. Parts of site HA3 Land north of Barkby Road Syston are shown by our evidence to be at risk from surface water flooding and ponding and there is therefore a need for two points of access to the site.

Policy DS3(HA3) Land north of Barkby Road, Syston

We will support development proposals at site HA3 that:

- **are accompanied by a flood risk assessment which responds to the evidence of flood risk on the site and demonstrates how mitigation of those risks, including securing**

appropriate site access arrangements, can be satisfactorily achieved so as to meet the Exception Test; and

- contribute to the reasonable costs of the provision of a new 2 form entry primary school located at site HA1.

HA4 Queniborough Lodge

- 2.69. Parts of site HA4 Queniborough Lodge are shown by our evidence to be at risk from fluvial and surface water flooding, particularly in the northern part of the site.

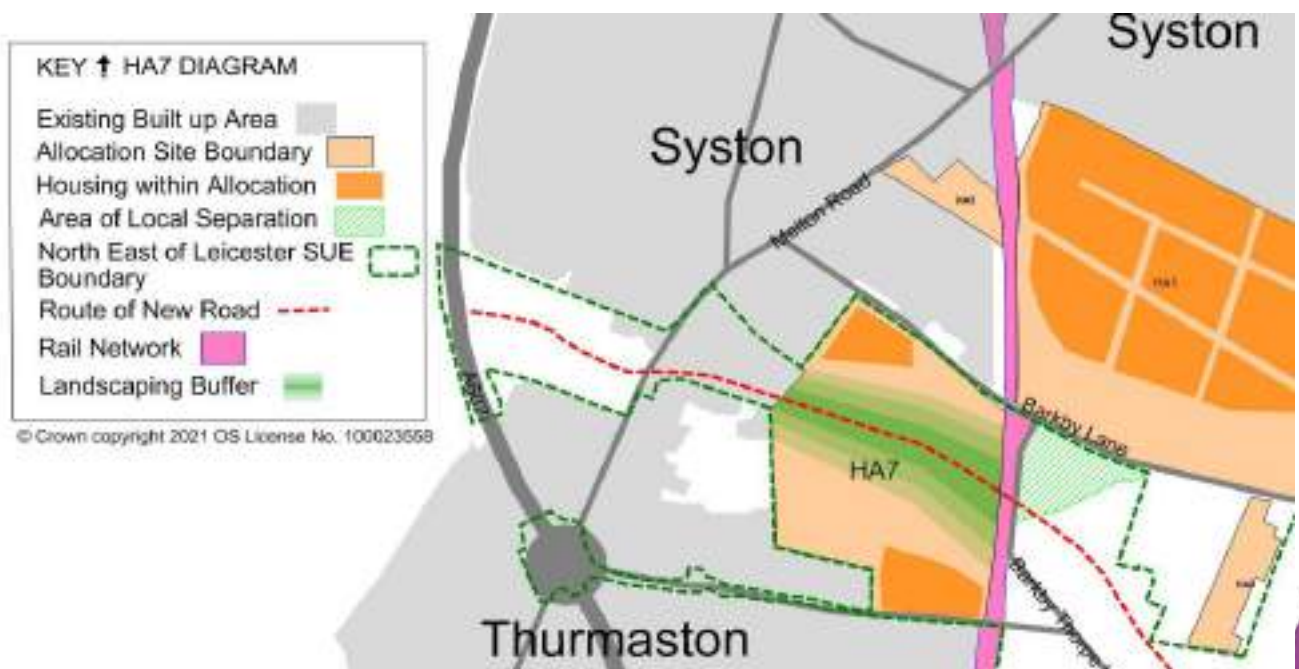
Policy DS3(HA4) Queniborough Lodge

We will support development proposals at site HA4 that are accompanied by a flood risk assessment which responds to the evidence of flood risk on the site and demonstrates how mitigation of those risks, including securing appropriate site access arrangements, can be satisfactorily achieved so as to meet the Exception Test.

HA7 Land off Barkby Thorpe Lane, Thurmaston

- 2.70. Site HA7 Land off Barkby Thorpe Lane, Thurmaston is located in the area between Thurmaston and Syston that is important in maintaining the separate identities of these two places and includes part of the route of the road that will serve the North East of Leicester Sustainable Urban Extension. The capacity of the site has been reduced to enable the impact of development on settlement identity to be mitigated and the route of the road to be secured.

- 2.71. The following diagram provides a visual guide to assist with interpretation of the policy below.



Policy DS3(HA7) Land off Barkby Thorpe Lane, Thurmaston

We will support development proposals at site HA7 that:

- **restrict built development to the north-western and south-eastern corners of the site to mitigate the impact on the settlement identities of Syston and Thurmaston;**
- **include an appropriate width of landscaping and extensive tree planting on the land on both sides of the route of the road to enhance the visual separation between the settlements; and**
- **are accompanied by a Design and Access Statement, or similar document, that sets out how these and other measures will minimise the impact of the development on the settlement identities of Thurmaston and Syston and safeguards the route of the road that will serve the North East of Leicester Sustainable Urban Extension.**

Before outline permission is granted for the site, or any part of the site, we will require:

- **a masterplan to be agreed which includes delivery and phasing arrangements for the whole allocation, in order to achieve comprehensive development; and**
- **a development brief, design code or equivalent to be prepared to inform decisions on detailed planning applications or reserved matters applications to ensure a cohesive approach to the design and impacts are satisfactorily mitigated.**

HA8 Woodgate Nurseries, Barkby Lane, Thurmaston

- 2.72. Parts of site HA8 Woodgate Nurseries, Barkby Lane are shown by our evidence to be at risk from fluvial and surface water flooding, particularly in the northern part of the site which may affect access onto Barkby Lane.

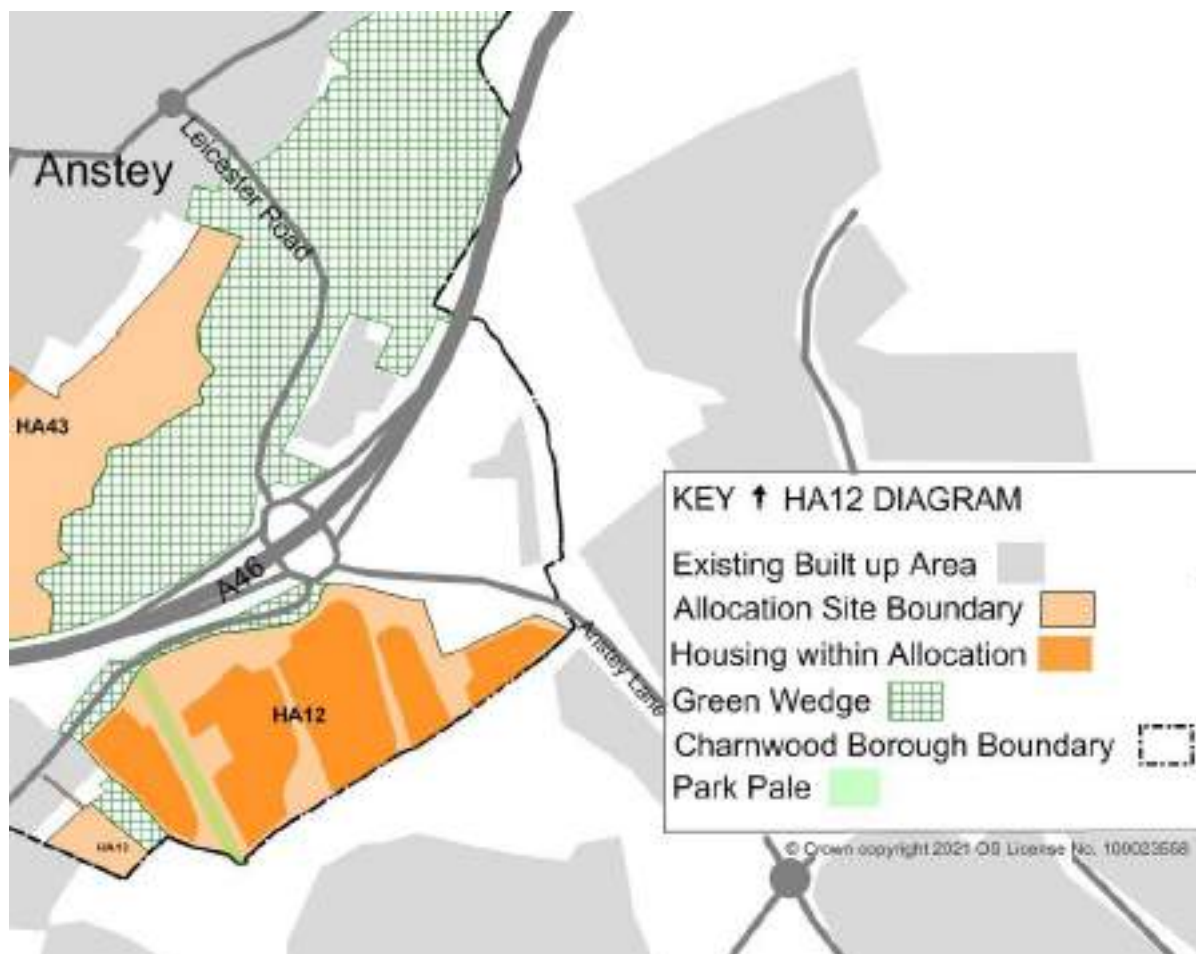
Policy DS3(HA8) Woodgate Nurseries, Barkby Lane, Thurmaston

We will support development proposals at site HA8 that are accompanied by a flood risk assessment which responds to the evidence of flood risk on the site and demonstrates how mitigation of those risks, including securing appropriate site access arrangements, can be satisfactorily achieved so as to meet the Exception Test.

HA12 Land at Gynsill Lane and Anstey Lane, Glenfield

- 2.73. Site HA12 Land at Gynsill Lane and Anstey Lane, Glenfield is located in an area that was previously designated as part of a Green Wedge adjoining Leicester, and the capacity of the site has been reduced to enable key Green Wedge functions to be retained as part of the development. Parts of the site are shown by our evidence to be at risk from surface water flooding related to two depressions within the site. The site will contribute to the cost of providing a new primary school that will meet the needs of this development and other development in Glenfield. The school may be located on this site.

- 2.74. The following diagram provides a visual guide to assist with interpretation of the policy below. It also provides a concept masterplan for the site for illustrative purposes. We will work with our partners to refine the masterplan as more detailed evidence is prepared.



Policy DS3(HA12) Land at Gynsill Lane and Anstey Lane, Glenfield

We will support development proposals at site HA12 that:

- are supported by a Green Infrastructure strategy, prepared in consultation with the local planning authority, Blaby District Council and Leicester City Council, that demonstrates how Green Wedge functions will be maintained as part of the development of the site, including ensuring that the effect upon the separate identities and landscape setting of distinct settlements is mitigated, and linked areas of open space into the urban area of Leicester are maintained;
- are accompanied by a Design and Access Statement, or similar document, that sets out how the site layout and planting schemes respond to the site's topography to minimise the impact of the development on the landscape, retain the Park Pale (an undesignated heritage asset) as open space and maintain and enhance the significance of heritage assets;

- are accompanied by a flood risk assessment which responds to the evidence of flood risk on the site and demonstrates how mitigation of those risks, including securing appropriate site access arrangements, can be satisfactorily achieved so as to meet the Exception Test; and
- provide the site for a new 1 form entry primary school located on land within the allocated site boundaries and of a size and specification which meets Leicestershire County Council's requirements or contribute to the reasonable costs of the provision of a new 1 form entry primary school within a safe walking distance from the site. We will expect the reasonable costs of making this provision to be shared amongst the developments that it would serve.

Before outline permission is granted for the site, or any part of the site, we will require:

- a masterplan to be agreed which includes delivery and phasing arrangements for the whole allocation, in order to achieve comprehensive development; and
- a development brief, design code or equivalent to be prepared to inform decisions on detailed planning applications or reserved matters applications to ensure a cohesive approach to the design and impacts are satisfactorily mitigated.

HA13 Park View Nursery Site off Gynsill Lane, Glenfield

2.75. Site HA13 Park View Nursery Site off Gynsill Lane, Glenfield includes ponds which provide habitats for great crested newts.

Policy DS3(HA13) Park View Nursery Site off Gynsill Lane, Glenfield

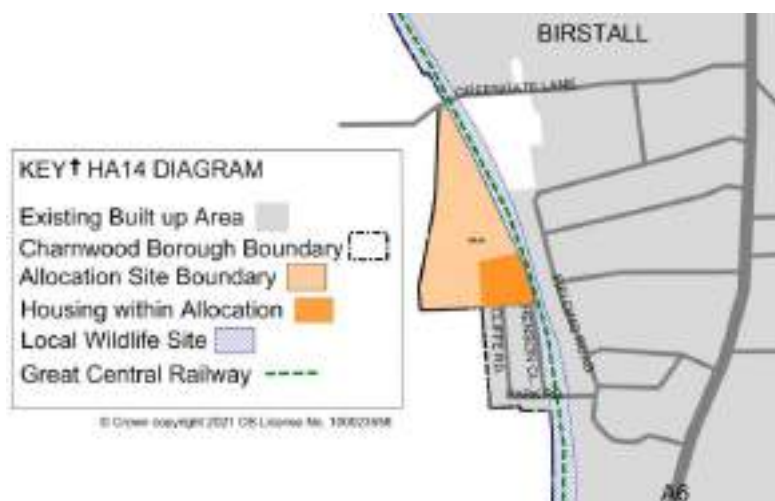
We will support development proposals at site HA13 that:

- retain the existing ponds on the site and their surrounding habitats in order to ensure that their functioning, as part of a wider network of habitats, is not adversely affected by development, and where possible, this functioning is enhanced; and
- are accompanied by a biodiversity impact assessment that demonstrates how the retention, and where possible enhancement, of on-site habitats for great crested newts can be satisfactorily achieved.

HA14 Land off Cliffe Road/Henson Close, Birstall

2.76. Site HA14 Land off Cliffe Road/Henson Close, Birstall is located in an area that was previously designated as part of a Green Wedge adjoining Leicester, and the capacity of the site has been reduced to enable key Green Wedge functions to be retained as part of the development.

2.77. The following diagram provides a visual guide to assist with interpretation of the policy below.



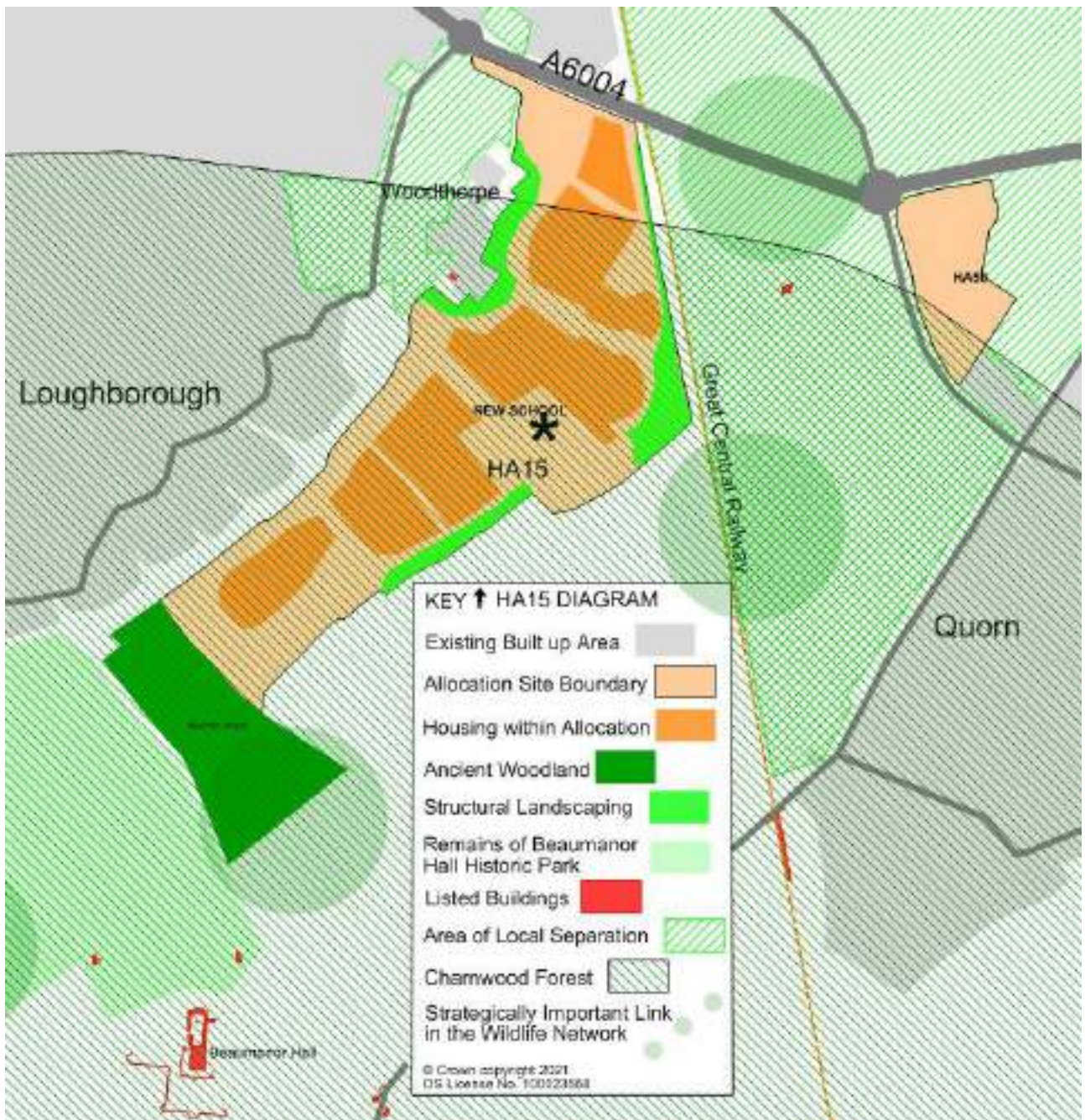
Policy DS3(HA14) Land off Cliffe Road/Henson Close, Birstall

We will support development proposals at site HA14 that:

- restrict built development to the south-eastern corner of the site;
- are supported by a Green Infrastructure strategy, prepared in consultation with the local planning authority and Leicester City Council, that demonstrates how the functions of Green Wedge will be maintained as part of the development of the site, including ensuring that the effect upon the separate identities and landscape setting of distinct settlements is mitigated, and linked areas of open space into the urban area of Leicester are maintained; and
- include the enhancement of the area adjacent to the Great Central Railway (which functions as a wildlife corridor) as part of that Green Infrastructure strategy.

HA15 Land south of Loughborough

- 2.78. Site HA15 Land south of Loughborough is located in a strategic position between Loughborough, Woodthorpe and Quorn, an area important for maintaining the separate identities of these settlements, and also in a strategically important links in the wildlife network between the important natural resources of the Charnwood Forest and Soar Valley. For this reason, it is particularly important that biodiversity net gain is achieved on site in this location rather than through off site contributions, in accordance with Policy EV6. The capacity of the site responds to the site constraints to enable the impact of development on settlement identity and the landscape to be mitigated.
- 2.79. The site is a large development that will provide a site for a new primary school that will meet the needs of this development and other development in a safe walking distance.
- 2.80. The following diagram provides a visual guide to assist with interpretation of the policy below. It also provides a concept masterplan for the site for illustrative purposes. We will work with our partners to refine the masterplan as more detailed evidence is prepared.



Policy DS3(HA15) Land south of Loughborough

We will support development proposals at site HA15 that:

- include the following measures to protect settlement identity and the landscape more generally:
 - provision of structural landscaping that screens the development and breaks up views of it, especially from the road between Woodhouse and Quorn, and from Loughborough;
 - retention of existing trees and hedgerows to contribute to the landscape setting of the development and retain landscape character;
 - restriction of built development to north of the ridge line that runs approximately east to west across the site;

- provision of an appropriate buffer between built development and Mucklin Wood;
- retention and enhancement of the character and identity of the linear hamlet of Woodthorpe and its wooded setting, including the listed building within it;
- are accompanied by a Green Infrastructure strategy that sets out how the development will provide, and maintain through a long-term management plan, a functional ecological network of habitats and corridors that facilitates wildlife movement within and through the site; and
- provide the site for a new 2 form entry primary school located on land within the allocated site boundaries and of a size and specification which meets Leicestershire County Council's requirements. We will expect the reasonable costs of making this provision to be shared amongst the developments that it would serve.

Before outline permission is granted for the site, or any part of the site, we will require:

- a masterplan to be agreed which includes delivery and phasing arrangements for the whole allocation, in order to achieve comprehensive development; and
- a development brief, design code or equivalent to be prepared to inform decisions on detailed planning applications or reserved matters applications to ensure a cohesive approach to the design and impacts are satisfactorily mitigated.

HA16 Laburnum Way, Loughborough

- 2.81. Site HA16 Laburnum Way, Loughborough is located in a sensitive and valued landscape within the Charnwood Forest and forms an important part of the landscape setting of Loughborough. The site is prominent in views from the Outwoods and other higher ground to the west, and care will be needed in planning the site to ensure that urbanising effects of development are successfully mitigated. The provision of significant planted areas which allow trees with large canopies to mature is likely to be a more successful solution to integrating new development into the landscape. This will require careful attention not just to design and layout, but to long term management and maintenance of public open spaces.
- 2.82. The site is also in a strategically important link in the wildlife network between the important natural resources of the Charnwood Forest and Soar Valley. For this reason, it is particularly important that biodiversity net gain is achieved on site in this location rather than through off site contributions, in accordance with Policy EV6. The site also includes a listed building (Half Way House) and is located close to two other listed buildings (Moat House and Park Grange) and the non-designated heritage asset of the parkland to Beaumanor Hall.
- 2.83. Parts of the site are shown by our evidence to be at risk from surface water flooding and access to the western portion of the site needs to be carefully planned in light of a flood risk assessment. The site also includes a tributary of the Wood Brook.
- 2.84. The following diagram provides a visual guide to assist with interpretation of the policy below. It also provides a concept masterplan for the site for illustrative purposes. We will work with our partners to refine the masterplan as more detailed evidence is prepared.



Policy DS3(HA16) Laburnum Way, Loughborough

We will support development proposals at site HA16 that:

- include substantial planting that makes use of large canopy, native species and naturalistic schemes throughout the site to enhance the relationship between the development and its wooded setting and helps to create a vegetated appearance to the whole of the development, particularly when viewed from areas of higher ground to the west of the site;
- are accompanied by a Green Infrastructure strategy that sets out how planting and other measures will minimise the impact of the development on the landscape and how the development will provide, and maintain through a long term management plan, a functional ecological network of habitats and corridors that facilitates wildlife movement within and through the site;
- are accompanied by a Design and Access Statement, or similar document, that sets out how the development will maintain and enhance the significance of heritage assets and their settings including:
 - the retention of Half Way House and the enhancement of its setting;
 - tree planting to screen Moat House and Park Grange from the development and appropriate design and layout to maintain, and where possible enhance, their setting; and
 - appropriate site layout and landscaping to protect, and where possible enhance, the setting of the parkland to Beaumanor Hall;

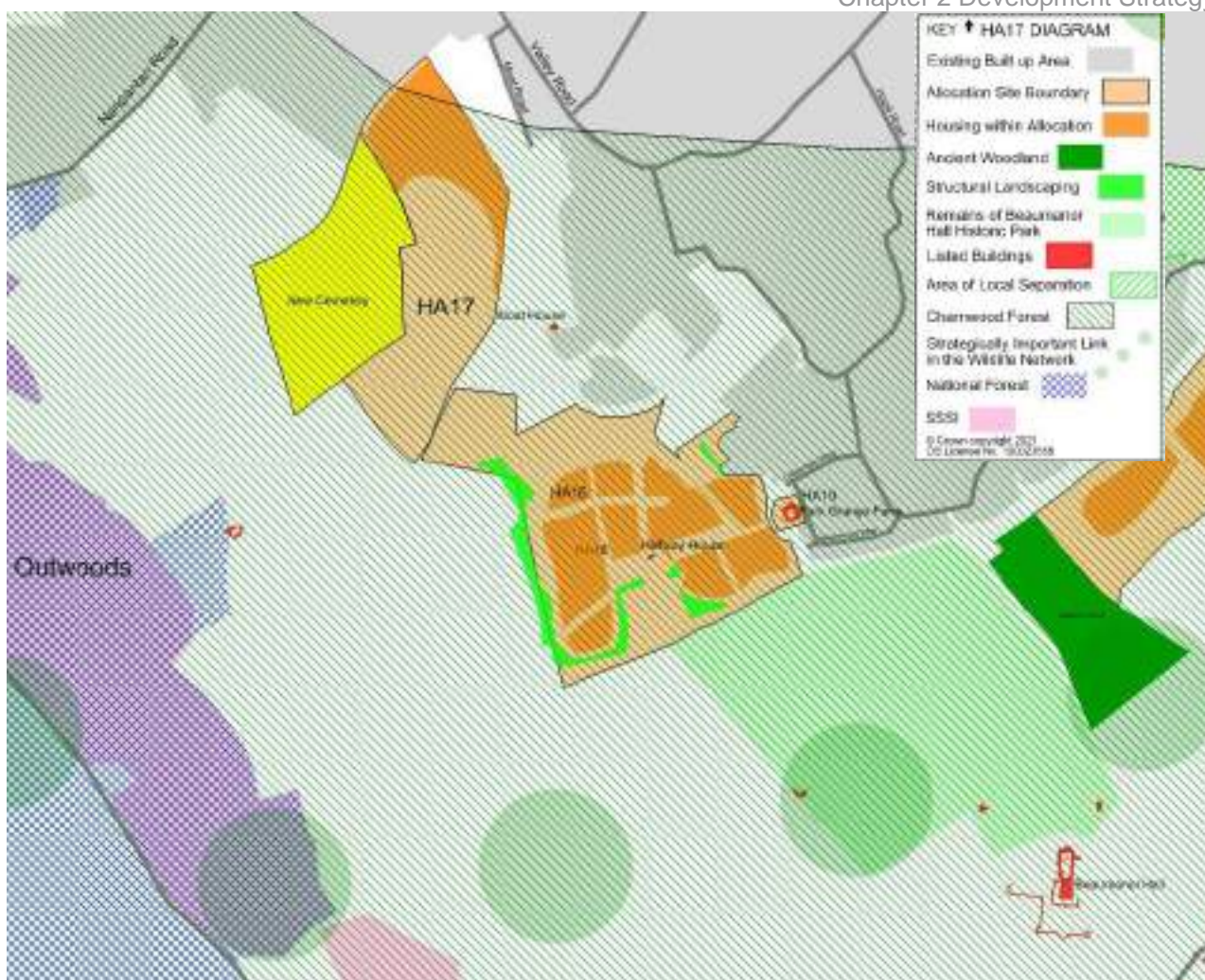
- are accompanied by a flood risk assessment which responds to the evidence of flood risk on the site and demonstrates how mitigation of those risks, including securing appropriate site access arrangements, can be satisfactorily achieved so as to meet the Exception Test;
- support measures to mitigate flood risk including contributions towards flood alleviation works in the wider catchment of the Wood Brook or other water courses flowing through or adjacent to Loughborough; and
- contribute to the reasonable costs of the provision of a new 2 form entry primary school located at site HA15.

Before outline permission is granted for the site, or any part of the site, we will require:

- a masterplan to be agreed which includes delivery and phasing arrangements for the whole allocation, in order to achieve comprehensive development; and
- a development brief, design code or equivalent to be prepared to inform decisions on detailed planning applications or reserved matters applications to ensure a cohesive approach to the design and impacts are satisfactorily mitigated.

HA17 Moat Farm, Land south west of Loughborough

- 2.85. Site HA17 Moat Farm, Land south west of Loughborough is located in a sensitive and valued landscape within the Charnwood Forest and forms an important part of the landscape setting of Loughborough. The site can be viewed from the Outwoods and other higher ground to the west, and care will be needed in planning the site to ensure that urbanising effects of development are successfully mitigated. The provision of significant planted areas which allow trees with large canopies to mature is likely to be a more successful solution to integrating new development into the landscape. This will require careful attention not just to design and layout, but to long term management and maintenance of public open spaces
- 2.86. The site is also in a strategically important link in the wildlife network between the important natural resources of the Charnwood Forest and Soar Valley. For this reason, it is particularly important that biodiversity net gain is achieved on site in this location rather than through off site contributions, in accordance with Policy EV6. The site is also located close to a listed building, Moat House and includes a tributary of the Wood Brook.
- 2.87. The following diagram provides a visual guide to assist with interpretation of the policy below. It also provides a concept masterplan for the site for illustrative purposes. We will work with our partners to refine the masterplan as more detailed evidence is prepared.



Policy DS3(HA17) Moat Farm, Land south west of Loughborough

We will support development proposals at site HA17 that:

- include substantial planting that makes use of large canopy, native species and naturalistic schemes throughout the site to enhance the relationship between the development and its wooded setting and helps to create a vegetated appearance to the whole of the development, particularly when viewed from areas of higher ground to the west of the site;
- are accompanied by a Green Infrastructure strategy that sets out how these and other measures will minimise the impact of the development on the landscape and how the development will provide, and maintain through a long term management plan, a functional ecological network of habitats and corridors that facilitates wildlife movement within and through the site;
- are accompanied by a Design and Access Statement, or similar document, that sets out how the development will maintain and enhance the significance of heritage assets and their setting including making use of tree planting to screen Moat House from the development and an appropriate design and layout to maintain, and where possible enhance, its setting;
- support measures to mitigate flood risk including contributions towards flood alleviation works in the wider catchment of the Wood Brook or other water courses flowing through or adjacent to Loughborough; and

- contribute to the reasonable costs of the provision of a new 2 form entry primary school located at site HA15, as necessary.

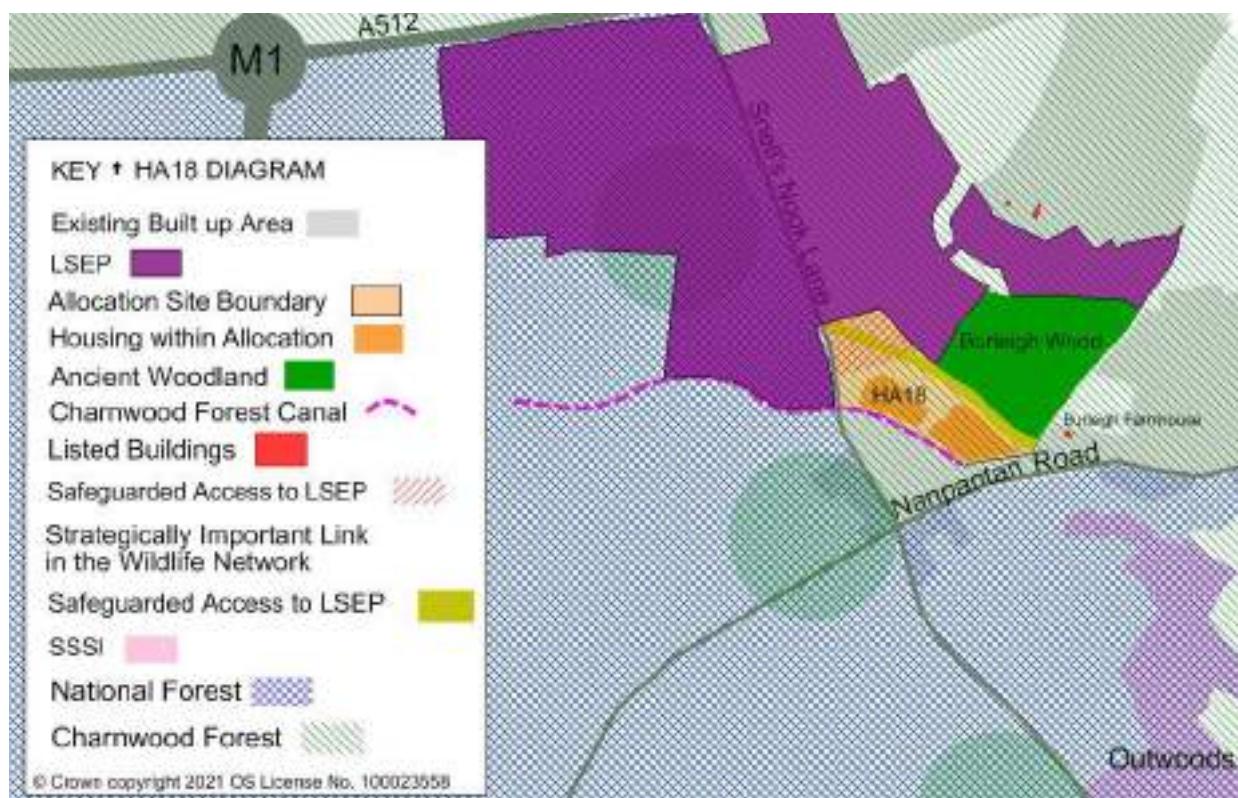
Before outline permission is granted for the site, or any part of the site, we will require:

- a masterplan to be agreed which includes delivery and phasing arrangements for the whole allocation, in order to achieve comprehensive development; and
- a development brief, design code or equivalent to be prepared to inform decisions on detailed planning applications or reserved matters applications to ensure a cohesive approach to the design and impacts are satisfactorily mitigated.

HA18 Land to r/o Snells Nook Lane, Loughborough

2.88. Site HA18 Land to r/o Snells Nook Lane, Loughborough is adjacent to Burleigh Wood (an ancient woodland) and in a strategically important link in the wildlife network between the important natural resources of the Charnwood Forest and Soar Valley. For this reason, it is particularly important that biodiversity net gain is achieved on site in this location rather than through off site contributions, in accordance with Policy EV6. In order to maintain an effective buffer between the development and the ancient woodland and maintain its connectivity with the wider landscape, the capacity of the site has been reduced. The site is also adjacent to a listed building (Burleigh Farmhouse), the route of the Charnwood Forest Canal (a non-designated heritage asset), and to the Loughborough Science and Enterprise Park.

2.89. The following diagram provides a visual guide to assist with interpretation of the policy below.



Policy DS3(HA18) Land to r/o Snells Nook Lane, Loughborough

We will support development proposals at site HA18 that:

- maintain appropriate buffers between built form and the eastern boundary of the site, and between built form and the northern boundary of the site to maintain connectivity between Burleigh Wood and the wider landscape;
- are accompanied by a Green Infrastructure strategy that sets out how the development will provide, and maintain through a long-term management plan, a functional ecological network of habitats and corridors that facilitates wildlife movement within and through the site;
- are accompanied by a Design and Access Statement, or similar document, that sets out how the development will maintain and enhance the significance of the heritage assets and their settings including:
 - the provision of an appropriate buffer to Burleigh Farmhouse, and enhancement of its setting, taking into account its origins as an agricultural building; and
 - increasing the ability of the public to appreciate the significance of the route of the Charnwood Forest Canal; and
 - ensure that the ability to provide suitable, safe access to the Loughborough Science and Enterprise Park, should this be required, is safeguarded, and that the development does not otherwise compromise the delivery of the Loughborough Science and Enterprise Park.

Policy DS3(HA19) Park Grange Farm, Newstead Way, Loughborough

We will support development proposals at site HA19 that:

- include the retention and restoration of the listed building, Park Grange and are accompanied by a Design and Access Statement, or similar document, that sets out how these and other measures will maintain and enhance the significance of the heritage asset and its setting; and
- contribute to the reasonable costs of the provision of a new 2 form entry primary school located at site HA15.

Policy DS3(HA20) Land off Beacon Road, Loughborough

We will support development proposals at site HA20 that contribute to the reasonable costs of the provision of a new 2 form entry primary school located at HA15, as necessary.

Policy DS3(HA21) Part of Baxter Gate Opportunity Site, Loughborough

We will support development proposals at site HA21 that:

- are accompanied by a Design and Access Statement, or similar document, that sets out how the development will maintain and enhance the significance of nearby listed buildings, and their settings; respecting their scale and form (which are generally lower in height and more traditional in form than other town centre buildings) and responding positively to the design cues provided by their materials and detailing; and

- are informed by the development brief set out in the Loughborough Town Centre Masterplan or any subsequently adopted design framework documents.

HA22 Devonshire Square, Loughborough

- 2.90. Site HA22 Devonshire Square is located adjacent to the mostly culverted channel of the Wood Brook. Our evidence shows that 77% of the site is outside Flood Zone 1.

Policy DS3(HA22) Devonshire Square, Loughborough

We will support development proposals at site HA22 that:

- are accompanied by a flood risk assessment which responds to the evidence of flood risk on the site and demonstrates how mitigation of those risks, including securing appropriate site access arrangements, can be satisfactorily achieved so as to meet the Exception Test;
- provides an appropriate easement from the bank of the Wood Brook as required by the Environment Agency; and
- support measures to mitigate flood risk including contributions towards flood alleviation works in the wider catchment of the Wood Brook or other water courses flowing through or adjacent to Loughborough.

HA23 Market Street, Loughborough

- 2.91. Site HA23 Market Street is located over the culverted channel of the Wood Brook. Our evidence shows that 82% of the site is outside Flood Zone 1.

Policy DS3(HA23) Market Street, Loughborough

We will support development proposals at site HA23 that:

- are accompanied by a flood risk assessment which responds to the evidence of flood risk on the site and demonstrates how mitigation of those risks, including securing appropriate site access arrangements, can be satisfactorily achieved so as to meet the Exception Test;
- provide appropriate easements from both banks of the Wood Brook as required by the Environment Agency; and
- support measures to mitigate flood risk including contributions towards flood alleviation works in the wider catchment of the Wood Brook or other water courses flowing through or adjacent to Loughborough.

Policy DS3(HA24) Southfields Council Offices, Loughborough

We will support development proposals at site HA24 that:

- are accompanied by a Design and Access Statement, or similar document, that sets out how the development will maintain and enhance the significance of the heritage assets and their settings including:

- retaining the locally listed Old Southfields building unless its loss is adequately compensated for by the high quality of the design; and
- responding positively to the relationship between the site and Southfield Park and the setting of the Leicester Road and Victoria Street Conservation Areas; and
- contribute to the reasonable costs of the provision of a new 2 form entry primary school located at site HA15, as necessary.

HA26 Former Limehurst Depot, Loughborough

2.92. Site HA26 Former Limehurst Depot is partially intersected by the Wood Brook and is close to the Loughborough Branch of the Grand Union Canal. Our evidence shows that 28% of the site is outside Flood Zone 1.

Policy DS3(HA26) Former Limehurst Depot, Loughborough

We will support development proposals at site HA26 that:

- are accompanied by a flood risk assessment which responds to the evidence of flood risk on the site and demonstrates how mitigation of those risks, including securing appropriate site access arrangements, can be satisfactorily achieved so as to meet the Exception Test;
- provide an appropriate easement from the bank of the Wood Brook as required by the Environment Agency; and
- support measures to mitigate flood risk including contributions towards flood alleviation works in the wider catchment of the Wood Brook or other water courses flowing through or adjacent to Loughborough.

HA27 Former Main Post Office, Sparrow Hill, Loughborough

2.93. Site HA27 Former Main Post Office, Sparrow Hill, Loughborough is locally listed and located in a prominent location, particularly as a result of the high ground it occupies. Because of its scale, location and the historical and communal associations arising from its former use, it provides a significant local landmark of visual and heritage interest that contributes positively to the townscape.

Policy DS3(HA27) Former Main Post Office, Sparrow Hill, Loughborough

We will support development proposals at site HA27 that are accompanied by a Design and Access Statement, or similar document, that sets out how development will maintain and enhance the significance of the heritage asset and its setting including the retention of the building or at least its facades.

HA28 Land off Derby Square, Loughborough

2.94. Site HA28 Land off Derby Square is located over the culverted channel of the Wood Brook. Our evidence shows that 100% of the site is outside Flood Zone 1.

Policy DS3(HA28) Land off Derby Square, Loughborough

We will support development proposals at site HA28 that:

- are accompanied by a flood risk assessment which responds to the evidence of flood risk on the site and demonstrates how mitigation of those risks, including securing appropriate site access arrangements, can be satisfactorily achieved so as to meet the Exception Test;
- provide appropriate easements from both banks of the Wood Brook as required by the Environment Agency; and
- support measures to mitigate flood risk including contributions towards flood alleviation works in the wider catchment of the Wood Brook or other water courses flowing through or adjacent to Loughborough.

Policy DS3(HA29) Southfields Road Car Park, Loughborough

We will support development proposals at site HA29 that contribute to the reasonable costs of the provision of a new 2 form entry primary school located at site HA15, as necessary.

HA30 Land off Fairway Road, Shepshed

- 2.95. Part of site HA30 Land off Fairway Road formed part of Garendon Park and retains features associated with this history. Parts of site are shown by our evidence to be at risk from fluvial and surface water flooding, particularly associated with the watercourse that flows through the centre of the site.

Policy DS3(HA30) Land off Fairway Road, Shepshed

We will support development proposals at site HA30 that:

- retain the areas of formal planting to the south of the site and are accompanied by a Design and Access Statement, or similar document, that sets out how these and other measures will maintain and enhance the significance of this non-designated heritage asset and the public's ability to appreciate it;
- are accompanied by a flood risk assessment which responds to the evidence of flood risk on the site and demonstrates how mitigation of those risks, including securing appropriate site access arrangements, can be satisfactorily achieved so as to meet the Exception Test; and
- contribute to the reasonable costs of the provision of a new 3 form entry primary school located at site HA32.

HA31 Land north of Ashby Road, Shepshed

- 2.96. Site HA31 Land north of Ashby Road, Shepshed is adjacent to an ancient woodland (White Horse Wood). In order to maintain an effective buffer between the development and White Horse Wood, and maintain its connectivity with the wider landscape, the capacity of the site has been reduced. For this reason, it is particularly important that biodiversity net gain is achieved on site in this location rather than through off site contributions, in accordance with Policy EV6. Parts of site are shown by our evidence to be at risk from fluvial and surface water flooding related to the water course that flows through the centre of the site.

Policy DS3(HA31) Land north of Ashby Road, Shepshed

We will support development proposals at site HA31 that:

- maintain an appropriate buffer between built form and the eastern boundary of the site;
- are accompanied by a flood risk assessment which responds to the evidence of flood risk on the site and demonstrates how mitigation of those risks, including securing appropriate site access arrangements, can be satisfactorily achieved so as to meet the Exception Test; and
- contribute to the reasonable costs of the provision of a new 3 form entry primary school located at site HA32.

HA32 Land off Tickow Lane (south), Shepshed

- 2.97. Site HA32 Land off Tickow Lane (south), Shepshed is one of four sites located in close proximity to the Black Brook which is a strategically important link in the wildlife network. The other three sites are HA33, HA34 and HA35. The development will provide a site for a new primary school that will meet the needs of this development and other development in Shepshed.

Policy DS3(HA32) Land off Tickow Lane (south), Shepshed

We will support development proposals at site HA32 that:

- are accompanied by a biodiversity strategy, that is produced jointly by the promoters of all four sites in close proximity to the Black Brook, that sets out how biodiversity net gain can be achieved in accordance with Policy EV6, including how water flow will be managed to enhance biodiversity and reduce flood risk; and
- provide the site for a new 3 form entry primary school located on land within the allocated site boundaries and of a size and specification which meets Leicestershire County Council's requirements. We will expect the reasonable costs of making this provision to be shared amongst the developments that it would serve.

HA33 Land at Oakley Road, Shepshed

2.98. Site HA33 Land at Oakley Road, Shepshed is one of four sites located in close proximity to the Black Brook which is a strategically important link in the wildlife network. The other three sites are HA32, HA34 and HA35.

Policy DS3(HA33) Land at Oakley Road, Shepshed

We will support development proposals at site HA33 that:

- are accompanied by a biodiversity strategy, that is produced jointly by the promoters of all four sites in close proximity to the Black Brook, that sets out how biodiversity net gain can be achieved in accordance with Policy EV6, including how water flow will be managed to enhance biodiversity and reduce flood risk; and
- contribute to the reasonable costs of the provision of a new 3 form entry primary school located at site HA32.

HA34 Land off Tickow Lane (north), Shepshed

2.99. Site HA34 Land off Tickow Lane (north), Shepshed is one of four sites located in close proximity to the Black Brook which is a strategically important link in the wildlife network. The other three sites are HA32, HA33 and HA35.

Policy DS3(HA34) Land off Tickow Lane (north), Shepshed

We will support development proposals at site HA34 that:

- are accompanied by a biodiversity strategy, that is produced jointly by the promoters of all four sites in close proximity to the Black Brook, that sets out how biodiversity net gain can be achieved in accordance with Policy EV6, including how water flow will be managed to enhance biodiversity and reduce flood risk; and
- contribute to the reasonable costs of the provision of a new 3 form entry primary school located at site HA32.

HA35 Land North of Hallamford Road and West of Shepshed

2.100. Site HA35 Land North of Hallamford Road and West of Shepshed is one of four sites located in close proximity to the Black Brook which is a strategically important link in the wildlife network. The other three sites are HA32, HA33 and HA34.

Policy DS3(HA35) Land North of Hallamford Road and West of Shepshed

We will support development proposals at site HA35 that:

- are accompanied by a biodiversity strategy, that is produced jointly by the promoters of all four sites in close proximity to the Black Brook, that sets out how biodiversity net gain can be achieved in accordance with Policy EV6, including how water flow will be managed to enhance biodiversity and reduce flood risk; and

- **contribute to the reasonable costs of the provision of a new 3 form entry primary school located at Site HA32**

Policy DS3(HA36) 20 Moscow Lane, Shepshed

We will support development proposals at site HA36 that contribute to the reasonable costs of the provision of a new 3 form entry primary school located at Site HA32.

Policy DS3(HA37) Land rear of 62 Iveshead Road, Shepshed

We will support development proposals at site HA37 that contribute to the reasonable costs of the provision of a new 3 form entry primary school located at Site HA32.

HA39 Land fronting Ashby Road and Ingleberry Road, Shepshed

2.101. Site HA39 Land fronting Ashby Road and Ingleberry Road, Shepshed contains a range of habitats, including those that have the potential to support reptile populations, and is well-related to the Morley Quarry Local Wildlife Site. For this reason, it is particularly important that biodiversity net gain is achieved on site in this location rather than through off site contributions, in accordance with Policy EV6.

Policy DS3(HA39) Land fronting Ashby Road and Ingleberry Road, Shepshed

We will support development proposals at site HA39 that:

- **enhance the biodiversity value of the site and support functional ecological links across the wider landscape by restricting development to the agricultural land to the east of the site and the northern half of the remainder of the site; and**
- **contribute to the reasonable costs of the provision of a new 3 form entry primary school located at site HA32.**

HA40 Land to the west of the B591/Ingleberry Rd and north of Iveshead Lane, Shepshed

2.102. Parts of site HA40 Land to the west of the B591/Ingleberry Rd and north of Iveshead Lane are shown by our evidence to be at risk from surface water flooding related to water draining onto the site from higher ground to the south.

Policy DS3(HA40) Land to the west of the B591/Ingleberry Rd and north of Iveshead Lane, Shepshed

We will support development proposals at site HA40 that:

- **are accompanied by a flood risk assessment which responds to the evidence of flood risk on the site and demonstrates how mitigation of those risks, including securing appropriate site access arrangements, can be satisfactorily achieved so as to meet the Exception Test; and**
- **contribute to the reasonable costs of the provision of a new 3 form entry primary school located at Site HA32.**

HA41 Land south of Ashby Road Central, Shepshed

2.103. Parts of site HA41 Land south of Ashby Road Central are shown by our evidence to be at risk from surface water flooding that bisects the site and ponding to the north of the site.

Policy DS3(HA41) Land south of Ashby Road Central, Shepshed

We will support development proposals at site HA41 that:

- are accompanied by a flood risk assessment which responds to the evidence of flood risk on the site and demonstrates how mitigation of those risks, including securing appropriate site access arrangements, can be satisfactorily achieved so as to meet the Exception Test; and
- contribute to the reasonable costs of the provision of a new 3 form entry primary school located at site HA32.

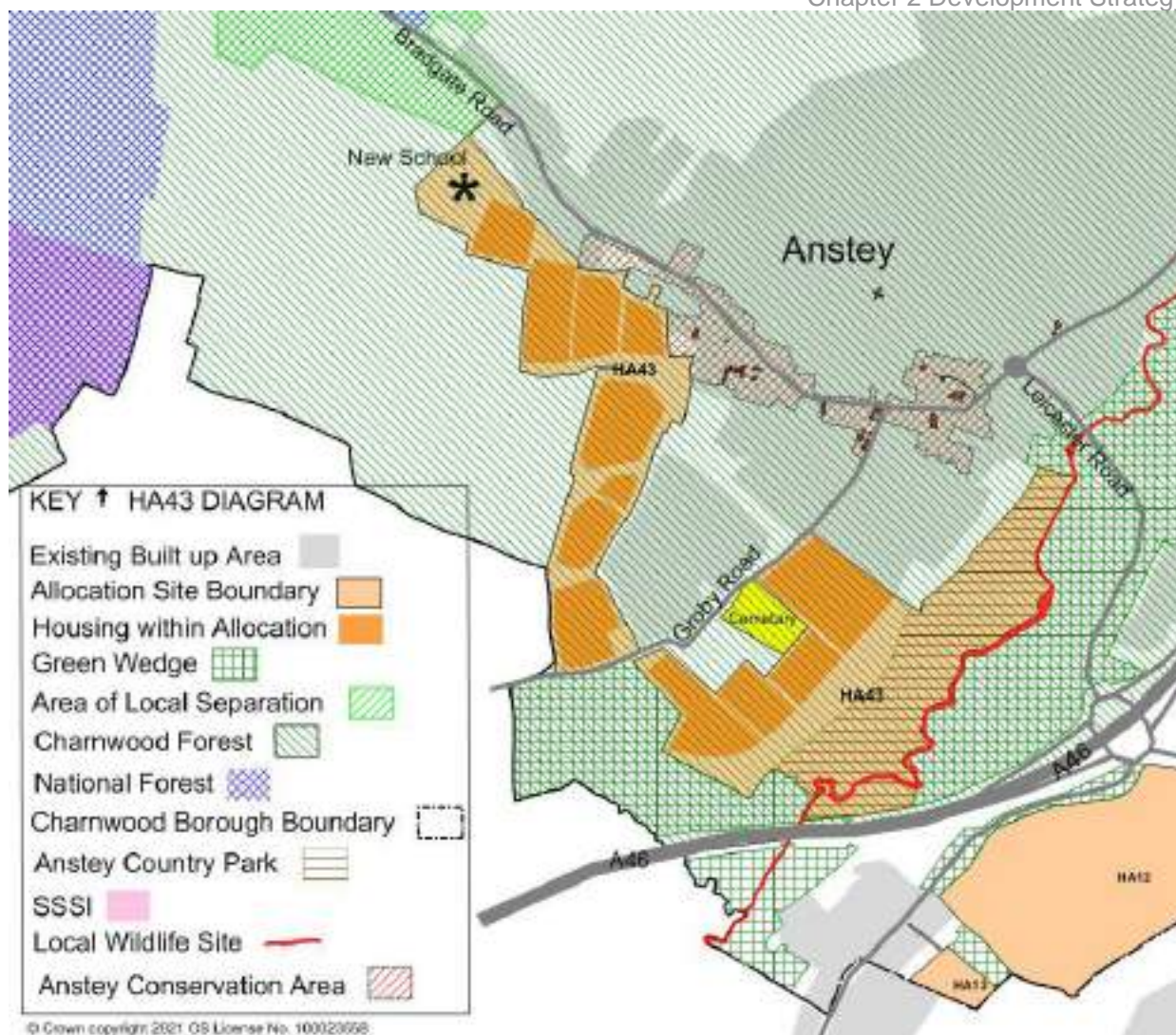
Policy DS3(HA42) 32 Charnwood Road, Shepshed

We will support development proposals at site HA42 that contribute to the reasonable costs of the provision of a new 3 form entry primary school located at site HA32.

HA43 Land west of Anstey

2.104. Site HA43 Land west of Anstey includes an area, in the southern part of the site that was previously designated as part of a Green Wedge adjoining Leicester, and also land to the north which is within a sensitive Charnwood Forest landscape. Part of the site is adjacent to the Anstey Conservation Area. The development will provide a site for a new primary school that will meet the needs of this development and other development in Anstey.

2.105. The following diagram provides a visual guide to assist with interpretation of the policy below. It also provides a concept masterplan for the site for illustrative purposes. We will work with our partners to refine the masterplan as more detailed evidence is prepared.



Policy DS3(HA43) Land west of Anstey

We will support development proposals at site HA43 that:

- retain existing hedgerows and add high canopy trees and other planting to create a softer appearance to the development, particularly at its edges, that provides a greater sense of separation between the development and other settlements and reduces the urbanising effects of the development when viewed from the wider landscape;
- provide a network of open spaces, including a country park to the south of the site, and active travel routes that serve the development and which link to significant locations outside the site;
- are supported by a Green Infrastructure strategy, prepared in consultation with the local planning authority, Hinckley and Bosworth Borough Council, and Leicester City Council, that demonstrates how Green Wedge functions will be maintained as part of the development of the site, including ensuring that the effect upon the separate identities and landscape setting of distinct settlements is mitigated, and linked areas of open space into the urban area of Leicester are maintained;

- provide the site for a new 1 form entry primary school located on land within the allocated site boundaries and of a size and specification which meets Leicestershire County Council's requirements and adopt a co-ordinated approach to development across the three land parcels that make up the site to ensure that it provides land for the school and the other infrastructure necessary to support the development as a whole. We will expect the reasonable costs of making this provision to be shared amongst the developments that it would serve;
- facilitate delivering a design for the school that complements its Charnwood Forest setting and minimises its impact on the landscape; and
- are accompanied by a Design and Access Statement, or similar document, that sets out how the development will preserve and enhance the character, appearance and setting of the Anstey Conservation Area including through screening and/or by providing an appropriate relationship between new dwellings and existing dwellings along Bradgate Road.

Before outline permission is granted for the site, or any part of the site, we will require:

- a masterplan to be agreed which includes delivery and phasing arrangements for the whole allocation, in order to achieve comprehensive development; and
- a development brief, design code or equivalent to be prepared to inform decisions on detailed planning applications or reserved matters applications to ensure a cohesive approach to the design and impacts are satisfactorily mitigated.

Policy DS3(HA44) Fairhaven Farm, Anstey

We will support development proposals at site HA44 that:

- include an appropriate buffer between the built form of the development and both the stream to the north of the site and the woodland to the west of the site; and
- contribute to the reasonable costs of the provision of a new 1 form entry primary school located at site HA43.

Policy DS3(HA45) Land to south of Melton Road, Barrow upon Soar

We will support development proposals at site HA45 that contribute to the reasonable costs of the provision of a new 1 form entry primary school located at site HA49.

Policy DS3(HA46) Land off Melton Road, Barrow upon Soar

We will support development proposals at site HA46 that contribute to the reasonable costs of the provision of a new 1 form entry primary school located at site HA49.

Policy DS3(HA47) Land adjoining 84 Melton Road, Barrow upon Soar

We will support development proposals at site HA47 that contribute to the reasonable costs of the provision of a new 1 form entry primary school located at site HA49.

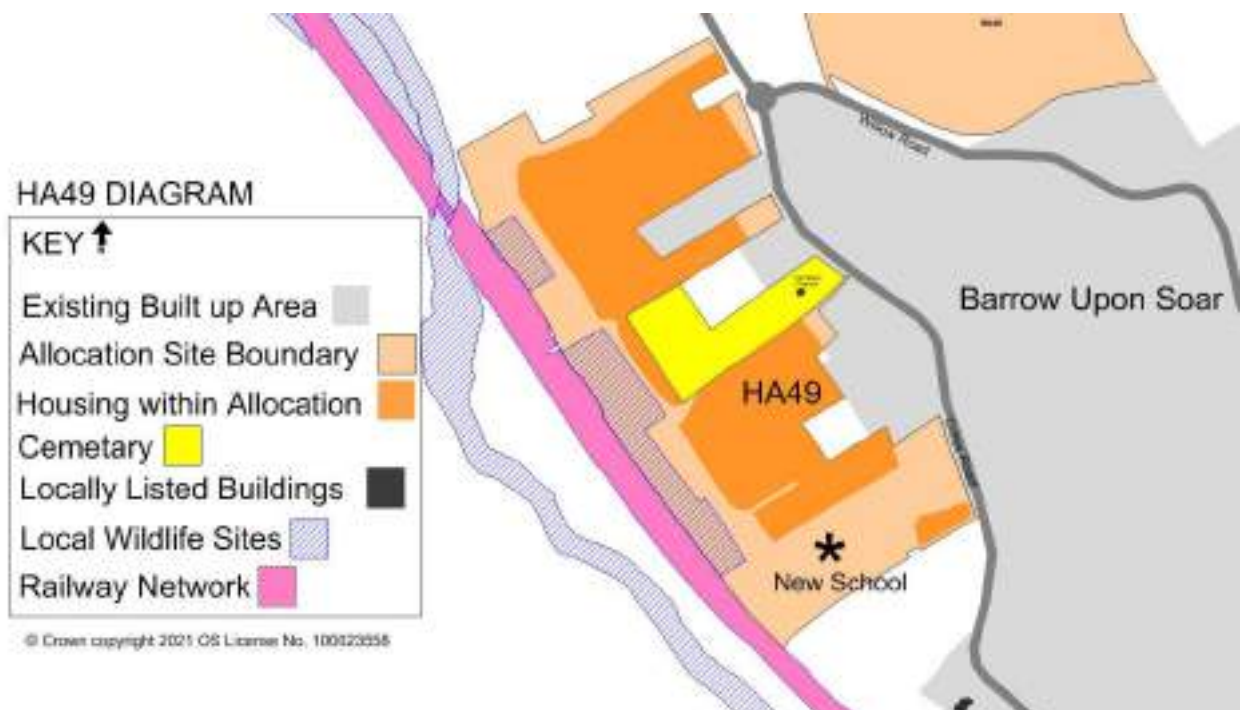
Policy DS3(HA48) Land off Willow Road, Barrow upon Soar

We will support development proposals at site HA48 that contribute to the reasonable costs of the provision of a new 1 form entry primary school located at site HA49.

HA49 Land off Cotes Road, Barrow upon Soar

2.106. Site HA49 Land off Cotes Road, Barrow includes two Local Wildlife Sites and for this reason it is particularly important that biodiversity net gain is achieved on site in this location rather than through off site contributions, in accordance with Policy EV6. Part of the site is adjacent to the cemetery (a non-designated heritage asset) which includes locally listed chapel buildings. Parts of site are shown by our evidence to be at risk from surface water flooding, particularly in relation to ponding on the western boundary of the site and a flow route that runs east to west through the site. The development will provide a site for a new primary school that will meet the needs of this development and other development in Barrow upon Soar.

2.107. The following diagram provides a visual guide to assist with interpretation of the policy below. It also provides a concept masterplan for the site for illustrative purposes. We will work with our partners to refine the masterplan as more detailed evidence is prepared.



Policy DS3(HA49) Land off Cotes Road, Barrow upon Soar

We will support development proposals at site HA49 that:

- ensure that surface water runoff will not detrimentally affect the Local Wildlife Sites and locate SuDS features away from the Local Wildlife Sites;
- are accompanied by a biodiversity and drainage strategy that demonstrates how biodiversity and drainage issues have been addressed;

- seek a relationship with the cemetery that does not detract from its tranquillity and its function as a place of reflection;
- are accompanied by a Design and Access Statement, or similar document, that sets out how the development will maintain and enhance the significance of the heritage assets and their settings;
- are accompanied by a flood risk assessment which responds to the evidence of flood risk on the site and demonstrates how mitigation of those risks, including securing appropriate site access arrangements, can be satisfactorily achieved so as to meet the Exception Test; and
- provide the site for a new 1 form entry primary school located on land within the allocated site boundaries and of a size and specification which meets Leicestershire County Council's requirements. We will expect the reasonable costs of making this provision to be shared amongst the developments that it would serve.

Before outline permission is granted for the site, or any part of the site, we will require:

- a masterplan to be agreed which includes delivery and phasing arrangements for the whole allocation, in order to achieve comprehensive development; and
- a development brief, design code or equivalent to be prepared to inform decisions on detailed planning applications or reserved matters applications to ensure a cohesive approach to the design and impacts are satisfactorily mitigated.

HA50 East of Loughborough Road, Quorn

2.108. Parts of site HA50 East of Loughborough Road, Quorn are shown by our evidence to be at risk from fluvial and surface water flooding related to local watercourses and low-lying land in the centre of the site.

Policy DS3(HA50) East of Loughborough Road, Quorn

We will support development proposals at site HA50 that:

- are accompanied by a flood risk assessment which responds to the evidence of flood risk on the site and demonstrates how mitigation of those risks, including securing appropriate site access arrangements, can be satisfactorily achieved so as to meet the Exception Test; and
- contribute to the reasonable costs of the provision of a new 2 form entry primary school located at site HA15, as necessary.

Policy DS3(HA53) Land off Barnards Drive, Sileby

We will support development proposals at site HA53 that contribute to the reasonable costs of the provision of a 0.5 form entry extension of Cossington Primary School located at site HA59.

HA54 Land off Homefield Road, Sileby

2.109. Site HA54 Land off Homefield Road, Sileby is located in the area between Sileby and Barrow upon Soar that is important in maintaining the separate identities of these two places and occupies sloping ground formed by sides of the Soar Valley. The site has

been promoted as providing 100% affordable homes, which is a benefit that is considered to outweigh the adverse effects on settlement identity.

Policy DS3(HA54) Land off Homefield Road, Sileby

We will support development proposals at site HA54 that:

- provide 100% affordable housing provision;
- make use of existing trees and hedgerows on the site, additional planting and the site's topography in order to reduce the prominence of the development when viewed from other places in the Soar Valley;
- through their design and layout, otherwise minimise the impact of development on the sense of separation between Sileby and Barrow upon Soar and maintain the separate identity of those settlements; and
- contribute to the reasonable costs of the provision of a 0.5 form entry extension of Cossington Primary School located at site HA59, as necessary.

HA55 Rear of The Maltings, High Street, Sileby

2.110. Site HA55 Rear of The Maltings, High Street, Sileby is adjacent to several listed buildings (collectively, The Maltings), and partly within the Sileby Conservation Area. Parts of site are shown by our evidence to be at risk from fluvial and surface water flooding affecting the east and far west corner of the site. There is also a risk of surface water ponding at the road junction from which site access will be gained.

Policy DS3(HA55) Rear of The Maltings, High Street, Sileby

We will support development proposals at site HA55 that:

- are accompanied by a Design and Access Statement, or similar document, that sets out how the development will maintain and enhance the significance of the heritage assets and their settings including:
 - ensuring that the new development has a subservient relationship to The Maltings in terms of scale, particularly building height, and by making effective use of tree planting and layout;
 - making use of a bespoke design approach that is informed by the Sileby Conservation Area Character Appraisal; and
- are accompanied by a flood risk assessment which responds to the evidence of flood risk on the site and demonstrates how mitigation of those risks, including securing appropriate site access arrangements, can be satisfactorily achieved so as to meet the Exception Test; and
- contribute to the reasonable costs of the provision of a 0.5 form entry extension of Cossington Primary School located at site HA59, as necessary.

HA56 Land off Kendal Road, Sileby

2.111. Site HA56 Land off Kendal Road, Sileby (South of Butler Way and Gray Lane) includes an area of orchard that has ecological and heritage value.

Policy DS3(HA56) Land off Kendal Road, Sileby

We will support development proposals at site HA56 that:

- include the retention of significant trees in that part of the site where the orchard is best preserved and delivers enhancements of that area as a community orchard;
- include the retention of other significant trees, where possible, within gardens or other open space on the site or as street trees;
- are accompanied by a plan that sets out how the long-term management of the retained trees will be achieved; and
- contribute to the reasonable costs of the provision of a 0.5 form entry extension of Cossington Primary School located at site HA59, as necessary.

Policy DS3(HA57) 36 Charles Street, Sileby

We will support development proposals at site HA57 that contribute to the reasonable costs of the provision of a 0.5 form entry extension of Cossington Primary School located at site HA59, as necessary.

HA58 9 King Street, Sileby

2.112. Site HA58 9 King Street, Sileby is located within the Sileby Conservation Area.

Policy DS3(HA58) 9 King Street, Sileby

Development proposals will be supported at site HA58 that:

- respond positively to the character of the Sileby Conservation Area in terms of its design, materials and layout (particularly in terms of the building line along King Street);
- make use of a bespoke design approach that is informed by the Sileby Conservation Area Character Appraisal; and
- are accompanied by a Design and Access Statement, or similar document, that sets out how these and other measures will preserve and enhance the character and appearance of the Conservation Area; and
- contribute to the reasonable costs of the provision of a 0.5 form entry extension of Cossington Primary School located at site HA59, as necessary.

HA59 Land to rear of Derry's Garden Centre, Cossington

2.113. Site HA59 Land to rear of Derry's Garden Centre, Cossington is located close to the Cossington Conservation Area and a locally listed building. Parts of the site are shown by our evidence to be at risk from fluvial flooding related to the watercourse that flows along the north of the site. The site will be the location for an extension to Cossington Primary School that will meet the needs of this development and other development in Sileby.

Site Policy DS3(HA59) Land to rear of Derry's Garden Centre, Cossington

We will support development proposals at site HA59 that:

- are accompanied by a Design and Access Statement, or similar document, that sets out how the development will maintain and enhance the significance of the heritage assets and their settings including:
 - the provision of an access to the development that is designed to enhance the entrance to the village and the setting of the heritage assets;
 - the protection of the setting of the Conservation Area; and
 - the use of a bespoke design approach that is informed by the Cossington Conservation Area Character Appraisal, particularly in relation to the linear form of the village;
- are accompanied by a flood risk assessment which responds to the evidence of flood risk on the site and demonstrates how mitigation of those risks, including securing appropriate site access arrangements, can be satisfactorily achieved so as to meet the Exception Test; and
- provide the site for a 0.5 form entry extension of Cossington Primary School located on land within the allocated site boundary and of a size and specification which meets Leicestershire County Council's requirements. We will expect the reasonable costs of making this provision to be shared amongst the developments that it would serve.

HA60 Land off Melton Road, East Goscote

2.114. Site HA60 Land off Melton Road, East Goscote is located in the area between East Goscote and Rearsby that is a sensitive landscape and important in maintaining the separate identities of these two places. The capacity of the site has been reduced to reflect the sensitive location and enable the impact of development on the settlement identities of the villages and the landscape to be mitigated.

2.115. The following diagram provides a visual guide to assist with interpretation of the policy below.



Policy DS3(HA60) Land off Melton Road, East Goscote

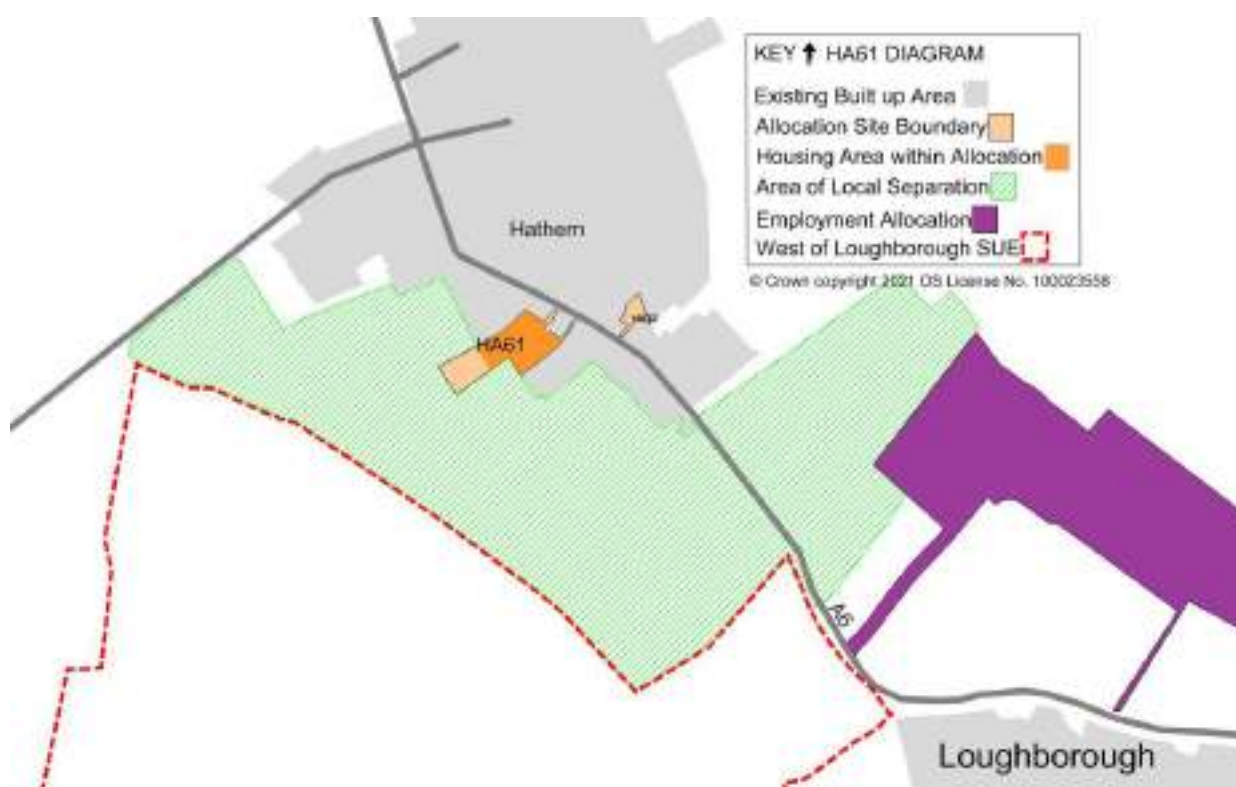
We will support development proposals at site HA60 that:

- restrict development to the western part of the site; and
- through their design and layout, clearly maintain the physical and perceptual separation between East Goscote and Rearsby and preserves the separate identity of those settlements.

HA61 Land to the rear of 89 Loughborough Road, Hathern

2.116. Site HA61 Land to the rear of 89 Loughborough Road, Hathern is located in the area between Hathern and Loughborough that is important in maintaining the separate identities of these two places. The capacity of the site has been reduced to reflect the sensitive location and enable the impact of development on the settlement identities of Hathern and Loughborough to be mitigated.

2.117. The following diagram provides a visual guide to assist with interpretation of the policy below.



Policy DS3(HA61) Land to the rear of 89 Loughborough Road, Hathern

We will support development proposals at site HA61 that

- restrict development to the eastern part of the site; and
- through their design and layout, clearly maintains the physical and perceptual separation between Hathern and Loughborough and preserves the separate identity of those settlements.

HA63 Land off Zouch Road, Hathern

2.118. Site HA63 Land off Zouch Road, Hathern is located to the north of the village and it is important to ensure that the development is well integrated with the rest of the settlement for reasons of good design, promoting sustainable development and facilitating access to the services and amenities provided by the village.

Policy DS3(HA63) Land off Zouch Road, Hathern

We will support development proposals at site HA63 that maximise the linkages between the development and the existing settlement, using features such as streets, active travel routes, landscaping and design.

HA64 Land at Threeways Farm, Queniborough

2.119. Site HA64 Land at Threeways Farm, Queniborough is located in the area between Queniborough and East Goscote that is important in maintaining the separate identities of these two places. The capacity of the site has been reduced to reflect the sensitive location and enable the impact of development on the settlement identities of the two villages to be mitigated.

2.120. The following diagram provides a visual guide to assist with interpretation of the policy below. This diagram should also be used for site HA65.



Policy DS3(HA64) Land at Threeways Farm, Queniborough

We will support development proposals at site HA64 that:

- restrict development to the southern part of the site; and
- through their design and layout, clearly maintains the physical and perceptual separation between Queniborough and East Goscote and preserves the separate identity of those settlements

HA65 Land off Melton Road, Queniborough

2.121. Site HA65 Land off Melton Road, Queniborough is located in the area between Queniborough and East Goscote that is important in maintaining the separate identities of these two places. The capacity of the site has been reduced to reflect the sensitive location and enable the impact of development on the settlement identities of the two villages to be mitigated.

2.122. The diagram above provides a visual guide to assist with interpretation of the policy below.

Policy DS3(HA65) Land off Melton Road, Queniborough

We will support development proposals at site HA65 that:

- **restrict development to the southern part of the site; and**
- **through their design and layout, clearly maintains the physical and perceptual separation between Queniborough and East Goscote and preserves the separate identity of those settlements.**

HA67 44 Hoby Road, Thrussington

2.123. Site HA67 is located close to the Thrussington Conservation Area and to the village pond which is a Local Wildlife Site and capable of supporting great crested newts. For this reason, it is particularly important that biodiversity net gain is achieved on site in this location rather than through off site contributions, in accordance with Policy EV6.

Policy DS3(HA67) 44 Hoby Road, Thrussington

We will support development proposals at site HA67 that:

- **maintain and enhance grassland habitats and utilise sustainable drainage systems to enhance the habitat value of the site and its connectivity with the village pond; and**
- **are accompanied by a Design and Access Statement, or similar document, that sets out how the development will maintain and enhance the significance of the heritage assets and their setting, including:**
 - **the protection of the setting of the Conservation Area; and**
 - **the use of a bespoke design approach that is informed by the Conservation Area Character Appraisal, particularly in relation to street layout.**

HA68 Land off Old Gate Road, Thrussington

2.124. Site HA68 Land off Old Gate Road, Thrussington is located close to a number of nationally and locally listed buildings and the Thrussington Conservation Area

Policy DS3(HA68) Land off Old Gate Road, Thrussington

We will support development proposals at site HA68 that are accompanied by a Design and Access Statement, or similar document, that demonstrates how the development will maintain and enhance the significance of the heritage assets, within and adjacent to the site, and their settings including:

- the protection of the setting of the heritage assets within and adjacent to the site through appropriate screening;
- making use of a bespoke design approach that is informed by the Conservation Area Character Appraisal; and
- making use of the topography of the site and walking and cycling routes through it to enable the village's heritage assets to be appreciated by people using those routes.

HA69 The former Rectory and Land at Thurcaston

2.125. Part of site HA69, the former Rectory and Land at Thurcaston is within the Thurcaston Conservation Area and the remainder of the site is adjacent to the Conservation Area. The site is also adjacent to a listed building (Thurcaston Grange).

Policy DS3(HA69) The former Rectory and Land at Thurcaston

We will support development proposals at site HA69 that are accompanied by a Design and Access Statement, or similar document, that sets out how the development will maintain and enhance the significance of the heritage assets within and adjacent to the site and their settings including:

- responding positively to the character of the Conservation Area in terms of its design, layout and materials and make use of a design approach that relates well to the wooded, parkland landscape, and enhances the setting of the Conservation Area and listed building;
- for the part of the site that is within the Conservation Area, make use of a bespoke design approach that is informed by the Conservation Area Character Appraisal; and
- retain the form and footprint of the rectory and the trees within the garden.

Employment Allocations

2.126. Our spatial strategy includes employment allocations made up of existing commitments and an additional allocation at Shepshed which evidence shows will meet the requirements of businesses and communities in Charnwood. These employment allocations will provide sufficient land, choice and flexibility in supply over the plan period to meet our strategic objectives and the wider aims of sustainable development.

2.127. Policy DS4 should be read in conjunction with other policies in the local plan.

Policy DS4: Employment Allocations

We will make provision for employment in accordance with Policy DS1. We will support employment development on the following sites listed in this policy. We will support development that:

- is cohesive and integrated with other allocations set out in this plan including in relation to the provision of infrastructure; and
- is in accordance with the other policies in this plan.

The following sites are allocated for employment, as outlined on the Policies Map:

SITE REF	EMPLOYMENT SITE DESCRIPTION	SITE LOCATION	AREA (ha)
LSEP	Loughborough Science and Enterprise Park in accordance with Policy LUC3	Loughborough	73
ES1	Employment land off Sileby Road - Neighbourhood Plan allocation	Barrow upon Soar	2.3
ES2	Employment land at the North of Birstall Sustainable Urban Extension in accordance with Policy LUA3	Birstall	15
ES3	Employment land at The Warren, for industrial uses and small warehouses	East Goscote	3.95
ES4	Employment land at the West of Loughborough Sustainable Urban Extension in accordance with Policy LUC2	Loughborough	16
ES5	Employment land at Dishley Grange	Loughborough	9
ES6	Employment land at Rothley Lodge, for industrial uses and small warehouses	Rothley	3.35
ES7	Employment land at Loughborough Road, for industrial uses and small warehouses	Rothley	2.2
ES8	Employment land off Fairway Road	Shepshed	5
ES9	Employment land at Watermead Business Park	Syston	12
ES10	Employment land at the North East of Leicester Sustainable Urban Extension in accordance with Policy LUA2	Thurmaston	13
			154.8

Design of Development

2.128. Achieving high quality design is one of the main elements of our vision for the Borough. This aim is supported by the NPPF, which makes clear a high standard of design is a key part of sustainable development and a means to make development acceptable to communities.

- 2.129. The Government's National Design Guide, preparation of a National Design Code and establishment of the Building Better, Building Beautiful Commission show a commitment to improving design nationally. The 2020 Housing Design Audit for England also identifies a need for improvement as the East Midlands continues to be the worst performing English region in terms of design quality of new developments.
- 2.130. High quality design is not just about how development looks; it is also about how it responds to the site and the environment around it. High quality design creates environments where people want to live, work and visit and which are safe, long lasting and adaptable to changing needs. High quality design can also respond effectively to a wide range of issues such as tackling climate change, improving local biodiversity, enhancing a sense of place and providing healthier and more active places. The Covid-19 pandemic has shown the importance of some of these aspects of design, such as the benefits to people of having green spaces within walking distance of their homes. Important design considerations therefore feature in other policies in this plan, particularly in relation to heritage, biodiversity, flood risk, sustainable construction and sustainable transport. Being able to respond appropriately to all of these considerations and understanding how they interact is a key part of achieving high quality design. A successful response in relation to one component is unlikely to overcome defects in the response to others.
- 2.131. While the principles of good design are well-established, there are many ways of describing how it can be achieved. For example, the NPPF sets out six characteristics of well-designed places, the National Design Guide sets out ten characteristics (loosely grouped under three themes), and there is useful guidance produced by specialist organisations in relation to specific design issues. These include:
- Sport England's Active Design Guidance and The Ten Principles of Active Design;
 - Historic England's Good Practice Advice on The Setting of Heritage Assets;
 - Designing Out Crime published by the Design Council; and
 - Manual for Streets.
- 2.132. Both the NPPF and National Design Guide are material considerations in decision making but we encourage applicants to also make use of available specialist guidance and consider the two pillars to good design set out below.

Pillar One: Responding to Place

- 2.133. We will require new development proposals to make a positive contribution to local character, including its heritage, biodiversity and overall sense of place. Because of the importance we place on this, and also on maintaining the individual identity of settlements and their surrounding countryside, we will expect the way in which developments on the edges of settlements are designed to be given particular attention. We will also recognise the role that appropriately innovative and original designs can play in helping to reinforce local distinctiveness and achieve a high standard of architectural quality.
- 2.134. Charnwood has a diverse natural landscape and history of human settlement; this has meant that our towns, villages and different areas of countryside have distinct identities and characters. Successfully designed schemes will draw inspiration from this local distinctiveness. The plan contains place-based policies that set out the key features of different parts of the Borough. The first pillar of our approach to good design is that those policies, along with adopted neighbourhood plans, village design statements and

conservation area character appraisals, should be the starting point for identifying the key aspects of place that will inform how development is designed. This approach will be enhanced when development proposals are informed by local engagement in advance of planning applications being made.

Pillar 2: Design Tools

- 2.135. Our approach to the process of design is based upon Building for a Healthy Life (BfHL). BfHL is a widely used design tool and its latest edition was prepared in partnership with Homes England, NHS England and NHS Improvement, and endorsed by the Home Builders Federation. We recognise the usefulness of BfHL in communicating important design considerations to applicants through illustrations and prompts. Although it is not place specific, we wish to see it used, alongside the place-based prompts described above, as the other major pillar supporting good design in Charnwood.
- 2.136. There are plenty of examples of well-designed new developments in the Borough, as shown in the Charnwood Design Awards' winners and nominees. However, these examples are predominantly small-scale developments. Research has shown that successful application of BfHL principles by major housebuilders in the East Midlands remains generally poor with many new developments failing to score highly against the questions that were the basis for Building for Life 12.



Storkit Meadows, Wymeswold: Shortlisted for the 2019 Charnwood Design Awards

- 2.137. We recognise that larger developments raise a wider range of design considerations, particularly regarding how groups of buildings and areas of open space relate to each other and how they are connected. Good design choices about the location and integration of services and facilities within larger developments can also increase the number of times that they are visited and enable sustainable modes of travel to be used to visit them. The structuring of BfHL around three themes of Integrated Neighbourhoods,

Distinctive Places and Streets for All is therefore particularly relevant to improving design quality in larger developments.

- 2.138. For those developments that require a Design and Access Statement, we will expect those statements to clearly set out how these two pillars have been addressed and how the design of the development has responded to the issues that have been identified. This should cover not just the architectural style and materials of buildings but their layout and arrangement in relation to open spaces, and the pattern and grain of the street network.

Independent Design Reviews

- 2.139. For developments of a significant scale and those on sites which we identify as being in sensitive locations, such as those that form a gateway to a settlement or area within a settlement, we want to see design excellence showcasing the very best use of urban design principles, setting a benchmark for achieving high quality design elsewhere in the Borough and across the region. Independent design reviews can be a helpful tool to influence the design process for these types of developments.
- 2.140. We will require developments of a significant scale and those in sensitive locations to undertake an independent design review, especially the following:
- Land South East of Syston (Site HA1) because of the scale of development;
 - Land at Gynsill Lane and Anstey Lane, Glenfield (Site HA12) because of its scale and impact upon the Green Wedge;
 - Land south of Loughborough (Site HA15) because of the scale of development;
 - West of Anstey (Site HA43) because of the scale of development;
 - Laburnum Way, Loughborough (Site HA16) because of the potential impact on the Charnwood Forest; and
 - Moat Farm, Land south west of Loughborough (Site HA17) because of the potential impact on the Charnwood Forest.
 - We want independent design reviews to be constructive and lead to better placemaking. They can for example provide a positive opportunity for both the local planning authority and the applicant to consider a range of design solutions that result in good placemaking.
- 2.141. To be effective, design reviews need to be incorporated at an early stage of the design process so that any amendments suggested by them can be incorporated into development proposals. It may be necessary for the review process be undertaken several times as development proposals evolve.
- 2.142. The Council will assess development proposals to determine whether an independent design review is appropriate due to their scale or location on a case-by-case basis. It is more likely that a design review will be required on unallocated sites than for those allocated in the local plan as they have not met the combination of characteristics in terms of minimising or mitigating harms, and achieving benefits, for inclusion in our development strategy.
- 2.143. Any design reviews that are required by the Council will be funded by the applicant.

Other considerations

2.144. Good design encompasses a wide range of considerations. The following sections highlight matters that should be used in interpreting our policy and is non-exhaustive.

Design Guidance

2.145. Guidance to be used in planning decisions, particularly with respect to house extensions, amenity, car parking and crime prevention is set out in Appendix 4. This guidance should be considered alongside the other aspects of good design, particularly the need to respond to local context.

Amenity

2.146. The amenity of a place relates to the positive characteristics that combine to make up its character and the way it is enjoyed by people, particularly those who live there. Good design will add to the amenity of an area and protect existing amenities, for example by enhancing its sense of place and protecting its tranquillity.

Retail Centres

2.147. Our retail centres (Town Centres, District Centres and Local Centres) perform a number of functions in terms of the services they provide and are places where people come together to meet. In order to support these functions it is important that the design of developments in and near these locations supports this character, for example by incorporating active frontages, which add interest, life and vitality to the public realm, and responding positively to the grain and vertical and horizontal rhythms (e.g. the building widths, the proportion and scale of windows and doors etc.) of the surrounding townscape.

Equalities Act 2010

2.148. The Council has a duty under the Equalities Act 2010 to have due regard in its decision making to achieve certain objectives for people with protected characteristics. These objectives include eliminating forms of discrimination, advancing equality of opportunity and fostering good relations between persons with and without protected characteristics. The contribution a development proposal makes to the achievement of objectives of the Equalities Act will form part of the consideration of planning proposals.

Neighbourhood Planning

2.149. We expect neighbourhood plans to continue taking a strong lead on the type of design they expect for their area. We have made clear that adopted neighbourhood plans and village design statements will be key starting points for understanding places and their character and therefore of achieving good design. We will encourage those communities who wish to prepare a neighbourhood plan to provide local design guidance which reflects and accords with Building for a Healthy Life principles. Many villages also have a village design statement, and we will continue to work with our communities who wish to influence the design of new buildings using this type of document.

Design Codes

2.150. We will be preparing our own design codes for the Borough. We also encourage their use by applicants, alongside other tools such as masterplanning and development briefs, as an effective way of developing and communicating the design ideas for proposed developments.

Policy DS5: High Quality Design

We will require new developments to make a positive contribution to Charnwood, by responding positively to the local distinctiveness of the area and providing attractive and functional places where people will want to live, work and visit. We will specifically require new developments to:

- **respect and enhance the character of the area, having regard to scale, density, massing, height, landscape, layout, materials, access arrangements, and heritage assets and their setting;**
- **protect the amenity of people who live or work nearby and those who will live in the new development;**
- **be built to last and add to the quality of the area, not just in the short term but over the lifetime of the development;**
- **provide attractive, safe and well managed public and private amenity spaces which support active lifestyles;**
- **provide well-defined, legible and multi-functional streets and spaces that support all users and encourage social interaction; and**
- **reduce their impacts upon, and be resilient to, the effects of climate change in accordance with Policy CC4.**

An independent design review should be carried out for strategic or sensitive development proposals. We will determine on a case by case basis whether an independent design review is required based on the scale of the proposals and the sensitivity of their location.

Any design reviews that are required by the Council will be funded by the applicant.

Planning permission will be refused for developments that are not well designed, especially where appropriate design methods to achieve well-designed places, such as Building for a Healthy Life, appropriate place-based reference points and engagement with the local community, have not been used.

Chapter 3 Place Based Policies

Leicester Urban Area

- 3.1. The Leicester and Leicestershire Strategic Growth Plan identifies Leicester as having a pivotal part to play in the strategy for delivering homes and jobs in Leicester and Leicestershire and looks to develop its role as the 'central city'. The urban settlements of Birstall, Syston and Thurmaston in the South of Charnwood form part of the Leicester Urban Area and are significantly influenced by their physical and functional relationships with the City whilst also having a good range and choice of services and facilities that meet the day to day needs of residents.
- 3.2. There is an area south of the A46 in Anstey parish, and a small residential area adjacent to Hamilton, to the north east of the city, within Charnwood which also form part of the Leicester Urban Area but are not settlements in their own right.
- 3.3. Leicester has significant housing needs yet the opportunities to satisfy this need are constrained within its administrative boundary. Many of the strategic opportunities available within the city are to the north and north west close to Charnwood. There is also growth being delivered in Blaby and Harborough district areas to the north west and north east of the city. A key part of supporting Leicester in its role as 'central city' will be ensuring a joined-up approach to delivering growth in this wider area.

Background

- 3.4. Leicester is one of the oldest cities in England with its origins in the Iron Age. The city has a rich heritage from Roman, Saxon, and Norman times, and became one of the most significant centres for textile and hosiery manufacturing in the UK. The city has grown significantly over the last few decades and now forms part of a continuous urban area which goes beyond its administrative area and is home to 650,000 people.
- 3.5. The proximity of Thurmaston, Birstall and Syston to Leicester has always been a key factor in their growth and development. All were originally Saxon standalone settlements, however, over the years, improving transport links with Leicester allowed new businesses to develop while also giving people the opportunity to travel to work in Leicester. From the 18th century onwards local industries in Syston included framework knitting and shoe manufacture. Later in the 20th century, Syston along with Thurmaston, experienced significant growth of jobs and housing.
- 3.6. The area is influenced by a series of natural and man-made features which have shaped development. The River Soar and Grand Union Canal stretch from the centre of the city into Charnwood and provide recreational opportunities along their length, notably at Watermead Country Park. There are also several major arterial routes, such as the A6, A607 and Anstey Lane which run into the city from the A46 in Charnwood, north of Leicester. The Midland Main Line railway runs northwards from the city to Loughborough and beyond, with the route east to Peterborough branching off at Syston junction. The Great Central Railway also passes through the area with this popular heritage line starting in Birstall and travelling north to Loughborough.

- 3.7. The Leicester Urban Area also holds a significant proportion of the Borough's population with over 20% of people in Charnwood living around the edge of Leicester. 51% of people living in Birstall, Syston, Thurmaston and Anstey travel to jobs in the City and benefit from the range of services and facilities that it has. Whilst there are a significant number of jobs in Charnwood, approximately 34% more people leave the Borough to work than travel in, with 84% of these heading to Leicester. Sustainable transport routes into Leicester allow relatively good access to jobs and the cultural and social opportunities provided by a large urban area.
- 3.8. In addition to having very good public transport connections into the city, Thurmaston, Syston and Birstall also individually provide a full range and choice of services and facilities to residents. These settlements all have a secondary school and more than one option available to residents for a range of services including food shops, primary schools, doctor's surgeries, pharmacies and cash machines. Thurmaston and Syston has the highest concentrations of employment outside the urban centres with between 8-9% of the Borough's total employment located in each of these settlements. Almost certainly related to this, these settlements also have a relatively high level of self-containment for travel to work journeys compared to other settlements.
- 3.9. Thurmaston is home to some of the most deprived households in the Borough, with some areas worsening in deprivation ranking over the last 5 years. Part of Thurmaston borders the Watermead Country Park and is within the South Charnwood Priority Neighbourhood. Our evidence shows pockets of deprivation where there are low levels of income among older people, low levels of education, skills and training and a poor-quality living environment. Community cohesion is also restricted by the physical barriers of the A607 and Midland Mainline railway. The opportunity to benefit the community by linking Thurmaston to Watermead Country Park and the Grand Union Canal has been supported in the past, but none of these initiatives as yet have successfully come forward to impact upon deprivation.

Environmental Context

- 3.10. The Leicester Urban Area sits largely within the Soar Valley landscape character area, with Syston lying within the Wreake Valley area. It also has a relationship with the Charnwood Forest to the west and High Leicestershire to the east. These landscape character areas are an important part of the character and local distinctiveness of the individual urban settlements and their setting.
- 3.11. Many of the locations allocated for new development on the edge of Leicester are situated on sites with sloping topography and are prominent in views from a variety of locations in surrounding countryside. Screening focussed on the edge of such sites is unlikely to successfully integrate development into its landscape setting, as more central parts of new development may still be conspicuous. The allowance for significant planted areas which allows trees with large canopies to mature is likely to be a more successful long-term solution to integrating new development into the landscape. This will require careful attention not just to design and layout, but to long term management and maintenance of public open spaces.

- 3.12. Also important to local distinctiveness are the historic centres of Thurmaston, Birstall and Syston. Conservation Areas have been designated within Birstall and Syston and for each there are nationally and locally listed buildings within and adjacent to the Conservation Area. Whilst not within the Leicester Urban Area, the setting and heritage of the Barkby Conservation Area and the Scheduled Ancient Monument of Hamilton Deserted Medieval Village will also be relevant to the delivery of development in this area.
- 3.13. The River Soar and Grand Union Canal provide a broad green corridor between the city centre and the countryside in Charnwood. This is a green lung which is important for wildlife, visitors and the tourist economy. We will work with partners on a joined-up approach to the River Soar and Grand Union Canal for ecology and leisure purposes and together with Watermead Country Park these are a significant element of our strategy for this important corridor.
- 3.14. Watermead Country Park is the most significant area of open space serving Syston, Thurmaston and Birstall and provides a large area of natural and semi natural green space totalling 144 hectares. It is an important recreational asset for surrounding communities based on a network of old mineral workings and artificial lakes that run north to south along the path of the river. A key issue in this area is the need to improve the connectivity between Thurmaston, Birstall and Wanlip and the Watermead Country Park and to make the most of this high-quality environment as part of supporting the regeneration of Thurmaston Local Centre.
- 3.15. Green Wedges are a long-standing policy designation used by the city of Leicester and the districts that surround it to manage urban growth. The aim of Green Wedges is to guide development form, to provide a 'green lung' into the City and ensure that, as the urban area grows, it is accompanied by open areas for people and for wildlife and to safeguard the identities of communities within and around urban areas. Our strategy is to extend the Leicester Hamilton Green Wedge as part of delivering the North East of Leicester Sustainable Urban Extension.
- 3.16. Our strategy, informed by wider sustainability considerations explained in Section 4, includes development in areas that have previously been identified as Green Wedge. Development in these locations will require careful planning to ensure that the effect upon the separate identities and landscape setting of distinct towns and villages is mitigated and to ensure that linked areas of open space can be maintained into the urban area of Leicester. We will work closely with Leicester City Council to ensure a coordinated approach to the delivery of new development to include areas where the functions of Green Wedge can be maintained. We will use the opportunities brought by new development to provide significantly improved recreational opportunities.
- 3.17. In forming part of the urban area of the city, the communities of Barkby, Birstall, Rothley, Syston, Thurmaston, Thurmaston and Wanlip have increasingly been concerned about their identities as separate places. Our strategy seeks to protect the identity of places and prevent the coalescence of urban settlements and settlements outside urban areas by introducing new Areas of Local Separation.

- 3.18. Our evidence shows us that that there was a quantitative shortfall in the provision of parks and gardens in Syston, Thurmaston and Birstall. Both Syston and Thurmaston have quantitative shortfalls of allotments, and Thurmaston also has an under provision of children’s play and facilities for teenagers. In delivering our development strategy, opportunities to provide new open space and recreational facilities will be sought.

Development Strategy for Leicester Urban Area

Homes and Jobs

- 3.19. Our development strategy directs development to the edge of Leicester as a sustainable location that has a range and choice of services and facilities that meet the day to day needs of residents and which functionally forms part of the Leicester Urban Area. The focus of development at the edge of Leicester reflects our commitment to the economic and social success of the city, which is essential to the success of the wider Housing and Economic Market Area of Leicester and Leicestershire and reflects the Leicester and Leicestershire Strategic Growth Plan’s aim to enhance Leicester’s role as the central city at the heart of the county.
- 3.20. Our strategy allocates most of the Leicester Urban Area growth to two Sustainable Urban Extensions (SUE); one to the north east of Leicester and the other north of Birstall, both of which have planning permission. The two SUEs are the subject of specific policies in this plan which will guide their implementation to ensure they make a positive contribution to sustainable development.
- 3.21. Our strategy allocates a further 2,104 new homes to the Leicester Urban Area through smaller allocations. The growth directed to the edge of Leicester takes account of landscape constraints, including Green Wedges, and the transport infrastructure required to support growth. A key part of our strategy is the delivery of homes and jobs that are supported by the necessary infrastructure. The delivery of growth in the Leicester Urban Area will be supported by continued coordination between the Borough Council, the two Highway Authorities, Highways England and the two Education Authorities to ensure the provision of the necessary infrastructure. Our strategy includes provision for a new primary school on Land South East of Syston.
- 3.22. The south of Charnwood provides significant job opportunities within our Borough, as well as supporting and supplementing the major centre for employment in Leicester. We have identified strategic employment sites at the two SUEs to reflect the need for additional provision close to the city. Land is also allocated for employment close to Watermead Country Park, providing a highly accessible and attractive site for inward investment. This will create jobs close to our Priority Neighbourhood in South Charnwood.

Regeneration

- 3.23. The high-quality recreational opportunities of the Watermead Country Park provide an opportunity for wider regeneration of this area. Development also provides the opportunity to address the severance of the community by major transport corridors and connect the community with the adjacent County Park and heritage canal frontage. Any development close, or with a relationship, to Thurmaston Waterfront or Watermead Country Park must support regeneration of this area and protect and enhance the area’s valuable landscape, tranquillity and biodiversity. We also want to make sure that this area

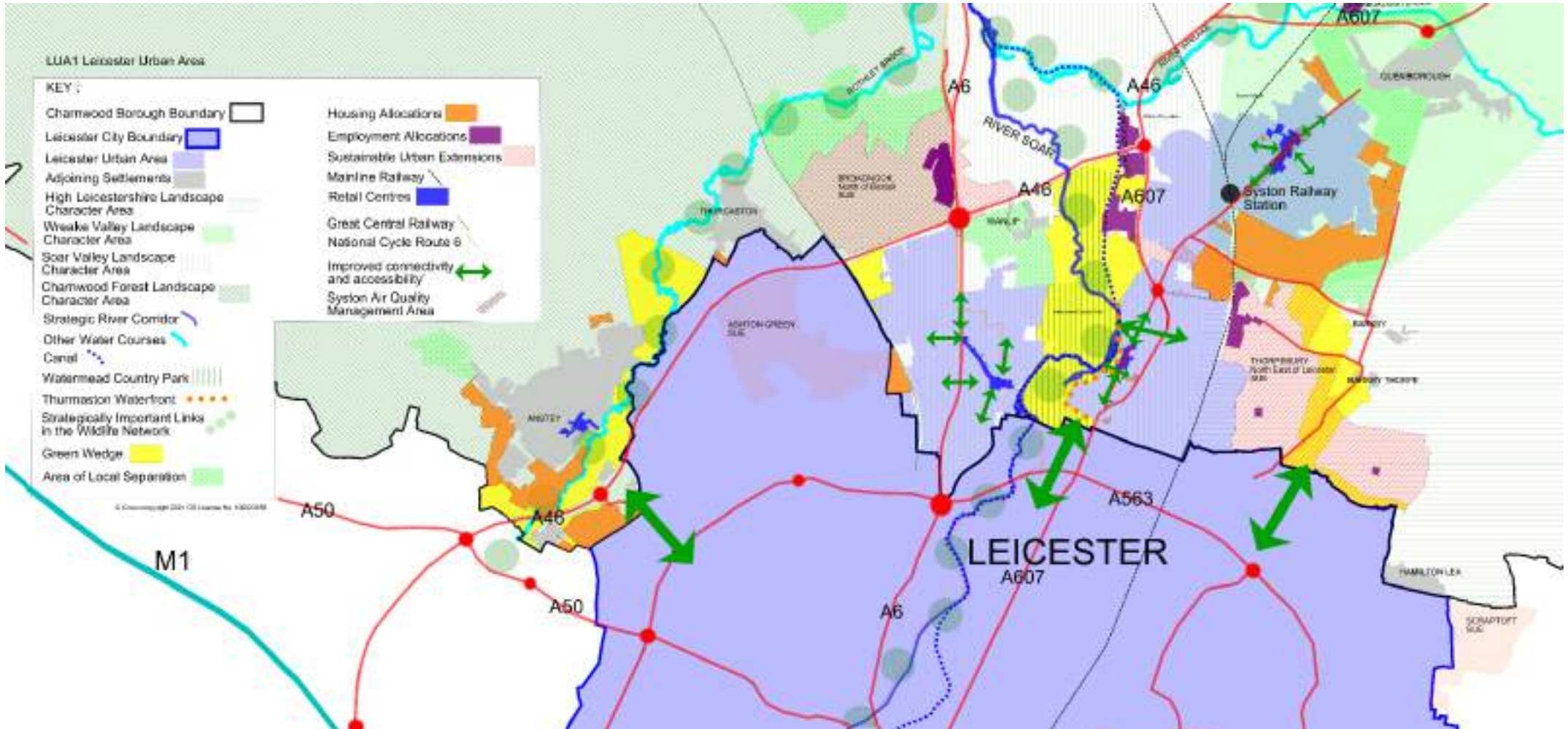
continues to act as a Green Wedge and contributes to community identity on the fringe of the city.

Sustainable Travel

- 3.24. The edge of Leicester enjoys a relatively good transport network connecting our settlements to both the city and Loughborough. As with any large conurbation, the road network can suffer from congestion at peak times in areas such as the A46 Leicester Western Bypass; Melton Road, Syston; and, Anstey Lane, Leicester. However, there are often walking and cycling opportunities available and bus services are good, including a park and ride service at Birstall, although journeys that require more than one bus can be inconvenient. The area is a highly accessible location, and our evidence has identified strategic transport advantages over many other locations in Charnwood.
- 3.25. We will seek to develop these connections and exploit the opportunities that new developments and transport projects will provide to encourage sustainable forms of transport. The constrained road network and breadth of alternatives to the private car provide a real opportunity to shift transport to walking, cycling and public transport in this area.

Retail

- 3.26. Whilst the city of Leicester is the focus for higher order services and facilities in areas such as retail, leisure and cultural activities in the south of Charnwood, there are also town and village centres which provide a focus for communities in the Borough by offering goods and services close to where people live.
- 3.27. Syston District Centre contains national retail chains as well as independent local retailers and provides a strong and varied shopping and service offer. Birstall also has a healthy District Centre with a strong convenience offer and a variety of other retail and service provision that meets the needs of the local community. Melton Road, Thurmaston provides a Local Centre for day to day needs and acts as a focal point for its community. We want to see new development within this Local Centre not only to support its role as a Local Centre but to help our priority for the regeneration of Thurmaston. We want to ensure that development proposals around the edge of Leicester supports the vitality and viability of these centres. We want these centres to continue to provide for day to day needs of their local communities and we will support town centre uses provided this development is consistent with their position in our retail hierarchy.
- 3.28. Thurmaston Shopping Centre, to the north of Thurmaston, provides an out-of-centre retail and leisure offer in Charnwood, and is a popular destination for shoppers drawing custom from outside the Borough. This centre does not form part of our hierarchy of centres for town centre uses.



Policy LUA1: Leicester Urban Area

We will support Leicester Urban Area in its role as the central economic, social and cultural focus of the County. We will do this by supporting development that:

- delivers housing and employment allocations in accordance with Policy DS3 and DS4 or sustainable development that is in accordance with the pattern of development outlined in Policy DS1 and which supports our vision and objectives including making effective use of land;
- ensures the timely and coordinated delivery of infrastructure to support sustainable communities, including coordination across authority boundaries, in accordance with Policies INF1 and INF2;
- improves connectivity and accessibility to Leicester city centre, Birstall and Syston District Centres and Thurmaston Local Centre, particularly by walking, cycling and public transport, capitalising on the accessibility of the Leicester Urban Area, in accordance in Policy CC5;
- ensures Green Wedge functions are maintained and development is co-ordinated across administrative boundaries where this is relevant, in accordance with Policy EV2;
- provides urban form which integrates with the wider landscape setting and responds positively to the relevant local landscape character area of Soar Valley, Wreake Valley, Charnwood Forest or High Leicestershire, in accordance with Policy EV1;
- protects the predominantly open and undeveloped character of Areas of Local Separation, in accordance with Policy EV3;
- protects and enhances the strategically important links in the wildlife network, including the Great Central Railway, River Soar, Grand Union Canal, Green Wedges and locations which provide connectivity between strategically important habitats, in accordance with Policies E5 and EV6;
- protects and enhances heritage features and positively supports local distinctiveness, in accordance with Policy EV8;
- responds positively to the high quality, tranquil setting of Watermead Country Park;
- improves connectivity and accessibility between Watermead Country Park, Thurmaston Waterfront and the wider community; and
- contributes to the regeneration of Thurmaston Local Centre, the Thurmaston Waterfront and the Grand Union Canal.

Leicester Urban Area Strategic Allocations

North East of Leicester Sustainable Urban Extension

- 3.29. The North East of Leicester Sustainable Urban Extension (SUE) is allocated on land adjacent to the Leicester Urban Area to the east of Thurmaston and north of Hamilton (in Leicester).
- 3.30. The site benefits from a hybrid planning permission granted in August 2016 which secured outline permission for the SUE and a detailed permission for the Southern Access Road into Leicester. The planning permission is structured around a detailed Design and Access Statement, six parameter plans and a series of framework and strategy documents, which together guide how development will come forward by establishing a design framework. The detail in these documents are secured by planning

conditions and a legal agreement. Reserved matters have also been approved for the first phase of residential development.

- 3.31. Delivery of the SUE is a key part of delivering the plan's overall spatial strategy. The site is a commitment and is allocated in the local plan to provide a policy framework and certainty around delivery in the long term. We will work with landowners, developers, and other stakeholders to support the delivery of the SUE over the plan period.
- 3.32. We have prepared a vision for the North East Leicester Sustainable Urban Extension in partnership with the developers, Leicestershire County Council and Leicester City Council. The vision is outlined below:

A Vision for the North East of Leicester Sustainable Urban Extension

The North East of Leicester Sustainable Urban Extension will be a locally distinctive, sustainable and thriving new community that is well integrated and has excellent connections with Thurmaston and Leicester. It will assist in realising regeneration opportunities for Thurmaston and north east Leicester and create a new focus for the community east of the railway line but maintain a physical separation from Syston, Barkby and Barkby Thorpe.

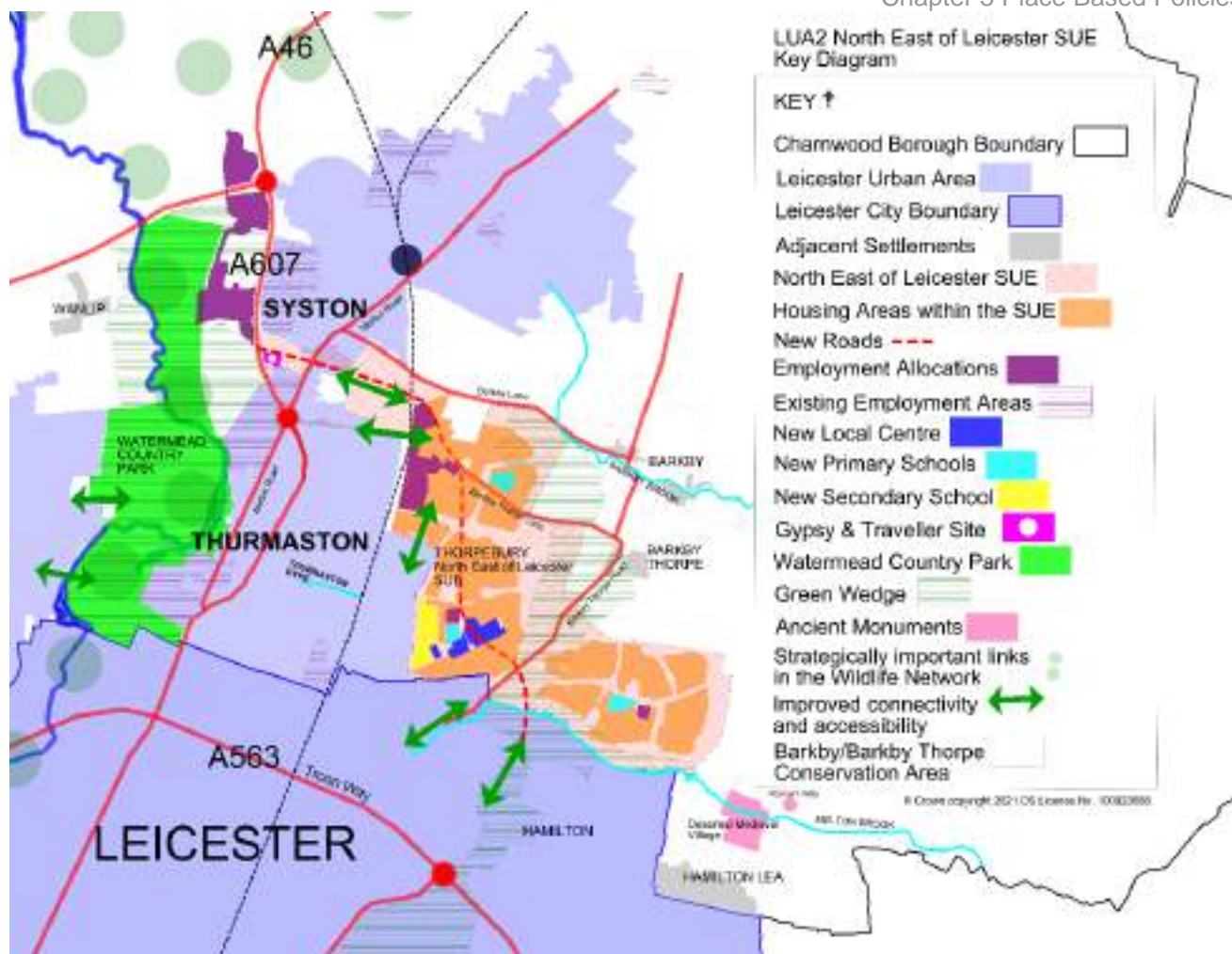
It will provide a balanced mix of high-quality housing as well as diverse employment opportunities and an excellent network of green infrastructure which connects into existing areas of environmental value and includes an extension of the Leicester Hamilton Green Wedge. It will have vibrant centres that provide a heart to the community and accessible community, shopping and business facilities.

Growth will be planned in a sustainable manner and have regard to the protection and enhancement of valuable built and natural resources. Design will be locally distinctive and create attractive, usable and adaptable development that meets high environmental standards, is resilient to climate change and optimises opportunities for sustainable transport choice. Development will deliver a place that is well connected with safe and attractive neighbourhoods that provide opportunities and benefits to existing communities and stimulate investment by new residents, visitors and businesses.

- 3.33. The scale of the SUE requires a comprehensively planned scheme that takes the opportunity to create distinct character areas that respond to the scale, layout and density of the existing neighbourhoods to ensure the new community relates appropriately to neighbouring areas, including Thurmaston. This will mean a mixture of homes and densities to meet the needs of our community and provide a high-quality environment.
- 3.34. We also expect an appropriate mix of business uses that reflect the needs of the local economy and maximises the opportunity to work locally. We want to ensure provision for new and developing business.
- 3.35. We want the SUE to connect new residents to employment, schools, shops, leisure facilities, open spaces and other community facilities both within the development and beyond. Whilst the SUE will include a range of uses to meet day to day needs, residents will also enjoy good connections with the Leicester city centre, Watermead Country Park

and the centres of Thurmaston, Syston and Hamilton where additional services and facilities are available.

- 3.36. The topography rises from Hamilton and Thurmaston to Barkby Thorpe, with Barkby on a plateau to the north. We expect the design of the SUE to protect the identities of Syston, Barkby and Barkby Thorpe and respond to the landscape. This should include avoiding development on the higher ground and ensuring that important views are protected and, where appropriate, used to full effect.
- 3.37. There are features in the local area which are of historic value. The Roman Villa and deserted medieval village of Hamilton are Scheduled Monuments. Historic England has identified the Roman Villa as at risk from ploughing. The conservation areas of Barkby and Barkby Thorpe are also nearby and there is potential for unscheduled archaeology in the area. Although these historic features are outside the development site, we expect their wider setting to be carefully considered at the start of the design process. It will be particularly important to protect views of historic buildings and spaces and consider the impact of access arrangements.
- 3.38. The site of the SUE is currently farmed. There are however two strategically important links in the wildlife networks along the Melton Brook and Barkby Brook which have the most biodiversity value in the area. The development will be expected to respect and enhance these two strategically important links in the wildlife networks supporting the Water Framework Directive and, where appropriate, create new wildlife networks. There are opportunities to create a network across the landscape along on the north-south and east-west axis. Activities that have the potential to disrupt wildlife should be focused elsewhere in the site.
- 3.39. We want the SUE to be designed so that is it resilient to climate change. Our evidence suggests that there is a need for appropriate run-off management and prevention of any increase in flood risk downstream. This should include investigating opportunities to reduce flood risk associated with the Thurmaston Dyke and reduce flood risk in Syston and Barkby through storage options on the site. Appropriate assessment of flood risk was undertaken in support of the approved outline planning application for the SUE.
- 3.40. The SUE is well related to the River Soar and the Watermead Country Park. We want the development to complement and maximise the opportunity for access to this wider Green Infrastructure Network.
- 3.41. We want to see the necessary physical and social infrastructure being delivered at the right time for the new community to foster sustainable lifestyles. Key infrastructure items and when they are expected to be delivered are included in the Infrastructure Schedule in Appendix 3.
- 3.42. Where appropriate and necessary we will use compulsory purchase orders to deliver the SUE in line with the vision.



Policy LUA2: North East of Leicester Sustainable Urban Extension

Land is allocated to north east of Leicester, as shown on the Policies Map, as a sustainable urban extension to deliver a community of approximately 4,500 homes. The development will make a significant contribution to meeting our housing needs by delivering approximately 3,205 homes by 2037 and the remaining homes beyond the plan period.

The sustainable urban extension will create a balanced community and a safe, high quality and accessible environment. We will do this by:

Housing

- seeking 30% affordable homes to meet local needs in accordance with Policy H4;
- seeking a range of tenures, types and sizes of homes in accordance with Policy H1;
- supporting extra care housing where it meets the needs of our ageing population in accordance with Policy H2; and
- requiring a permanent site for gypsies and travellers of at least 4 pitches and a site of at least 4 plots for showpeople in accordance with Policy H9;

Employment

- providing up to 13 hectares of employment land to help meet our strategic and local employment needs in accordance with Policy E1;

Community Facilities

- providing three primary schools and one secondary school, as appropriate to meet the need for school places, as focal points for the new community, in locations that are accessible to both the new and existing communities;
- providing one main accessible Local Centre delivered as part of an early phase of development that is accessible to both new and existing communities, including as a minimum, local shops and a supermarket, small scale employment and a range of non-retail and community facilities and services in accordance with Policy T1;
- including opportunities, where appropriate, for additional smaller centres where they complement the main centre, are well related to a school and meet community needs in accordance with Policy T1; and
- supporting the provision of superfast broadband networks for all homes and businesses in accordance with Policy E3;

Transport

- requiring well connected street patterns and walkable neighbourhoods that provide high quality, safe and direct walking, cycling and public transport routes in accordance with Policy CC5;
- requiring the retention of existing walking, cycling and road connections with Thurmaston and where possible the creation of new links in accordance with Policy CC5;
- requiring a comprehensive package of transport improvements in accordance with Policies CC5 and INF2 and including:
 - new and improved cycling and walking routes, well related to the Green Infrastructure network, connecting to existing and new employment areas and centres, Syston train station and Thurmaston Waterfront;
 - new and enhanced bus services connecting both the western part of the development and eastern part with local employment opportunities and Syston, Thurmaston and Leicester City Centre, as identified through a Transport Assessment;
 - a new main road through the development from Barkby Thorpe Lane at the north to Sandhills Avenue at the south, performing the function of a high street where it passes through the new main centre;
 - appropriate capacity improvements to Barkby Thorpe Lane and the A607/Barkby Thorpe Lane roundabout and if necessary, a new road link from the development to Melton Road and the A607; and
 - other network improvements as identified by an appropriate Transport Assessment;

Environment

- protecting the separate identities of Syston, Barkby and Barkby Thorpe and their Conservation Areas;
- requiring the development to respond to the landscape and surrounding areas to create a locally distinctive development in accordance with Policies DS5 and EV1;
- protecting historic and archaeological features including the setting of Hamilton Deserted Medieval Village and the Roman Villa in accordance with Policy EV8;

- requiring the development to protect and enhance existing wildlife corridors and, where appropriate, provide new corridors to create a coherent biodiversity network in accordance with Policy EV6;
- encouraging the development to, where viable, exceed Building Regulations for carbon emissions in accordance with Policy CC4;
- requiring the development to deliver buildings and spaces that have been designed to be adaptable to future climatic conditions including extremes of temperature, drought and flooding in accordance with Policy CC4;
- requiring development that provides appropriate sustainable drainage systems and flood alleviation measures and where possible reduces flood risk in Thurmaston, Syston and Barkby in accordance with Policy CC1 and CC2;
- protecting and enhancing water quality;
- providing an extension of the Leicester Hamilton Green Wedge including access to and long-term management of a formal parkland as part of an accessible, comprehensive and high-quality network of multi-functional green spaces in accordance with our open space standards in accordance with Policies EV9, EV10 and INF1.

We will do this by working with our public and private sector partners and will require the following to support a planning application:

- a Development Framework including delivery and phasing arrangements and a masterplan informed by an independent Design Review Panel and community consultation including key design principles to ensure the development of a comprehensive sustainable urban extension;
- a Green Infrastructure Strategy to inform the development of detailed proposals and long-term management; and
- a Sustainability Assessment that identifies the developments response to carbon emissions reduction and climate change resilience.

In the event that further outline planning permission is sought, before planning permission is granted, we will require a development brief, design code or equivalent to be prepared to inform detailed planning applications or reserved matters applications.

North of Birstall Sustainable Urban Extension

- 3.43. The North of Birstall Sustainable Urban Extension (SUE) is allocated on land north of Birstall, to the north of the A46, west of the A6, east of the Great Central Railway and to the south and west of the Broadnook Spinney.
- 3.44. The site now benefits from a hybrid planning permission, which was granted in November 2020 which secured outline permission for the SUE and the first phase of development. The planning permission is structured around a detailed Design and Access Statement, parameter plans and a series of framework and strategy documents, which together guide how development will come forward by establishing a design framework. The detail in these documents are secured by planning conditions and a legal agreement.
- 3.45. Delivery of the SUE is a key part of delivering the plan's overall spatial strategy. The SUE is a commitment and is allocated in the local plan to provide a policy framework and certainty around delivery in the long term. We will work with landowners, developers, and other stakeholders to support the delivery of the SUE over the plan period.

- 3.46. This location provides an opportunity to create a new garden suburb to reflect the pioneering work started during the early part of the twentieth century along the Great Central Railway. During the early part of the twentieth century homes were built to Garden Suburb principles along the route of the Great Central Railway. This is particularly evident at the Ridgeway in Rothley, part of the unfinished Rothley Garden Suburb, which was strongly influenced by Hampstead Garden Suburb. The plan included individually designed houses with good sized gardens.
- 3.47. Garden Suburbs are a development of the Garden City movement which sought to combine all the advantages of the town by way of accessibility and all the advantages of the country by way of environment without any of the disadvantages of either.
- Garden Suburb principles include:
 - strong vision, leadership and community engagement;
 - land value capture for the benefit of the community;
 - community ownership of land and long-term stewardship of assets;
 - high quality, imaginative design including homes with gardens;
 - mixed tenure homes which are affordable for ordinary people;
 - a strong local jobs offer, with a variety of employment opportunities well related to homes;
 - generous green space linked to the wider countryside, well managed and high-quality gardens, treelined streets and open spaces with opportunities for residents to grow their own food;
 - access to strong local, cultural, recreational and shopping facilities in walkable neighbourhoods; and
 - integrated and accessible transport systems.
- 3.48. We expect the development to continue the tradition of Garden Suburb housing associated with the Great Central Railway.
- 3.49. We have prepared a vision for the North of Birstall Sustainable Urban Extension in partnership with the developers, Leicestershire County Council and Leicester City Council. The vision is outlined below:

Vision for North of Birstall Sustainable Urban Extension

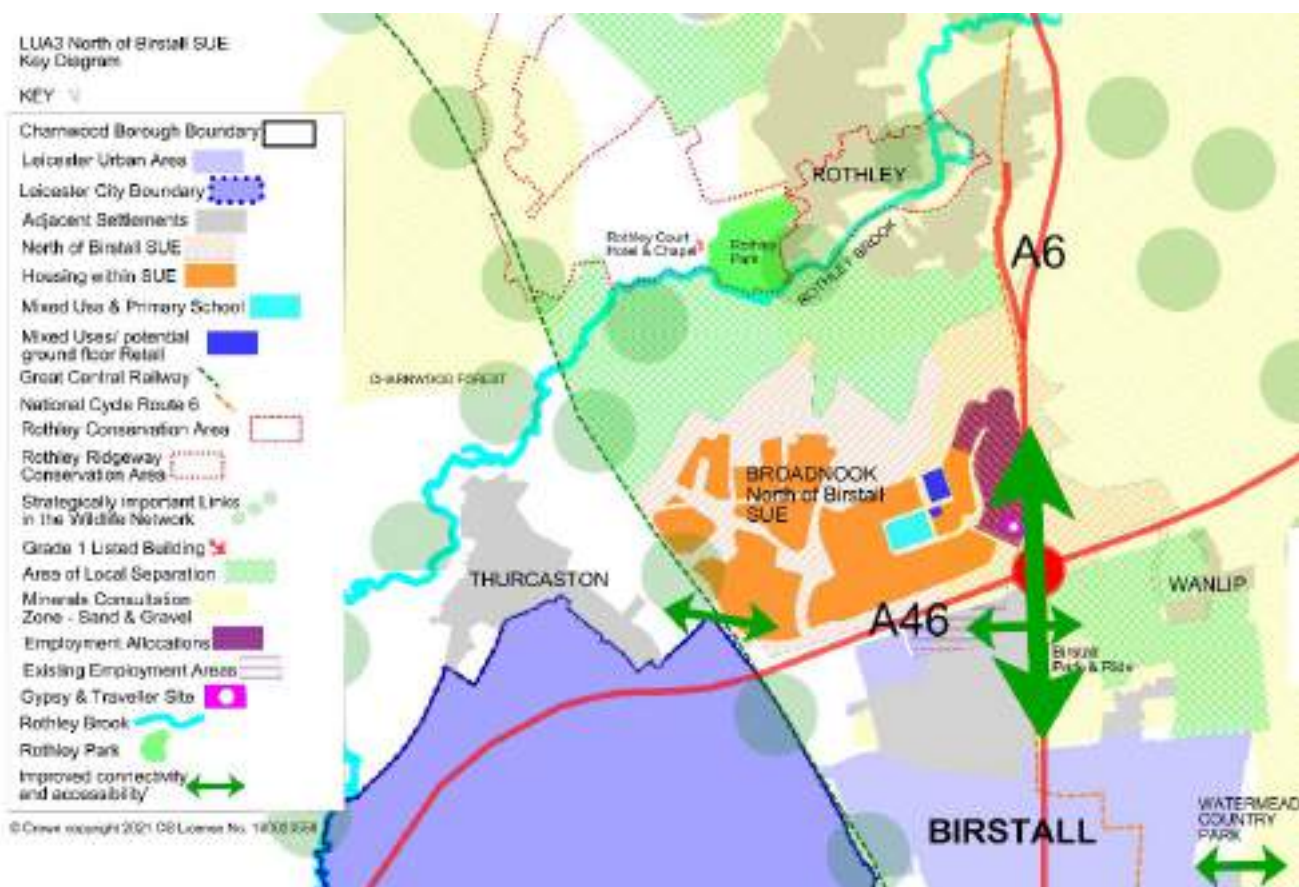
The North of Birstall Sustainable Urban Extension will be known for its reputation as a Garden Suburb. It will combine the benefits of excellent access to Leicester for work and leisure with the benefits of the countryside such as green open space, fresh air, tranquillity and beautiful character. It will have been comprehensively planned to offer an excellent quality of life for its community. The range of homes, jobs, community facilities and shops will meet the day to day needs of the people who live there. Community uses will provide a focus of civic pride.

- 3.50. We expect the SUE to meet the employment needs of the new community in accordance with garden suburb principles. However, given the area's excellent connections and relationship with Leicester there is also an opportunity for new jobs that contribute to our wider employment requirements. We will carefully assess any employment development through the masterplanning process. In total, this direction of growth may deliver up to 15 hectares of general employment land as part of this SUE.

- 3.51. We want this new community to benefit from access to a wide range of services and facilities including schools, shops, new or expanded health facilities and community facilities such as a place of worship and a community centre. We expect new facilities to be delivered as part of the centre within the development. This will reduce the need to travel for the people who live in the new homes and also increase access for the existing community.
- 3.52. We want the SUE to connect new residents to employment, schools, shops, leisure facilities, open spaces and other community facilities both within the development and beyond. Whilst the SUE will include a range of uses to meet day to day needs, they will also enjoy good connections with the City Centre, Watermead Country Park, Charnwood Forest, Loughborough and Birstall District Centre where additional services and facilities are available.
- 3.53. We will expect the development to make the most of opportunities for high quality walking and cycling routes and high frequency bus services. We want the new development to be accessible and connect the community to services and facilities, National Cycle Route 6 and the Park and Ride facility in Birstall.
- 3.54. Whilst we will maximise the opportunities to walk and cycle there will still be a need for new roads to serve the new development, provide links to the wider road network, support high frequency bus services and to avoid adverse impacts on neighbouring communities. This SUE will be next to the A6 and A46 which are the main transport corridors connecting Leicester to Loughborough and the area to the M1 motorway. We will work with our partners to understand the impact of more detailed development proposals on these corridors, the A46/A6 interchange and the wider network and develop a package of transport measures to support the development.
- 3.55. The SUE will provide a garden suburb, a high-quality environment, respecting and responding to the landscape, ecology and heritage in this area.
- 3.56. The topography in this location is partially lower lying on either side of the A6 and rises towards the south west. Rothley is located to the north of this location, beyond the Broadnook Spinney, whilst Wanlip is to the south east of the A6/A46 roundabout. We expect the design of the SUE to protect the identities of Rothley and Wanlip and respond to the landscape. This should include ensuring that important views are protected and, where appropriate, used to full effect.
- 3.57. There are a number of features in the local area which are of historic value. The nearby Rothley Conservation Area and Rothley Park are home to historic buildings including the Grade I listed Rothley Court Hotel and Chapel. There is also potential for unscheduled archaeology in the area. Although these historic features are outside the development location, we expect their wider setting to be borne in mind at the start of the design process.
- 3.58. The site of the SUE is currently farmed. There are however two important wildlife corridors associated with the Broadnook Spinney and the Great Central Railway which have the most biodiversity value in the area. The development will be expected to respect and enhance these wildlife corridors and, where appropriate, create new wildlife networks. This includes considering opportunities to create a network across the landscape along on the north-south and east-west axis to help enhance connections to the River Soar. In

particular, activities that have the potential to disrupt wildlife should be focused elsewhere in the site.

- 3.59. The SUE is well related to the River Soar and the Watermead Country Park. We want the development to complement and maximise the opportunity for access to this wider Green Infrastructure Network for recreation and leisure to the benefit of the existing and new communities.
- 3.60. The eastern part of this location lies within a sand and gravel Minerals Consultation Area and there is potential for minerals resources to be sterilised. We will expect the policies in the Leicestershire Minerals Local Plan to safeguard minerals from sterilisation to be applied and further detailed investigation undertaken to assess the resources that could be affected and the necessary mitigation.



Policy LUA3: North of Birstall Sustainable Urban Extension

Land is allocated to the north of Birstall as shown on the Policies Map as a sustainable urban extension to deliver a garden suburb of approximately 1,950 homes. The development will make a significant contribution to meeting our housing needs by delivering approximately 1,950 homes by 2037.

The sustainable urban extension will create a balanced community and a safe, high quality and accessible environment. We will do this by:

Housing

- seeking 30% affordable homes to meet local needs in accordance with Policy H4;

- seeking a range of tenures, types and sizes of homes in accordance with Policy H1;
- supporting extra care housing where it meets the needs of our ageing population in accordance with Policy H2; and
- requiring a site of at least 4 plots for showpeople in accordance with Policy H9;

Employment

- providing up to 15 hectares of employment land to help meet our strategic and local employment needs in accordance with Policy E1;

Community Facilities

- providing a primary school as appropriate to meet the need for school places, as a focal point for the new community;
- contributing to the provision of secondary school places as appropriate to meet the need for school places;
- providing one accessible Local Centre delivered as part of an early phase of development, including as a minimum, local shops and a small supermarket, small scale employment and a range of non-retail and community facilities and services including a community centre in accordance with Policy T1;
- supporting the provision of superfast broadband networks for all homes and businesses in accordance with Policies E1 and E3; and
- supporting development that maximises the opportunities to create strong social links with Birstall;

Transport

- requiring well connected street patterns and walkable neighbourhoods that provide high quality, safe and direct walking, cycling and public transport routes in accordance with Policy CC5; and
- requiring a comprehensive package of transport improvements in accordance with Policies CC5 and INF2 and including:
 - new and improved cycling and walking routes, well related to the Green Infrastructure network, connecting to existing and new employment areas and centres, the Birstall Park and Ride, Watermead Country Park and Charnwood Forest;
 - bus service enhancements connecting the new community with local employment opportunities and Birstall, Leicester City Centre and Loughborough, as identified through a Transport Assessment;
 - a new roundabout on the A6, north of the A46 interchange;
 - appropriate access arrangements including a connection to the A6 and Rothley;
 - appropriate capacity improvements at the A46 interchange; and
 - other network improvements as identified by an appropriate Transport Assessment;

Environment

- protecting the separate identity of Wanlip, Rothley and Rothley Conservation Area;
- requiring the development to respond to the landscape and surrounding areas to create a locally distinctive development in accordance with Policies DS5 and EV1;
- protecting historic and archaeological features including the setting of Rothley Park and Rothley Conservation Area in accordance with Policy LP24;

- requiring the development to protect and enhance existing wildlife corridors and, where appropriate, provide new corridors to create a coherent biodiversity network in accordance with Policy EV6;
- encouraging the development to, where viable, exceed Building Regulations for carbon emissions in accordance with Policy CC4;
- requiring the development to deliver buildings and spaces that have been designed to be adaptable to future climatic conditions including extremes of temperature, drought and flooding in accordance with Policy CC4;
- requiring development that provides appropriate sustainable drainage systems and flood alleviation measures and where possible reduces flood risk associated with the Rothley Brook in accordance with Policy CC1 and CC2;
- requiring the development to provide an accessible, comprehensive and high-quality network of multi-functional green spaces in accordance with our open space standards, set out in Policies EV9, EV10 and INF1; and
- requiring the development to respond to the minerals safeguarding policies in the Leicestershire Minerals Local Plan.

We will do this by working with our public and private partners and will require the following to support a planning application:

- a Development Framework, including delivery and phasing arrangements and a masterplan informed by an independent design review panel and community consultation including key design principles to ensure the development of a comprehensive sustainable urban extension;
- a Green Infrastructure Strategy to inform the development of detailed proposals and long-term management; and
- a Sustainability Assessment that identifies the development's response to carbon emissions reduction and climate change resilience.

In the event that further outline planning permission is sought, before planning permission is granted, we will require a development brief, design code or equivalent to be prepared to inform detailed planning applications or reserved matters applications.

Loughborough Urban Centre

Background

- 3.61. Loughborough dates back to the Saxon period and in 1221 was granted a Royal Charter by King Henry III to hold a weekly market and an annual fair. By 1600, the hosiery industry was starting to develop and Loughborough Canal opening in 1778 improved connections to London and Birmingham via the Grand Union Canal. The invention of steam operated machinery supported growth, attracting bleach and dye works and other industries including the John Taylor Bell Foundry, The Falcon Works (steam trains and cars), and the Empress Works (cranes). Further expansion of the town took place with the Great Central Railway arriving in 1840. Large mill and industrial buildings were located along the canal with many dye works across the town. The textile and hosiery industries continued to thrive peaking in the 1960s and attracting many immigrants from India and Bangladesh.

- 3.62. Loughborough Urban Centre is the largest settlement in the Borough located in the north west of Charnwood and providing the economic, cultural and social focus for a significant proportion of the Borough. Together with Shepshed it provides the main focus for homes and jobs in the Borough. While Loughborough and Shepshed have separate identities and characteristics they have close inter-relationships and function as a wider urban area. Loughborough is centrally positioned between the cities of Nottingham, Derby and Leicester at the very heart of the UK and the Midlands Engine: an area that is recognised as the 'engine room' of the UK economy
- 3.63. The Leicester and Leicestershire Strategic Growth Plan identifies Loughborough as a market town and a location for managed growth with aspirations for continued town centre regeneration and better services. It also highlights that the town has a close relationship with the Leicestershire International Gateway, providing an attractive and accessible place for workers to live. It also recognises the contribution Loughborough makes to the wider Leicestershire economy, being the location of two sites within the Loughborough & Leicester Science & Innovation Enterprise Zone.
- 3.64. Loughborough is the largest market town in the County with a population of over 67,000 and predicted to exceed 80,000 by the end of the plan period. Loughborough's population is younger and has a stronger skills and occupational profile than county, regional and even England averages. By 2043 its Old Age Dependency Ratio will still be below the England average as it is today. This youthful, skills-rich profile is epitomised by the University with over 17,000 enrolled students and the College with over 10,000.
- 3.65. Loughborough has a range of employment opportunities and high order services that meet all of the day-to-day needs of residents and are accessible to the surrounding area. However, the town's economy under performs and there is a need to level it up with other higher performing economies and balance the gap between its knowledge-based sectors and low skills levels particularly in areas of deprivation.
- 3.66. Our vision for Loughborough town centre aims to capitalise on its rich history, to support the town centre, and for the town to be the main economic, social and cultural heart of the Borough.

Economic Context

- 3.67. Half of the Borough's jobs are located in Loughborough and 53% of the economically active people living in Loughborough work in the town, meaning the town is by far the most self-contained settlement in Charnwood. Loughborough's economy is based on a range of service and manufacturing businesses. Whilst there has been a national decline in heavy and electrical engineering industries, they continue to make an important contribution to the prosperity of Charnwood. In more recent years, as traditional industry has declined, Loughborough has become well known for science and innovation activity in areas such as advanced engineering, bioscience and pharmaceuticals.

- 3.68. Whilst the industrial areas are concentrated in the east of the town, one of the largest employers is Loughborough University, which is located on the western side of the town. The University is home to one of the largest science parks in the UK and is a significant driver of economic prosperity for the Borough and the wider area and its students make up approximately a fifth of the town's population. Loughborough College is located in close proximity to the University and makes a similarly important contribution to the town's education sector.
- 3.69. The multi-site Loughborough and Leicester Science and Innovation Enterprise Zone includes two sites in Loughborough. Charnwood Campus is a Life Sciences Opportunity Zone offering state of the art laboratory space for research and development supporting bio-medical and pharmaceutical industries. Loughborough Science and Enterprise Park (LSEP) is home to knowledge-based businesses specialising in advanced engineering and manufacturing, high value research and development, and energy and low carbon technology. It benefits from the close links it has with Loughborough University and is an important location for the training and development of elite athletes, research into sports science, and provides a base for a number of sports governing bodies.
- 3.70. The 2019 Indices of Multiple Deprivation ranked two of the Lower Super Output Areas (LSOA) of the town in the top 10% of England's most deprived areas. The Bell Foundry and Warwick Way LSOAs sit close to the town centre and have the highest deprivation statistics for the town. Other neighbouring LSOAs are also in the top (meaning worst) 25% of the IMD data for the country. Two Priority Neighbourhoods have been established in East and West Loughborough due to the high levels of deprivation in these areas. The neighbourhoods variously suffer from low incomes, high unemployment, low educational attainment levels, poor health and high crime rates. The east of Loughborough also has pockets of derelict and neglected land.
- 3.71. The shape and pattern of the town centre has remained largely unchanged since the mid-20th century. The two shopping centres, The Carillon Court Shopping Centre (opened in 1972) and the more recent Rushes Centre (opened in 2002), together with a large food store on Ashby Road and the adjacent Regent Place Retail Park reflect the national trend for retail development in the last 30 years, with purpose built units for national retail chains.
- 3.72. More recently, many of the national chains have ceased trading or consolidated their outlets in fewer locations in the country and Loughborough has not been immune to this. Nevertheless, there remain a high proportion of independent traders in the town centre and the challenge will be to maintain this offer against the backdrop of increasing online trading and the town's proximity to the three cities and motorway accessible centres like Fosse Park. Vacancy rates, especially in secondary and peripheral areas, are high and we expect rates to increase post-Covid-19. The changing nature of retailing introduces the opportunity to strengthen the role of the town centre as a place where commercial activity can sit alongside community space and housing; and to take advantage of its unique heritage, open spaces and tourism that the town centre has to offer.

- 3.73. Loughborough's strengths are clustered towards the outskirts of the town rather than in a vibrant centre. This means key components of Loughborough's current success look outwards rather than inwards to the town. Loughborough University, the College and Loughborough Science and Enterprise Park are located very close to Junction 23 of the M1 motorway, an area which will also host the large West of Loughborough Sustainable Urban Extension (SUE). Charnwood Campus is just off the A6 on the road to East Midlands Airport. Loughborough Railway Station, only 70 minutes from London and therefore a potential attractor of inward investment, is 15 minutes walking distance east of the town centre, creating a long east-west primary spine from there through the town centre to the college, university, Science and Enterprise Park and SUE.
- 3.74. Loughborough benefits from a good walking and cycling network and there are good commercial bus services to Leicester and other centres. The town is, however held back by structural weaknesses in its local internal connectivity, which will only be exacerbated as it grows outwards away from the centre. While it is a walkable town with good accessibility for pedestrians and cyclists, there are key routes that are not attractive or safe. There are opportunities to improve connectivity, improve health benefits through more walking and cycling and improve the inclusion of deprived communities. Future regeneration projects will aim to enhance connectivity including improving walking and cycling routes between the town centre and the University and College, and to create stronger links between the railway station, the town centre and the heritage quarter.
- 3.75. Loughborough Railway Station has direct and regular services to Leicester, Nottingham, London and other destinations around the country. We are working with our partners to explore the potential to reopen the Syston Chord to passenger traffic, which would connect the Midland Mainline to the Birmingham/ Stanstead Line. This would connect Melton to Nottingham and could provide a direct connection between Loughborough and Cambridge, two renowned centres for research.
- 3.76. Loughborough also benefits from good access to the local and strategic road network. The M1 motorway lies to the west and improvements to the capacity of Junction 23 and the A512 as part of our growth at Shepshed and Loughborough has recently been completed. However, there is congestion at peak hours on key routes in the town including the A6 and along Epinal Way.

Environmental Context

Landscape

- 3.77. The western part of the town lies within Charnwood Forest landscape character area which provides a wooded landscape setting to the town, part of its local distinctiveness. The main routes to the west of the town provide gateways to the Charnwood Forest Regional Park. The eastern area of Loughborough sits within the Soar Valley landscape character area, the flat wide floodplain has significantly constrained the growth of the town to the east and therefore future projects to address flood risk in Loughborough will be supported. There is a small area of land between Loughborough and Shepshed that lies within the wider Langley Lowlands character area. Although it adjoins other landscape character areas around Loughborough, it shows transition features of its neighbouring landscapes. These landscape character areas are an important part of the character and local distinctiveness of Loughborough and its setting.

- 3.78. Many locations allocated for new development on the edge of Loughborough are situated on sites with sloping topography and are prominent in views from a variety of locations in surrounding countryside, including the Charnwood Forest. Screening focussed on the edge of such sites is unlikely to successfully integrate development into its landscape setting, as more central parts of new development may still be conspicuous. The allowance for significant planted areas which allows trees with large canopies to mature is likely to be a more successful long-term solution to integrating new development into the landscape. This will require careful attention not just to design and layout, but to long term management and maintenance of public open spaces

Biodiversity

- 3.79. The way Loughborough grows needs to take account of the strategically important natural resources of the Charnwood Forest to the south west along with the River Soar/Grand Union Canal to east and it needs to maintain the important Green Infrastructure connections between them. The gaps between Loughborough and surrounding settlements are narrowing, and the diagram shows strategically important links in the wildlife networks to the south and to the north of Loughborough which require protection and enhancement.
- 3.80. Loughborough, whilst predominantly urban in character, contains a variety of green spaces that provide places for recreation and also for wildlife. Within the built-up area to the west there are the ancient woodlands of Holywell and Burleigh Woods. These sites are part of an ecological network providing stepping stones for wildlife and contribute to the quality of place for local residents. The need for development has been balanced with the impact upon wildlife habitats and appropriate mitigation is factored into the capacity of sites.

Watercourses

- 3.81. Several tributaries to the Soar also run through Loughborough. They include Black Brook (also a Local Wildlife Site), Burleigh Brook and Wood Brook. These continue to support a range of wildlife despite being heavily canalised and culverted in some sections. Where they form part of managed open space they contribute significantly to the public realm. These watercourses are a valuable environmental and recreation asset to the town however, they require careful management to preserve their quality and value, and to manage flood risk. The Woodbrook runs through the town centre, partly in a culvert and flows near a number of allocated sites. Our Level 2 Strategic Flood Risk Assessment states that these sites are developable but detailed consideration would need to be given to the impact of both fluvial and surface water flood risk as part of a detailed local flood risk assessment. Developers should also ensure that they enter meaningful engagement with the Environment Agency at pre-application stage to understand the most up to date assessment and the types of mitigation measures that will be required including any limitations on development.

Settlement Identity

- 3.82. Quorn, Hathern and Woodthorpe are settlements in close proximity to Loughborough where communities have increasingly been concerned about their identities as separate places. We have identified Areas of Local Separation south and north of Loughborough to maintain the predominantly open and undeveloped character of the gaps between Loughborough, Hathern and Quorn. In planning for site HA16 South of Loughborough it will be important to ensure that Woodthorpe retains its immediate landscape setting in order to maintain the historical visual association that the hamlet has with agriculture.

Open Spaces

- 3.83. There is a good network of open spaces in Loughborough including parks and gardens and amenity green space and the town benefits from having the Charnwood Forest and River Soar corridor within a short walk from the urban edge. Our evidence tells us that the urban nature of some Loughborough wards means that demand for space is significantly higher than elsewhere in the district due to the population particularly in Garendon and Hastings Wards. In delivering our development strategy, opportunities to provide new recreational facilities will be sought and where this is not possible, we will seek to maximise the quality of existing sites and improving their accessibility.

Heritage

- 3.84. There are 90 Listed Buildings, 2 Ancient Monuments and 8 conservation areas in Loughborough. Garendon Park, to the west of the town, is a Registered Park and Garden containing many historical features including the Triumphal Arch (Grade I) and the Temple of Venus (Grade II*). The historic environment in Loughborough is essential in creating a distinctive place in which to live and work and needs to be safeguarded from inappropriate development. It is important that growth in Loughborough is managed carefully to strike a positive balance between safeguarding the natural and built environment and ensuring the future prosperity of the town.

Air Quality

- 3.85. There are two Air Quality Management Areas (AQMA) in Loughborough, the Loughborough AQMA in the town centre focused along A6 Derby Road and A512 Ashby Road (road traffic emissions) and the Great Central Railway AQMA (steam train emissions). There are two site allocations close to the Loughborough AQMA at Devonshire Square and Baxter Gate, which may have the potential to impact on air quality in and around the town centre. These locations are also within the boundary of the Loughborough East Priority Neighbourhood. We will therefore require sustainable transport modes to be prioritised in the planning for these developments to minimise the impact on air quality in these areas.

Development Strategy for Loughborough

Homes and Jobs

- 3.86. Our development strategy directs development to Loughborough as the location in Charnwood which provides the best access to jobs, services, infrastructure and sustainable travel options. The scale of development directed to Loughborough reflects our commitment to the town as the main economic, social and cultural centre of the Borough whilst recognising the need to respond to the environmental context of the town.
- 3.87. Most of the housing growth in Loughborough is allocated to the West of Loughborough Sustainable Urban Extension (SUE). Our strategy identifies Loughborough for urban intensification and concentration and allocates a further 2,242 new homes including a mixture of urban and greenfield sites of varying sizes. Sites have been identified in and close to the town centre to assist with our ambition to make the best use of redundant land and buildings, regenerate the public realm and to support its social and economic role. The growth directed to the edge of Loughborough takes account of landscape constraints, notably Charnwood Forest and settlement identity, and the transport and education infrastructure required to support growth. Our strategy includes provision for a new primary school to the south of Loughborough to support growth and developments will be expected to contribute towards the costs of education needs arising from their developments.
- 3.88. To support Loughborough's role as the economic focus for the Borough we will meet the employment needs of the town by delivering 16 hectares of employment land at the West of Loughborough Sustainable Urban Extension and a further 9 hectares of employment land at Dishley Grange. We will support the Council's vision for Loughborough to be recognised for its role in the region's knowledge-based economy with the Loughborough Science and Enterprise Park and Loughborough University at the heart of Loughborough's brand as a centre for excellence. Our strategy allocates 73 hectares of land adjacent to the University for the continued long-term expansion of Loughborough Science and Enterprise Park for knowledge-based businesses.
- 3.89. We will continue to work with our partners at Loughborough University and Loughborough College to further develop learning, creativity and innovation and assist in the commercialisation of research. This includes supporting the growth of Loughborough University by providing for the expansion of the University campus and providing opportunities which encourage our graduates to remain employed or set up their own business within the Borough and to deliver support for entrepreneurship in the community.
- 3.90. In parallel we will work with the promoters of Charnwood Campus to capitalise upon the legacy of world class buildings and laboratories vacated by a major research establishment to regenerate the facility as a centre for life sciences and biomedical research and development. This will consolidate the role of Loughborough as a centre for high technology and knowledge-based businesses.

Town Centre and Regeneration

- 3.91. The continued vitality and viability of Loughborough town centre is key to our regeneration strategy for the town. Loughborough's town centre includes a historic Market Place, a variety of shops and services but faces competition from larger centres like Leicester, Nottingham and Derby, along with new models of internet based shopping and other forms of online commerce.
- 3.92. The area to the east of the town centre is identified as Loughborough's Industrial Heritage Quarter. Many of the former industrial premises are now underused or in a poor state of repair offering an opportunity for the delivery of new homes and businesses. Regeneration opportunities including the redevelopment of redundant and underused land and property will be supported where they retain and enhance the remaining heritage assets.
- 3.93. The Tourism Blueprint for Charnwood recognises the tourism potential of our industrial past and its key heritage attractions such as the Great Central Railway, the Grand Union Canal and Taylor's Bell Foundry and Museum and the opportunity for a heritage trail is being investigated.
- 3.94. The Great Central Railway is an established heritage railway that runs between its main base in Loughborough and Birstall and is expanding its successful events programme and on-site offer. We will support development and investment in the infrastructure necessary to enhance the railway's appeal as a major tourism destination.
- 3.95. The River Soar and Grand Union Canal Partnership's vision for the delivery of improvements to the canal corridor will be supported in association with the regeneration of the Loughborough Industrial Heritage Quarter and the opportunities for enhanced linkages between the water way and the town centre.
- 3.96. The Loughborough Bell Foundry Trust is restoring key parts of the historic Grade II* Listed Taylor's Bell Foundry to enhance the commercial operation and attract more visitors.
- 3.97. The former landfill site at Allsopps Lane is currently neglected and could provide a major informal recreational area for the local community. We want to see it reclaimed for new green space and have identified it as a priority project in our Open Spaces Strategy.
- 3.98. Nottingham Road provides a direct route between the Loughborough Railway Station and the town centre and passes close to these heritage assets. There have been recent improvements to the public realm around the station; however, these have not been continued along Nottingham Road. We will encourage and support improvements to the public realm which enhances the walking and cycling experience from the station and link these to the heritage trail and wider connectivity improvements within Loughborough.
- 3.99. The Council will continue to work with partners and seek opportunities for funding to support our regeneration priorities for Loughborough. Several regeneration projects relating to the town centre have been initiated in order to enhance the economic, social and environmental prospects of the town. Proposals that support the aims of these and other regeneration projects will be supported, including:

- improving the public realm including the retail centre, heritage assets, key open spaces and to make it is easier for people to move between the railway station, the town centre and the education sector/enterprise park to the west of the town;
- unlocking the town's potential in terms of careers, enterprise, community projects and key development sites;
- specific public realm projects such as the Bedford Square Gateway; Nottingham Road, the Lanes and Links and Parish Green;
- culture and heritage projects such as Loughborough Bell Foundry; the Great Central Railway and the Riverside Regeneration; and
- projects to address flood risk in Loughborough including a flood defence scheme for the town centre which in turn would help to unlock development sites within the town that are currently constrained by flood risk.

3.100. The longer-term effects of the Covid-19 pandemic are unknown, but it is anticipated that it will accelerate trends for more shopping to be carried out online and may alter how people use town centres. Given these uncertainties, a more flexible and innovative approach to planning for Loughborough town centre is likely to be needed if our vision and objectives for the town centre are to be achieved. Uses which provide a reason for people to visit, spend time and which support economic activity in Loughborough town centre will be encouraged.

3.101. The Council's spatial vision expressed through the Loughborough Town Centre Masterplan is that:

Loughborough Town Centre Masterplan Vision

Loughborough Town Centre will be a successful and vibrant place with a strong identity that stems from its role as a market town and home to Loughborough University. It will be an attractive destination with a diverse retail and leisure offer, a mix of housing and a wide range of employment opportunities.

The town will be easy to access with a well-connected network of vehicular and pedestrian routes. Activity in the town will be supported by a range of events and innovative marketing, business and promotional strategies that will make Loughborough a great place to be.

3.102. The Masterplan identifies opportunity sites that are currently under-utilised and offer potential for development to strengthen the town centre offer and improve the townscape and sense of space.

1. Baxter Gate;
2. Aumberry Gap;
3. Devonshire Square;
4. Sainsbury's store on Ashby Road; and
5. Loughborough University School of Art and Design building.

- 3.103. The site at Baxter Gate, which is located to the south of the Baxter Gate leisure complex and to the north of Pinfold Gate, was the only one of the five sites identified as suitable for significant retail development. Having regard to the amount of retail development that is needed in the plan period, the network of centres and the strengths and weaknesses of Loughborough town centre, the Baxter Gate site is considered to be the most appropriate site for accommodating the Borough's need for retail floorspace. A mixed-use scheme on this site will be supported where this assists the vitality and viability of Loughborough town centre. The Council will be flexible in its approach to town centre uses on this site, given the uncertainties that might arise in a post Covid-19 world.
- 3.104. Following on from the successful redevelopment of Aumbery Gap, we will support the redevelopment of the other opportunity sites and any other town centre developments, where this supports the vitality and viability of the town centre and responds to the Loughborough Town Centre Masterplan.
- 3.105. We are also working with our partners to secure a Loughborough Town Deal Scheme with a shared vision that *'Loughborough will be a great place to live, learn, work, and grow – offering residents, communities, businesses, the university and college, opportunities to participate fully in the town's development. It will be digitally, culturally and physically connected, providing industries for the future, cherishing its heritage, with healthy neighbourhoods and opportunities for all.'*
- 3.106. The Loughborough Town Deal Board includes the Borough Council, Loughborough University, Loughborough College, Love Loughborough, Leicestershire County Council, the Leicester and Leicestershire Enterprise Partnership, Charnwood Together Economy and Skills Group, local businesses and the Loughborough MP. The Board have identified projects that will bring about social and economic improvements to the town. The Town Deal Investment Plan proposes a range of projects which will:
- improve skills levels to boost job prospects;
 - redefine the town centre to ensure it is well-used and vibrant for the future;
 - improve links between the east and west sides of town, from the railway station through to the town centre through to the Loughborough Science and Enterprise Park;
 - improve flood defences for the town;
 - reduce carbon emissions by encouraging more walking and cycling;
 - unlock areas prime for development for housing, leisure and commercial use;
 - build on Loughborough University's reputation as a centre for innovation, research and sport;
 - showcase the town's unique heritage to attract more visitors to the area by supporting Taylor's Bell Foundry, Great Central Railway and improving the canal environment; and
 - improve job prospects and life skills for 5,000 young people from disadvantaged background.
- 3.107. The Towns Fund has already provided £750,000 in forward funding to deliver the Skills and Enterprise Hub in the town centre.

- 3.108. We will also continue to work closely with the Loughborough Town Team and the Love Loughborough Business Improvement District to support smaller interventions which can deliver local and immediate change at relatively low cost, such as themed events, pop up shops, public realm interventions and support for existing community projects.
- 3.109. Public realm improvements are underway in the town centre and will be completed within the plan period. We will support the implementation of continued improvements including those identified through the development of the Loughborough Lanes Strategy. This aims to improve the overall experience of the town centre for people and enhance retail loops to increase footfall for businesses by encouraging improvements to the large number of lanes and alleyways that play an essential role in linking many of the town's important destinations. Other public realm projects that enhance the public realm of the town centre and provide better linkages between it and the knowledge-based sector to the west of the town, therefore broadening resident access to this growing employment sector, will be supported.
- 3.110. We also recognise that encouraging people to live in the town centre and supporting flexible workspaces/offices and commercial uses beyond the traditional retail offer, will support and complement Loughborough's vitality and viability.

District Centres

- 3.111. Loughborough has two District Centres at Gorse Covert and Shelthorpe and a Local Centre at Sharpley Road. These District and Local Centres support their local communities and are well-used. We want these centres to continue to provide for day to day needs of their local communities and we will support development for town centre uses that is consistent with their position in our town centre hierarchy.

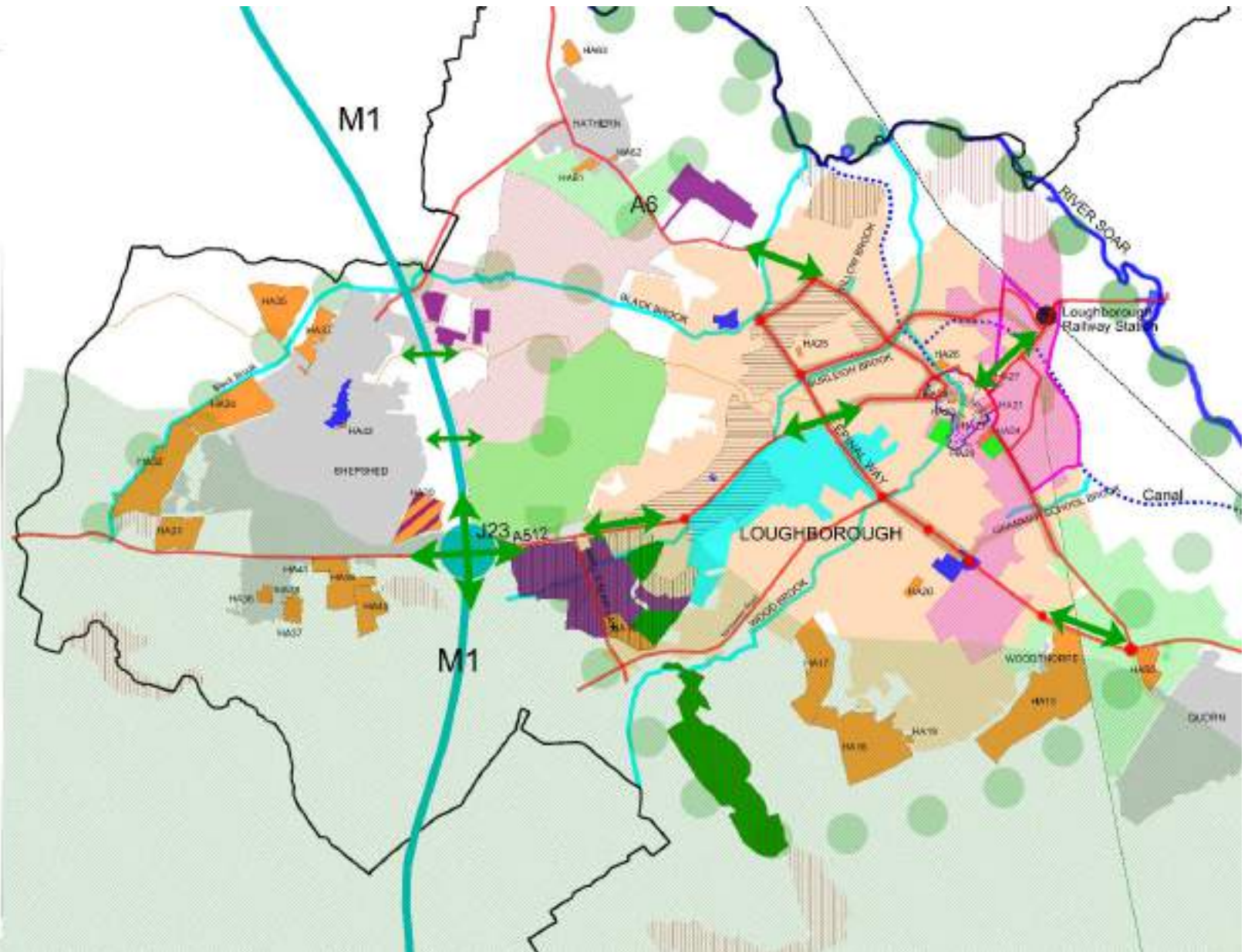
Sustainable Travel

- 3.112. Car usage is much lower in Loughborough than other parts of the Borough and there is an opportunity to encourage this further and increase the number of journeys made by sustainable transport modes. There is a comprehensive cycling and walking network to the west of the town centre providing routes from the edge of the town, past the University to the town centre.
- 3.113. We will work with our local partners to improve connectivity across the town and will produce a Local Cycling and Walking Infrastructure Plan for Loughborough and set out proposals for a public realm scheme that links the railway station to the town centre and the University, making the most of our unique heritage.
- 3.114. Making areas, such as Loughborough town centre, more accessible by foot and bicycle will also help to revitalise and further improve our local economy and regenerate the physical fabric of the town and its heritage assets. We will seek to improve the connectivity of Loughborough and exploit the opportunities that new developments and transport projects will provide to encourage sustainable forms of transport. The busy road network and breadth of alternatives to the private car provide a real opportunity to shift transport to walking, cycling and public transport in Loughborough.

LUC1 Loughborough Urban Centre

KEY

- Chamwood Borough Boundary 
- Loughborough Urban Centre 
- Adjacent Settlements 
- West of Loughborough Sustainable Urban Extension 
- Housing Allocations 
- Employment Allocations 
- Enterprise Zones 
- Loughborough Industrial Heritage Quarter 
- Loughborough East Priority Area 
- Loughborough Town Centre 
- Loughborough West Priority Area 
- Loughborough Primary Shopping Area 
- Retail Centres 
- Mainline Railway 
- Great Central Railway 
- Cycle Route 6 
- Loughborough University/College 
- Air Quality Management Areas 
- River Soar 
- Canal 
- Other Watercourses 
- Ancient Woodland 
- Garendon Park 
- Chamwood Forest Regional Park 
- Parks 
- Strategically Important Link in the Wildlife Network 
- SSSI 
- Area of Local Separation 
- Improved connectivity and accessibility 



Policy LUC1: Loughborough Urban Centre

We will support Loughborough Urban Centre in its role as the main economic, social and cultural heart of the Borough. We will do this by supporting development that:

- delivers allocations in accordance with Policy DS3 or sustainable development that is in accordance with the pattern of development outlined in Policy DS1 and which supports our vision and objectives including making effective use of land;
- ensures the timely and coordinated delivery of infrastructure to support sustainable communities, in accordance with Policy INF1;
- improves connectivity and accessibility within Loughborough and to surrounding settlements, particularly by walking, cycling and public transport, in accordance with Policy CC5;
- provides urban form which integrates with the wider landscape setting and responds positively to the relevant local landscape character area of Charnwood Forest, Soar Valley or Langley Lowlands, in accordance with Policy EV1;
- protects the predominantly open and undeveloped character of Areas of Local Separation in accordance with Policy EV3;
- protects and enhances the Charnwood Forest and River Soar and the strategically important links in the wildlife networks which connect them, in accordance with Policy EV6;
- supports measures to mitigate flood risk including contributions towards flood alleviation works in the wider catchment of the Woodbrook or other water courses flowing through or adjacent to the town;
- secures the redevelopment of the opportunity sites, following the design principles set out in the Loughborough Town Centre Masterplan, unless it can be clearly demonstrated that an alternative high-quality design solution is needed to ensure a viable scheme; and
- conserves and enhances the heritage and tourism value of Loughborough's Industrial Heritage Quarter and its heritage assets, including the Great Central Railway, Grand Union Canal and Taylor's Bell Foundry, in accordance with Policy EV8 including:
 - proposals to reconnect the northern and southern sections of the Great Central Railway and associated infrastructure;
 - requiring development adjacent to the Grand Union Canal to provide an active waterfront with public access; and
 - supporting proposals that enhance the landscape and biodiversity value of the former Allsopps Lane refuse tip and provide for public access.

Loughborough Town Centre

We will make a significant contribution to the regeneration and continued vitality and viability of Loughborough by supporting and encouraging retail, leisure, office, professional services and other town centre development in the Town Centre.

Non main town centre uses, including homes, will be supported where they form part of a mix of uses that provide activity throughout the day and evening and complement the main retail attractions of the town centre.

We will support development in the Town Centre that:

- reinforces and enhances the compact, legible and walkable character of Loughborough town centre maintaining the Market Place at its heart;
- maintains continuous street frontage activity within the Primary Shopping Area;
- makes a significant improvement to the character and appearance of Loughborough town centre, particularly at points of arrival into the town centre;
- makes a significant improvement to pedestrian and cycle connections within the town centre, including to surrounding public open spaces;
- provides improvements to the infrastructure for markets and events; and
- is designed to address public safety and wider security, particularly in areas where large numbers of people congregate.

Our additional need for non-food retail floor space will be met as part of a mixed-use development of allocation HA22 at Baxter Gate/Pinfold Gate. We require a coordinated and integrated approach to the redevelopment of this key opportunity site that:

- includes a retail parade, major new car park and housing and health centre as necessary in consultation with the Clinical Commissioning Group;
- follows the design principles set out in the Loughborough Town Centre Masterplan unless it can be clearly demonstrated that an alternative high-quality design solution is needed to ensure a viable scheme;
- takes account of the Air Quality Management Area; and
- prioritises sustainable modes of transport.

Loughborough Urban Centre Strategic Allocations

3.115. We have prepared a vision for the West of Loughborough Sustainable Urban Extension and Loughborough Science and Enterprise Park in partnership with the developers, landowners and Leicestershire County Council. The vision is outlined below:

A Vision for the West of Loughborough Sustainable Urban Extension and Loughborough Science and Enterprise Park

The West of Loughborough sustainable urban extension and Science & Enterprise Park will provide the opportunity to put local connectivity at the centre of the vision for growth in the north of the Borough. Connectivity to employment, services and open space for the benefit of new and existing residents, reducing the need to travel by car.

It will create a connected urban system of Loughborough and Shepshed with a historic park at the centre. Whilst the separate identities of the towns will remain, there will be an improved level of connectivity to and between Loughborough and Shepshed.

There will be a network of walking and cycling routes and bus services providing excellent connectivity to facilities, services and open spaces.

The sustainable urban extension will be a new community with its own character. It will be of mixed density and provide a variety of homes to meet the needs of all sections of the community including older people. The Local Centre will be a vibrant place day and night, providing a heart to the community.

The sustainable urban extension and Science and Enterprise Park will provide residents with a variety of employment opportunities. There will be excellent links between employment areas north east of Loughborough, within the sustainable urban extension and at the University and Science & Enterprise Park. The Science & Enterprise Park will support the needs and aspirations of the University for growth, whilst reinforcing the knowledge-based focus of Loughborough.

There will be a resilient biodiversity network that links Charnwood Forest to the River Soar Valley. Existing ecological sites and wildlife corridors such as the Black Brook and Burleigh Brook will be enhanced, and ecological sites will be reconnected.

Garendon Registered Park and Garden will be opened up for public access and the monuments and parkland will be restored and managed for the benefit of our community.

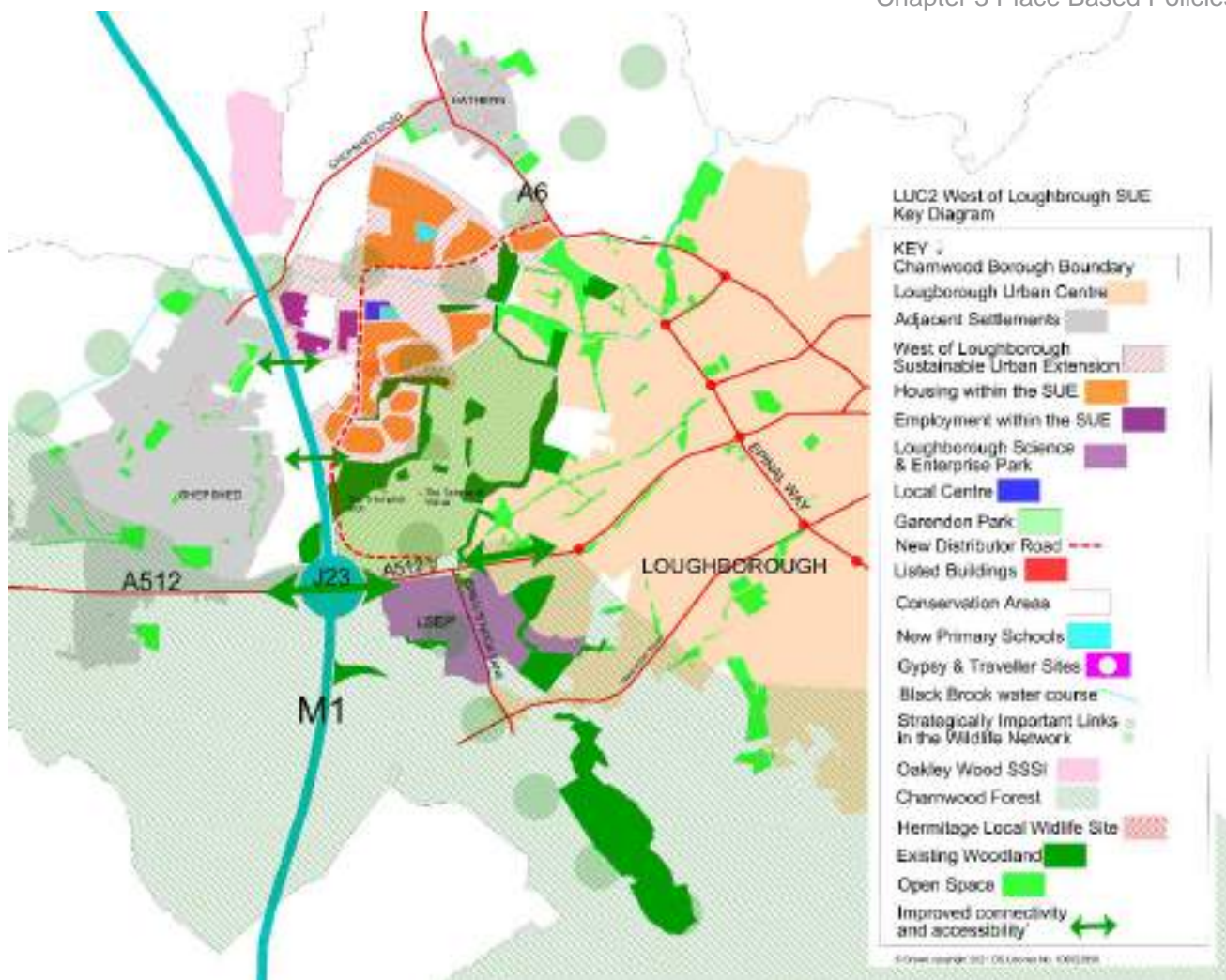
The design of the development west of Loughborough, will be strongly informed by the unique local character and the historic setting provided by Charnwood Forest and the Garendon Registered Park and Garden. Urban design of the development in this growth area will weave the local style into the development as well as introduce new innovative and creative solutions.

West of Loughborough Sustainable Urban Extension

- 3.116. The West of Loughborough Sustainable Urban Extension (SUE) is allocated on land to the west of Loughborough, north of Garendon Registered Park and Garden and west of the A6 to the north of the town.
- 3.117. The site benefits from planning permission granted in 2018 which secured outline permission for the SUE. The planning permission is structured around a detailed Design and Access Statement, parameter plans and a series of framework and strategy documents, which together guide how development will come forward by establishing a design framework. The detail in these documents are secured by planning conditions and a legal agreement.
- 3.118. Delivery of the SUE is a key part of delivering the plan's overall spatial strategy. The site is a commitment and is allocated in the local plan to provide a policy framework and certainty around delivery in the long term. We will work with landowners, developers, and other stakeholders to support the delivery of the SUE over the plan period.
- 3.119. The scale of the SUE requires a comprehensively planned scheme that takes the opportunity to create distinct character areas that respond to the scale, layout and density of the existing neighbourhood to ensure the new community becomes a part of Loughborough. This will mean a mixture of homes and densities to meet the needs of our residents and provide a high-quality environment.

- 3.120. We expect the SUE to include employment development so that people living in the development and nearby have the opportunity to live close to work as part of our plans to reduce commuting.
- 3.121. An essential part of a sustainable community is to have a centre that acts as a focal point for the community providing goods and services close to where people live. Our evidence suggests that the development should include one new Local Centre that provides a mixture of small-scale employment and local shops, a supermarket and a range of non-retail services such as a cafe or a public house. The scale of 'town centre' uses within the new Local Centre should support our strategy for the regeneration of Loughborough Town Centre and Shepshed District Centre and to protect the vitality and viability of surrounding centres, whilst also responding to the lack of provision for food shopping in the west of Loughborough.
- 3.122. To ensure that people living in this new community have services close to where they live it may be appropriate to have an additional smaller centre that complements the main centre. We expect any smaller centre to be well related to the school to provide a focus for the community and reduce the need to travel by car.
- 3.123. We want the SUE to connect the new residents to employment, schools, shops, leisure facilities, open spaces and other community facilities both within the development and beyond. Whilst the SUE will include a range of uses to meet day to day needs, they will also enjoy good connections with Loughborough town centre along with Shepshed and Gorse Covert District Centres where additional services and facilities are available.
- 3.124. We will expect the SUE to make the most of opportunities for high quality walking and cycling routes and high frequency bus services. We want the SUE to be accessible and connect the community to services and facilities, Loughborough Railway Station, Charnwood Forest and provide safe routes across the M1 motorway in support of our regeneration priority for Shepshed District Centre.
- 3.125. Whilst we will maximise the opportunities to walk and cycle there will still be a need for new roads to serve the new development, provide links to the wider road network, support high frequency bus services and to avoid adverse impacts on neighbouring communities. The SUE will deliver a new strategic distributor road, from the A512 to the A6 north of Loughborough. This will run through Garendon Registered Park and Garden, aligned closely with the M1 motorway. Through the Park, this will have the character of an estate road and be designed sympathetically to help reduce impact on the heritage assets. This strategic distributor road will include a link to Hathern Road which connects the development to Shepshed and Hathern.
- 3.126. The duelling of the A512 together with improvements to Junction 23 of M1 have already been undertaken in anticipation of additional traffic generated by the development.

- 3.127. The SUE will also include a new road designed to function as a high street for the development which will be a focus for community and commercial uses. A high-quality environment respecting and responding to the landscape, ecology and heritage in this area will also be delivered in association with the development.
- 3.128. The topography in this location rises from the site southwards up to the Temple of Venus in the Registered Park and Garden and then falls into a shallow bowl before ascending once again northwards towards a second the ridgeline located to the south of Hathern. We expect the design of the SUE to protect the identities of Hathern and Shepshed and respond to the landscape including the relationship the site has with Charnwood Forest. This should include avoiding development on the ridgeline south of Hathern and ensuring that important views are protected and, where appropriate, used to full effect.
- 3.129. The SUE is located to the north of Garendon Registered Park and Garden. The Park includes the remains of a Cistercian Abbey and Mansion, with fishpond and mound which is a scheduled monument. It also includes a Grade I listed building called the Triumphal Arch, a Grade II* listed building called the Temple of Venus and other Grade II listed buildings. Historic England has registered the park and garden because of its importance and identifies the registered park, Triumphal Arch and Temple of Venus as being at risk due to their condition, maintenance and uncertain future. There is also potential for unscheduled archaeology in the area.
- 3.130. The development provides the opportunity to restore the Park and Garden and its monuments and provide appropriate public access for the first time, securing its long-term future. We expect these opportunities, together with careful design, to inform a comprehensive strategy to mitigate the impact of development on the Park.
- 3.131. The area includes strategically important links in the wildlife network which are part of the ecology network connecting the Charnwood Forest to the Soar Valley. These corridors include the Black Brook, Hathern Drive, a series of woodlands along the western edge of Loughborough, a disused railway line and connect to the Hermitage Local Wildlife Site.
- 3.132. We expect the development to respect and enhance these strategically important links in the wildlife network for their important biodiversity value and, where appropriate, create new wildlife networks. There are opportunities to create a network across the landscape along the north-south and west-east axes. There is an opportunity to re-connect isolated ecological assets, such as the Site of Special Scientific Interest at Oakley Wood. Activities that have the potential to disrupt wildlife should be focused elsewhere in the site.
- 3.133. The M1 motorway runs along the site's western boundary. We expect the layout and design of the site to mitigate the impacts of noise and pollution associated with the M1 motorway.
- 3.134. The SUE will provide appropriate public access to Garendon Registered Park and Garden. This will provide a formal park, including recreation and leisure space in keeping with the character of the historic park



Policy LUC2: West of Loughborough Sustainable Urban Extension

Land to the west of Loughborough is allocated as a sustainable urban extension to deliver a community of approximately 3,200 homes by 2037. The development will make a significant contribution to meeting our housing needs.

The sustainable urban extension will create a balanced community and a safe, high quality and accessible environment. We will do this by:

Housing

- seeking 30% affordable homes to meet local needs in accordance Policy H4;
- seeking a range of tenures, types and sizes of homes in accordance Policy H1;
- supporting extra care housing where it meets the needs of our ageing population in accordance Policy H2; and
- requiring a permanent site for gypsies and travellers of at least 4 pitches and a site of at least 4 plots for showpeople in accordance with Policy H9.

Employment

- providing up to 16 hectares of employment land to help meet our strategic and local employment needs and support the regeneration of Loughborough and Shepshed in accordance with Policies DS1, LUC1 and SUA1;

Community Facilities

- providing two primary schools as appropriate to meet the need for school places, as focal points within the new community;
- contributing to the provision of secondary school places if necessary to meet the need for school places;
- providing one accessible Local Centre, delivered as part of an early phase of development, including as a minimum, local shops and a small supermarket, small scale employment and a range of non-retail and community facilities and services in accordance with Policy T1;
- including opportunities, where appropriate, for an additional smaller centre where it complements the main centre, is well related to the school and meets community needs in accordance with Policy T1; and
- supporting the provision of excellent electronic communications networks for all homes and businesses in accordance with Policy E3.

Transport

- requiring well connected street patterns and walkable neighbourhoods that provide high quality, safe and direct walking, cycling and public transport routes in accordance with Policy CC5;
- requiring the retention of walking, cycling and road connections with Loughborough and Shepshed and where possible the creation of new links in accordance with Policy CC5;
- requiring a comprehensive package of transport improvements in accordance with Policies CC5 and INF2 and including:
 - new and improved cycling and walking routes, well related to the Green Infrastructure network, connecting to new and existing employment areas including the Science & Enterprise Park and Dishley Grange, new and existing centres and Garendon Registered Park and Garden;
 - new and enhanced bus services linking the new community with local employment opportunities, Loughborough Town Centre, Shepshed District Centre and Loughborough Railway Station;
 - a new road providing the function of a high street where it passes through the new main centre;
 - a new strategic distributor road through the development to connect to the A512 at the south and the A6 (south of Hathern) to the north;
 - a new road link from the distributor road to Hathern Road;
 - dualling of the A512 between Snell's Nook Lane and M1 motorway J23;
 - capacity improvements to M1 motorway J23; and
 - other network improvements as identified by an appropriate Transport Assessment.

Environment

- protecting the separate identities of Hathern and Shepshed and their Conservation Areas;
- responding to the landscape and surrounding areas to create a locally distinctive development in accordance with Policies DS5 and EV1;
- protecting and mitigating impacts on historic and archaeological features including Garendon Registered Park and Garden, the scheduled monument and listed buildings within the Park in accordance with Policy EV8;
- protecting and enhancing existing strategically important links in the wildlife networks and where appropriate, provide new links to create a coherent biodiversity network in accordance with Policy EV6;
- encouraging the development to, where viable, exceed Building Regulations for carbon emissions in accordance with Policy CC4;
- delivering buildings and spaces that have been designed to be adaptable to future climatic conditions including extremes of temperature, drought and flooding in accordance with Policy CC4;
- requiring development that provides appropriate Sustainable Drainage Systems and flood alleviation measures and where possible reduces flood risk in Loughborough in accordance with Policy CC1 and CC2;
- including appropriate measures to mitigate any noise and air quality impact from the M1 motorway;
- provide public access to, restoration and long-term management of Garendon Registered Park and Gardens as a public park and heritage assets consistent with their significance; and
- provide an accessible, comprehensive and high-quality network of multi-functional green spaces in accordance with our open space standards in accordance with Policies ENV9, ENV10 and INF1.

We will do this by working with our public and private sector partners and will require the following to support a planning application:

- a Development Framework, including delivery and phasing arrangements and a masterplan informed by an independent Design Review Panel and community consultation including key design principles to ensure the development of a comprehensive sustainable urban extension;
- a Heritage Strategy to inform the detailed mitigation proposals for the restoration and long-term management of heritage assets;
- a Green Infrastructure Strategy to inform the development of detailed proposals and long-term management; and
- a Sustainability Assessment that identifies the developments response to carbon emissions reduction and climate change resilience.

In the event that further outline planning permission is sought, before planning permission is granted, we will require a development brief, design code or equivalent to be prepared to inform detailed planning applications or reserved matters applications.

Loughborough and Science and Enterprise Park

- 3.135. The teaching and research expertise of Loughborough University is of regional and national importance, particularly in sports sciences and performance. The University is the Borough's largest employer, with more than 3,500 staff, and 17,000 students.
- 3.136. The Loughborough Science and Enterprise Park, located alongside the University, is one of the largest science parks in the UK with a diverse range of potentially high growth businesses within the knowledge-based and high technology manufacturing sectors. The initial phases of the Science and Enterprise Park has been successful and makes a significant contribution to our economy. On that basis the allocated extension to the Science and Enterprise Park is carried forward from our Core Strategy to support its continued expansion and enable long term planning of the Science and Enterprise Park beyond the plan period to recognise its lasting importance to the wider regional economy.
- 3.137. The Science and Enterprise Park remains central to our vision for Charnwood and its extension will help achieve a strong, responsive and competitive economy in the Borough. Exploiting the full commercial and research potential of the University is a priority we share with our partners, including the University, the Leicester and Leicestershire Enterprise Partnership and Leicestershire County Council.
- 3.138. The importance of the Science and Enterprise Park to not only Charnwood, but also the wider region, is highlighted by its inclusion as one of three sites within the Loughborough and Leicester Science and Innovation Enterprise Zone designated in April 2017. The dynamic innovation community, a world-class research base and graduate supply along with the offer of financial incentives and the priority partnership working available will help drive job creation and business growth.
- 3.139. We have identified the best strategy to enable high technology manufacturing and knowledge-based businesses alongside the University's core business needs. We will work with our partners to sustain the momentum of that development to drive the delivery of the Loughborough Science and Enterprise Park. This will provide a positive framework for inward investment and business interest within and beyond the plan period.
- 3.140. Our evidence suggests that future demand for space on the Science and Enterprise Park is expected to come from four main sources and we have identified a demand for space from:
- start-ups and very small companies requiring small units and shared facilities in a multi-occupancy facility;
 - existing technology-based firms, predominantly drawn from the Derby/Nottingham and Leicester triangle;
 - larger corporate companies with research and development related projects from other parts of the UK and abroad requiring a site to develop their own facilities; and
 - major new University-related research and development projects which cannot easily be accommodated in the existing University facilities.

- 3.141. The extension of the Loughborough Science and Enterprise Park complements the new homes and local jobs in the adjoining SUE and makes the best use of new and existing infrastructure. The Loughborough Science and Enterprise Park will be expected to contribute towards infrastructure in conjunction with the SUE.

Business and Innovation

- 3.142. We do not want to see the Loughborough Science and Enterprise Park used for general industrial development or warehouses. The Loughborough Science and Enterprise Park concept is based on providing land for businesses within the knowledge-based sector. Knowledge-based businesses are those which are based on their intensive use of technology and/or human capital. While most businesses are dependent in some way on knowledge as inputs, knowledge-based businesses are particularly dependent on knowledge and technology to generate revenue, they rely on the creation, evaluation and trading of knowledge. These types of businesses include high and medium technology manufacturing, communications technology, financial and professional services, creative and cultural industries and employment in education and health care. We do not want to see the Loughborough Science and Enterprise Park used for general industrial development or warehouses.

Knowledge Based Sector

“The knowledge-based economy” is an expression coined to describe trends in advanced economies towards greater dependence on knowledge, information and high skill levels, and the increasing need for ready access to all of these by the business and public sectors. (OECD Definition)

- 3.143. However, we want to continue the relationship between business innovation and learning. For that reason, the Loughborough Science and Enterprise Park makes provision for University uses, including teaching and research activities, student accommodation and sports infrastructure where this doesn't diminish the main focus of the site for knowledge-based businesses.
- 3.144. We wish to ensure that the uses within the Loughborough Science and Enterprise Park maintain its unique character as a place for knowledge-based activity (both University, commercial and other research activities) and that a strong “community of innovation” is built. This can be achieved by the establishment of a clear and robust gateway policy, in conjunction with the University and other partners, such as the Leicester and Leicestershire Economic Partnership. The operation of such a policy will provide an important control mechanism for the occupiers and the uses they carry out in the Science and Enterprise Park; and help to attract similar occupiers by giving them an assurance that the Park will continue as a high quality, specialist facility.
- 3.145. The policy will be designed to guarantee that all companies and organisations on the Science and Enterprise Park will be:
- engaged in knowledge-based activities that complement the academic activities of the University (or be specialist organisations engaged in the support of such businesses);
 - and

- willing to engage on an on-going basis in discussion of mutually beneficial joint activities across the spectrum of teaching, research, and knowledge exchange.

Landscape

- 3.146. The landscape to the west of the University provides a particularly attractive approach to Loughborough. It is an attractive area which forms the north-eastern part of Charnwood Forest Regional Park together with the National Forest and as such the requirements of Policy EV4 will apply. It includes important habitats, such as the ancient woodlands at Holywell Wood and Burleigh Wood, both of which are Local Wildlife Sites. The opportunity should be taken for the development to create and improve habitats, reflecting the established character. To the south of the shallow valley of the Burleigh Brook the land rises towards the Outwoods, providing an open foreground to the elevated areas of Charnwood Forest. The landscape is bisected by Snell's Nook Lane.
- 3.147. The landscape will need to be planned for carefully. Early phases of the Science and Enterprise Park have maintained a parkland setting by retaining 40% of the development site as open and undeveloped. The extension to the Science and Enterprise Park within this attractive landscape setting is only considered acceptable because of its outstanding economic advantage and the expectation that high quality buildings can be developed in a similar landscaped parkland setting.
- 3.148. There is around 31 hectares of land to the east of Snell's Nook Lane. With around 40% of the site being retained as parkland we expect to see around 18.5 hectares developed. There is around 42 hectares of land to the west of Snell's Nook Lane, within the National Forest; with around 40% of the site being retained as parkland we expect to see around 25 hectares developed.
- 3.149. The development's scale, form, character and design must respect the site's topography, natural features and setting. As a gateway to Loughborough the site provides an opportunity to provide landmark buildings on prominent frontages in support of our vision for high quality design set out in Policy DS6. We have worked with our partners to develop a concept masterplan and design principles that responds to the landscape and our vision. This is intended to provide an illustrative example of how the development of the Science and Enterprise Park could be delivered in the future rather than a restrictive framework which is rigidly enforced. As such we would welcome any adaptations which reflect our aims for the science park and will assist in its delivery.
- 3.150. The Science and Enterprise Park offers the potential to reduce our carbon footprint through design, including the careful layout and orientation of buildings. The development must achieve high standards of sustainable construction and design.
- 3.151. We want the Science and Enterprise Park to be designed so that is it resilient to climate change. We expect the development to maintain a greenfield run-off rate, protect and enhance water quality, in support of the Water Framework Directive. We have worked with our partners to explore opportunities to reduce flood risk. Our evidence suggests that there is a need for appropriate run-off management and consideration of storage options to prevent any increase in flood risk downstream. This should include

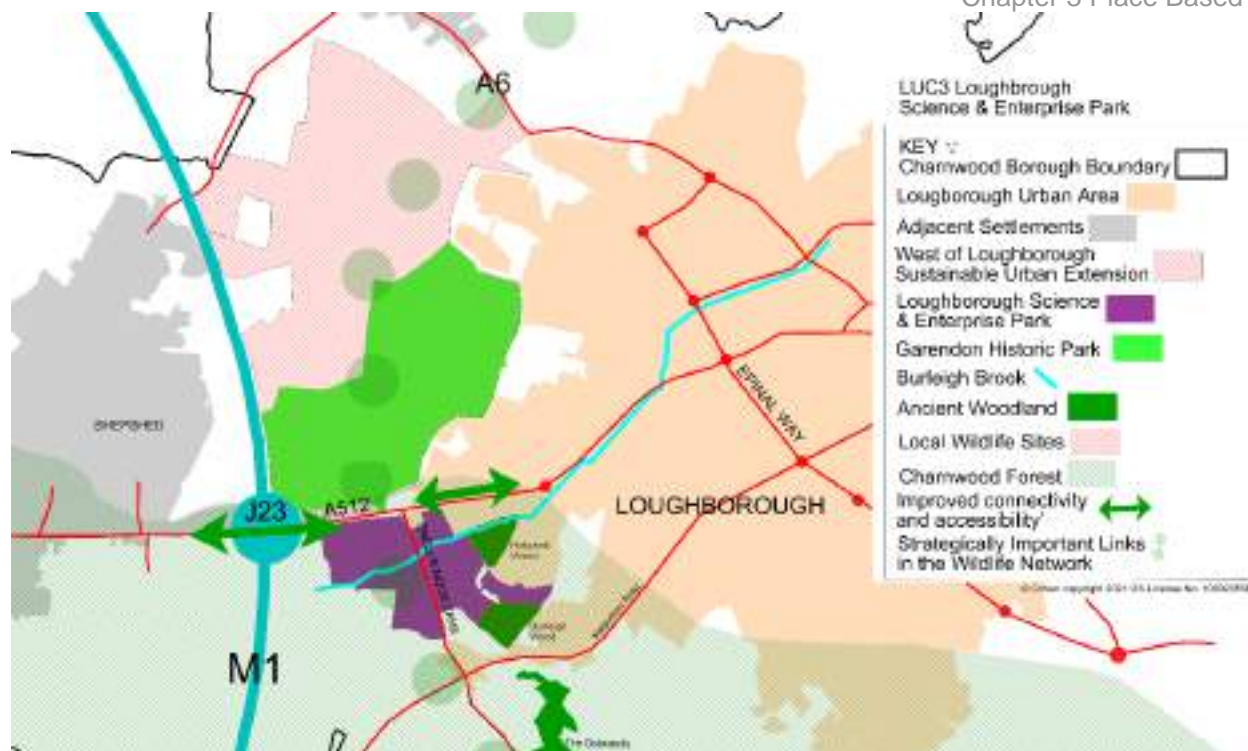
investigating opportunities to reduce flood risk associated with the Burleigh Brook and reduce flood risk in Loughborough.

Access and Travel

- 3.152. The development should be fully accessible and legible, supported by facilities that encourage walking and cycling. The site is well served by existing bus services providing direct connections to the town centre, Leicester, Nottingham and Coalville, along with destinations in between. The potential for a significantly increased customer base will support improvements to those services delivering wider benefits across the public transport network.
- 3.153. We will expect the Development Framework, masterplan and development proposals to be informed by a Transport Assessment in accordance with Policy INF2.

Delivery

- 3.154. We will work with our partners to seek public and private funding and inward investment. The demand for development to support knowledge-based business is difficult to predict. We want to be ready for global inward investors and will also pursue schemes to support business start-ups and growth. A successful Science and Enterprise Park will have major benefits for the economy of Leicestershire and the East Midlands.
- 3.155. The advantages of its unique location and quality landscape will demand a phased approach capable of both promoting appropriate development and responding positively to opportunities as they arise.
- 3.156. We do not want to see ad hoc and poorly related development take place on the Science and Enterprise Park. A concept masterplan has been developed to evidence how a positive framework for an integrated development could be provided. We will support any similar cohesive framework which would achieve a similar comprehensive development.
- 3.157. The provision of infrastructure will be timed to service the needs of the relevant phase of development. We will expect to see a phasing strategy as part of the early parameter plan that establishes the timing of infrastructure.
- 3.158. We are working with our partners, including the University, to maximise the opportunities for local employment and businesses to benefit from the Loughborough Science and Enterprise Park. We will produce a joint Economic Development Strategy which will show how new jobs and other training opportunities that arise from the Science and Enterprise Park will be targeted towards local people. Training, apprenticeships, education and supply-chain opportunities for local businesses will be promoted during construction and through the operation of the Science and Enterprise Park.



Policy LUC3: Loughborough Science & Enterprise Park

We will allocate 73 hectares of land to the west of Loughborough University for an extension to the Science and Enterprise Park.

This will include 31 hectares of land to the east of Snell's Nook Lane and 42 hectares to the west of Snell's Nook Lane.

By 2037 the Science and Enterprise Park will have delivered suitable knowledge-based business space in a landscaped campus that:

- provides for uses that directly relate to the University's own operational activities including teaching, research and development, administration, student accommodation and sports facilities;
- provides for the development of businesses operating within or directly supporting the knowledge-based sector;
- delivers a range of development opportunities that includes an innovation centre, space for business start-ups, grow on units for small and medium sized enterprises and potential for inward investment;
- provides for appropriate ancillary uses to serve the Science and Enterprise Park and ensures that any main town centre uses are in accordance with Policy T1;
- protects historic and archaeological features including the setting of Garendon Registered Park and Gardens and its assets in accordance with Policy EV8;
- integrates with the sensitive landscape and respects its character, biodiversity and appearance in accordance with Policies EV1 and EV6;
- retains 40% of the overall site area for Green Infrastructure, designed to maintain key linkages across the site connecting into the surrounding network in accordance with Policy ENV9;

- provides high quality design and innovation in the form and layout of the development, buildings and green space in accordance with Policy DS5;
- where viable, exceeds the sustainable construction techniques in accordance with Policy CC4;
- delivers buildings and spaces that have been designed to be adaptable to future climatic conditions, including extremes of temperature, drought and flooding, in accordance with Policy CC4;
- includes appropriate Sustainable Drainage Systems and flood alleviation measures and where possible reduces flood risk in Loughborough in accordance with Policies CC1 and CC2;
- provides genuine choice to walk and cycle and is well connected to public transport networks in accordance with Policy CC5; and
- makes a positive contribution to the provision of highway infrastructure as identified through a Transport Assessment in accordance with Policy CC5 and INF2.

We will do this by working with our public and private sector partners, including Loughborough University, to:

- prepare a gateway policy to ensure the Loughborough Science and Enterprise Park maintains its unique character as a place for knowledge-based activity;
- agree a flexible Development Framework, including delivery and phasing arrangements and a masterplan that sets parameters and a phasing strategy for the delivery of a cohesive development;
- establish an economic development strategy to capture the wider benefits of the development; and
- support the University in the development of management and marketing practices that assist the delivery of the Loughborough Science and Enterprise Park.

We will require the flexible Development Framework and detailed planning applications to be informed by a Green Infrastructure Strategy and a Sustainability Assessment that identifies the developments response to carbon emissions reduction and climate change resilience.

Shepshed Urban Area

- 3.159. Shepshed is located in the north west of the Borough on the west side of the M1 motorway. It is the second largest settlement in Charnwood and together with Loughborough it provides the main focus for homes and jobs in the Borough. While Loughborough and Shepshed have separate identities and characteristics they have close inter-relationships and function as a wider urban area.
- 3.160. The town lies within an area identified by the Leicester and Leicestershire Strategic Growth Plan as the Leicestershire International Gateway. This is an area of land focused around the northern parts of the A42 and M1 motorway that includes East Midlands Airport, the East Midlands Gateway (a strategic rail freight terminal) and other land and settlements in North West Leicestershire.

- 3.161. Our vision and objectives for Shepshed are to support the Leicestershire International Gateway, through the provision of new homes and jobs, to secure its regeneration and to make the most of its location on the edge of the Charnwood Forest.

Background

- 3.162. The development of Shepshed since the medieval period has been influenced by the wool industry, linked to the nearby Charnwood Forest to the south and the Cistercian Abbey at Garendon to the east. The town centre remains focussed around the marketplace but the pattern of nineteenth and twentieth century expansion has resulted in the town centre now being located in the northern part of the town. The key routes from the Market Place lead to the north (Hathern and Long Whatton) and south to the Charnwood Forest. The A512 linking Shepshed to Loughborough and Ashby-de-la-Zouch is located a mile south of the town centre, leaving the centre somewhat disconnected from main through routes as a result.
- 3.163. Following the decline of framework knitting as a key source of employment, the economy of Shepshed was focussed on small manufacturing businesses. The majority of Shepshed's factories have now closed and their sites have been redeveloped, mainly for homes. Shepshed continues to have significant employment areas, particularly in the area to the north of the A512 Ashby Road, and after Loughborough is the second most self-contained settlement in the Borough, with 20% of those living in the town also working there. However, the majority of Shepshed residents work elsewhere, including the 27% who work in Loughborough, and the town has fewer jobs than the smaller settlements of Syston and Thurmaston.
- 3.164. Many of the new homes that have been built on old factory sites have been to the south of the town centre, locations where access to the town centre is difficult due to a lack of walking and cycling links. As a consequence, many residents choose to shop elsewhere and Shepshed town centre has declined over the last 30 years with closures exacerbating the fragmented character of the main shopping streets.

Environmental Context

- 3.165. Shepshed lies within two landscape character areas: the Langley Lowlands area, with a rolling landform of gentle slopes, to the north, and the Charnwood Forest to the south. The part of the Charnwood Forest character area that includes the southern part of the town and the area immediately south of it has a gently rolling character of mixed farmland. Further south the land rises significantly to Ives Head where it has an elevated upland character.
- 3.166. About a third of the built-up area of Shepshed lies within the boundary of the Charnwood Forest Regional Park. The area to the south west of Shepshed includes a number of wooded areas, including several ancient woodlands, which also form part of the Charnwood Forest. These are important habitats and are also of historical and cultural value in terms of the forest landscape and Shepshed's past. These landscape character areas are an important part of the character and local distinctiveness of Shepshed and its setting.

- 3.167. The historic centre of Shepshed has been designated as a Conservation Area and there are several nationally and locally listed buildings within and adjacent to the Conservation Area. Historic England has identified the Conservation Area on its Heritage at Risk Register describing its condition as poor and declining. Our approach to regeneration in Shepshed aims to have positive benefits for the Conservation Area as well as the District Centre. Through positive engagement with the local community and Historic England and using the Conservation Area Character Appraisal we will seek opportunities to improve the condition of the Conservation Area with the aim of securing its removal from the Heritage at Risk Register over the course of the plan period.
- 3.168. The Black Brook is a tributary to the River Soar and flows around the west and north of the town. It is part of the town's Green Infrastructure network but also forms part of the Borough's network of strategically important links in the wildlife network. We have therefore carefully considered the impact that new development in this area and will require that any developments, including site allocations, result in an enhancement in biodiversity and address how water flow will be managed as part of that enhancement and to reduce flood risk.
- 3.169. Shepshed generally has sufficient provision of Green Infrastructure and open space. New development will have to ensure that provision keeps pace with the needs of a growing population. Development also provides an opportunity to maintain and enhance networks of open spaces that provide biodiversity and health benefits. These are particularly important in Shepshed and in some cases have the potential to support our objectives for improving connectivity within the town.
- 3.170. Air quality is generally good and improving in the Borough, however, a combination of road traffic and industrial sources of pollution could have an impact on communities in Shepshed that are more deprived and therefore more vulnerable to the effects of pollution. As our strategy directs a significant amount of new growth to Shepshed it is important that the issue of air quality is carefully considered so that opportunities to mitigate impacts and improve air quality can be identified. Whilst the impacts of individual developments in isolation are not significant, it will be necessary to consider the cumulative impacts of proposed development, including the allocations set out in this plan, to avoid an overall significant impact on air quality.

Development Strategy for Shepshed Urban Area

Homes and Jobs

- 3.171. Our strategy directs development to Shepshed as a sustainable location for growth. It has a range and choice of services, facilities and employment opportunities that meet the needs of residents and benefits from its close relationship with the Loughborough Urban Centre. Our strategy identifies sites for 1,878 homes and 5 hectares of employment land as part of the overall distribution of growth to meet the Borough's needs over the plan period.

- 3.172. The housing sites identified in this plan include significant development on the west side of the town, which will also be the location for new infrastructure including a new primary school. Additional demands on GP surgeries will also be addressed through joint working with the Clinical Commissioning Group and local GP Practices. This is likely to result in enhanced provision at existing surgeries or the provision of a satellite surgery.

Regeneration

- 3.173. In planning terms there is a hierarchy of retail centres and in Charnwood this comprises a Town Centre in Loughborough, several District Centres and smaller Local Centres. Using these terms Shepshed provides the functions of a District Centre despite Shepshed being a town.
- 3.174. Addressing the structural issues in the District Centre and its poor accessibility requires a concerted effort from different agencies to implement the regeneration strategy already agreed. We have worked with the Leicester and Leicestershire Enterprise Partnership and have already committed substantial funds to commence the improvement of the public realm in the Market Place and Bullring areas. However, more needs to be done to ensure the town is re-vitalised as the focal point for the community and the first choice for day to day needs and services. An important strand of our strategy is to ensure that new development contributes to the regeneration of the town and District Centre through public realm works and accessibility improvements.
- 3.175. There are opportunities at the Leicestershire International Gateway to use the environmental assets of the Charnwood Forest to support sustainable development including supporting investment in tourism and leisure and the wider health and well-being agenda, and using existing and newly planted trees to enhance the physical fabric of the town and respond to its forest setting. There are also regeneration benefits from securing good transport links, including by sustainable transport modes, between Shepshed and the International Gateway's key employment locations.
- 3.176. With our partners we have already produced a strategic vision to improve the overall economic health and vitality of the current centre through the Shepshed Town Centre Masterplan and Delivery Framework. They focus on interventions around complementary activities combining public realm improvements with strategies to relate character and identity to the town's retail function. The Council's spatial vision expressed through the Shepshed Town Centre Masterplan is that:

Shepshed Town Centre Masterplan Vision

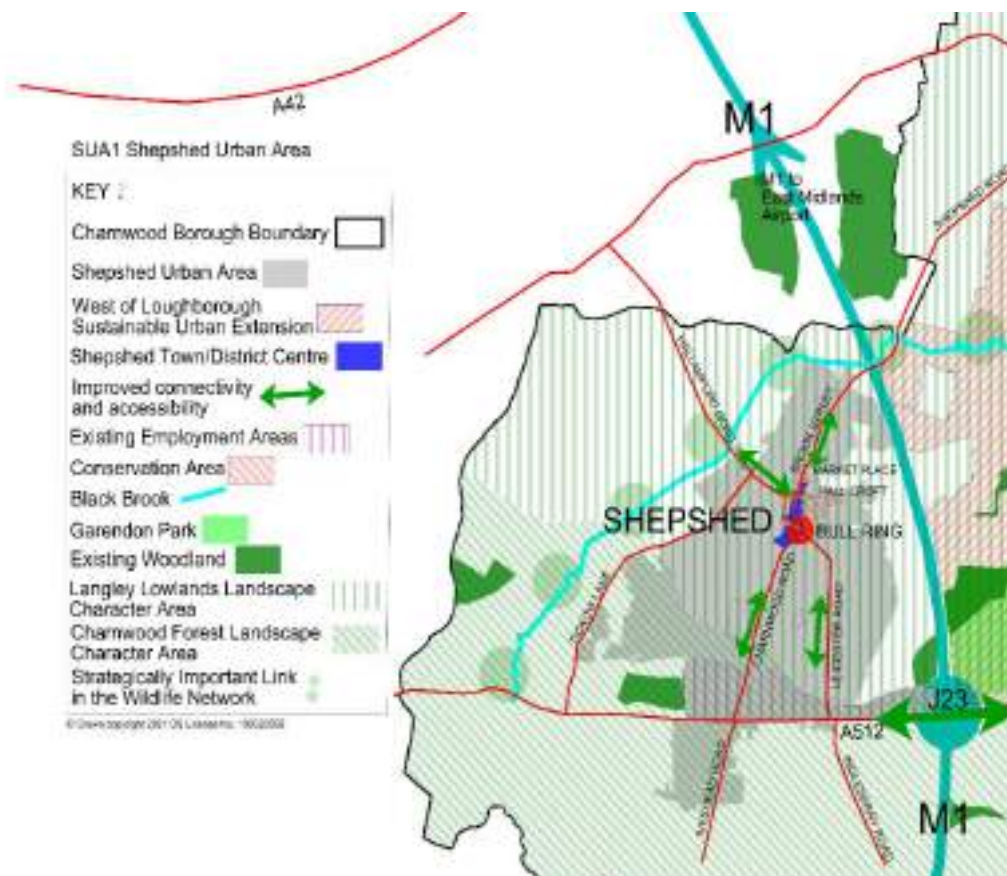
Shepshed is to be a District Centre for local people, based on support for, and expansion of, independent traders, repairing the physical fabric of the town and thereby making it more attractive to visitors.

- 3.177. Work is underway to improve the Bull Ring, Market Place and Hall Croft, financed by developer contributions, the Borough Council and Leicester and Leicestershire Enterprise Partnership. We will continue to work with Shepshed Town Council, the Town Team and other stakeholders to deliver the Shepshed Town Centre Masterplan and Delivery Framework.
- 3.178. There is evidence that the investments that have already been made and improvements made by businesses and the local community are starting to have a positive effect, as shown in lower shop vacancy rates and shorter re-letting times. New retailers have moved to the town, adding to the range of the town's retail offer, and there has been a recent growth in the Shepshed Market as people have made more use of shopping locally during the Covid-19 pandemic. These improvements need to be consolidated and built on to deliver the Masterplan in full and the opportunity exists to do so. There are also opportunities to build on the growth of the market to further raise its profile and secure its future.

Shepshed District Centre

- 3.179. The continued vitality and viability of Shepshed District Centre is key to our regeneration strategy for the town and to ensuring that development in Shepshed is sustainable. The Shepshed Town Centre Masterplan and Delivery Framework has been produced to consider the opportunity to improve the overall economic health and vitality of the centre. The Framework identifies a number of issues related to shopping patterns, accessibility of the centre, public realm and services available.
- 3.180. We want to support Shepshed District Centre to improve its overall economic health and vitality and viability, and in continuing to provide for resident's day to day needs. This will mean supporting developments which address these issues. Proposals for town centre uses, out of the District Centre, will require careful assessment of the impacts, particularly given our understanding of the health of Shepshed District Centre and our strategy to address this.
- 3.181. In order to consolidate the improvements to the District Centre and deliver our vision of increasing its vitality and viability, opportunities to improve car parking facilities will be considered. This forms part of our overall strategy of improving access to the District Centre as the focus for retail and other services in the town. Whilst we wish to enable more people to use sustainable transport modes to access the District Centre, we recognise the need to ensure sufficient car parking facilities are available.
- 3.182. Our development strategy for delivering new homes at Shepshed will seek to encourage footfall and spending in Shepshed District Centre by ensuring new homes are well connected to, and contribute to the regeneration of, the centre. Where appropriate, this may include developer contributions for supporting improvements to connectivity, the public realm, landscaping, and heritage assets, the provision of public art and the repurposing of buildings for commercial or community use

- 3.183. In addition, we would support innovative proposals which seek to complement this approach with more transformative solutions. These would need to respect Shepshed's heritage but could include seeking to open up links and create new gateways between the District Centre and the rest of the town, creating greater coherence between the different elements of the centre, or identifying new complementary uses for sites within the centre that build on its role as the town's meeting place.



Policy SUA1: Shepshed Urban Area

We will support Shepshed as a settlement within the Leicestershire International Gateway and secure its regeneration. We will do this by supporting development that:

- delivers allocations in accordance with Policy DS3 and DS4 or sustainable development that is in accordance with the pattern of development outlined in Policy DS1 and which supports our vision and objectives including making effective use of land;
- ensures the timely and coordinated delivery of infrastructure to support sustainable communities, in accordance with Policy INF1;
- improves connectivity within Shepshed, particularly between new developments and the District Centre, and also to community facilities, particularly by walking, cycling and public transport in accordance with Policy CC5 but also through signage, highway improvements and traffic management, and parking initiatives;
- improves connectivity and accessibility from Shepshed to Loughborough and other surrounding settlements, and to East Midlands Airport and other major employment opportunities within the Leicestershire International Gateway, particularly by cycling and public transport, in accordance with Policy CC5;

- provides an urban edge which integrates with the wider landscape setting and responds positively to the relevant local landscape character area of Charnwood Forest and Langley Lowlands, in accordance with Policy EV1;
 - enhances biodiversity in the strategically important links in the wildlife network of the Black Brook, in accordance with Policy EV6 including addressing how water flow will be managed to enhance biodiversity and reduce flood risk in accordance with Policies CC1 and CC2;
 - mitigates impacts on air quality, taking account of cumulative effects, including those from significant industrial sources in the area, and where possible contributes to improvements in air quality, in accordance with Policy EV11;
 - contributes to improving the condition of Shepshed Conservation Area, having regard to the Conservation Area Appraisal in accordance with Policy EV8;
 - secures financial contributions to improve the public realm, landscaping, community facilities, public art and heritage of the town and particularly for the Bull Ring, Hall Croft, Field Street and Market Place; and
- provides innovative proposals for improving the vitality and viability of Shepshed District Centre including:
 - opening up links and creating new gateways between the District Centre and the rest of the town;
 - creating greater coherence between the different elements of the centre;
 - identifying new complementary uses for sites within the centre that build on its role as the town's meeting place, including repurposing vacant buildings for community and commercial uses; and
 - providing managed workspace and small business start-up space.

We will work with the West Leicestershire Clinical Commissioning Group and local health providers to help meet the increased demands on local GP practices.

Service Centres

Background

- 3.184. Service Centres are larger settlements with a good range of services and facilities to meet the day to day needs of residents or have good accessibility to services not available within the settlement. Five Service Centres are located in the Soar Valley: Barrow upon Soar, Mountsorrel, Quorn, Rothley and Sileby, while the other Service Centre, Anstey, is located close to the boundary with the city of Leicester, Hinckley and Bosworth and Blaby in the south west of the Borough.
- 3.185. Our vision and objectives for the Service Centres is to ensure there is a network of centres, so residents have access to a range of shops, services and facilities and also to protect and enhance the identity of the Borough's locally distinctive towns and villages.
- 3.186. Each Service Centre has origins which date back many centuries. Anstey, Barrow upon Soar, Rothley and Sileby were all recorded in the Domesday Book, and are thought to be of Saxon origin while Sileby's name indicates its Danish origin. Quorn and Mountsorrel's origins postdate the Domesday book, but have histories dating back to 12th century.

- 3.187. The Service Centres developed during the 19th century through manufacturing; notably through framework knitting. Quorn and Mountsorrel's historical development is linked to the quarrying of local stone; an industry that remains today. All of the Service Centres saw significant residential expansion in the 20th Century, a trend that has continued until the present.
- 3.188. All of the Service Centres generally have a good range of local facilities including convenience shops, pubs and community buildings. All have at least one primary school which provide a focal point for their communities, serving the majority of children living in the village, and with the exception of Rothley, all have a GP surgery. District and Local Centres are in reasonable health and some centres have a strong restaurant and bar offer too.
- 3.189. These facilities serve not only the villages themselves but a hinterland of smaller settlements and surrounding countryside. All Service Centres have good road and public transport links to larger settlements for access to employment and higher order goods and services. While there is a degree of self-containment in terms of travel to employment for residents of the Soar Valley Service Centres, a large majority travel to other locations for employment. For Barrow upon Soar, Mountsorrel and Quorn, Loughborough is a major destination for employment, whereas for Anstey, Rothley and Sileby, Leicester is more of a focus for employment opportunities.
- 3.190. Our Service Centres have a population ranging from 5,056 in Rothley to 8,849 in Sileby. The population of all Service Centres has increased significantly in recent years with the largest increases being in Rothley, Quorn and Barrow upon Soar. Together they are home to slightly less than a quarter of the Borough's population and the location of 14% of the borough's jobs. Local employment opportunities can help to reduce out commuting and bring sustainability benefits for the centres and the wider community.
- 3.191. The Service Centres' proximity to the large urban areas of Loughborough and Leicester and attractive countryside, has created a strong market demand for housing which has been one of the key reasons for their significant expansion in recent years. This expansion has often been unplanned and as a consequence there have only been incremental improvements made to the infrastructure. Schools in particular have limited options available for further expansion and there has also been pressure on doctors' surgeries and the local road network.
- 3.192. All Service Centres are recognised for having a strong sense of community identity, and this is reflected by the strong engagement in neighbourhood plan preparation encouraged by proactive parish councils and their local communities.

Environmental Context

- 3.193. Our Service Centres lie within the Soar Valley landscape character area, but also extend into Charnwood Forest and Wolds character areas. Anstey lies within the Charnwood Forest character area.

- 3.194. All of our Service Centres have historical cores, defined by conservation areas, which have developed close to the River Soar, or the Rothley Brook in the case of Anstey. All Service Centres lie in areas of significant flood risk and that has affected the pattern of development. Significant growth in recent years has meant that development now extends well beyond these original cores, extending up valley sides into adjoining landscape character areas, with a pattern of development that often contrasts strongly between old and more recent development. New development will need to be carefully planned to integrate with the unique settlement pattern and landscape setting of the Service Centres.
- 3.195. As our Service Centres have grown, the gaps separating them have become smaller. This has contributed to an increase in concern about settlement identities and the importance of settlements remaining distinct and separate places. We have identified Areas of Local Separation adjoining our Service Centres as well as a Green Wedge to the south of Anstey to manage the growth of Anstey and Leicester.
- 3.196. The Soar Valley on which five of the Service Centres lie is a strategically important part of the Borough's ecological network. In addition, the Charnwood Forest also has one of the highest concentrations of designated ecological sites in Leicestershire. The further narrowing of the gaps between Service Centres, particularly on the western side of the River Soar has the potential to isolate our most important wildlife networks. Our development strategy seeks to ensure that connectivity is maintained between the River Soar, Rothley Brook and the broader ecological network.
- 3.197. All the Service Centres are located on the edge of the Charnwood Forest and/or next to the River Soar/Grand Union Canal Corridor, which are major recreational assets. A key priority in our Open Space Strategy is to link areas of open space through Green Infrastructure Corridors, particularly throughout the Soar Valley and Charnwood Forest. There are also railway stations at Quorn/Woodhouse and Rothley on the Great Central Railway with potential to support a visitor economy.
- 3.198. The Charnwood Open Space Strategy 2018 – 2036 identifies shortfalls in provision for a range of typologies of open space in terms of quantity, accessibility and quality. The most common deficiencies in all six of the service centres were the number of parks and gardens followed by allotments where a shortfall was recorded in all but Quorn and Rothley. There was a shortfall of natural and semi natural open space in Barrow upon Soar, Quorn and Sileby. The Soar Valley is generally well-provided with playing pitches for all pitch sports and age groups.

Development Strategy for the Service Centres

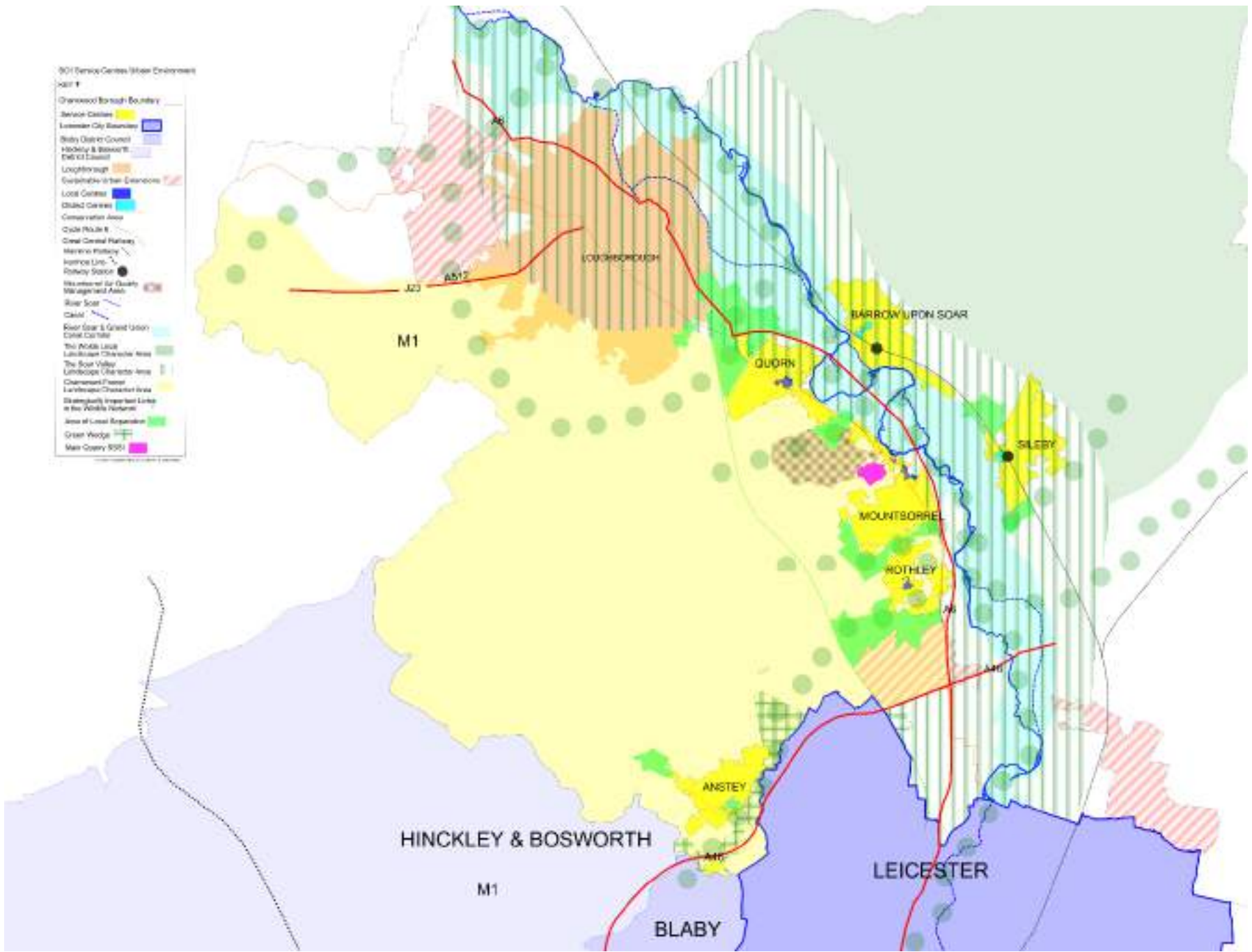
- 3.199. Our Service Centres are the most sustainable locations for growth outside our urban centres and urban areas, but growth needs to be planned carefully in these villages to respond to their key characteristics and constraints as outlined in this chapter.

- 3.200. Our development strategy identifies sites for 1,819 homes as part of the overall distribution for meeting the Borough's needs over the plan period.
- 3.201. Our strategy is to support employment development in the Service Centres in accordance with the pattern of development outlined in Policy DS1, where this would contribute towards meeting our borough wide need for employment land and would reduce out commuting in service centres.
- 3.202. We will encourage development which supports the vitality and viability of the Local and District Centres and seek to enhance their unique characteristics in terms of their heritage and diversity of uses.
- 3.203. One of the key issues for our Service Centres is the provision of homes within a safe walking distance of a primary school. Primary schools in the Service Centres are at or nearing capacity with no or limited opportunity for future expansion. It is therefore important that development in these settlements can deliver new or extended schools to ensure the future sustainability and cohesion of these communities. The housing sites identified are largely focused in three of the Service Centres to ensure that new or extended primary schools can be secured as part of new development.
- 3.204. The Infrastructure Schedule identifies the Service Centres where new or extended schools are required to support new housing growth. Development in these areas will be expected to contribute to the costs of education facilities in accordance with Leicestershire County Council's Developer Contributions Policy. The locations for new facilities are:
- A new 1 Form Entry Primary School, land west of Anstey (HA43)
 - A new 1 Form Entry Primary School, land off Cotes Road, in Barrow upon Soar (HA49)
 - A 0.5 Form Entry Extension to Cossington Primary School, land to the Rear of Derry's Garden Centre (HA59), which would also serve housing growth in Sileby
- 3.205. Between 70% and 90% of journeys to work in the Service Centres are made by the private car, but car usage is lower than in rural parts of the borough, in the Wolds and the Charnwood Forest. All Service Centres benefit from access to frequent public transport services to larger urban areas of Leicester and Loughborough. The proximity to larger centres also means that cycling can be an option, making use of National Cycle Route 6, a long-distance route passing through the Soar Valley. Our development strategy allocates new development within 800m of public transport which provides at least a 30-minute frequency to a larger urban area or where there is the potential to achieve this. Our evidence has also identified a need for additional off street car parking spaces in Anstey, Sileby, Barrow upon Soar and Quorn.

301 Service Centres (Urban Environment)

2011

- Charnwood Borough Boundary
- Service Centres
- Leicester City Boundary
- Blaby District Council
- Hickley & Bosworth District Council
- Loughborough
- Expendable to their Extensions
- Local Centres
- Global Centres
- Conservation Area
- Cycle Route 6
- Great Central Railway
- Metrolink Railway
- Leicester Line
- Railway Station
- Watercourse for Quality Management Area
- River Soar
- Canal
- River Soar & Grand Union Canal Corridor
- The River Leic
- Loughborough Character Area
- The Soar Valley Landscape Character Area
- Charnwood Forest
- Loughborough Character Area
- Statistically Important Links in the Wildlife Network
- Area of Local Expansion
- Green Wedge
- Main County Road



Policy SC1: Service Centres

We will support Service Centres in providing for the day to day needs of their residents, seek to improve their sustainability and maintain their unique characters and separate identities.

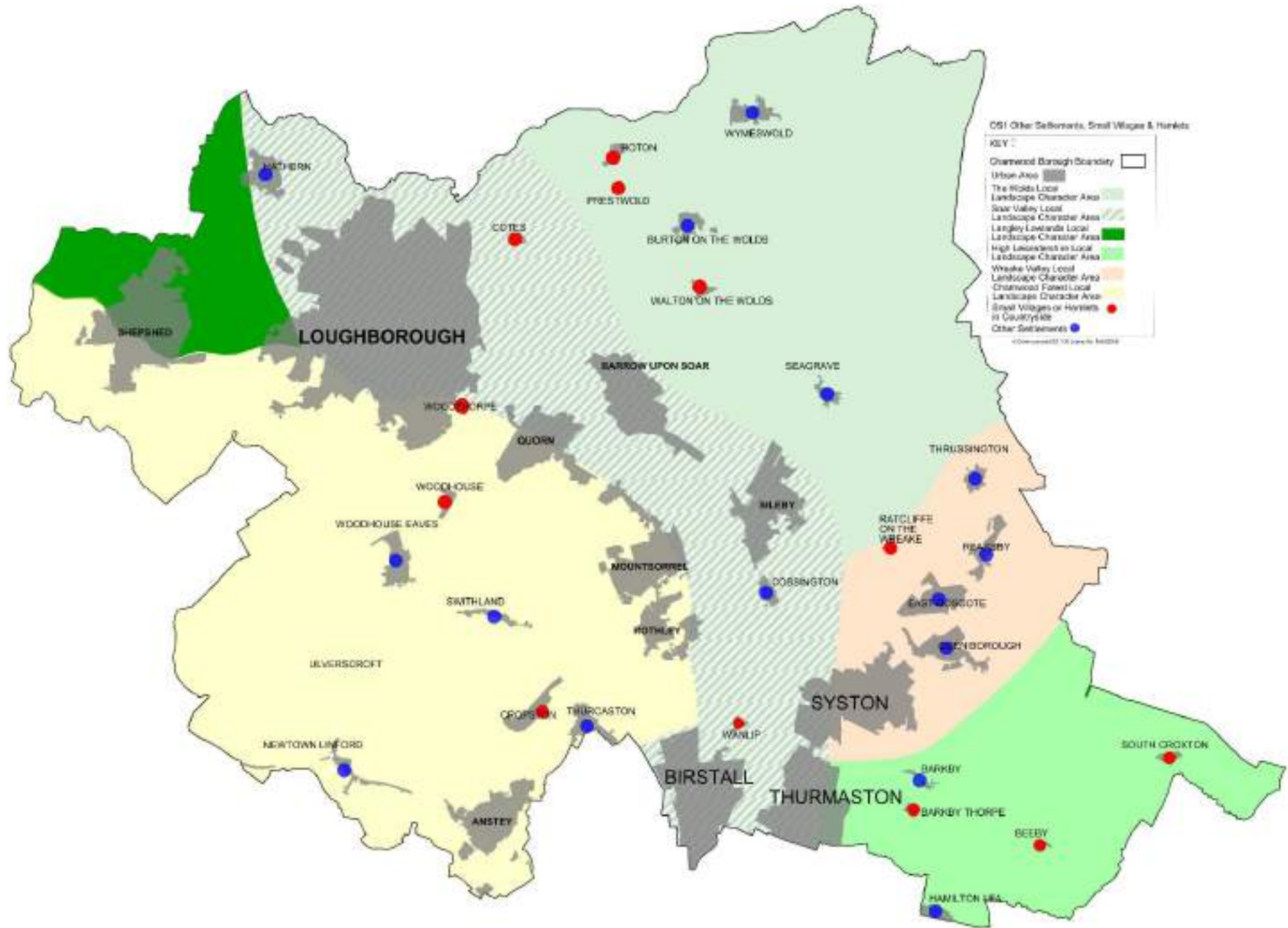
We will do this by supporting development that:

- delivers allocations in accordance with Policy DS3 and DS4 or sustainable development that is in accordance with the pattern of development outlined in Policy DS1 and which supports our vision and objectives including making effective use of land;
- ensures the timely and coordinated delivery of infrastructure to support sustainable communities, in accordance with Policy INF1 including contributing to new primary schools in Anstey and Barrow upon Soar with additional primary school provision at Cossington to serve Sileby;
- is carefully planned to integrate with the unique settlement pattern and landscape setting of Service Centres;
- protects the predominantly open and undeveloped character of Areas of Local Separation in accordance with Policy EV3;
- protects and enhances the Charnwood Forest and River Soar and the strategically important links in the wildlife network which connect them, in accordance with Policies EV4 and EV5.
- improves connectivity and accessibility within Service Centres and to higher order settlements, particularly by walking, cycling and public transport, in accordance with Policy CC5;
- seeks to provide new development within 800m of public transport with at least a 30-minute frequency to a larger urban area;
- provides employment opportunities in accordance with Policy DS4 and which reduces out commuting from Service Centres;
- contributes to the vitality and viability of the Mountsorrel, Quorn and Rothley Local Centres and Anstey, Barrow upon Soar and Sileby District Centres and which builds upon the unique characteristics of these centres in terms of their heritage and their diversity of uses, in accordance with Policy T1; and EV8.
- provides new off street car parking provision to improve the viability and functioning of the Local and District Centres where there is a proven local need.

Other Settlements, Small Villages and Hamlets

- 3.206. Charnwood is characterised by a mix of urban and rural environments: from the edges of the city of Leicester to hamlets and the wider countryside. Although the majority of the Borough's population live in larger settlements, smaller settlements are more numerous, and the countryside occupies most of the Borough's area. In all there are 39 settlements in the Borough and only 12 of these are classified as Urban Areas or Service Centres.

- 3.207. Our vision and objectives for the Borough's smaller settlements seek to maintain their identity and to protect the special and distinctive qualities of the Borough's landscapes. As with all places we want the people who live in these areas to have good access to jobs, services, facilities and opportunities for recreation, with greater opportunities to do so by walking, cycling and public transport. Appropriately located and designed development can help to deliver these objectives.
- 3.208. Our Settlement Hierarchy Assessment identifies 14 Other Settlements in the Borough. Although forming a recognisable tier in the settlement hierarchy there is also a significant degree of variation between them. They range in size from East Goscote (population 2,866) to Swithland (217) but all have a primary school and some of the other services and facilities required to meet the day to day needs of residents. Our Other Settlements are Barkby, Burton on the Wolds, Cossington, East Goscote, Hathern, Newtown Linford, Queniborough, Rearsby, Seagrave, Swithland, Thrussington, Thurstaston, Woodhouse Eaves and Wymeswold.
- 3.209. The Settlement Hierarchy Assessment also identifies a further 13 Small Villages and Hamlets which have few or no local facilities and range in population from Hoton (353) to Cotes (29). Most of these settlements do not have a parish council of their own and are served by a parish meeting or form part of a larger parish. Our Small Villages and Hamlets are: Barkby Thorpe, Beeby, Cotes, Cropston, Hoton, Prestwold, Ratcliffe on the Wreake, South Croxton, Ulverscroft, Walton on the Wolds, Wanlip, Woodhouse, and Woodthorpe.
- 3.210. 5.7% of the Borough's jobs are found in Other Settlements, Small Villages and Hamlets and Countryside. While the number of jobs per economically active person is greater here than in our Service Centres, the more limited range of employment opportunities that are available means that only between 4 and 6% of economically active people in these areas work in the electoral ward in which they live. Most of these settlements have access to only infrequent public transport services to the employment opportunities and higher order goods and services offered by Service Centres and our urban areas. The distances and routes involved also makes walking and cycling not a suitable option for these journeys. This particularly affects settlements further away from the Soar and Wreake valley corridors and includes some settlements that would otherwise be large enough to be considered sustainable locations, e.g. Newtown Linford, Woodhouse Eaves, Burton on the Wolds and Wymeswold, all of which had populations recorded in excess of 1,000 in the 2011 census. As a result of these factors, in the middle super output areas covering the Charnwood Forest and the Wolds, 86% of journeys to work are by private car.
- 3.211. Prior to the Covid-19 pandemic, 5% of the people in employment worked mainly at home, a further 1% worked in the same grounds or buildings as their home, such as farmers or people with a shop attached to their home, and another 8% used their home as a base while undertaking self-employed work on site at varying locations. The response to the pandemic resulted in the number of people working from home increasing to nearly 50%. While this potential for homeworking is not evenly distributed between different sectors of the economy and poses challenges for our retail centres, it provides an opportunity to improve the sustainability of smaller settlements by reducing the number of journeys to work made by car. We will therefore respond positively to proposals to improve superfast broadband infrastructure, on which homeworking relies, in rural areas and to modifications to homes which facilitate homeworking.



LOUGHBOROUGH

SYSTON

THURMASTON

SHEPHERD

LATHERN

ROTON

WYMERWOLD

PRESTWOLD

COTES

BURTON ON THE WOLDS

WALTON ON THE WOLDS

BARROW UPON SOAR

SEAGRAVE

WOODBORNE

OGORN

THRUSHINGTON

WOODHOUSE

MURBY

WOODHOUSE EAVES

RATCLIFFE ON THE WREAKE

PEARSBY

MOUNTSERRREL

DOBBSINGTON

SWITHLAND

EAST WOODCOTE

BEVERSDRIFT

ROTHLEY

LENBOROUGH

CROPSHOLM

THURCASTON

WANLIP

SYSTON

NEWTOWN LINCOLN

BIRSTALL

BARBY

SOUTH CROXTON

ANSTEY

THURMASTON

BARBY THORPE

BEEDY

HAMILTON LEA

Environmental Context

- 3.212. Our evidence has identified six distinct landscape character areas in the Borough. The following map shows the location of all of our smaller settlements in relation to those landscape character areas. This shows:
- the distribution of settlements within the Charnwood Forest is mainly to the east of the highest land;
 - the sparse settlement distribution in the High Leicestershire area, particularly further to the east;
 - that although the Soar Valley is dominated by larger settlements, there are also five smaller settlements located in this area;
 - the importance of the topography of the Wolds for the location of settlements with most nestled within small valleys around the 75m contour line, and
 - the dense distribution of settlements in the Wreake Valley particularly in the west of this area.
- 3.213. The historic centres of most Other Settlements have been designated as Conservation Areas. The exceptions to this are Burton on the Wolds and East Goscote.
- 3.214. East Goscote was built as a new settlement in the 1960s and 1970s whilst Burton on the Wolds only significantly grew following the demise of the Burton Hall estate in the 1950s.
- 3.215. Many of our smaller settlements have not grown significantly beyond their historic centres and in some cases, for example Barkby, Newtown Linford and Seagrave, the Conservation Area extends over the vast majority of the built-up area. In the case of Swithland, Woodhouse and Woodhouse Eaves, the Conservation Area extends to include buildings and settings beyond the village itself.
- 3.216. Our countryside has been heavily influenced by human activity and contains evidence of the history of human settlement in the area. These include a Bronze Age/Iron Age hill fort at Beacon Hill, a Roman villa at Hamilton, deserted medieval villages at Cotes and Hamilton, monastic and aristocratic estates at Bradgate, Garendon and Prestwold and the settlements that remain part of the rural landscape today.
- 3.217. Our evidence shows that there is a strong link between the form and character of our smaller settlements and the surrounding landscape. Examples of this include:
- the significance of views of church spires and towers in several areas;
 - the use of local stone and slate in the construction of buildings in the Charnwood Forest and the importance of stone walls as boundaries;
 - the presence of farms within settlements and green lanes in High Leicestershire; and
 - the location of villages in the Wolds within their own small valleys which means that extension of those villages can have a significant impact on the landscape.

- 3.218. The sense of identity of our smaller settlements is one of their characteristics that we wish to maintain and enhance. This sense of identity is also reflected in neighbourhood planning: both in the community endeavour of preparing a plan and in the content of the plans themselves. Four neighbourhood plans have been made covering eight of our smaller settlements. A further three neighbourhood plan groups are working on plans relating to four settlements.
- 3.219. Our evidence shows that accessible natural and semi-natural green space is not evenly distributed across the Borough, with limited provision east of the River Soar. This means that only 25% of the smaller settlements in the Borough have any accessible natural and semi-natural green space within their parish. This is in part a further reflection of the different character of the Wolds and High Leicestershire landscapes which lack the extensive woodlands of the Charnwood Forest and the meadows of our river valleys. It also demonstrates the importance of maintaining and enhancing the public right of way network as a means of enabling people to have access to and benefit from the countryside.

Strategy for Other Settlements

- 3.220. Protecting our landscape character while allowing sustainable development that supports our rural areas is a delicate balance. There is a close relationship between protecting our landscape and our support for the agricultural and tourism sectors of the rural economy. Our strategy and policies also support our rural communities' needs for affordable housing, facilities and services.
- 3.221. As part of our strategy we have made a number of allocations in Other Settlements that will provide 755 homes as part of the overall distribution for meeting the Borough's needs over the plan period. Development has been directed to those settlements where there is capacity at local primary schools or, in the case of Cossington, where development there and in neighbouring Sileby can secure an extension to the existing school. In the case of Wymeswold we have chosen to identify a housing requirement figure for 60 new homes and enable appropriate sites to be identified through a neighbourhood plan.
- 3.222. Beyond these allocations, our strategy is to limit growth in Other Settlements and as a result only small-scale development proposals within the Limits to Development are likely to be appropriate. This infill is expected to be well-designed and enhance local character and distinctiveness.

Policy OS1: Other Settlements

We will support our Other Settlements, to meet their local social and economic needs. We will do this by supporting development that:

- **delivers allocations in accordance with Policy DS3 or sustainable development that is in accordance with the pattern of development outlined in Policy DS1 and which supports our vision and objectives including making effective use of land;**
- **is small-scale and within defined Limits to Development;**
- **ensures the timely and coordinated delivery of infrastructure to support sustainable communities, in accordance with Policy INF1, including contributing to expanded primary school provision in Cossington;**

- supports the provision of community services and facilities that meet proven local needs as identified by a neighbourhood plan or other community led plan;
- safeguards existing services and facilities; and
- contributes to local priorities as identified in neighbourhood plans.

Strategy for Small Villages and Hamlets in the Countryside

- 3.223. Our Small Villages and Hamlets have few or no services and facilities, and the people who live in these settlements rely on larger ones for their day-to-day needs. They are therefore generally poor locations for new development, and we have made no allocations in these places.
- 3.224. We have only defined Limits to Development for Other Settlements, Service Centres and Urban Areas on the Policies Map. As a consequence, our Small Villages and Hamlets are within the Countryside when it comes to making planning decisions. Our approach to development in the Countryside is set out in Policy C1 and our policy in relation to rural exception sites to meet affordable housing need is set out in Policy H5.

Strategy for the Countryside

- 3.225. Countryside is the largely undeveloped land beyond the defined Limits to Development of our towns and villages and has its own intrinsic character and beauty.
- 3.226. Land designated as Countryside is identified on the Policies Map. Our Smaller Villages and Hamlets as defined in the settlement hierarchy do not have Limits to Development and are considered part of the Countryside when it comes to making planning decisions.
- 3.227. The local plan has an important role to play by guiding development in areas of Countryside to protect its intrinsic beauty. Managing development in areas of Countryside is fundamental to delivering the pattern of development set out in our development strategy and therefore delivering sustainable development. It also has an important role in providing the landscape setting to our settlements which contributes to their settlement identity. Policy EV1 sets out our approach to protecting landscape character which highlights the role of the Countryside in providing the setting and contributing to the distinct separate identities of our towns and villages.
- 3.228. Countryside is the location of many rural enterprises, notably agriculture, forestry and horticulture. Whilst protecting the Countryside from most development, it is important to support these rural enterprises and make provision for development that has a strong relationship with their operational requirements. This includes considering new isolated homes in circumstances where there is an essential need for a rural worker, including those taking majority control of a farm business, to live permanently at or near their place of work in the Countryside. Where locational requirements are required for equalities reasons, exceptions to the policy will be considered under the public sector equalities duty.

- 3.229. Where an independent expert assessment is required to assess the viability of rural businesses or the requirement for a worker to be housed at or near their rural place of work the costs of this will be charged to the applicant.
- 3.230. Within land designated as Countryside there are other designations which have their own purposes in guiding development and delivering sustainable development. These are set out in our policies on Green Wedges (EV2) and Areas of Local Separation (EV3).

Policy C1: Countryside

We will manage development in areas of Countryside to protect its largely undeveloped character, and its intrinsic character and beauty. We will do this by:

- **supporting rural economic development which has a strong relationship with the operational requirements of agriculture, horticulture, forestry and other land-based industries;**
- **supporting development for the reuse and adaptation of rural buildings and small scale new built development where there would not be significant adverse environmental effects; and**
- **supporting the provision of community services and facilities that meet proven local needs as identified by a neighbourhood plan or other community led plan.**

The development of isolated homes in the Countryside will be supported if one or more of the following circumstances apply:

- **there is an essential need for a rural worker, including those taking majority control of a farm business, to live permanently at or near their place of work in the countryside;**
- **the development would represent the optimal viable use of a heritage asset or would be appropriate enabling development to secure the future of heritage assets;**
- **the development would re-use a redundant or disused building and enhance its immediate setting;**
- **the development would involve the subdivision of an existing residential dwelling; or**
- **the design is of exceptional quality, in that it:**
 - **is truly outstanding or innovative, reflecting the highest standards in architecture, and would help to raise standards of design more generally in rural areas; and**
 - **would significantly enhance its immediate setting and be sensitive to the defining characteristics of the local area.**

Chapter 4 Housing

- 4.1. Our development strategy meets the Borough's identified housing needs in terms of the number of new homes required for our growing and changing communities. The following policies address the need to ensure that the new homes that are delivered provide an appropriate mix of types, tenures and sizes of homes including affordable housing for those who cannot afford market rents and purchase prices. By seeking an appropriate mix of housing, we will act positively to ensure that new homes best meet the changing needs of the population and create mixed and balanced communities.
- 4.2. Our priority is that over the plan period enough homes are built to meet our identified housing needs and that their size, tenure, adaptability and type also meet people's needs.
- 4.3. We will encourage our communities through neighbourhood plans to make decisions on what type of housing they need in their local area, where it should be built and who should occupy it. Supported by evidence, neighbourhood plans can include policies around affordability, local lettings and retaining homes as community assets in perpetuity. They can also identify specific sites for housing and specify a proportion of them to be affordable and available to local people.

Housing Mix

- 4.4. A range of house sizes is required to cater for a diverse housing market and provide levels of affordability. Our evidence shows that the suggested mix of market dwellings should be largely split between 2-and-3-bedroom dwellings, for which there is demand from both newly forming households and older households wishing to downsize but retain the ability for friends and family to come and stay. There is also a small need for 1-bedroom dwellings, and some 4-bedroom dwellings reflecting the lack of turnover in larger dwellings and the number of larger households in the Borough.
- 4.5. The overall need is similar for affordable housing but with a greater need for smaller properties and less need for larger ones. The following table sets out the most appropriate mix for new affordable and market homes to meet our needs over the plan period. This takes account of the particular need for smaller affordable home ownership properties to assist people getting onto the housing ladder. It also takes into account the existing high number of 1-bedroom social rented homes available in the Borough and the priority need for larger affordable rented homes for families with children.

Table 6: Preferred Overall Mix of New Housing by Size and Tenure

Preferred Overall Mix of New Housing by Size and Tenure				
	1 bedroom	2 bedroom	3 bedroom	4+ bedroom
Market	Up to 10%	20-30%	45-55%	15-25%
Affordable home ownership	10-20%.	35-45%	30-40%	5-15%
Affordable housing (rented)	60-75%		20-30%	Up to 10%

- 4.6. The preferred mix of affordable housing is also influenced by the need to ensure that the best use is made of the housing stock to ensure that properties are both affordable and provide stability for low income households to meet housing needs. For example, 1-bed properties offer limited flexibility for changing household circumstances and Registered Providers prefer not to acquire additional one bed properties which may result in fewer 1-bed affordable rented properties being sought. We have therefore chosen to present the preferred proportion of 1-bed and 2-bed affordable homes for rent as a combined figure. Local evidence from the housing register and discussions with Registered Providers will be used to inform the appropriate mix of homes.
- 4.7. It is also important to consider the types of affordable homes to ensure what is provided best meets the needs of households and ensures a Registered Provider can be successfully secured to manage the homes. On this basis we will generally seek to avoid the following:
- rented affordable flats for families with children;
 - large numbers of one bedroom rented affordable flats on an individual site;
 - one-bedroom intermediate affordable homes; and
 - intermediate affordable flats.
- 4.8. Our approach is also to seek to ensure affordable homes are designed to accommodate the following number of people to reflect how homes will be allocated to those on the housing register:
- 1 bed affordable rented homes need to accommodate 2 people;
 - 2 bed affordable rented homes need to accommodate 4 people;
 - 3 bed affordable rented homes need to accommodate a minimum of 5 people; and
 - 4 bed plus affordable rented homes need to accommodate a minimum of 7 people.
- 4.9. Like many other parts of the country, Charnwood has seen an increase in the size of the private rented sector over the last 20 years. Our evidence shows there is a sufficient supply of homes in the private rented sector and no demand for Build to Rent properties has been identified. Issues in relation to rented houses in multiple accommodation and purpose-built student accommodation are dealt with later in this chapter.
- 4.10. Our evidence has also considered differences in the existing housing stock and housing market in different parts of the Borough. While differences exist, these are not significant enough to warrant different policies in relation to housing mix being applied in different parts of the Borough.
- 4.11. The policy supports the deliverability of development and seeks to adopt a flexible approach that uses our evidence in relation to housing mix to guide development over the course of the plan period rather than being a requirement for each development. We will therefore consider evidence that is provided that could justify a particular housing mix on a site.

Policy H1: Housing Mix

We will seek a mix of house types, tenures and sizes that meet the overall needs of the Borough in line with our most up to date evidence. We will do this whilst having regard to the extent to which those needs have already been met by other development, local housing needs and housing market evidence, economic conditions, viability and site-specific circumstances.

Housing for Older People and People with Disabilities

- 4.12. People are living longer and the proportion of older people in the population is increasing. This means there will be an increase in the number of people with long-term mobility and health problems as people age. Our evidence also shows that the number of people aged 65+ with mobility problems and dementia is increasing more quickly than the total number of people in this age category.
- 4.13. There is therefore likely to be an increased requirement for specialist housing options for older people, whether in the form of sheltered housing or extra care housing. There are also younger people who have needs for adapted or specialist accommodation. We wish to encourage enhanced provision of these types of housing in both the market and affordable sectors.
- 4.14. The Borough Council owns 14 sheltered housing schemes across the Borough comprising nearly 450 units. The Council is already undertaking a phased sheltered housing review which aims to provide high quality housing in self-contained accommodation, addressing tenants' needs and expectations, and where residents may live independently with support.
- 4.15. Bungalows can also provide more appropriate accommodation for those with limited mobility and we will therefore support their provision on appropriate sites. While bungalows may require a greater plot size, affecting the density of development, there may also be situations where bungalows are the most suitable house type for a particular site or part of a site, taking account of the site's constraints or context.
- 4.16. Our policy is to encourage an adequate supply of accessible housing through the provision of homes which can provide greater accessibility, flexibility and adaptability to meet a diverse range of needs over time. Our approach focusses on increasing the supply of those properties that are accessible and adaptable (i.e. they meet Part M4(2) of the Building Regulations) so that people can more easily remain in their homes if their circumstances change.
- 4.17. In providing affordable housing, there is an opportunity for the Council, through its nomination rights, to match the needs of individuals to homes including those that need homes suitable for wheelchair users. We can therefore work with Registered Providers to identify an appropriate combination of accessible and adaptable properties (Part M4(2) of the Building Regulations), and wheelchair user properties (i.e. those that meet Part M4(3) of the Building Regulations) when delivering affordable homes. Building Regulations differentiate between wheelchair accessible and wheelchair adaptable dwellings and options will be considered in discussions with Registered Providers.

Policy H2: Housing for Older People and People with Disabilities

To meet the needs of the ageing population and people with disabilities, we will:

- seek at least 10% of new market homes on major developments that meet the Building Regulations Part M4(2) standards for being accessible and adaptable, or any replacement standards produced by the Government; and
- seek an appropriate proportion of affordable homes that meet the Building Regulations Part M4(2) standards and/or the Part M4(3) standards for being suitable for wheelchair users in consultation with relevant Registered Providers of affordable housing.

In seeking these types of homes, we will have regard to any evidence provided regarding viability or other site-specific factors that may make it impossible to provide step-free access.

We will also:

- support the provision of bungalows or other single level properties; and
- support the provision of specialist accommodation where it addresses the needs of older people in accordance with identified housing needs and care requirements, or of younger people with special accommodation needs.

Internal Space Standards

- 4.18. Living in a dwelling that is overcrowded or too small can cause health problems and be detrimental to well-being. Average dwelling sizes in the UK are amongst the smallest in Europe and the Government has introduced nationally described space standards to establish minimum standards and help bring consistency across the country. The Government has recently required these standards to be complied with for new homes delivered through permitted development rights.
- 4.19. Our evidence shows that the nationally described space standards are not consistently being met in new homes in Charnwood, particularly those relating to gross internal floorspace and the provision of built-in storage. We wish to balance the delivery of the number of homes needed with providing adequate living conditions for their occupiers and avoiding overcrowding. Delivering homes that meet the standards is also consistent with our wish that people can remain in their homes if their circumstances change. We will work with Registered Providers to balance meeting the space standards with other factors so as to maximise the delivery of affordable housing.
- 4.20. In order to provide certainty for developers, we will not apply this policy to reserved matters applications that relate to outline planning permissions granted before the adoption of this plan.

Policy H3: Internal Space Standards

We will seek compliance with the nationally described space standards, or any replacement standards produced by the Government, for all new homes (including those resulting from the change of use of existing buildings). We will do this while having regard to any evidence provided regarding viability or other site-specific factors.

For affordable housing we will respond positively to development proposals that are accompanied by a Design and Access Statement, or similar document that satisfactorily explains how any deviation from the nationally described space standards (or any replacement standards produced by the Government) will still meet the needs of occupiers.

Affordable Housing

- 4.21. The difference between house prices and household incomes makes it difficult for some people to afford to buy a home. Market rent levels can also be unaffordable for some people who are unable to or do not wish to purchase their home.
- 4.22. Evidence from the Land Registry shows that house prices in Charnwood have increased significantly over the last decade and have done so by more than the regional and national average. Household earnings have not kept pace with this increase in house prices. The generally accepted ratio for the amount of mortgage a household can borrow is 3 to 3.5 times household income and in Charnwood average house prices are over 7 times average earnings.
- 4.23. We wish to help people whose housing needs are not being met by the market by seeking the delivery of new affordable homes. These are usually homes that are made available to buy a share in, buy at a discount or rent through a Registered Provider such as the Council or a Housing Association.
- 4.24. The National Planning Policy Framework categorises affordable housing into four main types:
- (a) **Affordable housing for rent:** owned and managed by a Council or other Registered Provider with rent set at a level which does not exceed 80% of the local market rent or Social Rent set in accordance with the Government's rent policy.
 - (b) **Starter homes:** new dwellings which are available for purchase by qualifying first-time buyers and are sold at a discount of at least 20% of the market value, subject to a price cap and with restrictions on sale or letting.
 - (c) **Discounted market sales:** housing which is sold at a discount of at least 20% below local market value with eligibility determined by local incomes and house prices and with provisions to ensure housing remains at a discount for future eligible households.
 - (d) **Other affordable routes to home ownership:** for those who could not achieve home ownership through the market including shared ownership, equity loans, low cost homes for sale and rent to buy.
- 4.25. There is an identified need for 476 new affordable homes for rent (category a) a year in Charnwood over the plan period to meet existing and newly arising needs. The majority of that need is for homes where rent is charged at the social rent level, which is less expensive than the affordable rent level. It is recognised that there is also a role for affordable rents and our evidence suggests that a significant proportion of the need for affordable homes for rent could be met by either affordable rent or social rent when access to housing benefits and the local housing allowance cap sought on affordable

rents are taken into account. It is clear from our evidence that both tenures of homes are likely to be required in all areas of the Borough.

- 4.26. The National Planning Policy Framework states that major housing development proposals should make provision for at least 10% of the overall number homes to be available for affordable home ownership (categories b, c and d). This is more than sufficient to meet the need for affordable home ownership in the Borough.
- 4.27. First Homes are the Government's preferred discounted market tenure. First Homes are a specific kind of discounted market sale housing (category c) which are discounted by a minimum of 30% against the market value, sold to a person or persons meeting the First Homes eligibility criteria set out in the Planning Practice Guidance and cost no more than £250,000. When sold they must have a restriction registered on the title at HM Land Registry to ensure this discount and other restrictions are passed on at each subsequent title transfer. In accordance with national guidance, we will require at least 25% of all affordable homes delivered through developer contributions to be First Homes.
- 4.28. Our evidence shows that shared ownership is the most appropriate form of affordable home ownership to meet the needs of those most in need in the Borough due to the lower deposit requirements and lower overall costs. Once the First Homes requirement has been met, this will be the preferred affordable home ownership tenure
- 4.29. Our approach to meeting the need for affordable housing has also been informed by our viability evidence. This has informed the policy to seek 30% of all homes delivered as part of major developments to be affordable, with the exception of brownfield sites. We recognise that there are greater costs associated with bringing forward developments on brownfield sites than on greenfield sites. Informed by our evidence on viability we will therefore seek a minimum of 10% affordable housing from major developments on brownfield sites.
- 4.30. In order to meet the national requirement for 10% of the overall number of homes to be available for affordable home ownership on greenfield sites, we will seek a tenure split of 67% affordable housing for rent and 33% affordable home ownership (made up of 25% First Homes and 8% other affordable home ownership, preferably shared ownership). This is equivalent to 20%/10% of the total number of homes on the site. We will seek a 50%/50% split on brownfield sites to take account of our much greater need for rented affordable housing and the number of brownfield sites included in our development strategy as part of urban intensification. The 50% affordable home ownership will be made up of 25% First Homes and 25% other affordable home ownership, preferably shared ownership.
- 4.31. In considering alternative tenure mixes the Council will balance the need to meet the objectively assessed needs of our communities with the need for flexibility to avoid delays to the delivery of housing. We will continue to work collaboratively with Registered Providers and housebuilders to consider alternative mixes where there is a clear justification.

- 4.32. In planning for affordable housing, we have taken account of viability to ensure development schemes are not rendered undeliverable as a result of excessive obligations and policy burdens. We have undertaken a whole plan viability study that includes the required level of affordable housing. Where a developer considers that the requirement for affordable housing is making a site financially unviable, the applicant will be required to provide a viability appraisal that meets the requirements set out in the Planning Practice Guidance and meet the cost of an independent assessment of that appraisal commissioned by the Council to inform a discussion of the appropriate development of the site.
- 4.33. It may not always be viable or practical for sheltered housing or extra care housing to provide an element of affordable housing, this will be considered on a case by case basis.
- 4.34. Affordable housing should be provided on site as part of sustainable and mixed communities. Where there is a lack of a Registered Provider willing to acquire or manage the affordable homes, the Council will also consider proposals for the affordable homes to be gifted to the Council to add to its own social housing stock. Exceptional circumstances may however justify alternative means of affordable housing provision such as the use of a commuted sum in lieu of provision on site. An example might be a preference from the local housing authority for local affordable housing need to be met in an alternative location.
- 4.35. We will work to ensure that housing proposals are delivered on all suitable sites and will invite interest from developers regarding providing new affordable homes for young first-time buyers at discounted prices on underused or unviable commercial or industrial sites not currently identified for housing, as part of our support for entry-level exception sites.
- 4.36. Our policy follows the National Planning Policy Framework in only seeking contributions from applicants of major developments and excluding small sites of less than 10 dwellings. However, developers are expected to make efficient use of land and attempts to deliberately circumvent the local plan thresholds through the inefficient use of land or subdivision of sites will not be acceptable. When considering whether a development meets the threshold for the provision of affordable housing the Council will consider the development potential of land adjacent to the site. Where the site forms part of a wider allocation or a larger area within the control of the applicant, which is suitable for development, this will be taken into account to ensure comprehensive development and avoid piecemeal development which does not make appropriate provision of affordable housing.
- 4.37. We will monitor the delivery of affordable housing in our Authority Monitoring Report.

Policy H4: Affordable Housing

We will seek 30% affordable housing from all major housing developments with the exception of brownfield sites where 10% affordable housing will be sought.

We will seek the following tenure mix:

	Total Affordable	% of Affordable Homes for Rent	% of Affordable Homes for Ownership
Greenfield	30%	67%	33%
Brownfield	10%	50%	50%

New affordable housing should be delivered on site and integrated with market housing unless there are exceptional circumstances which contribute to the creation of mixed communities.

A clear justification supported by an independent viability assessment will be required if the applicant considers that particular circumstances justify the need for a lower level of provision.

Developers are expected to make efficient use of land and attempts to artificially reduce the scale of development to below the threshold for providing affordable housing will not be acceptable.

Contributions will not be sought from self-build or custom housebuilding developments.

Rural Exception Sites

- 4.38. Our evidence shows that house prices and rents in rural areas are higher than in other parts of the Borough. This and a smaller stock of dwellings can restrict choice and lead to limited availability of affordable housing in rural areas. Our development strategy involves restricting the amount and scale of development in the Countryside, which includes Smaller Villages and Hamlets.
- 4.39. We wish to address the lack of affordable housing options in our rural areas by using a rural exception sites policy to meet local needs. Households with a local need are those who are either current residents or have an existing family or employment connection but are unable to access market housing. Our policy would allow developments that provide affordable housing that meets those needs to take place outside the Limits to Development of settlements where it would not otherwise be allowed.
- 4.40. Rural exception sites will be limited to our Other Settlements, Small Villages and Hamlets with a population of less than 3,000. Proposals for small scale rural exception sites will be expected to be adjacent, or otherwise well-related, to the existing village or hamlet so that they are accessible and within a short and safe walk. Developments should be appropriate in scale, character, and appearance. In terms of scale, sites should be less than 1ha in area or increase the number of homes in the settlement by less than 5% of the existing housing stock, whichever is the smaller. A high standard of design will be expected which seeks to minimise the development's impact upon the landscape, the existing built form of the village or hamlet and its effect upon the role and function of the settlement.
- 4.41. The successful delivery of rural exception sites will require a partnership approach between the Borough Council, Parish Council, Registered Provider and the landowner. Neighbourhood plans provide a good opportunity for communities to identify the need and possible locations for rural exception sites.

- 4.42. Proposals must be supported by a Housing Needs Survey which demonstrates local housing need having regard to the Council's local lettings policy. The format, method of analysis and geographical extent of any survey should be agreed with the Council. Some market housing may be acceptable where it subsidises the delivery of rural exception schemes as part of the same development. We will only do this where there is clear and robust evidence of the needs being met and the financial justification for the market housing being proposed to deliver the scheme.
- 4.43. We will seek to address an identified local need in a single village/hamlet or where a combined need can be identified across a group of villages/hamlets. The affordable homes provided will be allocated in accordance with the Council's Housing Allocations Policy to ensure they meet the needs of current residents or those who have an existing family or employment connection to the village(s)/hamlet(s) but are unable to access market housing.

Policy H5: Rural Exception Sites

We will support the provision of small-scale developments in rural areas for affordable housing outside Limits to Development as an exception where:

- **the housing is demonstrated to meet an identified local need for affordable housing as set out in a Housing Needs Survey; and**
- **development is adjacent, or otherwise well-related, to a rural settlement, and respects the character of the settlement and its landscape setting.**

We will require, through a planning condition or legal agreement, that homes delivered as part of a rural exception site must remain available as affordable housing in perpetuity.

Self-build and Custom Housebuilding

- 4.44. Some people want to build or commission their own homes and we want to ensure our communities have the opportunity to do so as part of our strategy for meeting housing need. Such schemes can include individual family homes and community housing projects. The Council maintains a register of those interested in building their own home within Charnwood. Approximately half of these have no specific location in mind with the other half identifying an area of search.
- 4.45. Our evidence suggests that most of the demand in relation to these types of homes is for small sites in the countryside but that these are in limited supply, and that in terms of both number and affordability they are insufficient to meet the demand. We will therefore support self-build or custom housebuilding in any location considered suitable for housing in accordance with our spatial strategy set out in Policy DS1 and Policy C1 on development in the Countryside. We will also encourage neighbourhood plan groups to identify suitable sites for self-build and custom housebuilding within their areas.

- 4.46. There is also potential for larger housing sites to include plots for self-build homes as a means of meeting the demand for this form of accommodation. Our evidence tells us a small proportion of self-build plots as part of larger schemes is unlikely to adversely impact the viability of those sites. Applying this as a requirement to all development sites could be disruptive to the build out process and may not meet the needs of self and custom housebuilders, thus making it ineffective. Instead, we will pro-actively encourage applicants to consider the potential for including plots for those wishing to build or commission their own homes as part of development proposals. We will focus on those areas where the demand can be identified from the register or other evidence, and on the largest sites where disruption will have a less marked effect.
- 4.47. Contributions for affordable housing will not be sought from plots used to develop self and custom-built homes.

Policy H6: Self-build and Custom Housebuilding

We will support proposals for self-build and custom housebuilding in locations considered suitable for housing in accordance with Policies DS1 and C1.

We will encourage the provision of serviced plots for self-build and custom housebuilding as part of an appropriate mix of dwellings on all major developments in locations where there is clear evidence of local demand.

We will seek the provision of at least five serviced plots for self-build and custom housebuilding on sites of more than 250 dwellings.

Where plots have been made available and marketed appropriately for at least 12 months and have not sold, the plots can be used to deliver general market housing.

Houses in Multiple Occupation

- 4.48. A house in multiple occupation (HMO) is a property in which 3 or more unrelated people live together and share facilities such as a kitchen and bathroom. There are two types of HMO:
- Small HMOs: shared houses or flats occupied by between 3 and 6 unrelated individuals who share basic amenities, classified as C4 in the Use Classes Order; and
 - Large HMOs: those with more than 6 people sharing, unclassified by the Use Classes Order and described as being sui generis (of their own kind).
- 4.49. The number of properties used this way has grown in recent years. Our evidence tells us that HMOs are meeting the needs of a range of social groups including students, low income households, young professionals, migrant workers, those going through a change in family circumstances and those who select HMOs as a preferred choice of accommodation such as weekday accommodation returning to another home at weekends.

Concentrations of Houses in Multiple Occupation in Charnwood

- 4.50. Our evidence shows that there are two distinct dimensions to the local HMO market. The student HMO market is focused around the northern, eastern and southern edges of the Loughborough University campus, and in particular Storer Ward and Southfields Ward. The non-student HMO market is most marked in the eastern wards of Loughborough and to a lesser extent in other larger settlements in the Borough and some outlying villages. Traditionally, HMOs in Loughborough were considered to be mainly used by students who attend Loughborough University or Loughborough College. Our research has shown, however, that a high proportion (44%) is occupied by other groups in our community.
- 4.51. HMOs are an important part of the housing market which bring benefits to the community by providing affordable, flexible accommodation for those groups who otherwise may struggle to access housing and those that require short term housing options, including students. Our student population makes a significant economic, social and cultural contribution to our Borough, which is valued.
- 4.52. However, some communities in Loughborough with a high concentration of HMOs experience problems, including anti-social behaviour, noise, crime, poor maintenance of properties, lack of car parking, highway safety issues and an imbalance in the mix of the community which can leave community facilities under resourced.
- 4.53. Where there is a high proportion of HMOs occupied by students it can also lead to a sharp contrast between busy term times and quieter periods during the holidays which impacts on social interactions, surveillance, local services and facilities. In essence, an over concentration of HMOs can lead to a loss of community spirit as long-standing communities are replaced by transient populations with less stake in the community.
- 4.54. We will continue to work closely with our partners, particularly local residents' groups, Leicestershire County Highways, Leicestershire Police, Loughborough University and College and the Students' Union, as well as the Council's Private Sector Housing and Environmental Health Teams, to address issues arising from concentrations of houses in multiple occupation.
- 4.55. In recognition of the issues caused by the concentration of HMOs in Loughborough, special powers were granted to us by the Secretary of State under an Article 4 Direction to remove permitted development rights to convert a home into a small HMO. The Direction means that in Loughborough planning permission is needed to use a house as a small HMO. Planning permission has always been required for use as a large HMO and this remains the case for the whole of the Borough.

Use of Concentration Threshold in Loughborough

- 4.56. The development of sustainable, inclusive and mixed communities is a key planning objective which aims to ensure the needs of different groups in the community are met. While the impact of a single new HMO or the expansion of an existing HMO may not always be significant on its own, it can add to the cumulative impact of a concentration of

HMOs on the character and amenity of an area and the sustainability of the local community.

- 4.57. In Loughborough, where the Article 4 Direction is in place, we will use a threshold approach to assess the cumulative impacts of HMOs on communities. This will measure whether there is already a high concentration of HMO accommodation within an area where a new HMO or expanded HMO is being proposed. The threshold approach will apply to:
- new small or large HMOs;
 - conversions of existing small HMOs (3-6 unrelated people) to large HMOs (more than 6 unrelated people); and
 - extensions to existing large HMOs where this would not result in a change in their use class but would intensify the use, e.g. the provision of additional bedrooms.
- 4.58. The policy will not apply to extensions to small HMOs which remain in the C4 use class. In those cases, the property can lawfully accommodate between 3 and 6 people as a small HMO. Where planning permission for an extension to an existing small HMO is required, the impact of the development on the amenity of people occupying the property and neighbouring properties, and on the character of the area will be considered in assessing proposals against other policies in the plan including Policies DS5 (Design) and H3 (Internal Space Standards).
- 4.59. In setting a threshold above which no further HMOs or expansion of existing HMOs will generally be granted planning permission, a balance needs to be struck. There is a need to maintain mixed and balanced communities, whilst not unnecessarily restricting the overall supply of HMOs across Loughborough and therefore limiting the housing available to meet the needs of the population as a whole. Studies have indicated that local communities become unbalanced if more than 10% of properties are HMOs. This is therefore the threshold that we will use.
- 4.60. Assessments of the current concentration of houses in multiple occupation in Loughborough will be undertaken using the following method.
- A 100m radius will be measured from the centre of the building to which the application applies.
 - The number of current HMOs will be measured as a proportion of the total number of residential properties within the area defined by the radius.
 - A property will be included in a calculation where the centre of the property falls within the area defined by the radius.
 - Each dwelling house within the area defined by the radius will be counted as a single property, regardless of the number of bedrooms.
 - Each HMO will be counted as a single property, regardless of the number of bedrooms.
- 4.61. The 10% threshold provides a measure of the concentration of HMOs and therefore the broad level of balance or imbalance in a community. It is important to note however that we will not adopt a rigid approach to decision making, and our policy identifies other factors that will also be taken into account when determining applications. These include

factors that operate at the smaller scales of a house and its neighbours and the street, which can also be important in affecting the impact of development on the character and amenity of a residential area.

Local Geography in Loughborough

- 4.62. A number of factors relating to local geography will be considered in addition to the threshold in order to assess the impact of an additional or expanded HMO on community balance, and the character and amenity of the area. These may indicate that development in an area that exceeds the 10% threshold is acceptable or development in an area below the 10% threshold is unacceptable.
- 4.63. The number, location and size of large HMOs, and the presence of a halls of residence and purpose-built student accommodation within the area defined by the radius will be taken into account. This is because their proximity, the location of the main entrances and whether the facilities are managed could accentuate or diminish the cumulative impacts measured by the concentration of HMOs.
- 4.64. We will also consider the area in the immediate proximity of the property to which the application relates and assess whether the concentration of HMOs in the surrounding street/s is significantly different to the overall proportion in the area defined by the radius.
- 4.65. It may be appropriate in certain circumstances to exclude from the calculation parts of the area defined by the radius where the presence of any natural or other physical boundaries clearly separates them from the location of the proposed development.
- 4.66. Our evidence has identified an issue with residential properties being sandwiched between two HMO properties. In these circumstances negative impacts from HMO properties can be exacerbated for occupants of the non-HMO property. The residents of the non-HMO property may also feel isolated from other residential properties on the street. Our policy will resist an HMO where it would result in a residential property being sandwiched between two HMOs along the same side of a street. This would not apply where the properties are separated by an intervening road.
- 4.67. These matters expand upon the concentration threshold approach and therefore only apply to Loughborough.

Noise

- 4.68. HMOs can often be noisier than a family home because of the number of people living independently within the property. There is likely to be a greater number of journeys up and down stairs and entering and exiting the property. There is the potential for a greater number of electronic devices to be in use at the same time including TVs and radios and there can also be increased noise created by self-closing doors fitted for fire safety reasons. Noise can adversely affect the amenity of neighbours and other local residents and the potential noise impact of a proposed HMO will need to be considered.
- 4.69. In Loughborough, these impacts have been considered as part of establishing the threshold approach to assessing cumulative impact.

Character and Amenity

- 4.70. The impact of proposed HMOs on the character and amenity of an area will differ depending on the nature of the area and the effects of existing HMOs. In Loughborough, these effects have informed the threshold approach used to assess cumulative impacts. Where available we will also consider other evidence including standards of property maintenance, parking issues, reported crime and anti-social behaviour including noise complaints, a fear of crime, accumulations of waste and rubbish, littering, fly-posting and the proliferation of letting signs to assess the existing impact of HMOs in a particular local area. In Loughborough this will enable local factors to form part of the consideration of applications. Outside Loughborough, where the threshold approach is not used, the evidence will enable an assessment to be made of the impact of existing HMOs on the area.
- 4.71. HMOs by their nature have the potential to increase the number of cars associated with a single property and therefore to increase the pressure on the on-street parking provision. This can lead to problems such as traffic obstructions (to pedestrians, emergency vehicles and refuse vehicles) and congestion. While highway safety will be an issue to consider for all applications, the harm to the residential amenity of the local area caused by the number of cars associated with new HMO developments will also be an important consideration in determining applications.
- 4.72. One way of addressing the issue is to seek adequate off-street parking and appropriate storage space for bikes. However, the removal of front gardens and curtilage features such as walls to provide additional off-street parking can also have a detrimental impact on the character and amenity of an area and so will need to be considered on a case by case basis.
- 4.73. The provision of secure, unobtrusive and accessible refuse and recycling storage away from the public highway but within easy access to the front of the property for collection can be beneficial in reducing the impact of new HMO development on amenity.

Policy H7: Houses in Multiple Occupation

We will support the well-being, character and amenity of our communities by managing the proportion of houses in multiple occupation.

We will support new houses in multiple occupation, conversions of small houses in multiple occupation to large houses in multiple occupation or extensions to large houses in multiple occupation in Loughborough where:

- **the concentration of houses in multiple occupation is less than 10% within the area defined by a 100m radius from the centre of the building to which the application relates, or the development would not otherwise result in an over-concentration of houses in multiple occupation taking into account local geographical factors;**
- **they do not result in a residential dwelling being sandwiched between two houses in multiple occupation; and**

- they do not, either cumulatively with other houses in multiple occupation or in themselves, lead to:
 - adverse noise and disturbance which is detrimental to the amenity of the street or residential area;
 - on street car parking that would cause an unacceptable impact on highway safety, severe impacts on the road network, or cause detriment to the amenity of the street or residential area; or
 - damage to the social and physical character and amenity of a street or residential area.

We will support new or expanded large houses in multiple occupation outside of Loughborough that:

- do not, either cumulatively with other houses in multiple occupation or in themselves, lead to:
 - adverse noise and disturbance which is detrimental to the amenity of the street or residential area;
 - on street car parking that would cause an unacceptable impact on highway safety, severe impacts on the road network, or cause detriment to the amenity of the street or residential area; or
 - damage to the social and physical character and amenity of a street or residential area.

Campus and Purpose-Built Student Accommodation

- 4.74. Loughborough University and Loughborough College are important contributors to the local economy, both in terms of the number of people whom they employ and the investment that they attract into the town. The student population also contributes to the town's vitality.
- 4.75. Our evidence shows that the number of people studying at Loughborough University has continued to increase over the last five years, although more slowly than in the decade prior to that. Although the University has no plans to significantly increase the number of students, this trend is likely to continue. There has also been an expansion in the provision of purpose-built student accommodation both on the University campus and elsewhere in Loughborough in recent years. Loughborough College also provides some accommodation for its students.
- 4.76. The provision of new purpose-built student accommodation on the campuses of the University and College, or in other appropriate locations, meets the needs of students for this type of accommodation. It can also help reduce pressures on residential areas to accommodate students and, consequently, help meet the housing needs of other groups and address the issues associated with high concentrations of houses in multiple occupation.
- 4.77. Given the recent increase in the supply of campus and purpose-built student accommodation, our evidence concludes that there is no need to have a specific policy allocating sites for purpose-built accommodation in order to meet the needs of students. We will support new purpose-built student accommodation, both in the form of new buildings and the conversion of existing buildings, in appropriate locations.

- 4.78. We wish to see such developments generate the minimum number of vehicle movements through optimising opportunities for making use of sustainable modes of transport, for example through providing secure cycle storage as part of the development, and such measures as no car provisions in tenancy agreements.
- 4.79. The Loughborough Student Street Support Scheme provides welfare support to students and minimises night-time noise disturbance to local residents through providing street patrols on routes used by students. New off-campus student accommodation can result in changes to the pattern of pedestrian traffic between the campus, the town centre and the accommodation. It may be appropriate for new off-campus student accommodation to contribute to the additional costs of patrolling new routes or increased patrolling of existing routes associated with the development.
- 4.80. Providers of new purpose-built student accommodation are encouraged to respond positively to the needs of students in terms of providing an appropriate proportion of lower cost accommodation, providing 24-hour warden services, and adopting the ANUK/UNIPOL National Code.

Policy H8: Campus and Purpose-Built Student Accommodation

Additional student housing provision within the campuses of Loughborough University and Loughborough College will be supported.

Additional off-campus purpose-built student accommodation will be supported provided it:

- **is located to be well-related to either Loughborough town centre or the campuses of Loughborough University and Loughborough College;**
- **has good access to suitable bus routes or is within easy cycling or walking distance of the campuses;**
- **minimises the vehicle traffic generated by the development;**
- **avoids damage to the social and physical character and amenity of the local area taking account of the cumulative impacts of the development and other similar uses; and**
- **contributes to the cost of the Loughborough Student Street Support Scheme, where the development will result in additional patrols.**

Development proposals for off-campus purpose-built student accommodation should be accompanied by a Design and Access Statement, or similar document, that sets how issues of sustainable transport and the potential impacts of the development on the local community have been addressed.

Gypsies, Travellers and Travelling Showpeople

- 4.81. The Government has an overarching aim to ensure the fair and equal treatment of gypsies and travellers that facilitates their traditional and nomadic way of life whilst respecting the interests of the settled community. To inform our policies we have worked with other Leicestershire local authorities to assess the need for sites to accommodate gypsies', travellers' and travelling showpeople' s needs.
- 4.82. The Sustainable Urban Extensions North East of Leicester, West of Loughborough and North of Birstall include provision for permanent pitches for gypsies and travellers or plots for travelling showpeople to meet identified needs. These are being implemented as follows:
- Land for 4 gypsy and traveller pitches and 4 travelling showpeople plots as part of the North East of Leicester Sustainable Urban Extension;
 - Land for 4 gypsy and traveller pitches and 4 travelling showpeople plots as part of the West of Loughborough Sustainable Urban Extension;
 - 4 plots for travelling showpeople as part of the North of Birstall Sustainable Urban Extension.
- 4.83. We will monitor the delivery of plots and pitches, including those at the Sustainable Urban Extensions, to ensure they are provided within agreed timescales.
- 4.84. Our evidence shows that there are no additional needs for permanent pitches for gypsies and travellers or plots for travelling showpeople in Charnwood for the period up to 2037. There remains a need for transit sites across the county, particularly in the north west of the county and the city of Leicester, and we are working with other local authorities in Leicester and Leicestershire to identify and bring forward sites in the areas of greatest need for transit provision.

Policy H9: Gypsies, Travellers and Travelling Showpeople

We will support sites for gypsies, travellers and travelling showpeople to meet an identified need that are:

- **designed to create a safe and healthy environment for residents;**
- **appropriate in scale;**
- **well related to local infrastructure and services including shops, schools and health facilities;**
- **sensitively designed to avoid unacceptable adverse impacts on the character, appearance and amenity of the locality; and ensure safe access for the movement of vehicles to and from the site with provision for parking and servicing within the site.**

Chapter 5 Employment

Our Economy and Labour Market

- 5.1. Charnwood is centrally located in England and is the largest district by population in Leicestershire and one of the largest in the country. Leicester, Nottingham and Derby are within easy reach whilst the Midland Mainline railway, M1 motorway and East Midlands Airport provide good connections with more distant destinations, and this makes Charnwood an extremely attractive location for business.
- 5.2. Loughborough is a big driver for the local economy in the north of the Borough, with the high technology manufacturing and knowledge-based industries an important sector for the town. The Charnwood economy also has a strong relationship with Leicester and our economic fortunes are closely linked to the city. Businesses in the south of the Borough benefit from their proximity to the city and 15,000 residents living in Charnwood travel to work in the city.
- 5.3. We produced an Economic Development Strategy for Charnwood in 2018 and following the Covid-19 global pandemic we have been working with our partners to contribute to an Economic Recovery Strategy for the Leicester and Leicestershire area. Our 'in Charnwood' initiative aims to create a strong economy for the Charnwood area by working closely with other parts of the Council, businesses and with a wide range of partner organisations to encourage inward investment and business growth. Charnwood has significant economic growth potential, and our policies are designed to help facilitate that.
- 5.4. In 2019 there were around 79,000 jobs in Charnwood with our businesses producing goods and providing services worth £3.5 billion a year to the economy. The education sector and professional, scientific and technical activities are particularly well represented compared to the national average. This reflects the importance of Loughborough University and Loughborough College to the local economy. Despite a 35% decline in employment in manufacturing from 2000 to 2016, this sector is still substantially larger in Charnwood than the regional and national average.
- 5.5. The Borough's average wage is very similar to that of the East Midlands and the wider country whilst the number of our residents claiming out-of-work benefits is lower than the national average and that of the East Midlands. Unemployment levels are also lower than the national and regional average. However, there are still areas of Charnwood which suffer from higher unemployment, lower wages and lower levels of educational attainment, especially in our Priority Neighbourhoods of Loughborough East, Loughborough West, Mountsorrel and South Charnwood (part of Thurmaston and Syston).

Charnwood's Future Economy

- 5.6. We want to create a strong and lasting economy which will encourage the success of our businesses and in turn provide jobs and a better quality of life for all our residents.

- 5.7. Our development strategy sets out our approach to meeting employment needs in the Borough. We want to ensure that businesses in Charnwood can access suitable premises which enable them to thrive. We also want to attract new inward investment. Our aim is to encourage a flexible supply of land which can respond to a changing market and working practices, encourage competition and maximise economic growth. We will help facilitate the supply of major employment sites and make provision for the supply of land and property which encourages the establishment and growth of small and medium sized businesses.
- 5.8. Innovation is important for value creation, growth, competitiveness and employment. We will capitalise on this by taking advantage of the presence of Loughborough University, the Loughborough and Leicester Science and Innovation Enterprise Zone sites, our existing businesses that are involved in innovation and leading-edge technologies and the excellent transport links in our Borough.
- 5.9. We will continue to support our Enterprise Zone sites of Loughborough Science and Enterprise Park and Charnwood Campus as centres for high value, knowledge-based businesses. We will seek opportunities to support the forward funding of infrastructure and buildings within the Enterprise Zone area through the use of future business rate receipts to ensure a significant boost to our economy. We will also use these receipts to support initiatives which help provide training and improve the skills required to establish, improve and grow businesses.
- 5.10. Just to the north of the Borough, East Midlands Airport and the East Midlands Gateway provide employment opportunities for some of our residents. The Leicester and Leicestershire Strategic Growth Plan has identified the Leicestershire International Gateway, focussed around these sites, as an area with the potential for further growth and employment. To promote the potential of this area we will work collaboratively with our partners on any major employment opportunities proposed outside Charnwood which contribute to the Leicestershire International Gateway and seek to improve access to them from Charnwood.
- 5.11. Shepshed has provided a focus for our housing growth and to support this development and our regeneration aims for the town, along with the International Gateway, we have allocated 5 hectares for employment on land off Fairway Road to provide the opportunity for new employment premises to be built in the town.
- 5.12. The economic relationship between south Charnwood and the city of Leicester provides an opportunity to encourage new manufacturing and small warehousing jobs within Charnwood to take advantage from business investment and expansion that may not be able to take place in the city.
- 5.13. Our evidence forecasts a growth in office related jobs to 2037. Around half of this growth will be focussed in professional services with the rest spread across a range of sectors. We recognise that the impact of the Covid-19 pandemic has altered the way many companies have operated and may well alter future working patterns for such jobs, and this will be monitored through the plan period as the economy settles. There has been a rise in homeworking over recent years, driven by improvements in technology which has accelerated during the pandemic. We will support opportunities for live/work units which consist of both commercial/office space and a residential component where this does not affect residential amenity or lead to conflict with commercial activities.

- 5.14. Development can provide opportunities for our communities through the provision of new jobs and training prospects. We will encourage developers to demonstrate how job and training opportunities can be made accessible to residents, particularly those from priority neighbourhoods, through planning obligations. The availability of new jobs can support our local residents whilst the raising of skills levels will help increase the productivity and competitiveness of the Charnwood economy.
- 5.15. In the manufacturing sector, the decline in jobs is forecast to slow down compared to past rates and as a result manufacturing is likely to remain an important part of our local economy in future years and we will seek to support this. Alongside Covid-19, the departure of the United Kingdom from the European Union is also likely to have implications for our economy and how it operates in the future; however, these impacts cannot be defined with any great certainty at present and their precise nature is likely to remain unknown for several years.
- 5.16. To encourage the establishment of small and medium sized businesses we will ensure the provision of land and buildings to meet their needs whilst facilitating the supply of major employment sites and their delivery. Our evidence has also identified that there is a strong demand for smaller freehold industrial units and additional development for such units to meet this need will be supported provided it is in suitable locations.
- 5.17. Our evidence regarding employment land highlights that our existing land supply commitments are sufficient to provide choice and flexibility to meet our needs. The oversupply of land identified will allow us to respond to any changes in demand, including unmet employment needs from within the city of Leicester in the south of the Borough.
- 5.18. Amendments to the town and country planning regulations have established that Class E now covers a range of commercial, business and service uses. Where a proposal is meeting a demonstrable need in support of the local economy, we will consider using specific conditions to restrict permitted development rights within the new Class E.
- 5.19. To create favourable conditions for the growth of our economy requires good infrastructure and a built environment which suits the needs of businesses so they can thrive. We will support and influence infrastructure providers to meet the future needs of existing and new businesses.
- 5.20. Neighbourhood plans provide local communities with the opportunity to make decisions about employment for example stipulating the type of jobs needed, the scale of employment and its location. We will encourage our communities through neighbourhood plans and supported by appropriate evidence to identify employment opportunities in their local area.

Regeneration

- 5.21. We want to help all our towns and villages to thrive, and to revitalise and further improve our urban areas which will support our vision and objectives. We will encourage development which improves the urban environment and rejuvenates the economy. Our overall development strategy of urban intensification and concentration aims to support the vitality and viability of existing centres. We want to encourage people to live close to the urban centres in the Borough to promote the future success of those centres by boosting footfall and the local economy. We will support the regeneration of existing

employment sites to support our urban areas and ensure the efficient use of brownfield land.

- 5.22. We have identified priorities for regeneration at Thurmaston in our place-based policies. We also recognise the importance of regenerating the centres of Loughborough and Shepshed, as the major urban areas in the north of our Borough. We have developed Masterplans and identified place-based policies which will assist in their revitalisation.

Policy E1: Meeting Employment Needs

By 2037 we will meet the economic needs of our communities and continue to contribute to supporting the economic needs of Leicester. We will do this by supporting development that:

- **contributes to delivering our employment needs, in accordance with Policies DS1 and DS4;**
- **supports the expansion of the Loughborough Science and Enterprise Park, in accordance with Policy LUC3;**
- **encourages a greater proportion of high technology and knowledge-based businesses in Loughborough;**
- **provides opportunities for manufacturing businesses to develop, re-locate and expand;**
- **supports proposals that provide flexible accommodation, including for offices and managed workspace;**
- **provides opportunities for small-scale, high quality business units and offices, including freehold industrial units;**
- **supports business and employment regeneration opportunities which support our Priority Neighbourhoods and existing urban areas;**
- **seeks to provide employment and training schemes to maximise local employment opportunities and help address skills deficits in the local population; and**
- **supports and promotes transport, power and broadband infrastructure which facilitates employment developments.**

We will consider the use of planning conditions for applications which are for offices, research and development or light industrial uses (Use Class E (g)) to ensure that they remain within that use in perpetuity.

Protecting Our Existing Employment Sites

- 5.23. We want to prevent the loss of good quality employment sites to alternative uses as our evidence identifies that these sites have low vacancy rates and are needed to maintain a supply of land and buildings for new and growing businesses. Employment uses are generally considered to fall within the B and E Use Classes along with some sui generis employment uses; however, we also recognise that there may be occasions when other employment generating commercial uses may be acceptable.
- 5.24. The Policies Map identifies the good quality employment sites which should be safeguarded, based on our evidence of their attractiveness to occupiers, accessibility and compatibility with their surroundings.

- 5.25. We will require any proposal involving the loss of commercial accommodation or land to demonstrate that there are no reasonable prospects that the site will be required for employment use in the future through proportionate marketing relevant to the site's circumstances and setting, and the market demand at that point in time.
- 5.26. We recognise that recent changes to the Use Classes Order and General Permitted Development Order will mean that some alterations to a building's function and operation may no longer be controlled by the planning system. However, to provide a range of employment sites and limit the need for development on greenfield land we will look to ensure that existing employment sites, premises and allocations that are viable for continued use are safeguarded where possible to maintain job opportunities and protect the economic health of our Borough. Where we are able, we will seek to ensure the release of viable employment sites or premises to other uses may only be made where their loss would not cause harm to business or employment opportunities, or where there are unacceptable amenity impacts for local residents. This policy will be applied to not only new floorspace, but also to change of use (where appropriate) and variations of conditions to remove or amend restrictions on how units operate in practice.
- 5.27. The marketing evidence submitted with a planning application should demonstrate:
- that the site or land has been widely advertised and marketed for a wide range of economic uses for at least one year, including offering the site for both freehold and leasehold interest;
 - that the site or land has been offered at values reflective of current market values, including benchmarking with similar sites in the market area;
 - details of any interest received from potential buyers or tenants since marketing commenced, including explanation of why this was not pursued; and
 - viability testing of indicative schemes where sites or land are undeveloped, or property needs to be redeveloped.
- 5.28. We will consider sites on an individual basis to take account of specific circumstances including the relationship with, and amenity of, adjoining sites. It may be possible for an employment site which cannot remain wholly in employment use to become a mixed-use development to offset part of the loss of employment space. This should be considered prior to total loss of the site.
- 5.29. Our allocated sites, which are not yet developed, may not be brought forward for several years. These sites contribute towards our medium and long-term supply of employment land and allow the economy to respond flexibly to demand over time. We would, therefore, not normally expect them to be considered for alternative uses.

Policy E2: Protecting Existing Employment Sites

Existing good quality employment sites, as identified on the Policies Map, will be protected for employment uses unless it can be demonstrated that:

- **the site or land has no reasonable prospect of being re-occupied or redeveloped for a new employment use;**
- **the proposed use would contribute to delivering the wider local plan objectives in accordance with Policy DS1;**

- immediately prior to submission of a relevant planning application the site or land has been widely advertised and marketed for a wide range of economic uses at reasonable market values for at least one continuous year;
- consideration has been given to mixed use development of the site including employment uses; and
- the alternative use is small scale, complimentary and ancillary to the main employment use of the site.

For other existing employment sites, not identified as good quality on the Policies Map, proposals for alternative uses will be supported where it can be demonstrated that:

- the property or land is vacant and has been unsuccessfully marketed for employment use for at least six months, at reasonable market values; and
- the change would result in amenity or environmental benefits to the adjacent uses or area.

Warehousing and Logistics

- 5.30. The logistics and distribution industry now form a significant part of the UK's economy as goods flow from the manufacturer to the general public via suppliers, retailers and their distribution centres. Leicestershire, and the wider Midlands area, occupies a central location in the country with excellent transport links and as such is considered a prime location for large scale B8 warehouse and distribution operations, making it of regional and national significance to the strategic distribution sector. The commercial buildings (strategic warehouses) used in these strategic storage and distribution operations are large scale and relate to units where the individual unit size is over 9,000sqm (or approximately 100,000sqft), a standard definition within the commercial property sector.
- 5.31. We recognise that the sub-regional, regional and national scale at which the strategic distribution and logistics sector operates requires significant cross boundary cooperation to meet their development needs. We have joined with our local authority partners across the Functional Economic Market Area to produce an evidence base which examines the current and future needs of the sector, with an emphasis on future floorspace and land requirements. However, delivering new commercially attractive strategic sites on this scale to proactively drive and support sustainable economic development cannot be undertaken by Charnwood working alone.
- 5.32. We will use our evidence base, through the duty to cooperate, to ensure continued long-term strategic and collaborative planning across the county of Leicestershire, and potentially with authorities in neighbouring areas, to identify and deliver the needs of this industry. Our evidence recognises that the prime locations for strategic distribution operations are influenced by several criteria which are required to ensure they can operate efficiently: for example, good connectivity with the strategic road network and accessibility to a suitable workforce.
- 5.33. These factors will be used, with our partners, to identify potential areas of opportunity for such development. When identifying sites, a sequential approach is also recommended which ensures that existing sites are sufficiently exhausted first; followed by extensions of these sites; then satellite sites near existing sites; then brownfield; and finally, new greenfield sites.

- 5.34. We will seek to ensure that any proposals for strategic distribution development meet the vision and objectives in this plan of supporting our strong and diverse economy and enhancing the role of knowledge-based industries in Charnwood. Proposals for strategic warehousing will be determined against other policies in this plan to assess their impacts upon factors such as residential amenity, sustainable construction and impact on the character and appearance of an area.
- 5.35. Alongside the strategic distribution warehouses themselves the logistics industry also has further requirements at different points in the supply chain, which include consolidation centres and last mile delivery facilities, along with HGV parking and associated amenities. We will support such development and its contribution to the wider supply chain, subject to the other policies in this plan.

Our Rural Economy

- 5.36. Our rural areas have changed with the continued mechanisation of agriculture and consolidation of holdings into larger farms. Jobs in agriculture have declined considerably and are forecast to continue to do so and we want to ensure the economic viability of rural communities and enterprises. Our rural areas generally have less access to public transport, and it is important that local services and facilities are supported. We are proposing to support the regeneration and diversification of the rural economy whilst protecting the character and appearance of the countryside and our rural communities.

Small Scale Business Development in Villages

- 5.37. We will support development which is not detrimental to the character and appearance of the countryside and will provide employment opportunities in our rural areas for local communities. Neighbourhood plans provide an opportunity for local communities to take the lead in deciding how to balance the employment needs of their communities and several have already done so.

Re-use of Rural Buildings

- 5.38. We will help our rural economy by supporting the reuse of redundant or under used rural buildings for small scale business activities compatible with countryside locations. This can also help preserve historic agricultural buildings whilst supporting local economies.

Farm Diversification

- 5.39. Farm diversification can help farmers by providing sources of income which allow them to continue to farm and manage the land. Successful farm diversification activities include small farm shops, processing and selling produce from the farm, craft workshops, small businesses, bed and breakfast and holiday accommodation. We will support activities which are compatible with a countryside location as long as farming remains the dominant business activity.

Equine Businesses

- 5.40. The keeping of horses in the Borough makes a valuable contribution to our countryside and the rural economy. We will support the development of our horse related industry which provides opportunities for leisure, tourism and farm diversification along with the related farriery, saddlery, feed trades and specialist equine veterinary services. New development proposals of this nature will however need careful consideration in terms of their impact on the character and appearance of the countryside.

Tourism and Leisure

- 5.41. Tourism in Charnwood contributed £304 million to our economy per year as of 2018 and the Borough attracts over 6.01 million visitors a year. The Charnwood Tourism Strategy found that tourism supports over 6,000 jobs in more than 900 businesses in the Borough. There are several popular attractions in our Borough such as the Charnwood Museum, Loughborough Town Hall, the Carillon Court Shopping Centre, Great Central Railway, Taylors Bell Foundry, Bradgate Park, Grand Union Canal and various other country parks. We recognise the important role tourism and leisure plays in the Borough's rural areas and overall economy and will support our partners to continue to grow the tourism sector in our Borough.
- 5.42. The Great Central Railway plays a significant role for our rural tourism offer with stations at Rothley and Quorn providing a focus for tourism activity. We will continue to work with the Great Central Railway to support the future success of this heritage line.
- 5.43. We will continue to work with the River Soar and Grand Union Canal Partnership to harness the potential of the waterway and make it more attractive to visitors. The policy will support development which improves accessibility and facilities for canal related tourism development.
- 5.44. There is also potential for rural tourism based on the enjoyment of the countryside, our rich built heritage, festivals and events supported by restaurants, cafés, bars and public houses.
- 5.45. Charnwood Forest is a unique and important landscape which is related to the wider National Forest. With our partners in the Charnwood Forest Regional Park, we will promote sustainable leisure and tourism, manage and promote landscape and settlement character and support agricultural diversification and woodland and rural economy uses.

Small Scale Expansion of Existing Businesses in the Countryside

- 5.46. There are a number of existing businesses across the rural areas of the Borough including offices, warehousing and manufacturing operations. Some, such as those at Wymeswold and Rearsby, are associated with redundant military and civil airfields. Whilst these sites are not good locations for businesses that create a significant number of vehicle movements, some types of business can contribute to the local economy and provide jobs for our village communities. We will support small scale expansion or intensification of these types of business provided it is sensitive to the character and appearance of the Countryside.

Policy E3: Rural Economic Development

We will maximise the potential of our rural economy by 2037 by supporting development that:

- **provides small scale, sustainable growth and expansion of existing businesses in rural areas both through conversion of existing buildings and well-designed new buildings;**
- **enables farm diversification where farming remains the dominant element of the business;**
- **provides superfast broadband networks for all homes and businesses;**
- **provides tourism and leisure facilities, particularly developments that benefit the Great Central Railway, the River Soar and Grand Union Canal, the National Forest Strategy and the Charnwood Forest Regional Park; and**
- **is not detrimental to the character and appearance of the Countryside in terms of its scale, character or operational requirements.**

Chapter 6 Town Centres, Services and Facilities

Town Centres

- 6.1. Town, district and local centres are the focal point of communities. They provide local access to goods, services, leisure facilities, social interaction and employment and are therefore an essential part of sustainable communities. Our centres are set within the historic core of our towns and villages and contain significant heritage assets that are integral to their sense of place.
- 6.2. Our vision and objectives include support for strong, vibrant and healthy communities. This policy applies to proposals for main town centre uses and proposals within defined centres and needs to be considered alongside other policies in the local plan. Policy DS1 sets out the scale and pattern of development for retail uses for the local plan as whole. Policies for specific places are set in the place-based policies including the Baxter Gate/Pinfold Gate Opportunity Site in Loughborough to meet need for retail uses, as well as our regeneration and other priorities for different centres in Charnwood.
- 6.3. To achieve our vision and objectives, planning decisions need to ensure that there is a network of vibrant centres, so residents have good access to a range of shops, services and facilities at the heart of their communities. The vitality and viability of centres will be supported by developments that provide a range of uses, that encourage a strong daytime and evening economy that enhance local employment opportunities and spend. High quality design of buildings and spaces including the retention of traditional shop frontages, avoidance of ‘dead frontages’, providing for the ease of movement and attractive public realm will enhance the visual interest of centres and create safe places where people want to spend time together. We will support appropriate residential uses within centres, particularly at upper floor levels, to make the best use of underused floorspace and to enhance activity, footfall and natural surveillance.
- 6.4. Our evidence establishes individual centre boundaries which are identified on the Policies Map and which are within the following hierarchy:
- **Town Centre** (Loughborough) – provides the principal focus for retail, leisure, offices, arts, tourism and cultural activities in the Borough. A ‘primary shopping area’ is identified defining the area where retail development is concentrated within the town centre.
 - **District Centres** (Anstey; Barrow upon Soar; Birstall; Gorse Covert; Shelthorpe; Shepshed, Sileby; and Syston) – provide day-to-day retail and service needs that typically arise for a wider local catchment, usually comprised of groups of shops, at least one supermarket, and a range of non-retail facilities such as banks, healthcare, religious institutions, restaurants or a library.
 - **Local Centres** – (Mountsorrel; Rothley; Sharpley Road Loughborough; Quorn; and Melton Road, Thurmaston) – provide a range of small convenience shops that serve a small local catchment and, in most cases, non-retail facilities such as a religious institution or community hall.

Sequential Test and Impact Assessment

- 6.5. We want to see main town centre uses being developed in our town centres rather than other locations. Development of such uses outside of our defined centres will not help us to deliver our vision. We will apply a sequential approach to the location of new town centres uses which prioritises sites in centres, ahead of those in edge of centres or then out of centre locations.
- 6.6. The sequential test will be applied to proposals for main town centre uses, including developments involving mezzanine installations and variation of condition applications (for example to extend hours of operation or the range of goods sold). The sequential test will not be applied to proposals for small-scale rural economic development such as for a small-scale shops that is ancillary to a tourism use or farm, or the expansion or a rural business which involves minimal new floorspace (see policy E3). Similarly, the sequential test will not be applied to proposals for changes of use for a unit within existing undesignated small parades of shops that provide goods or services for a local neighbourhood catchment.
- 6.7. Our evidence has established local impact assessment thresholds which are reflected in the policy. When applying the assessment thresholds, the size of proposals will be assessed as the proposed gross internal area.

Permitted Development

- 6.8. We will help create the conditions in which businesses can invest, expand and adapt whilst balancing this with supporting the viability of Charnwood's designated centres. Where permitted development rights exist that could result in subsequent alterations/use changes that could undermine the aims of the sequential approach, we will consider attaching specific planning conditions in order to support the viability of town centres. This will be considered on a case-by-case basis but could include for example restricting the sale of certain goods and services and restricting changes of use.

Hot Food Takeaways

- 6.9. Hot food takeaways contribute to the mix of uses in centres and can support local evening economies. However, concentrations of hot food takeaways, particularly on prominent streets or retail frontages, can detract from the overall appearance of centres due to their predominant evening use which can result in a lack of street activity in the daytime. They can lead to the generation of significant litter, including food waste, and to short term parking outside takeaways leading to congestion. Our evidence tells us that the concentration of hot food takeaways in specific locations, particularly in Birstall and Shelthorpe District Centres, detracts from their vitality. We want to manage the concentration of hot food takeaways to support the vitality and viability of our centres.

Policy T1: Town Centres and Retail

The hierarchy of centres in Charnwood Borough is defined below and their boundaries are identified on the Policies Map:

- **Town Centres:** Loughborough
- **District Centres:** Anstey; Barrow upon Soar; Birstall; Gorse Covert (Loughborough); Shelthorpe (Loughborough); Shepshed, Sileby; and Syston
- **Local Centres:** Mountsorrel; Rothley; Sharpley Road (Loughborough); Quorn; and Melton Road (Thurmaston).

We will make a significant contribution to the vitality and viability of our town, district and local centres. We will do this by supporting development for main town centre uses within centres that:

- widens the range of main town centre uses in the centre;
- supports activity throughout the day and into the night;
- are physically integrated within the centre and enhance the centre's compact and walkable character;
- makes use of above ground floor spaces, including for residential use, whilst maintaining main town centre uses at ground floor;
- addresses specific regeneration priorities for Loughborough, Shepshed and Thurmaston (see policies LUC1, SUA1 and SC1);
- enhances existing or create new markets;
- maintains street frontage activity which encourages activity within the Centre (such as avoiding dead frontages and ensuring security provisions have some visual permeability)
- are physically integrated within the centre and enhance the centre's compact and walkable character;
- ensures that proposed signage does not detract from the character and appearance of the surrounding area;
- maintains and enhance historic shopfront features; and
- provides appropriate access for building servicing.

We will apply a sequential approach to the location of proposals for main town centre uses. Town centre uses will be directed to defined centre locations, then edge of centre locations, and only if suitable sites are not available (or expected to become available within a reasonable period) should out of centre sites be considered.

We will require an impact assessment for proposals (including the formation of mezzanine floors) for/or which include retail, leisure and office developments which are not located within a defined centre where:

- the proposal provides a floorspace greater than 500sqm gross; or
- the proposal is located within 800m of the boundary of a District Centre and is greater than 300sqm gross; or
- the proposal is located within 800m of the boundary of a Local Centre and is greater than 200sqm

Proposals that result in clusters of hot food takeaway uses will not be supported, taking account of the concentration and proximity of existing such establishments in the immediate area.

Protection of Community Facilities

- 6.10. Community facilities are essential to ensure and maintain a high quality of life for those people who visit, live and work in both the urban and rural areas of our Borough. We will protect and where possible, enhance, viable and necessary community facilities which play an important role in social interaction and community cohesion.
- 6.11. Neighbourhood plans play an important role in allowing local communities to identify, protect and enhance community facilities which are important to their neighbourhood area. Through neighbourhood planning, local communities can identify important local facilities, including those on the statutory list of assets of community value, and develop appropriate solutions for their retention and enhancement.
- 6.12. For the purpose of this policy, community facilities are defined as follows:

Facilities and uses generally available to and used by the local community at large for the purposes of leisure, social interaction, health and well-being or learning. This will include, but not be confined to, community centres, historic and community public houses, premises for indoor sport, leisure and cultural centres, places of worship, doctor's surgeries/ health centres, crèches, playgroups, libraries, schools and other training and educational facilities.

Policy T2: Protection of Community Facilities

We will protect community facilities and support their enhancement. Development resulting in the loss of an existing community facility will only be permitted where:

- **suitable alternative provision exists or will be provided in an equally accessible or more accessible location within 800m walking distance; or**
- **all reasonable efforts have been made to preserve the facility, but it has been demonstrated that it would not be economically viable, feasible or practicable to retain the building or site for its existing use; and**
- **evidence is provided to confirm that the property or site has been marketed at a reasonable value according to size, condition and existing use without development potential for a meaningful period, of at least for example 12 months, and that there is no realistic interest in its retention for the current use or for an alternative community use.**

Car Parking

- 6.13. The availability of residential and non-residential parking is important in our Borough as it can have a major influence on the way in which people travel and the accessibility to services and facilities.
- 6.14. Our evidence tells us that demand for car parking will increase and, in some areas, demand will exceed supply. This is forecast to be the case in Loughborough, Shepshed, Anstey, Barrow upon Soar, Quorn and Sileby where additional off street car parking will be required. We commissioned further evidence to identify the scope for bringing forward sites at each location, and this will inform our discussions with local communities and developers.
- 6.15. We do not have a statutory duty to provide car parking however we recognise the value it provides for supporting the vitality and viability of our towns and villages and we will work with local communities, Leicestershire County Council and businesses to address the issues where they are most acute. In providing for sufficient parking for local communities and businesses we will also ensure that environmental sustainability is secured through measures such as providing for electric vehicle charging points in accordance with Policy CC6.
- 6.16. Leicestershire County Council, as the local highway authority, has prepared a Leicestershire Highway Design Guide which provides advice on highway design, including parking standards. It provides guidance on the levels of car, cycle, motorcycle, electric car charging and disabled parking that should be provided in association with development. This document is the starting point for detailed discussions and agreement on development proposals and any new development will need to have regard to the guidance and advice set out in the document. All new proposals will be expected to be supported by robust evidence that justifies the need for the specified amount of parking.

Policy T3: Car Parking Standards

We will ensure that there is an adequate provision for all users of residential and non-residential parking in our Borough. We will do this by:

- **encouraging parish and town councils to address car parking needs and identify potential sites for new car parks through the neighbourhood planning process;**
- **requiring that all new developments provide car parking spaces in accordance with the latest published guidance of Leicestershire County Council and Charnwood Borough Council;**
- **requiring that parking infrastructure is well-designed and in suitable, sustainable locations; and**
- **requiring that any variation from the guidance is supported by robust evidence and thoroughly justified.**

Chapter 7 Climate Change

- 7.1. We recognise Climate Change as one of the key challenges facing Charnwood with predictions for the East Midlands indicating that we can expect hotter, drier summers and warmer, wetter winters as well as an increase in incidents of severe weather such as storms and flooding.
- 7.2. The Climate Change Act commits the UK government to reduce greenhouse gas emissions by at least 100% of 1990 levels (net zero) by 2050. Net zero refers to the balance between the amount of greenhouse gas produced and the amount removed from the atmosphere. We recognise the planning system will need to play a role in achieving this challenging target. As well as taking actions to reduce emissions, it will be important to maximise natural process that can take carbon out of the atmosphere such as peat and trees, known as carbon sequestration.
- 7.3. We know that we need to take immediate action to protect the environment for future generations and this is a priority in our Corporate Plan, reflected through our Climate Change Strategy, and is an objective of the local plan. The Council has already reduced its carbon footprint by 32% since 2012 and is committed to making operations carbon neutral by 2030 through using less energy, producing more power from renewable energy sources and reducing waste.
- 7.4. Carbon emissions from activities in the wider Borough have also fallen over recent years; however, we want to see further reductions and there is a role for us all to play in achieving this. Ensuring that our Borough fully contributes to reducing the impacts of climate change is a priority and we can all make changes to our lifestyles to reduce our impact on the environment.
- 7.5. We will help make these changes by raising awareness of climate change issues with our local communities, partners and stakeholders, introducing mitigation measures which reduce our impact on climate change, and by ensuring our built and natural environments are resilient and can adapt to climate change over the short and longer term. Some of the actions for tackling climate change, such as improving energy efficiency in homes and increasing provision of Green Infrastructure, could have direct benefits for residents by reducing energy bills and providing a higher quality environment.
- 7.6. We are aware that there are parts of the Borough where air quality is an issue. Our policies on Sustainable Construction and Sustainable Transport also seek to address activities that can detrimentally affect air quality.
- 7.7. The policies in our local plan will play a significant role in helping to shape a sustainable pattern of development which supports our climate change ambitions. Our approach also provides a positive planning framework which addresses issues such as renewable and low carbon energy, sustainable construction, minimising flood risk, encouraging the application of sustainable drainage systems (SuDS) and promoting sustainable transport. We will also work with our partners, stakeholders and local communities to protect and enhance our local environment.

- 7.8. We also recognise that trees play an essential role in helping to tackle climate change by offsetting CO₂ emissions and reducing the heat island effect. We have pledged to ensure that 100,000 trees are planted by the end of 2024 and our policy on trees is set out in more detail in the Environment Chapter of the local plan.

Managing Flood Risk

- 7.9. The Rivers Soar and Wreake flow through Charnwood and together with the Grand Union Canal and other watercourses mean that approximately 12% of our Borough lies in Flood Zone 3 (highest risk of flooding). Charnwood's rivers, reservoirs, canal and brooks are a valuable asset, but they require careful management to preserve their quality and value, and to manage flood risk.
- 7.10. Significant fluvial flooding incidents occurred in April 1998 and January 1999 along the Rivers Soar and Wreake, and surface water flooding occurred during the summer of 2007 in the settlements around Charnwood Forest in the west of the Borough. More recently fluvial flooding occurred in June and November 2012 in Loughborough and across the wider Borough. Between 2018 and 2020 there was a total of 87 Local Flood Authority reports of internal flooding, 32 of which were in Loughborough.
- 7.11. The main flood risk from rivers (fluvial flood risk) is along the River Soar, the River Wreake and their tributaries. These present flood risk to rural communities as well as to the main urban areas including Loughborough, Syston, Thurmaston and Quorn. The risk of flooding from surface water (pluvial flood risk) is usually caused by intense rainfall that may only last a few hours and usually occurs in lower lying areas, often where the drainage system is overwhelmed with the volume of water. Our evidence also tells us that surface water predominantly follows topographical flow paths of existing watercourses.
- 7.12. Groundwater susceptibility mapping of the Borough has shown that the lower permeability of bedrock in Charnwood means that the majority of the Borough is at a lower probability of groundwater flooding (less than 25%). Areas with higher susceptibilities and more likely to flood from groundwater are found along the River Soar and River Wreake. The Grand Union Canal is the only canal in Charnwood. There have been only two incidents of a breach of the canal which occurred at Wanlip Weir in 1962 and Barrow Weir in 1971.
- 7.13. Our evidence provides us with an appraisal of all potential sources of flooding and assesses the potential increase in flood risk due to climate change. Our policy on managing flooding is based upon a risk-based, sequential approach to the location of development, avoiding high risk areas and steering development to areas at lower risk. This will be done by applying the Sequential Test meaning that sites at risk of flooding can only be suitable for development if there is no other land available in areas with little or no flood risk. If it is not possible to locate development in areas with a lower risk of flooding (Flood Zone 1), the Exception Test will need to be applied (this is for development in Flood Zones 2, 3a and 3b). Where no suitable sites on land with the lowest risk of flooding are available, we will need to ensure that developments are appropriate, flood resilient and resistant, safe for its users for the development's lifetime, there will be no increase to overall flood risk, and where possible should look to reduce flood risk to third parties. Our evidence provides a framework for the application of the Sequential Test of sites and, where necessary, the Exception Test.

- 7.14. We require all applications for major developments in Flood Zone 1 or any development in Flood Zones 2 or 3 to be accompanied by a site-specific Flood Risk Assessment. This should identify the main flood risks to the site, including whether the development will increase flood risk downstream, and recommendations for mitigating measures such as sustainable drainage systems, site layout and design or modifying ground levels.
- 7.15. We also require developments to take account of the cumulative impact of flooding at the design and planning application stage and ensure that appropriate mitigation measures are installed so flood risk is not increased elsewhere. Examples of such include level for level floodplain compensation.
- 7.16. We recognise that measures to manage the biodiversity and landscape of major watercourses such as the River Soar and River Wreake corridors and the Grand Union Canal and projects such as the Soar and Wreake Living Landscape Scheme, will be extremely important in helping to reduce flood risk. The creation of new habitats, including woodlands and wetlands, planting of trees and reconnecting rivers to natural flood plains can all be used to reduce flood risk naturally and provide ecological benefits. It will also be important to reduce impacts of flood risk for areas of habitat that are vulnerable to climate change in line with Natural England's Climate Change Vulnerability Mapping.
- 7.17. New developments can have a significant impact on water use and water network capacity and also on water resources, waste disposal and flood risk. The benefits of adopting an early and integrated water management approach are advocated by the Environment Agency and can help to create a healthier, safer and richer environment for our communities to live in.
- 7.18. We will work with our partners including the Environment Agency, Leicestershire County Council, in its role as the Lead Local Flood Authority, and Seven Trent Water to manage flood risk across the Borough. We will work with developers to secure contributions to flood risk mitigation measures where it is appropriate and viable to do so.
- 7.19. We will support our local communities, through their neighbourhood plans to identify opportunities for flood mitigation measures suitable for their local area.

Policy CC1: Flood Risk Management

We will manage flood risk by directing development to areas in the Borough with the lowest risk of flooding (Flood Zone 1), applying the Sequential Test and Exception Test, where necessary. We will do this by:

- **ensuring that major development proposals in Flood Zone 1 and any developments in Flood Zones 2 and 3 are accompanied by a site-specific flood risk assessment;**
- **requiring a sequential approach to layout is taken within the site, with the highest vulnerability development being located within the lowest flood risk zone(s);**
- **requiring developments on greenfield sites to cause no net increase in the rate of surface water run off;**
- **requiring development on brownfield sites to secure a decrease in surface water run-off;**

- requiring developments to consider the cumulative impact of proposals within, or which affect, local areas susceptible to flooding, and ensuring appropriate mitigation measures are in place so that new development does not increase flood risk and, where possible, reduces flood risk;
- ensuring that, where appropriate, all major developments incorporate sustainable drainage systems, in accordance with Policy CC2;
- ensuring that the natural environment and major watercourses within the site are suitably managed to help reduce flood risk;
- encouraging minor developments to incorporate sustainable drainage systems, in accordance with Policy CC2;
- ensuring that the design of flood risk mitigation measures is appropriate and in keeping with the environment in which they will be implemented;
- encouraging an integrated water management approach is considered in the early stages of site planning; and
- encouraging developments which support the creation of new habitats, including woodlands and wetlands, planting of trees and reconnecting rivers to natural flood plains.

We will support neighbourhood plans in identifying suitable flood risk mitigation measures appropriate for their local area.

Sustainable Drainage Systems

- 7.20. Sustainable drainage systems (SuDS) are designed to manage the drainage of surface water in the urban environment. They provide an alternative, or addition to, traditional drainage systems that drain surface water into underground piped drainage. SuDS techniques seek to capture, use, delay or absorb rainwater and are important as they help to reduce the causes and impacts of flooding. They also remove pollutants from urban run-off at source and provide benefits for amenity, recreation and wildlife.
- 7.21. We recognise that the use of SuDS may not be appropriate in all circumstances and will depend on the nature of the proposed development and its location; however, our approach is that all major development proposals should ensure that SuDS are put in place unless clear evidence is provided that they would be inappropriate.
- 7.22. We also recognise the cumulative impact of a smaller number of developments could have a significant impact on flood risk and in these circumstances the use of SuDS should be considered.
- 7.23. It is important that SuDS are considered at an early stage of the development process to ensure the delivery of well designed, appropriate and effective schemes whilst also providing multifunctional benefits. The aim will be for surface water to be directed to sustainable outfalls as high up the drainage hierarchy as reasonably practicable:
- discharging into the ground (infiltration);
 - to a surface water body;
 - to a surface water sewer, highway drain, or another drainage system; and
 - to a combined sewer.

- 7.24. We will seek advice from Leicestershire County Council, as the Lead Local Flood Authority, to ensure that the development's proposed standards of operation are appropriate and that there are clear arrangements for on-going maintenance over the lifetime of the development.

Policy CC2: Sustainable Drainage Systems (SuDS)

We will ensure that development includes appropriate measures to manage flood risk in an integrated way that achieves wider benefits for communities and the environment. We will support major development that:

- provides, where appropriate, Sustainable Drainage Systems that are integrated into development proposals having been considered as part the masterplanning of the site;
- prioritises Sustainable Drainage Systems where the development is in an area at risk of flooding, in accordance with the criteria set out in Policy CC1;
- ensures, where Sustainable Drainage System are used, surface water is directed to sustainable outfalls in accordance with the drainage hierarchy;
- ensures that the design, construction and ongoing maintenance of Sustainable Drainage Systems is carefully and clearly defined; and
- ensures Sustainable Drainage Systems provide multifunctional benefits for amenity, recreation and wildlife, that utilise natural features, where possible.

Renewable and Low Carbon Energy

- 7.25. Carbon emissions in Charnwood fell 26% between 2005 and 2015 to 894 ktCO₂ due to a reduction in local energy consumption and the use of cleaner energy sources. However, there is still an over reliance on the use of fossil fuels in the UK and much of the fuel used in the nation's power stations is imported.
- 7.26. Whilst we have seen a reduction in energy consumption and emissions in our Borough, we still need to do more to reinforce our efforts to reduce carbon emissions. One way we can achieve this is to significantly increase the proportion of renewable and low carbon energy generated within our Borough.
- 7.27. Renewable energy technologies produce energy from natural resources that will not run out. The most common technologies are energy from wind (wind turbines), energy from the sun (solar panels) and energy from water (hydroelectricity). Low carbon technologies are not completely renewable as they may still have carbon emissions associated with them albeit much smaller than conventional fossil fuel burning technologies, an example of such technologies is energy recovery from waste.
- 7.28. The existing renewable and low carbon installations in Charnwood are shown in the table below which also includes fewer common technologies. We are supporting the delivery of our Climate Change Strategy and meeting our carbon reduction commitments by encouraging further renewable sources of energy supply in the Borough. Whilst we have the most technical potential for wind and solar energy, other renewable energy or low carbon technologies, such as district heating and micro and domestic scale installations, will also be considered positively.

Table 7: Renewable and Low Carbon Installations in Charnwood

Renewable Energy and Low Carbon Technologies	Capacity	Location
Solar	64.8 megawatts	Five solar farms at Wymeswold, Six Hills and Barrow upon Soar, with the largest solar farm at Wymeswold Airfield.
Wind	2.57 megawatts	Two wind power installations, one at West Beacon Farm and the larger one at the Severn Trent Sewage Treatment Works, Wanlip.
Anaerobic Digestion	5 megawatts	Three anaerobic digestion plants at Wanlip and Loughborough.
Landfill Gas	1.6 megawatts	One landfill gas facility at Mountsorrel Landfill Site.
Energy Recovery	-	Newhurst Quarry near Shepshed has planning permission and could process 350,000 tonnes of waste per year.

- 7.29. Increasing the amount of energy, we produce from renewable and low carbon technologies will help to secure energy supply whilst also helping to reduce greenhouse gas emissions, slow climate change and stimulate investment in new jobs and businesses.
- 7.30. We recognise that renewable energy installations are generally large in scale and can have a significant impact on the character and appearance of parts of our Borough, potentially having an impact upon our landscape, biodiversity, heritage assets and the amenity of local residents. We have a positive strategy for renewable energy and low carbon technologies which supports the potential for suitable development whilst ensuring that any adverse impacts are satisfactorily addressed, including cumulative landscape and visual impacts.
- 7.31. We have identified suitable areas for renewable and low carbon energy sources on our Policies Map. We know that the main technical potential is for wind and solar energy and that identifying opportunity areas, based on low to moderate landscape sensitivity, offers a reasonable balance between landscape harm and increasing renewable energy capacity in our Borough.
- 7.32. These opportunity areas reflect a combined understanding of the sensitivity of each landscape character area and the likely impacts of different sizes of renewable energy installations and are set out in the tables below.

Table 8: Opportunity Areas for Wind Turbines

Wind Turbines	
Landscape Sensitivity	Scale of wind turbine that could be accommodated within each Landscape Character Area
Low Moderate	<p>Langley Lowlands Small-scale turbines (<40 metres)</p> <p>Soar Valley Small scale and medium scale wind turbines (up to 80m)</p>
Moderate	<p>High Leicestershire, Langley Lowlands, Wolds, and Wreake Valley Small scale and medium scale wind turbines (up to 80m)</p>

Table 9: Opportunity Areas for Solar Energy Installations

Soar Energy Installations	
Landscape Sensitivity	Scale of solar energy installation that could be accommodated within each Landscape Character Area
Low	<p>Soar Valley (very small less than 1ha)</p>
Low Moderate	<p>Soar Valley Small (1- 5ha)</p> <p>High Leicestershire, Langley Lowlands, The Wolds, Wreake Valley (very small less than 1ha)</p>
Moderate	<p>Charnwood Forest (very small less than 1ha)</p> <p>Wolds (small 1 -5ha)</p> <p>High Leicestershire, Langley Lowlands, Wreake Valley Medium Up to 10ha</p> <p>Soar Valley (Large 10 -15ha)</p>

- 7.33. Proposals for renewable energy installations will be expected to have regard to our landscape sensitivity evidence and this will inform the scale of installation that will be appropriate in each landscape character area.
- 7.34. Whilst our evidence tells us these areas have the most potential, any individual proposals for energy installations would need to be supported by robust evidence and detailed site-based assessment taking into account other issues such as heritage and flood risk. In some cases, an Environmental Impact Assessment may be required.

- 7.35. We will support proposals for wind energy installations where they are located within the area identified on the Policies Map or in a neighbourhood plan as suitable for renewable energy installations and where consultation has been undertaken and it can be demonstrated that the planning impacts identified by affected local communities have been fully addressed and, therefore, the proposal has their backing.
- 7.36. Our local communities may also identify suitable locations for, and state the range of, renewable and low carbon technologies, including community energy projects that could be accommodated in their area through neighbourhood plans.

Policy CC3: Renewable and Low Carbon Energy Installations

Proposals for renewable and low carbon energy installations will be supported where any adverse impacts, including cumulative impacts have been fully addressed, including impacts on local amenity, the historic environment and the setting of heritage assets, noise and odour, the wider landscape, biodiversity and public safety.

Where any localised adverse impacts remain, proposals will be only be supported where these adverse impacts are outweighed by the wider environmental, economic or social benefits of the scheme.

In addition, we will require wind energy development involving one or more wind turbines to:

- **be located in an area identified as suitable for wind energy on the Policies Map or in a neighbourhood plan;**
- **be of an appropriate scale in that area, taking account of the evidence on landscape sensitivity; and**
- **demonstrate that, following consultation, the planning impacts identified by affected local communities have been fully addressed and therefore the proposal has their backing.**

Proposals within the Safeguarded Area shown on the Policies Map will not be permitted if they adversely affect the operational integrity of East Midlands Airport, aircraft operations or radar and navigation systems.

In all cases, the contribution of the renewable and local carbon energy proposals to cutting greenhouse gas emissions and decarbonising our energy system will be balanced with other policy and material considerations.

We will support neighbourhood planning groups to consider identifying locations and the range of renewable and low carbon technologies that could be accommodated within neighbourhood plans.

Sustainable Construction

- 7.37. We recognise that the construction process for new developments in our Borough uses a significant amount of resources and generates a large amount of waste. To reduce this impact on our environment during the construction phase, developments will need to take account of the principles of sustainable development by carefully managing the production, use and disposal of materials and sourcing materials with minimum environmental impact, such as those that are from local sources, recycled or reused. This also includes reducing energy consumption and waste, creating a healthy environmentally friendly environment and protecting the natural environment.
- 7.38. We encourage all new developments to be designed to exceed national sustainable building standards to maximise the use of energy efficiency and energy conservation in their design, layout and orientation.
- 7.39. All major development proposals should demonstrate their sustainability by setting out the actions that have been taken to reduce greenhouse gas emissions in their design, having regard to:
1. **Reducing** the need for energy, reducing CO₂ emissions and reducing the heat island effect through design features that provide natural heating, cooling and lighting, using landform, building layout orientation, massing and landscaping;
 2. **Generating** the residual energy required through the use of low or zero carbon energy technologies; and
 3. **Adapting** to the effects of climate change whilst contributing to health and well-being.
- 7.40. We will encourage all proposals to demonstrate how they will reduce the energy, water and materials used in the construction and operation of the new buildings including the environmental benefits and impacts of the proposal.
- 7.41. It will be important that the design and layout of new buildings does not preclude the later installation of renewable or low carbon technologies. For example, spacing, orientation and roof space will be important in the installation of solar energy technologies. Ensuring good energy efficiency in the fabric of buildings will make the later installation of heat pumps more viable. Larger schemes also offer the opportunity to explore the future potential for district heating. The design and layout of new buildings will also be important in encouraging people to make sustainable choices, for example, travelling by sustainable modes of transport.
- 7.42. Our sustainable urban extensions provide the opportunity to maximise the potential for a reduction in carbon emissions through their design and layout. We will encourage these schemes to provide a 10% reduction in CO₂ emissions when compared to the Building Regulations at the time the detailed scheme is proposed. We recognise the impact which such an ambitious package could have on viability; however, some of the best ways to improve environmental performance are through simple decisions on the layout and orientation of buildings and spaces. We will offer the flexibility for the scheme to be designed to achieve the best range of these measures. We will support schemes that compensate for CO₂ emissions where reductions are not possible through the design and construction of a development.

- 7.43. We will support energy efficient buildings and work with our partners to secure funding and deliver projects that support a low carbon economy across Charnwood. We will encourage on site, near site and off-site compensatory measures for development, taking into account their location and opportunities available.

Policy CC4: Sustainable Construction

We will adapt to and mitigate against the effects of climate change, by requiring all new developments and refurbishments to take account of sustainable development principles.

We will do this by:

- **encouraging high standards of energy efficiency in sustainable construction processes including the use of materials with low embodied carbon and passive cooling and heating, optimal levels of thermal insulation, passive solar design and locally sourced and recycled materials;**
- **encouraging the use of renewable and low carbon supply systems and connection to low carbon heat networks;**
- **minimising construction waste, including designing out waste during the design stage, selecting sustainable and efficient building materials and reusing materials where possible;**
- **supporting developments that reduce waste, provide for accessible and unobtrusive sustainable waste management facilities such as refuse/ recycling/ composting bin storage and allow convenient waste collections;**
- **requiring that sustainable water management solutions such as sustainable drainage systems, green roofs and/or rainwater harvesting systems are incorporated into proposals, where viable;**
- **requiring residential development to meet the Building Regulations optional water efficiency requirement of 110 litres/per person per day;**
- **encouraging non-residential development in excess of 1,000sqm gross floorspace to achieve the equivalent of BREEAM 3 credits for water consumption as a minimum;**
- **combating the heat island effect by encouraging green roofs, green walls, increased tree cover, waterways and the suitable layout of external spaces;**
- **requiring the layout, orientation and design of buildings to improve efficiency of heating, cooling and lighting and to maximise the potential for daylight and passive solar gain;**
- **encouraging the design and layout of new buildings which enable low carbon energy generation to be installed from the start where viable, or at a later stage, including district heating;**
- **encouraging the effective use of land by reusing land that has been previously developed, provided that it is not of high environmental value; and**
- **supporting new development that protects environmental resources including local air quality and our most versatile agricultural land.**

We will expect major development proposals to demonstrate how the need to reduce emissions has influenced the design, layout and energy source used.

Sustainable Travel

- 7.44. Transport plays an important role in allowing our communities to gain access to jobs and services and should be considered in the earliest stages of development proposals. Our vision is that our communities will have better access to jobs and services, with a choice to walk or cycle safely and that for longer journeys people will be able to take advantage of the excellent connections by bus or rail in Charnwood. This vision is a fundamental part of our development strategy, which seeks to direct development to those locations where there is a genuine choice to walk, cycle and use public transport to travel to jobs and services.
- 7.45. Our walking and cycle networks have seen significant investment in recent years, including the Loughborough Town Centre Transport Scheme, which has helped to secure an increase in the number of journeys made by foot and bicycle. Making areas, such as Loughborough Town Centre, more accessible by foot and bicycle will also help revitalise and further improve our local economy. The River Soar and Grand Union Canal Corridor also provide opportunities for walking, cycling and other leisure activities.
- 7.46. Part of National Cycle Route 6 connects Birstall in the south of the Borough to Loughborough and Shepshed in the north, via the Soar Valley villages. This is part of our network of safe cycle routes which includes the Connect 2 Project in the Watermead area. There are also plans for a new bridge at Watermead Country Park which will span the River Soar improving cycling and footpath access along the river and canal corridor between Leicester City Centre and Birstall, Thurmaston and Syston. We will continue to work with our partners, including Leicestershire County Council, Leicester City Council and Sustrans to deliver walking and cycling links across the Borough.
- 7.47. We will expect major developments in the Borough to make provision for improving and extending our walking and cycle networks and ensuring priority is given first to pedestrians and cycle movements. We will also explore opportunities for improved signage, safe well-lit routes and increased connectivity between urban and rural areas. We will promote the health benefits of walking and cycling for healthier lifestyles and improved well-being. More people walking and cycling will also mean less congestion and emissions on our roads, improving air quality for our local communities.
- 7.48. Travel by bus and train is essential for longer journeys which cannot be made on foot or by bicycle. We benefit from a well-connected bus network in Charnwood which offers commuters reliable and direct routes between Loughborough, Shepshed and our smaller settlements and further afield to Leicester, Derby, Nottingham and East Midlands Airport. There is a Park and Ride at Birstall which provides bus services into Leicester.
- 7.49. However, less than half of our community uses a local bus service once a month because of the congestion on local and inter-urban services at peak periods and poor interchanges. We also recognise that people are more likely to use buses for their journeys where there is easy access to half hourly or more frequent services within less than a 400m walk. However, in some rural areas there is not easy access to bus services. People are also more likely to use the bus rather than their car if there are good quality passenger facilities and the bus has priority over the car on congested routes.

- 7.50. There is a Midland Mainline railway station located in Loughborough, which was improved in 2012 as part of the Loughborough Eastern Gateway Scheme. It is the busiest station in Leicestershire outside the city and provides excellent local and national rail connections to Leicester, Nottingham, Derby, Sheffield and London. There is good parking at the train station, and it is also served by local bus services with good access for walking and cycling. The Ivanhoe Railway Line provides a popular and well-used local passenger rail service and links Syston, Sileby, Barrow upon Soar and Loughborough with Leicester and Nottingham. The Great Central Railway is a heritage railway and important regional tourist attraction. There may be potential in the future for the Great Central Railway to support the area's quarrying industry once the line is fully reconnected at Loughborough.
- 7.51. Major growth in housing, employment and jobs is planned at the East Midlands Enterprise Gateway and at the HS2 hub in Toton to the north of the Borough. A priority for the local plan will be ensuring that bus and rail services from Charnwood, particularly those within the Leicestershire International Gateway, to these destinations are frequent, efficient and reliable.
- 7.52. We know that sustainable travel in rural areas is more difficult due to distances between homes, jobs and facilities and accessibility to public transport. We will work with our partners, developers and service providers to support innovative sustainable travel solutions in our rural areas including demand responsive buses, community mini buses, car sharing and community rail partnerships.
- 7.53. Policy DS6 expects that new developments will be comprehensive and well-designed, and located adjacent to existing transport networks. Improving connectivity and integration between sustainable transport modes and existing transport networks will ensure that travelling sustainably is an easier option for our community by being fast, efficient and value for money. We will also help to reduce the need to travel by ensuring that the right mix of uses in new developments is a priority.
- 7.54. Sense of place is important to our residents and the good design of sustainable transport infrastructure can have a positive influence on this. We will ensure that this infrastructure, including bus stops, cycle parking infrastructure, signage, lighting and charging points for electric vehicles, is well designed and contributes to making places that are safe, secure and attractive. We will also require developments, where possible, to reduce the negative impacts of vehicles such as excessive volumes of fumes and noise which can also have a negative impact on health and well-being.
- 7.55. We will work with our partners, developers and service providers including bus operators, Leicestershire County Council, Leicester City Council and Network Rail to ensure routes are economically viable and that operators are able to make improvements to transport infrastructure, existing services and provide new services where these are required. Leicestershire County Council through its Passenger Transport Policy and Strategy 2018 places the onus on site promoters to come forward with passenger transport proposals appropriate to the scale and nature of their development as opposed to seeking contributions through S106 agreements.

- 7.56. Working with our local partners, we will ensure that sustainable transport strategies are aligned, and investment is targeted to the places where it is needed most in our Borough.
- 7.57. We will support our local communities, through their neighbourhood plans to identify sustainable travel opportunities suitable for their local area.

Policy CC5: Sustainable Transport

We will support sustainable patterns of development which will minimise the need to travel and seek to support a shift from travel by private car to walking, cycling and public transport. We will support major development that:

- **provides excellent accessibility to key facilities and services by walking, cycling and public transport, including for people with restricted mobility;**
- **is informed by a robust transport assessment and travel plan which considers sustainable travel options at the outset so that they form an integral part of the development;**
- **provides well-lit, safe and attractive walking and cycling routes and secure cycle shelters;**
- **secures, where possible, new and enhanced bus services, including new bus stops, where development, is more than a 400m walk from an existing bus stop;**
- **ensures sustainable transport infrastructure is well designed, integrated with the Green Infrastructure and contributes towards making high quality places;**
- **contributes to the infrastructure required to improve the speed, reliability and attractiveness of public transport including, where appropriate, bus gates, bus priority measures and bus links; and**
- **reduces, as far as possible, the negative impacts on air quality in accordance with policy EV11.**

We will work with our partners to secure funding for and delivery of sustainable transport improvements

We will support neighbourhood plans in identifying sustainable travel opportunities suitable for their local area.

Electric Vehicle Charging Points

- 7.58. We recognise that for some people travel by car will remain the only available or preferred option for some journeys. The impact of those journeys on CO₂ emissions can be reduced if they are made in low emission vehicles. The Government's Ten Point Plan for a Green Industrial Revolution published in 2020 confirms its ambition to end the sale of new petrol and diesel cars and vans by 2030. We will make a positive contribution to reducing CO₂ emissions by working with our partners to deliver an integrated network of affordable electric vehicle charging points in locations which are safe, accessible and convenient throughout Charnwood. We will also consider the potential for e-scooter and e-bike charging points.

- 7.59. We require new developments to make provision for electric vehicle charging points to encourage our residents to switch to low carbon vehicles. We will also work with infrastructure providers to trial new technologies such as street lamppost charging points and rapid charging hubs and the timely instalment of cable routing.

Policy CC6: Electric Vehicle Charging Points

We will significantly increase the number of electric vehicle charging points in the Borough. We will support development that:

- **provides an electric vehicle charge point or cabling routing for each new residential dwelling (including flats) with a dedicated car parking space; and**
- **provides at least 1 charging point or cable routing per 5 car parking spaces for new non-residential developments with more than 10 parking spaces.**

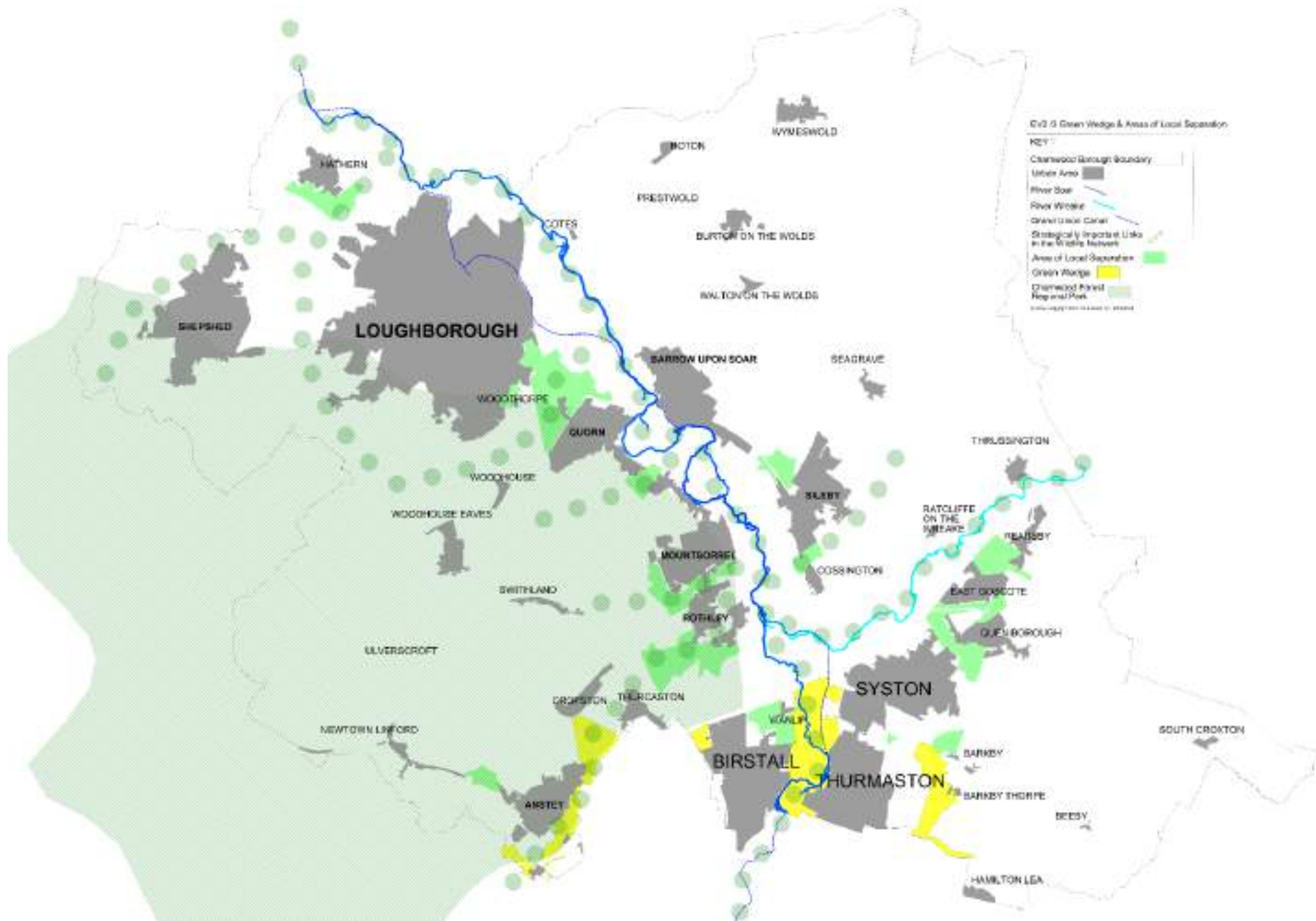
We will work with our partners and developers to deliver infrastructure for electric vehicles and ensure charging points are provided at appropriate locations.

Chapter 8 Environment

- 8.1. Our built and natural environment is fundamental to our way of life. Our communities and the buildings we use are nestled in a rich setting formed by our landscape and the wildlife it contains. These, and the relationships between each of them, give us our sense of place.
- 8.2. We want our existing and new communities to live and work in a high quality and healthy environment. Our vision seeks to both protect and enhance our built and natural environment. A more attractive environment also helps us to attract economic investment.
- 8.3. We recognise the intrinsic value of the natural environment, its value as natural capital and the range of ecosystem services that it provides. We also recognise that access to high quality open spaces and opportunities for sport and recreation contribute to health and well-being and to the cohesion of our communities.
- 8.4. Protecting and enhancing the natural environment can help in our efforts to reduce climate change and to adapt to it. The buildings and townscapes of our built environment that are of heritage value also perform ongoing functions as homes and business premises.
- 8.5. Green spaces and wildlife habitats are also present in our towns and villages. Similarly, parts of the Borough's built environment and heritage occur in the countryside as well as in our towns and villages. As such, much of this chapter is relevant to all development, regardless of where it is proposed.
- 8.6. Neighbourhood plans offer the opportunity for local communities to identify ways in which the natural and built environment can be protected and enhanced in their local area. We will encourage neighbourhood plan groups to explore these opportunities.

Landscape

- 8.7. Landscape covers land outside and within the defined Limits to Development and includes all of the visible features of both the natural and built environments. In different places the landscape has its own distinctive character that is valued by our communities. Our Landscape Character Assessment identifies 6-character areas within Charnwood:
 - Langley Lowlands
 - The Soar Valley
 - The Wolds
 - Wreake Valley
 - High Leicestershire; and
 - Charnwood Forest.



- 8.8. We want to make sure the landscape as a whole and the features of these character areas continue to be recognised for their distinct quality. Protecting our landscape character and allowing sustainable development that supports our rural areas is a delicate balance. The consideration of whether proposals for new development accord with Policy EV1 will be informed by relevant local landscape character assessments.

Policy EV1: Landscape

We will carefully manage development to protect the Borough's distinctive landscape. We will do this by:

- requiring new development to protect landscape character and to reinforce sense of place and local distinctiveness; and
- requiring new development to maintain the separate identities of our towns and villages.

Green Infrastructure

- 8.9. The natural environment and the different types of green spaces that make it up benefit from a connectivity between these spaces. This network of formal and semi-natural green spaces across the Borough is known as Green Infrastructure. It is important for providing habitat and landscape connectivity for wildlife; offering safe and attractive cycling and walking routes for people, including non-motorised users; helping us to manage flooding; and, countering the heat island effect in urban areas by reducing the heat retained in buildings and streets.
- 8.10. Our strategically important areas of Green Infrastructure include the National Forest and the Charnwood Forest Regional Park, River Soar and Grand Union Canal corridor and the Green Wedges which extend from the Leicester urban area. We have therefore developed specific policies for these. However, outside these areas other Green Infrastructure and features of the natural environment continue to play an important role. Other green infrastructure can also be identified in neighbourhood plans.

Green Wedges

- 8.11. Green Wedges are a long-standing policy designation used by the city of Leicester and the districts that surround it. The functions of Green Wedges are:
- to guide development form;
 - to provide a green lung into the City;
 - to ensure that as the urban area grows, it is accompanied by open areas for people and for wildlife and
 - to safeguard the identities of communities within and around urban areas.
- 8.12. Green Wedges are distinct from other types of open space including Areas of Local Separation, in that they provide a continuous corridor of land into urban areas therefore linking town and countryside.

- 8.13. Together with our partners we have a shared methodology for reviewing our Green Wedges and we have used this to consider which of our networks of green spaces perform the functions of a Green Wedge. We have also considered the opportunity for Green Wedges to be provided in association with our new strategic developments.
- 8.14. Our strategy proposes the following Green Wedges as part of our Green Infrastructure network:
- Leicester (Beaumont Leys)/Birstall/Thurcaston/ Cropston/Anstey/ Glenfrith/ Groby (GW1)
 - Birstall/Leicester/Thurmaston (Soar Valley North) (GW2)
 - Leicester Hamilton (GW3).
- 8.15. Our development strategy includes allocations of land within areas of Green Wedge and development proposals for these sites should be considered against the policy for the Leicester Urban Area and policies for specific sites.

Policy EV2: Green Wedges

We will work with our partners to manage the pattern of development to protect areas of Green Wedge defined on the Policies Map to ensure they fulfil their functions to provide a green lung into the City, open areas for people and for wildlife, and to safeguard the identities of communities within and around urban areas.

We will support development in Green Wedges where it:

- **Is small scale and retains the predominantly open and undeveloped character of the Green Wedge;**
- **retains and creates green networks between the countryside and open spaces within the urban areas; and**
- **retains and enhances public access to the Green Wedge, especially for recreation.**

Areas of Local Separation

- 8.16. Our towns and villages are concentrated along the river valleys of the Soar and the Wreake and around the edge of the city of Leicester. As these towns and villages have grown the spaces between them have got smaller. Our communities have increasingly become concerned about their identities as separate places.
- 8.17. Areas of Local Separation are a longstanding local plan designation. They are areas of open countryside that separate two neighbouring settlements. They are distinct from Green Wedges as their main purpose is preserving settlement identity, and they are based on landscape character, the visual appearance of the area and maintaining connectivity with the wider landscape setting of a settlement.
- 8.18. Areas of Local Separation have been used successfully to guide development in areas between our towns and villages. The policy has maintained the character and identity of individual settlements and prevented their coalescence.

8.19. We have reviewed the evidence regarding how existing Areas of Local Separation are working and whether there is a need for new ones and the following Areas of Local Separation are identified on the Policies Map:

- Loughborough/Woodthorpe (ALS1)
- Quorn/Mountsorrel (ALS2)
- Mountsorrel/Rothley (ALS 3)
- Sileby/Cossington (ALS4)
- Sileby/Barrow upon Soar (ALS5)
- Thurcaston/Cropston/The Ridgeway Area of Rothley (ALS6)
- Wanlip/Birstall (ALS7)
- Rearsby/East Goscote (ALS8)
- East Goscote/Queniborough (ALS9)
- Queniborough/Syston (ALS10)
- Syston/Thurmaston (ALS11)
- Syston/Barkby (ALS12)
- Anstey/Newtown Linford (ALS13)
- Quorn/Loughborough (ALS14)
- Birstall/Rothley (ALS15)
- Loughborough/Hathern (ALS16)

8.20. In identifying our development strategy, we have carefully balanced the need for development against a range of sustainability indicators, and the scope to mitigate adverse effects. This process has resulted in housing allocations in areas previously identified as Areas of Local Separation, but these allocations will require careful planning through their design and layout to minimise the impact on the physical and perceptual separation between the built areas of settlements.

Policy EV3: Areas of Local Separation

We will protect the predominantly open and undeveloped character of Areas of Local Separation defined on the Policies Map.

We will only support development in Areas of Local Separation that:

- **preserves settlement identity; and**
- **clearly maintains the physical and perceptual separation between the built-up areas of settlements.**

Charnwood Forest and the National Forest

8.21. Charnwood Forest is an important and distinctive upland landscape for the region punctuated by rocky outcrops and fast flowing streams. The landscape is well wooded including large tracts of ancient woodland. The majority of fields within Charnwood Forest are rectilinear in shape while some have been enlarged to allow for the introduction of arable crops. Local stone vernacular is visible in buildings and walls and there are many sites of nationally and locally valued ecological importance, including former quarries, woodland and heath grasslands in the Forest. Historic estate parklands add to the

distinctiveness of the landscape and long panoramic views are possible from numerous parts of the area. Two thirds of Charnwood Forest is within Charnwood; the remainder is within the neighbouring areas of North West Leicestershire District and Hinckley and Bosworth Borough.

- 8.22. The distinctive geology and land cover within Charnwood Forest results in a rich ecology, with a wide variety of biodiversity including Biodiversity Action Plan (BAP) priority habitats, supporting a range of threatened species including European Protected Species. Its significance for ecology and biodiversity is also recognised by the Charnwood Forest Living Landscape Scheme and the Charnwood National Character Area Profile.
- 8.23. Charnwood Forest has been identified as a Regional Park and, together with our partners, we have prepared landscape evidence which defines the boundary of the Park, and this is shown on the Policies Map. The partnership has been successful in securing £2.78m of funding from the National Lottery Heritage Fund for a Landscape Partnership Scheme to create a step-change in the way Charnwood Forest's heritage and landscape is explored, understood and cared for. The scheme will run between 2020 and 2025 and will deliver 18 integrated projects. We will support the objectives of the scheme through the local plan.
- 8.24. The Partnership is also pursuing other means to secure the recognition of the distinctive and unique qualities of the Charnwood Forest Regional Park which may include UNESCO Geo Park status in recognition of the special value of the area's geology.
- 8.25. Charnwood Forest is fringed by towns and villages as well as being accessible to residents in the wider sub-region. It experiences significant pressure from visitors with much of the visitor pressure focussed on a few honey pot sites including Bradgate Park, Beacon Hill Country Park and the Outwoods all of which are in our Borough. Similarly, we will support the aims of the Landscape Partnership Scheme to provide a high-quality experience for visitors through both new or improved small-scale tourism facilities and through rural diversification. It is essential that visitor growth is managed in a way that is compatible with the special and unique character of Charnwood Forest.
- 8.26. Charnwood Forest marks the eastern extent of the National Forest. The National Forest seeks to create a National Forest between the ancient forests of Needwood in Staffordshire and Charnwood in Leicestershire and extends over an area of 200 square miles. Originating in the early 1990's the woodland cover within the National Forest has increased from the original 6% to nearly 22% by March 2021.
- 8.27. The relationship between the Charnwood Forest and the National Forest is illustrated on the Key Diagram. Within the Borough, all areas of National Forest are overlapped by the area of Charnwood Forest, the latter extending over a broader area.
- 8.28. We will support the National Forest Strategy 2014-2024, and any subsequent National Forest Strategy, which supports rural regeneration and demonstrates the benefits of a forest close to a large population. We will support the aims of the National Forest Strategy to create a visitor destination for the National Forest as a whole, whilst recognising the unique character of Charnwood Forest. We will also support the Charnwood Forest

Regional Park and aims of the National Forest Strategy by ensuring new developments in the Charnwood Forest area meet the National Forest Planting Guidelines.

- 8.29. Our vision recognises the importance of Charnwood Forest and it has shaped our development strategy for homes and jobs, especially around Loughborough and Shepshed.

Policy EV4: Charnwood Forest and the National Forest

The Charnwood Forest Regional Park and National Forest are defined on the Policies Map. We will work with our partners to protect and enhance the Charnwood Forest Regional Park and support the aims of the National Forest Strategy. We will support development that:

- **supports the woodland economy and rural diversification, including sustainable small-scale tourism and recreation opportunities which protect, and enhance the distinctive landscape character of the Charnwood Forest;**
- **protects and enhances the biodiversity of the Charnwood Forest Regional Park, consistent with the aims of the National Character Area profile of Charnwood;**
- **provides tree planting within the Charnwood Forest Regional Park, in accordance with the National Forest Planting Guidelines;**
- **provides an improved network of public rights of way within Charnwood Forest and between nearby settlements including the establishment of a network of off-road links for walkers, cyclists and equestrians; and**
- **improves accessibility for people with mobility issues including improved footpaths and parking for people with disabilities.**

River Soar and Grand Union Canal Corridor

- 8.30. The River Soar and Grand Union Canal Corridor contain significant wildlife habitats, and this is recognised by the Soar and Wreake Living Landscape Scheme. The corridor also has links to the wider River Soar and River Wreake catchments. Many people within our communities live close to the corridor and enjoy the opportunities it provides for walking, cycling, the navigation of boats and other leisure activities. However, there are nearby villages that suffer from a lack of access to green spaces.
- 8.31. The River Soar and Grand Union Canal Strategy, which was prepared with our partners, aims to improve and promote a 23-mile-long corridor which runs from Kilby Bridge in Oadby and Wigston to the south, through the city of Leicester to Loughborough Meadows in the north.
- 8.32. The River Soar and Grand Union Canal Strategy identifies hubs at Loughborough, Barrow upon Soar and Thurmaston for leisure activities. We are supportive of this strategy and we will improve access to green spaces for our communities by encouraging improved links between our villages and the River Soar. The Strategy identifies the need to provide tourism facilities at Watermead Country Park and also recognises the challenges facing the corridor including its ability to deliver economic benefits. We will work with our partners to improve the tourism offer and to maximise the economic benefits delivered along the River Soar and Grand Union Canal Corridor.

- 8.33. There will also be an opportunity for local communities, through neighbourhood plans, to identify ways in which the River Soar and Grand Union Canal Corridor can be preserved and enhanced.

Policy EV5: River Soar and Grand Union Canal Corridor

We will work with our partners to protect and enhance the River Soar and Grand Union Canal Corridor.

We will support development that:

- **provides high quality walking, cycling and bridle path links, between the River Soar and Grand Union Canal Corridor and our towns and villages, including for people with reduced mobility;**
- **delivers hubs and other high-quality tourism opportunities linked to the River Soar and Grand Union Canal at Loughborough, Barrow upon Soar and Thurmaston;**
- **protects and enhances the biodiversity value of the River Soar and Grand Union Canal, and the strategically important links in the wildlife network between them;**
- **protects and enhances the water bodies and resources of the River Soar and Grand Union Canal; and**
- **actively seeks opportunities to enhance the River Soar and Grand Union Canal Corridor, links to it and its management including its wildlife and biodiversity.**

We will support local communities through neighbourhood plans to identify ways in which the River Soar and Grand Union Canal Corridor can be preserved and enhanced.

Biodiversity and Geodiversity

- 8.34. Our Borough benefits from a rich and varied range of habitats and species which reflect our diverse landscape character. Few places in the region are fortunate enough to possess the array of habitats provided by the river valleys of the Soar and Wreake, and the uplands of Charnwood Forest and the Leicestershire Wolds.

Designated and Non-Designated Sites

- 8.35. The ecological interest provided by our natural environment is highly valued by our communities and should be protected for future generations. The significance of Charnwood's natural environment is recognised by statutory designations including 19 Sites of Special Scientific Interest (SSSI) which are identified as being of national importance. Alongside these there are 5 Local Nature Reserves (LNR) and 218 Local Wildlife Sites (LWS) which have an important ecological value and contribute to our Borough's natural environment.
- 8.36. Geology and geological formations are also an important part of our natural environment. They help contribute to our sense of place and are important for aesthetic, educational and historic reasons. We have nationally significant sites of geological interest in the Borough, including statutory geological SSSIs, and 4 Regionally Important Geological Sites (RIGS). The majority of these relate to Charnwood Forest.

- 8.37. These statutory and local designations are complemented by landscape and habitat features which have not been formally designated but provide important wildlife corridors and stepping stones. Undesignated landscape and habitat features, for example trees, ponds and hedges make an important contribution to Charnwood's wider ecological networks and are essential to the continued health of the more valuable sites. For example, they create a means for wildlife movement and dispersal through the landscape as well as being habitats with value in their own right, and as such should be protected and enhanced.
- 8.38. Trees can be important individually and within formal groups, copses and woodland. Development should seek to protect and enhance these assets for our communities. Ancient and Veteran trees in Charnwood are also important to us as their age, size and condition create biological, cultural and visual interest which cannot easily be replaced. These trees provide ecosystems that support a wide range of other plants and wildlife, many of which require the special environment created by an old tree. The loss of such valuable trees and habitats in Charnwood will be resisted unless there are overriding exceptional circumstances and their loss can be compensated.

Conservation, Restoration and Enhancement

- 8.39. We recognise that there has been a loss of habitats and species in Leicestershire over the past 50 years, reflecting the national picture. The most threatened priority habitats and species for conservation at a national level are identified through the England Biodiversity List. At a more local level the Leicester, Leicestershire and Rutland Biodiversity Action Plan sets out habitats and species of local conservation concern in Charnwood and the rest of Leicestershire and Rutland.
- 8.40. We must manage our natural environment to limit damage and habitat fragmentation and give appropriate support to wider duties, such as the Water Framework Directive.
- 8.41. The existing pattern of development in Charnwood poses very significant challenges for wildlife, as built development is concentrated from the edge of Leicester along the Soar and Wreake Valleys up to Loughborough. As growth has taken place the gaps have narrowed between our settlements, which is a serious concern for our ecological network because it causes the most significant features to become more isolated from each other and from the wider landscape. Our development strategy seeks to ensure that landscape scale habitat connectivity is maintained between the River Soar, Rothley Brook, Charnwood Forest and the broader ecological network including the strategically important links in the wildlife network.
- 8.42. Managing, enhancing, restoring and creating habitats can help to reverse this decline and sustain the benefits from our natural environment which we currently enjoy. Charnwood Forest and the National Forest, along with the floodplain of the River Soar and River Wreake valleys are recognised as having high value for wildlife because of the quality of existing habitats. Whilst these areas will be a focus for nature recovery, other parts of the Borough will also be targeted including the Wolds.

- 8.43. We will work with our partners on nature recovery prioritising areas which support protected species and contain priority habitats. This will include supporting initiatives such as the Leicestershire and Rutland Wildlife Trust's 'Living Landscapes' schemes for the Charnwood Forest and the Soar and Wreake which aim to restore, recreate and reconnect fragmented habitats to create a resilient and healthy environment, accessible and useful for people and wildlife.
- 8.44. Neighbourhood plans also offer the opportunity to protect and enhance sites which are important for wildlife, biodiversity and geodiversity locally. These sites may already be locally designated however there may be opportunities to enhance or improve connections between these or to designate new wildlife sites. We will work with neighbourhood plan groups to explore these local opportunities.
- 8.45. We have a statutory duty to improve prospects for biodiversity. This means protecting restoring and enhancing designated sites and local wildlife-rich habitats and wider ecological networks which provide essential supporting habitat to designated sites. This landscape scale approach will be an important means of mitigating the impact of climate change on biodiversity.

Measurable Biodiversity Net Gain

- 8.46. We will improve biodiversity in our Borough by requiring a 10% net biodiversity gain when development takes place. This should be achieved through a combination of retaining important features of the site and by making on site biodiversity enhancements to ensure an overall 10% net biodiversity gain is achieved, which contributes to restoring and enhancing the wider ecological networks and biodiversity of the Borough.
- 8.47. We may consider biodiversity offsetting where it can be evidenced that on-site improvements are not possible, may result in piecemeal mitigation on small sites, or where better opportunities exist to secure net gain elsewhere. In essence this can allow ecological harm caused by development in one location to be compensated by habitat enhancement and creation in another where this provides the best opportunity to enhance and restore biodiversity networks.
- 8.48. Biodiversity net gain means leaving the natural environment in a measurably better state than beforehand. Biodiversity Impact Assessments (BIA) are used to measure the impact of development taking account of the proposed mitigation. To achieve net gain, a development must have a higher biodiversity unit score after development than before development. A suitable BIA metric should be used to allow the assessment of biodiversity impact of a given development, and where appropriate the size of contribution required to offset the ecological impact of that development.
- 8.49. Features provided by development to provide net gain should usually relate as closely as possible to the impacts that they are proposed to mitigate. Net gains in biodiversity can be provided for all development proposals from a single dwelling to much larger strategic developments through a variety of measures, for example:

- ensuring open spaces, landscaping and other areas include areas of wildflower meadows, urban woodland, community woodland and other biodiversity supporting features;
- sustainable drainage systems which benefit wildlife;
- removing barriers to wildlife movement and restoring connections;
- planting suitable trees and shrubs in landscaping; and
- other features such as integrated bird and bat boxes which can help to enhance the ecological value of developments and in some cases may be used to provide specific mitigation for protected or notable species and can, where there is a specific requirement for such features, result in biodiversity net gain.

8.50. To demonstrate that development proposals have met the requirements of Policy EV6, they will need to be accompanied by an ecological survey, where this is relevant to the type of development proposed and its relationship with biodiversity and geodiversity interests. Proposals should also be able to demonstrate how they have been designed to minimise their impact on ecology. Ecological surveys should be undertaken by a suitably qualified and/or experienced ecologist and will need to include a Biodiversity Impact Assessment to measure the net gain achieved on site or loss that would need to be compensated. The assessment should be proportionate to the scale and impact of the development.

Policy EV6: Conserving and Enhancing Biodiversity and Geodiversity

We will conserve, restore and enhance our natural environment for its own value and the contribution it makes to our communities and economy and ensure it is resilient to current and future pressures.

We will ensure that biodiversity, ecological networks and geodiversity interests are protected, restored, enhanced and resilient. We will do this by seeking 10% biodiversity net gain and supporting development that:

- protects and enhances national and local priority habitats and species;
- protects and enhances irreplaceable habitats including trees, veteran trees and ancient woodland;
- protects and enhances biodiversity networks, including strategically important links in the wildlife network between our most valuable habitats;
- supports nature recovery particularly in areas which have protected species and priority habitats;
- protects features of geodiversity value and enhances their interpretation;
- ensures biodiversity and geodiversity are maintained during construction; and
- improves the water quality of any water body as required by the Water Framework Directive.

Development proposals should be accompanied by an ecological survey including a Biodiversity Impact Assessment and demonstrate how they have been designed to minimise ecological impact and provide 10% net gain on site in the first instance or through biodiversity offsetting, where appropriate.

Development proposals which harm internationally, nationally or locally designated biodiversity and geodiversity sites and/or Charnwood's priority habitats and species will not be supported, unless there are exceptional circumstances. It must be demonstrated that:

- **there is no alternative site available; and**
- **there are clear and convincing public benefits of the development that significantly outweigh the nature conservation or scientific interest of the site.**

Where exceptional circumstances are demonstrated, we will require adequate mitigation measures, relocation or as a last resort compensatory measures providing a 10% net gain in biodiversity value above the habitat lost.

Tree Planting

- 8.51. Trees are an essential part of our environment, individually and in groups they provide a habitat for wildlife, enhance our natural landscape, help to reduce flood risk, and offer space for recreation and enjoyment of the natural world. They can also help to lower temperatures, especially in urban areas, and importantly offset CO₂ emissions.
- 8.52. In Leicestershire the tree population changed significantly in the late 1970s with more than 200,000 mature trees lost from the landscape to Dutch elm disease. Since then, the effects of other disorders, the impacts of residential and commercial development, and changes to farming methods were primarily responsible for a further reduction in individual trees in the 1980s and 1990s. Today, our evidence tells us that semi natural and plantation woodlands account for 12.16% of the area of the Borough. This figure does not include hedgerows, scrub, scattered trees or trees in urban areas.
- 8.53. More recently there have been some positive developments with the introduction of tree planting initiatives in areas such as the National Forest to create new woodlands. Our Borough enjoys the benefits of such initiatives as it contains part of the National Forest and the Charnwood Forest Regional Park. To take advantage of this we are proposing to work with our partners to achieve high levels of tree planting across the Borough, not only within the National Forest and Charnwood Forest, but also in other rural and urban areas. This will enable us to ensure all our communities benefit from tree planting and to enhance our Green Infrastructure and ecological networks.
- 8.54. We want new residential developments to make a significant contribution to tree planting as an integral part of their landscaping schemes. We understand that this may not be appropriate in every case, for example if there are space constraints or where tree planting may impact on important landscapes or habitats. In such instances it may be more appropriate to agree to tree planting elsewhere. The Woodland Trust's Emergency Tree Plan for the UK 2020 recommends that for every tree removed, three more should be planted. This will help to significantly increase tree coverage in Charnwood, and we will be supportive of developments that adopt this approach. For developments in Charnwood Forest, the National Forest Planting Guidelines will apply.

- 8.55. We will expect developers to follow a sequential approach to tree planting: firstly, within the development site in accordance with a landscape plan; secondly, where on site planting is not possible due to the size or characteristics of the site or the impact upon habitats and biodiversity then planting should take place in the vicinity of the development, and thirdly, if the opportunities for local planting are limited then tree planting should take place elsewhere in the Borough through a commuted sum with priority given to those areas which are deficient in parks and gardens and natural and semi natural open space. Wherever new tree planting is proposed, consideration should be given to the proximity of underground sewers to prevent damage to the sewerage network.
- 8.56. We will encourage our local communities through neighbourhood plans to identify locations for additional tree planting.

Policy EV7: Tree Planting

We will seek to protect and enhance our natural environment by increasing the number of trees in Charnwood. We will support development that:

- **retains existing trees where appropriate;**
- **provides new tree planting on site, including replacing any removed non-woodland tree with at least three new trees; and**
- **applies the latest National Forest Planting Guidelines for development proposals within the area of the National Forest and Charnwood Forest Regional Park.**

Any new trees planted should be native species suitable for the location and be of benefit to local biodiversity. We will expect the planting of new trees to take proper consideration of long-term management and maintenance including impact on highways and sewerage network.

Where on site planting is not possible due to the size of site, its characteristics or the impact upon biodiversity, we will encourage trees to be planted at a suitable location outside the site.

We will encourage neighbourhood plans to identify suitable locations for additional tree planting and to promote tree planting on public and privately owned land by the wider community.

Heritage

- 8.57. Alongside the importance of our natural environment, the built environment in Charnwood also contributes greatly towards our quality of life, the enjoyment of our surroundings and understanding of our history. The heritage assets and historic environment in our Borough signify Charnwood's long history and are irreplaceable resources which contribute greatly to our well-being and sense of place. We recognise that our historic environment is essential in creating a distinctive, enjoyable and thriving place in which we live and work. It can help economic growth, attracting investment and tourism, and provide a focus for successfully regenerating our Borough.

- 8.58. Our nationally designated heritage assets include nearly 800 Listed Buildings, such as the Grade I listed Prestwold Hall, Ulverscroft Priory Ruins and the Triumphal Arch at Garendon Park. There are 21 Scheduled Monuments from the Hill Fort at Beacon Hill to Bradgate House, the home of Lady Jane Grey. We have three Registered Parks and Gardens at Bradgate Park, Garendon Park and Prestwold Hall.
- 8.59. We want to protect the listed buildings and other designated heritage assets in our Borough and ensure that the special architectural and historic interest they represent are preserved for future generations and continue to reflect Charnwood's unique character.
- 8.60. There are 38 Conservation Areas in the Borough, including most of our traditional village and town centres as well as some Victorian, Edwardian and 1920s residential suburbs.
- 8.61. The Conservation Areas in our Borough acknowledge the important contribution of the historic cores of our towns and villages, along with more recent suburbs, to the high-quality built environment we enjoy. We regularly monitor their character and appearance through Conservation Area Character Appraisals to identify opportunities for improvement and ensure that they continue to be of architectural and historic merit.
- 8.62. We also have more than 200 locally listed buildings, which are non-designated heritage assets of historic or architectural interest identified for their contribution to our local environment and heritage. Neighbourhood plans provide an opportunity for local communities to identify and protect local heritage assets which are of importance to their local community.
- 8.63. We accept that to fully appreciate our heritage assets it is important we ensure that their setting is respected. This may include a variety of views of the asset and its surroundings, and we will seek to ensure that they are not compromised by inappropriate or unsympathetic development.
- 8.64. Archaeological remains also form part of our historic environment providing evidence of earlier human activity in Charnwood which should be protected to help understand our past. Whilst some are recorded through the Leicestershire and Rutland Historic Environment Record (HER) other sites are yet to be discovered but may still be important.
- 8.65. Some of our buildings and structures of historic importance are at risk of falling into disrepair as they are no longer required for their original purposes. Alternative uses can help retain these valued buildings by addressing that risk, but any changes to them must be carefully considered to avoid or minimise any conflict between the heritage asset's conservation and any aspect of the proposal.
- 8.66. Historic England has identified eleven heritage assets at risk in our Borough including the Triumphal Arch and the Temple of Venus at Garendon Park, along with the Park itself; Taylor's Bell Foundry; Ulverscroft Priory Ruins; churches at Rothley, South Croxton and Woodhouse; a Roman villa at Barkby Thorpe, and the Shelthorpe Conservation Area.

- 8.67. We have worked with our partners to ensure that the development of the West of Loughborough Sustainable Urban Extension addresses the risk to Garendon Park and its assets. The remaining heritage assets at risk in our Borough will be monitored and we will proactively seek opportunities for their restoration and re-use, supporting appropriate development schemes that ensure their repair and maintenance.
- 8.68. We will ensure that our heritage assets and their settings are safeguarded from inappropriate development whilst the character and appearance of our Conservation Areas are preserved and enhanced. A development proposal will need to fully consider the significance of the heritage asset and the impact of the development on the asset. This should be supported by evidence and the level of detail should be proportionate to the assets' importance. Development that has the potential to affect a heritage asset or its setting will be expected to demonstrate an understanding of the significance of the asset and/or its setting proportional to its importance.
- 8.69. Our policy states that we will encourage the sympathetic reuse of our historic assets and where we consider the loss of a heritage asset to be clearly justified by the benefits to the public, we will seek to ensure investigation and recording of the asset for the community.
- 8.70. The reuse of historic assets supports our aim of mitigating the impacts of climate change by minimising the use of new natural resources and preventing wastage of existing resources. The sensitive retrofitting of historic buildings and conservation areas with energy efficiency measures and micro-renewables is a crucial part of their conservation and ensuring that they have a sustainable future.

Policy EV8: Heritage

We will conserve and enhance our historic environment including our heritage assets (which include archaeological assets) for their own value and the contribution they make to the community, environment and economy. We will support development that:

- **protects and enhances heritage assets, including non-designated heritage assets, and prevents harm to their significance and setting;**
- **incorporates Charnwood's distinctive local building materials and architectural details to make a positive contribution to the character and appearance of the area;**
- **has been informed by our Conservation Area Character Appraisals, Landscape Character Appraisals, Village Design Statements and neighbourhood plans;**
- **supports the sympathetic reuse of buildings of architectural or historic importance, to ensure they continue to make a positive contribution to the historic environment, and which reinforce local distinctiveness and sense of place;**
- **conserves, protects and enhances heritage assets at risk through neglect, decay or other threats; and**
- **sensitively retrofits energy efficient measures and micro-renewables to historic buildings and in conservation areas, whilst protecting heritage assets and their setting for the future in accordance with DS6 Design and CC4 Sustainable Construction.**

We will support neighbourhood plans in identifying and protecting local heritage assets which are of importance to their local community.

Open Spaces Sport and Recreation

- 8.71. Open spaces are an important resource with multiple benefits for people, particularly for their health and well-being. As our population increases the pressure on current provision will mount and we need to ensure that our communities have access to open spaces which meet their needs, as well as having the opportunity to practice sport and recreational activities at good quality, well designed accessible facilities. Design has an important role to play in encouraging people to be more active by improving accessibility, enhancing amenity and increasing awareness.
- 8.72. We have identified nine types of open space, sport and recreation facilities:
- **Parks and gardens** – from major parks to small memorial gardens;
 - **Natural and semi-natural urban green spaces** – from woodlands to grasslands;
 - **Amenity green space** – often small spaces which improve the local environment and, in some cases, provide recreational value;
 - **Provision for children and young people** – primarily for play and social interaction;
 - **Outdoor and indoor sports facilities** – including playing fields;
 - **Allotments, community gardens and urban farms** – for people to grow produce;
 - **Cemeteries, disused churchyards and other burial grounds** – primarily used for burials but can also provide open space, ecological value and amenity benefits;
 - **Green corridors** – accessible linear spaces for walking and cycling which can include rights of way, cycle paths, bridleways and towpaths and waterways;
 - **Civic spaces** – comprising civic and market squares and village greens.
- 8.73. We have undertaken assessments of our communities' needs for open space, sport and recreation facilities, along with opportunities for new provision. This evidence was used to inform the Council's Open Spaces Strategy and to inform our standards for provision of open space and facilities from new development.
- 8.74. New provision can often best serve the community on site as an integral part of the development, but consideration should also be given to the enhancement of existing provision off site. New development often places greater demand on existing sites and facilities in the locality, and so in cases where provision on site may be inappropriate, we will expect a contribution towards enhancing existing provision and/or the provision of new facilities off site. We will assess if there is any shortfall in provision created by new development by taking account of our evidence on supply and demand for open spaces.
- 8.75. We have used our evidence to develop the following standards of provision set out in the table below and will apply these to all major new residential developments based on an average of 2.4 persons per dwelling. We will apply the open space provision standards having regard to the type of accommodation proposed.

Table 10: Provision Standards

Open Space Type	Quantity per 1,000 population	Accessibility (including maximum distance to open space)
Parks and gardens	1.4ha per 1,000 people	1,200m in the Towns and Service Centres
Amenity Green Space		400m for either Amenity Green Space or Parks and Gardens in the Towns, Service Centres and Other Settlements
Natural and Semi Natural Green Space	2.0ha per 1,000 people	800m
Children's Play and provision for young people	0.25 ha per 1,000 people of designated equipped playing space including teenage provision	<p>400m for Local Equipped Areas for Play (LEAPs)</p> <p>1,000m for Neighbourhood Equipped Areas for Play (NEAPs)</p> <p>1,000m for teenage facilities</p> <p>There should be a full network of NEAPs, LEAPs and teenage facilities in the Towns and Service Centres</p> <p>There should be a full network of LEAPs in the Other Settlements and Small Villages and Hamlets where the population is greater than 200 people and there is an identified local need.</p>
Allotments	0.33ha per 1,000 people	1,000m
Outdoor Sports Facilities	To be calculated using the Sport England Playing Pitch Calculator, the Playing Pitch Strategy and local priorities.	<p>10-minute drive time for formal provision, recognising that for some sports i.e. hockey and athletics the drive time will be greater.</p> <p>20-minute drive time for Artificial Grass Pitches (AGP).</p> <p>10-minute walk (800m) to informal outdoor sports</p>

Open Space Type	Quantity per 1,000 population	Accessibility (including maximum distance to open space)
		provision i.e. grassed kick about areas.
Indoor Sports Facilities	To be calculated using the Indoor Built Sports Facilities Strategy or other local evidence of needs and priorities. Sport England Sports Facilities Calculator should only be used to give a broad indication of need	No standard set
Green Corridors	No standard set	No standard set
Civic Spaces	No standard set	No standard set
Cemeteries, closed churchyards and other burial sites	No standard set	No standard set

- 8.76. The standards will be applied having regard to the size and the characteristics of the proposal. The application of our standards will be applied holistically having regard to not only the quantity of existing provision, but also its quality, to ensure its fitness for purpose, and that it is accessible to the community it serves.
- 8.77. The table below gives an indication of the types of open space that will be expected for different sizes of residential proposals.

Table 11: Indicative Types of Open Space and Recreational Provision for Development Scale

10–99 residential units (24 to 238 persons)	Typically, this might include on site provision of amenity green space plus natural and semi-natural green space (as part of public open space) and off-site contributions towards parks and gardens, indoor and outdoor sports facilities, provision for children and young people, canopy cover and allotments.
100-249 residential units (240 to 598 persons)	Typically, this might include on site provision of amenity green space, natural and semi-natural green space, provision for young people and/or children’s play and off-site contributions towards parks and gardens, indoor and outdoor sports facilities, canopy cover and allotments.
250+ units (600 persons +)	Provision for all types of open space, indoor and outdoor sports facilities and recreation provision in accordance with our standards and with a presumption for on-site provision in accordance with our policy.

- 8.78. Because of the benefits provided by open space, sport and recreation facilities, we are proposing to protect existing areas unless their loss can be justified. Development proposals which affect playing pitches will require strong justification due to the health and recreational value they provide. To ensure that the needs of our communities are met our approach is to secure the provision, quality and accessibility of open space, sport and recreation facilities by planning condition or a Section 106 legal agreement. We will also encourage our communities to protect and enhance locally important open space, sport and recreation facilities through neighbourhood plans.
- 8.79. We have provided detailed guidance on the maintenance arrangements we would expect for open spaces, sports and recreation facilities in our Open Spaces Strategy. Open space sites can be transferred to the ownership of the Borough Council, Parish Council or retained through management companies. Where land is transferred to the ownership of the Borough Council or Parish Council the payment of a commuted sum to ensure ongoing maintenance will be required. In those cases where on site provision is retained and maintained under a management company, we expect the open space to be managed to a high standard and be available for the whole community and not restricted to occupiers of that specific development. We will secure these arrangements in a S106 legal agreement.

Policy EV9: Open Spaces, Sport and Recreation

We will work with our partners to meet the open space, sport and recreation facilities needs of our communities to support their health, well-being and cohesion.

We will support major residential development where they meet the needs generated by the proposed community and that:

- **provide on-site open space, sport and recreation facilities in accordance with our standards, having regard to the latest assessment of needs and priorities, the quantity, accessibility and quality of existing provision and viability; and/or**
- **contribute towards off site provision in accordance with our standards, where on site provision is not possible or desirable.**

We will require new and enhanced open space, sport and recreation facilities to contribute towards healthier and more active lifestyles by:

- **being accessible to the whole community, functional, of high quality and active design, visible and safe, and including facilities for a range of ages;**
- **enabling links to be created with surrounding recreational networks and facilities (including public rights of way, cycle paths, bridleways and towpaths);**
- **providing appropriate and practical landscape design solutions that reflect the identity and quality of place whilst meeting the current and future needs of communities in a sustainable and creative way; and**
- **specifying the responsibilities for management and maintenance prior to commencement of development and, if the site is to be transferred to the Borough Council or its nominee, agreeing a maintenance payment.**

We will protect our open space, sport and recreation provision identified on the Policies Map, and any future provision made as part of new development, unless it can be satisfactorily demonstrated that:

- the proposed development is ancillary to the existing recreational use of the site; or
- the provision is surplus to requirements as evidenced by an assessment of need; or
- alternative provision of an equivalent or greater standard will be provided in an accessible location nearby.

Flood alleviation schemes within areas of open space will generally be supported, provided they do not have an adverse impact on the primary function of the open space.

We will support neighbourhood plan groups in protecting and enhance locally important open space, sport and recreation facilities through neighbourhood plans.

Indoor Sports Facilities

8.80. We enjoy a good range of existing sport and leisure facilities in Charnwood; however, some existing facilities are now ageing, are of a poorer quality, or require long term replacement and refurbishment. We have set out our priorities for new or enhanced provision of these facilities through the Action Plan in our Indoor Built Sports Facility Strategy and these include:

- retaining existing levels of community accessible sports halls and fitness provision in the Borough as a minimum, but recognising that these need not necessarily be the same facilities as at present;
- promoting investment into additional swimming pool provision in accordance with the evidence of need;
- encouraging investment in ageing facilities which need to be replaced or refurbished in accordance with Sport England and national governing body standards; and
- supporting opportunities for participation to be provided in a wider range of places and spaces particularly at a local level.

8.81. To support these objectives, we will seek contributions from new developments towards new or enhanced provision either on site or off site, having regard to viability and our evidence of need. This should also be supported by information on how management and maintenance of the facility will be undertaken. We will calculate the contributions required from new developments using our evidence of needs and priorities.

8.82. We will ensure that any contributions sought are based on a tailored approach to each development, using our evidence to justify our approach. Where a proven need exists, we will encourage pooled contributions to facilitate provision. In assessing whether new provision is required consideration will be given to the quantity, quality and accessibility of existing provision in the local area.

Policy EV10: Indoor Sports Facilities

We will encourage healthier lifestyles across our communities and increase the amount of regular physical activity undertaken through the provision of indoor sports facilities.

We will seek developer contributions from major development in accordance with Policy INF1 to support the provision of new indoor sports facilities, or improvements to existing facilities, based on an assessment of need and our evidence of quantity, quality and accessibility of provision. We will support the provision of new indoor sports facilities that are designed to respond to changing participation trends and opportunities.

Where provision of new indoor sports facilities is located within school and college sites, public access to these facilities will be sought and secured through community use agreements.

Air Quality

- 8.83. The Government's Clean Air Strategy 2019 recognises that clean air is essential for life, health, the environment and the economy and that we must act to tackle air pollution which shortens lives. Air pollution can be hugely harmful to our health and Public Health England estimates that 5% of deaths in Charnwood are attributable to long-term exposure to particulate air pollution, the same rate as for the country as a whole.
- 8.84. Older people, the young and those with existing lung or other health conditions, for example asthma, are particularly at risk, with the potential for reduced life expectancy. Increasing temperatures can heighten the impact of air pollutants, and so climate change further raises the importance of addressing air quality issues.
- 8.85. Our evidence tells us that the air quality in Charnwood is very good and compliant with the National Air Quality Objective standards. These standards are to ensure that those in our community who are most susceptible to the effects of poor air quality do not suffer ill health as a result. However, there are four Air Quality Management Areas in Charnwood in Syston, Mountsorrel and two in Loughborough. These have been declared because of emissions from transport or local industry and they are at risk of experiencing air pollution levels above those set out in the UK Air Quality Regulations.
- 8.86. There have been no exceedances of air quality objectives in the Borough in recent years and our evidence predicts that there will be an improvement in air quality in Charnwood over the plan period. Therefore, the focus of our approach is towards prevention of exceedances rather than tackling pollution when limits have been surpassed.
- 8.87. There are important links with other policies in the local plan. Our development strategy seeks to minimise the need to travel by private car and CC5 Sustainable Travel aims to see a modal shift to sustainable modes of transport. These policies along with our policy for electric vehicle charging points seek to reduce emissions from vehicles. The policies in our environment chapter seek to protect and enhance aspects of our natural environment which is important for the absorption of air pollutants. A proactive rather than reactive approach will help us to improve air quality across the whole of the Borough.

- 8.88. Some developments may require an air quality assessment where there is the risk of a significant air quality effect, either from a new development causing an air quality impact or creating exposure to high concentrations of pollutants for new residents. The purpose of the assessment will be to determine the predicted impact of a development on local air quality, public health and/or the local environment, to help determine the appropriate level of mitigation from a development.
- 8.89. An assessment will be required for proposals of:
- 10 or more dwellings (or a site area of more than 0.5 hectares) or more than 1,000sqm for all other uses (or a site area greater than 1 hectare) and
 - the development has more than car 10 parking spaces or the development will have a centralised energy facility or other centralised combustion process.
- 8.90. Assessments will need to be proportionate to the nature and scale of development proposed and the potential impacts (taking into account existing air quality conditions), and because of this are likely to be location specific
- 8.91. We recognise the importance neighbourhood plans can play in helping to improve air quality locally whereby our communities can identify measures suitable to their local areas.

Policy EV11: Air Quality

We will expect developments to support our aim to improve air quality in the Borough. We will support development that:

- **does not lead to a significant impact upon, and deterioration of, local air quality resulting in unacceptable effects on human health, local amenity or the natural environment;**
- **does not impede the achievement of any air quality objective(s), particularly in locations currently or historically declared as Air Quality Management Areas (AQMAs);**
- **does not introduce a significant new source of any air pollutant;**
- **does not expose its users or occupiers to concentrations in excess of air quality objectives;**
- **is designed to minimise the potential for air pollution to become trapped close to the ground; and**
- **is supported by an air quality assessment, where appropriate.**

We will encourage neighbourhood plans to identify suitable air quality management measures to help improve air quality in their local area.

Burial Space

- 8.92. As our population grows, we will also need to ensure that sufficient space is available for burials in the future. The Borough Council has assessed how best to meet its long term need for burial space and has identified a new 9.1ha site at Nanpantan which will help us to provide for the needs of the Loughborough area. Phase 1 of the cemetery was granted planning permission in September 2020.
- 8.93. Elsewhere in the Borough our evidence shows that burial provision is likely to be sufficient to deal with the demand for burials at most locations for at least twenty years taking into account the number of deaths, the populations served by the burial grounds and increasing population as a result of housing growth.
- 8.94. The cemetery allocation lies within an area of sensitive landscape at the edge of Charnwood Forest Regional Park, and is visible from areas of higher ground, notably from the Outwoods. The layout and landscaping of later phases of the cemetery will need careful consideration so that they are integrated into the surrounding landscape, with particular attention given to views of the cemetery from areas of higher ground.

Policy EV12 Burial Space

9.1ha of land are allocated at Nanpantan for burial space.

Proposals for new cemetery space should minimise the impact of development on the landscape by making use of additional planting comprising native species and naturalistic schemes to enhance the relationship between the development and its wooded setting and helping to create a vegetated appearance to the edge of the built form of Loughborough.

Chapter 9 Infrastructure and Delivery

- 9.1. Infrastructure includes all services and facilities necessary to support development including essential utilities such as gas and electricity, water supply and sewage treatment, broadband and transport. Green infrastructure is also an important part of delivering sustainable development, including the provision of open space and recreation facilities, while community infrastructure including schools, health centres, and community buildings provide the framework of physical facilities needed to support and sustain a community.
- 9.2. We will ensure that development provides infrastructure to facilitate and deliver the plan's development strategy. This strategy has been based on an assessment of the infrastructure needs of individual site allocations to ensure that development is sustainable. We have worked in partnership with infrastructure providers and delivery agencies to assess requirements and ensure that all development proposals are supported by appropriate on site and off-site infrastructure. We will continue to work closely with these bodies to ensure the timely delivery of infrastructure and the Council will work with parish councils through a process of continuous engagement and ongoing liaison to understand community needs while also ensuring a close alignment with the neighbourhood planning process.
- 9.3. An Infrastructure Schedule is included as an Appendix to the local plan, setting out the infrastructure required to support our development strategy. In addition, our Infrastructure Delivery Plan will be regularly updated as more evidence becomes available and investment decisions are finalised. We will also continue to work closely with infrastructure providers to ensure their future investment plans take account of the development strategy and are aligned to support growth in the Borough.
- 9.4. We will assess each planning application to ensure that the impacts of the proposed development can be mitigated, and the policies of this plan are fully implemented. We have not introduced a Community Infrastructure Levy (CIL) and will continue to secure developer contributions through Section 106 Legal Agreements to mitigate the impacts of development. Our decisions will be taken in accordance with the Government's CIL Regulations 2010 (as amended), which state that a planning obligation within a legal agreement should be:
- necessary to make the development acceptable in planning terms;
 - directly related to the development; and
 - fairly and reasonably related in scale and kind to the development.

In accordance with the regulations new development cannot be used to fund an existing shortfall in infrastructure; it can only be required to address the needs arising from new development itself.

- 9.5. We will work with infrastructure providers to consider whether development proposals require infrastructure which can only be provided through pooling contributions from a number of different developments. This will apply to a range of infrastructure including education, health, local and strategic road improvements and flood protection and resilience schemes.

Education

- 9.6. We have worked closely with the Local Education Authority to assess the current capacity of schools and their ability to cater for new growth, and to determine where, and how, additional capacity to support growth should be provided. Whilst the provision of secondary school and early years places can be achieved through appropriate individual site contributions having regard to the adequacy of local provision, our development strategy will require significant new and expanded primary school provision which cannot be achieved without a coordinated approach. To provide certainty for communities, developers and providers, the sites required to contribute have been specified in Policy DS3. This does not preclude other sites contributing to these new and expanded schools or prevent Leicestershire County Council and Charnwood Borough Council agreeing an alternative approach to education provision to take account of the timing of delivery, for example.
- 9.7. The sites identified in Policy DS3 do not account for all the primary school provision required by our development strategy. All development sites will be required to contribute to education provision in accordance with Policy INF1 and having regard to Leicestershire County Council's policy on developer contributions.

Health

- 9.8. Our engagement with the Clinical Commissioning Groups (CCGs) has shown that there are capacity constraints in terms of primary care health provision at some locations due to rising numbers of patients which has been exacerbated by the ageing population and the difficulty of recruiting doctors and medical staff.
- 9.9. New development will be expected to contribute to the reasonable costs of enhanced service provision. Improvements are most likely to be in the form of extensions to existing premises to provide more treatment rooms and ancillary facilities or modifications to improve the patient experience. The funding and delivery of entirely new GP practices will be supported where necessary. Planning decisions will be informed by continued joint working and evidence of need including the Estates Strategy prepared collectively by Leicester, Leicestershire and Rutland CCGs.

Power

- 9.10. Western Power Distribution has advised the Council that there are currently no known capacity constraints which would limit the implementation of the plan. We will continue to work closely with them to ensure that the capacity of the system is sufficiently robust to cope with any changes arising during the plan period. For example, our evidence points to significant changes in demand arising from the move to low carbon energy, such as the anticipated growth in electric vehicles, supported by local plan Policy CC6 for new electric vehicle charging points. We are also aware that availability of supply can change within a short space of time, as new connections take place, and significant developments such as the Loughborough Science and Enterprise Park could result in high levels of electricity demand. We will work closely with the developers and Western Power Distribution to ensure that any capacity issues are addressed.

Water

- 9.11. Severn Trent Water has advised that water supply is not expected to be a constraint to development because the water supply network is pressurised and therefore has flexibility to provide for new connections. There will however be a need for improvements to capacity at some waste water treatment works that could otherwise be a constraint to growth, including Wanlip (where improvements are programmed) and Shepshed (where capacity improvements are likely to be needed towards the end of the plan period). We will continue to work closely with Severn Trent Water to ensure that growth needs are addressed, and the implementation of major capital investment takes place in accordance with the trajectories of housing growth.

Broadband

- 9.12. Superfast broadband is a critically important infrastructure now commonly referred to as the 'fourth utility' alongside electricity, gas and water supply. We want Charnwood to be a well-connected Borough in order to reduce the need to travel, support higher levels of home working and inward investment and improve economic competitiveness. Leicestershire County Council's support for enhanced broadband coverage, 'Superfast Leicestershire' is focussed on areas not served by commercial operators. The greatest need is likely to remain in rural areas in the east of the Borough where in the region of 1,000 premises remain unconnected. We will continue to support the full roll out of superfast broadband to achieve the Government's target of a full fibre UK wide network and ensure that all of our businesses and communities are able to take advantage of the opportunities that it presents.

Viability

- 9.13. The local plan's policy requirements together with local and national standards have been assessed to consider the impact they are likely to have on development viability. The assessment demonstrates that our policies are realistic, and that the total cumulative cost of all relevant policies will not undermine deliverability of the plan. We will expect applicants to share with us the full results of any site-specific viability appraisals so that the process for assessing the deliverability of infrastructure is fair and transparent.

Policy INF1: Infrastructure and Developer Contributions

We will work with infrastructure providers, developers and partner organisations to ensure the delivery of new and improved infrastructure necessary to support our development strategy and maintain sustainable and healthy communities. We will support development that:

- **is supported by robust evidence of the infrastructure needed to mitigate impacts and support sustainable development;**
- **contributes to the reasonable costs of on site, and where appropriate off site, infrastructure needed to mitigate the impacts of the development through the use of Section 106 Legal Agreements, or in the case of highways, Section 278 Legal Agreements; and**

- **contributes to the reasonable costs of any infrastructure required to mitigate the impacts of the development strategy including through pooling of developer contributions where the impacts can only be addressed in a comprehensive way.**

We will seek to enter into planning performance agreements with promoters of strategically important sites to ensure a programmed approach to determination and implementation.

We will relate the type, amount and timing of infrastructure to the scale of development, its viability and the impact it has on the site and surrounding area. Where viability is identified as a barrier to delivery, we will expect all promoters of major development to enter with us into an open book viability appraisal.

The Local and Strategic Road Network

- 9.14. Our priority is to improve the sustainable transport offer in our Borough and Policy CC5 will help achieve this, but we know that our communities will still need to make some journeys by car, for example our evidence tells us that nearly 64% of people who live in Charnwood make their journey to work by private cars.
- 9.15. Charnwood benefits from good accessibility, with the local road network connecting into the strategic road network of the M1 motorway and the A46. The A6 runs through the centre of the Borough providing access to destinations north and south. The Leicester and Leicestershire Strategic Growth Plan identifies the importance of key transport corridors including the A46 Corridor which is also identified as a pan regional strategic priority by Midlands Connect. Aligning growth and transport infrastructure along this corridor will be an important strategic priority and the Borough Council is supporting a partnership agreement to ensure a coordinated approach.
- 9.16. The key strategic and local routes in Charnwood benefit the local economy; however, congestion along these roads has an impact upon business efficiency and reduces the attractiveness of the Borough for inward investment. Our development strategy will place more pressure on the network, and we have worked closely with Leicestershire County Council, Leicester City Council and Highways England to understand what the impacts will be and what measures are required to mitigate that impact.
- 9.17. Our evidence tells us that by 2037 the highway network in the Borough will be close to capacity in some areas with the development which is already committed in Charnwood and the surrounding areas. To ensure that the development provided for in this plan and in other districts does not have a severe impact on the highway network we will require mitigation measures and a wider strategic programme for highway improvements to be developed with our partners.
- 9.18. We will expect development to mitigate the impact of additional traffic by improving accessibility, encouraging travel by sustainable modes of transport and through the necessary highway improvements. Development should not have an unacceptable impact on highway safety, and assessment of the impacts should include consideration of the cumulative impacts of growth and the need for pooled contributions to ensure that the network remains robust. Consideration will be given to the cross-boundary implications arising from development and, where applicable, the potential for co-

ordinating developer contributions with those of neighbouring authorities to mitigate impacts will be investigated. Proposals for highway improvement works, including those to the strategic road network, will be required to conform to the relevant design standards.

- 9.19. We will continue to work with key stakeholders including Leicester City Council, Leicestershire County Council, Highways England and Housing Market Area partner authorities, to develop strategies to support growth, minimise the impacts of our development strategy on the local and Strategic Road Network and maximise the delivery of transport infrastructure to meet the needs of our residents and businesses.

Policy INF2: Local and Strategic Road Network

We will work with Leicestershire County Council, Leicester City Council Highways England and wider HMA authorities to mitigate the transport impacts of our development strategy and improve the efficiency of our local and strategic road network.

We will support development that:

- **is supported by a robust transport assessment of the impact of the development on the road network, including any cumulative impacts;**
- **provides the necessary infrastructure to mitigate the impacts of the development with infrastructure which supports sustainable transport choices (including walking, cycling and the use of public transport) prioritised before any improvements to the local and strategic road network; and**
- **contributes to the reasonable costs of measures required to mitigate the cumulative impacts of the development strategy upon the local and strategic road network, in accordance with Policy INF1.**

Appendix 1 - Monitoring

It is important that our local plan can be implemented and that the delivery and effectiveness of its policies against our objectives and timescales are monitored to ensure that our spatial vision for Charnwood is being delivered.

Our profile of Charnwood at the start of this plan is compiled from statistics and information which comes from our evidence base, helping us in identifying the issues which are important for the future of our Borough. The profile has provided a clear picture of how Charnwood looks now and has provided the foundation for our vision of Charnwood which this local plan will seek to deliver.

We will carry out monitoring of the local plan each year to determine how successfully it is working. If any part of the local plan is not delivering as we intended, or if circumstances have changed significantly then we will consider changes to our policies to support the successful delivery of new development and growth.

We have based the framework for monitoring the local plan on its policies, which in turn were prepared to meet the plan's vision and objectives. Our performance monitoring framework is set out in the following table and details how we intend to check the delivery of the policies contained in the local plan and the spatial vision which the policies seek to implement. The framework identifies the key indicators for each policy that will be used to monitor the delivery of our local plan objectives. It shows the strategic relationship between policy and objectives and how we will monitor the successful delivery of our objectives.

Each year we produce an Authority Monitoring Report (AMR), formerly the Annual Monitoring Report, which provides data and information on how our policies are performing and what effect they are having on Charnwood. The report looks at the progress of plan preparation; the duty to cooperate; development needs; delivery of local plan policies; infrastructure delivery; neighbourhood planning; and developer contributions. We will use our monitoring framework to set out in our AMR how well policies are achieving their objectives; whether the targets in our local plan are being met; and whether there have been any unintended consequences which we have identified.

Managing Delivery

Our supporting text for each policy sets out how it will be delivered, with most policies delivered through the development management process. We will ensure that we continue to provide a high quality and efficient service to assist in the timely delivery of sustainable development.

We recognise that the delivery of housing and economic growth, together with the provision of essential infrastructure, is vital for us to deliver our vision for the Borough. A key aim for our local plan is to ensure that sufficient homes are being built or in the pipeline to meet our identified need. We have prepared a housing trajectory to accompany our local plan which shows how we expect our strategy to deliver the houses we need to meet our housing requirement.

We will check the number of houses that are being delivered each year against our trajectory and the housing requirement. This will enable us to consider the implications of any shortfall or surplus of housing and will be reported through the AMR.

Our trajectory has been produced using information from a variety of sources. It takes into account projected completions from sites which have planning permission, including our sustainable urban

extensions. We have worked with the developer interests involved to agree projected rates of delivery and phasing of infrastructure to inform our trajectory.

We will also use our AMR to report two further tests related to the delivery of new homes which have been introduced by the Government, the Housing Delivery Test and the Five-Year Housing Land Supply Assessment. The tests look at housing completions over a three-year rolling average and at the supply of housing sites that could be built in the next five years. We will use these tests to further inform the success of our strategy in delivering the homes our community needs.

Charnwood Local Plan Monitoring Framework

Baseline data for each monitoring indicator will be determined as part of the first Authority Monitoring Report following adoption of the local plan.

INDICATOR	TARGET
DS1 - Development Strategy	
Total number of homes completed in accordance with housing need	At least 17,776 homes by 2037.
Number of homes completed related to provision in the trajectory	Maintain a Five-Year Housing Land Supply and meet the Housing Delivery Test.
Number of homes completed at the Leicester Urban Area	As an overall proportion, 37.8% of homes delivered in the Leicester Urban Area by 2037 and in accordance with the housing trajectory.
Number of homes completed at Loughborough Urban Centre	As an overall proportion, 31.2% of homes delivered in the Loughborough Urban Centre by 2037 and in accordance with the housing trajectory.
Number of homes completed at Shepshed Urban Area	As an overall proportion, 12.0% of homes delivered in the Shepshed Urban Area by 2037 and in accordance with the housing trajectory.
Number of homes completed at Service Centres	As an overall proportion, 14.1% of homes delivered in the Service Centres by 2037 and in accordance with the housing trajectory.
Number of homes completed at Other Settlements	As an overall proportion, 4.8% of homes delivered in the Other Settlements by 2037 and in accordance with the housing trajectory.
Number of homes completed at Small Villages and Hamlets	As an overall proportion, 0.1% of homes delivered in the Small Villages and Hamlets by 2037 and in accordance with the housing trajectory.
Amount of office Employment land (ha) delivered on employment allocations	11.92 hectares by 2037
Amount of industrial and small-scale warehouse Employment land (ha) delivered on employment allocations.	43.55 hectares by 2037
Delivery of the Loughborough Science and Enterprise Park	Up to 73 hectares (comprised of 31 hectares for phase 3 and 42 hectares for phase 4)
Delivery of up to 4,500sqm of comparison retail on allocated site	Delivery of Baxter Gate/ Pinfold Gate Opportunity site by 2037

INDICATOR	TARGET
DS2 - Leicester and Leicestershire Unmet Needs	
No indicator – policy is a commitment relating to local plan review	
DS3 - Local Plan Allocations	
Progress on the delivery of allocated housing sites above 250 dwellings.	Delivery of sites in accordance with trajectory. Housing delivery also monitored in DS1.
DS4 – Employment Sites	
No indicator – delivery of employment allocations monitored in DS1.	
DS5 - High Quality Design	
Number of independent design reviews undertaken	Reviews undertaken to support the delivery of Sustainable Urban Extensions.
LUA1 - Leicester Urban Area	
No indicator - housing delivery and allocations monitored in DS1.	
LUA2 - North East of Leicester Sustainable Urban Extension	
Number of homes completed on the North East of Leicester Sustainable Urban Extension	3,205 homes total by 2037
Amount of employment land delivered as part of the North East of Leicester Sustainable Urban Extension	13 hectares by 2037
Progress on the delivery of community facilities as part of the North East of Leicester Sustainable Urban Extension	3 primary schools, 1 secondary school, 1 local centre
LUA3 - North of Birstall Sustainable Urban Extension	
Number of homes delivered on the North of Birstall Sustainable Urban Extension	1,950 homes by 2037
Amount of employment land delivered as part of the North of Birstall Sustainable Urban Extension	15 hectares by 2037
Progress on the delivery of community facilities as part of the North of Birstall Sustainable Urban Extension	1 primary school, 1 local centre
LUC1 - Loughborough Urban Centre	
No indicator - housing delivery and allocations monitored in DS1.	
LUC2 - West of Loughborough Sustainable Urban Extension	
Number of homes delivered on the West of Loughborough Sustainable Urban Extension	3,200 homes by 2037
Amount of employment land delivered as part of the West of Loughborough Sustainable Urban Extension	16 hectares by 2037
Progress on the delivery of community facilities as part of the West of Loughborough Sustainable Urban Extension	2 primary schools, 1 local centre
LUC3 - Loughborough and Science and Enterprise Park	
No indicator – progress is monitored in DS1.	
SUA1 - Shepshed Urban Area Policy	
No indicator - housing delivery and allocations monitored in DS1.	
SC1 - Service Centres	
No indicator - housing delivery and allocations monitored in DS1.	
OS1 - Other Settlements	
No indicator - housing delivery and allocations monitored in DS1.	

INDICATOR	TARGET
C1 - Countryside	
No indicator - housing delivery and allocations monitored in DS1	
H1 - Housing Mix	
No indicators – data not readily available to monitor this effectively.	
H2 - Housing for Older People and People with Disabilities	
Number of units completed for specialist accommodation (sheltered/ retirement housing, extra care housing)	No target
H3 - Internal Space Standards	
No indicator – it is considered that 100% of relevant applications would meet the policy unless material considerations justify otherwise.	
H4 - Affordable Housing	
Number and percentage of new affordable homes completed.	30% on greenfield sites and 10% on brownfield sites
Amount of developer financial contributions secured for affordable housing (commuted sums)	No target
H5 – Rural Exception Sites	
Number of rural exception sites granted permission and number of such dwellings completed.	No target
H6 - Self-build and Custom Housebuilding	
Number of self-build and custom housebuilding dwellings plots delivered.	Demand indicated self-build and custom housebuilding register is increasingly being provided for.
H7 - Houses in Multiple Occupation	
No indicator - it is considered that 100% of applications would meet the policy unless material considerations justify otherwise.	
H8 - Campus and Purpose-Built Student Accommodation	
No indicator - it is considered that 100% of applications would meet the policy unless material considerations justify otherwise.	
H9 – Gypsies, Travellers and Travelling Show people	
Number of gypsy and traveller and travelling show people pitches as part of the North East Leicester Sustainable Urban Extension	4 gypsy and traveller pitches and 4 travelling show people pitches as part of the development.
Number of gypsy and traveller and travelling show people pitches as part of the West of Loughborough Sustainable Urban Extension	4 gypsy and traveller pitches and 4 travelling show people pitches as part of the development.
Number of travelling show people pitches as part of the North of Birstall Sustainable Urban Extension	4 travelling show people pitches
E1 - Meeting Employment Needs	
Number of full-time and part-time jobs	No target
Percentage of people in employment, self-employed and unemployed	No target
Percentage of employee profiles by occupation	Growth in the proportion of professional/ knowledge-based sectors
Average wages	Growth in wages
Percentage of qualification attainment by level	Growth in the proportion of NQV4+ qualifications

INDICATOR	TARGET
E2 - Protecting Existing Employment Sites	
Amount of protected existing employment site land lost to residential development (ha)	None.
E3 - Rural Economic Development	
Number of new tourism related facilities	No target
T1 - Town Centres and Retail	
Amount of net additional main town centre uses floorspace provided in Charnwood	16,400 – 24,900sqm net of new comparison goods floorspace by 2037.
Number and location of new large convenience stores (supermarket)	No target
Percentage of vacant units in each designated centre or primary shopping area (monitored periodically)	A decline in vacancies
Number of hot food takeaway clusters in each designated centre or primary shopping area (monitored periodically)	No increase in clusters.
Number of planning permissions granted for main town centre uses at out of centre locations	No target
T2 - Protection of Community Facilities	
Number of Assets of Community Value	No target
T3 - Car Parking Standards	
No indicator - it is considered that 100% of applications would meet the policy unless material considerations justify otherwise.	
CC1 - Flood Risk Management	
Number of planning permissions granted contrary to Environment Agency or Lead Local Flood Authority advice.	Zero – matters to be resolved through planning condition.
Area of land and number of households within Flood Zone 2 or 3	No target
CC2 - Sustainable Drainage Systems (SuDS)	
No indicator - it is considered that 100% of applications would meet the policy unless material considerations justify otherwise.	
CC3 - Renewable and Low Carbon Energy Installations	
Carbon dioxide emissions per capita (industry, sector and transport)	Net reduction in carbon dioxide emissions
Amount of new energy being provided from renewable or low carbon energy developments	Net increase in low carbon energy provided
CC4 - Sustainable Construction	
No indicator - it is considered that 100% of applications would meet the policy unless material considerations justify otherwise.	
CC5 - Sustainable Transport	
Railway station entry and exits	A modal shift towards increased rail use
Bus usage data	A modal shift towards increased bus use
Amount of new development at Sustainable Urban Extensions and service centres with access to a half-hour frequency public transport service	100% of new houses to be within 400 metres of a local bus service
CC6 – Electric Vehicle Charging Points	
Number of electric vehicle charging points secured through planning condition	A net increase in electric vehicle charging provision

INDICATOR	TARGET
Number of public (non-domestic) electric vehicle charging points	A net increase in electric vehicle charging provision
EV1 - Landscape	
No indicator - it is considered that 100% of applications would meet the policy unless material considerations justify otherwise.	
EV2 - Green Wedges	
Area of Green Wedge land lost to residential development (ha)	No target
EV3 - Areas of Local Separation	
Area of Local Separation land lost to residential development (ha)	No target
EV4 - Charnwood Forest and the National Forest	
Update of status and strategies related to the management of the Charnwood Forest and the National Forest	No target
EV5 - River Soar and Grand Union Canal Corridor	
Update of status and strategies related to the management of the River Soar and Grand Union Canal Corridor	No target
EV6 - Conserving and Enhancing Biodiversity and Geodiversity	
Number of Local Wildlife Sites	No net reduction of Local Wildlife Sites
Number of Sites of Special Scientific Interest (SSSI) in favourable and unfavourable condition	No net reduction of Sites of Special Scientific Interest (SSSI)
Number of Local Nature Reserves and number of which that have a management plan.	No net reduction of Local Nature Reserves
Number of Regionally Important Geological Sites	No net reduction of Regionally Important Geological Sites
Area of Ancient Woodland	No net reduction of Ancient Woodland
Amount of developer financial contributions secured for biodiversity projects	No target
EV7 - Tree Planting	
Canopy cover by area and percentage of Borough	No target
EV8 - Heritage	
Number of Listed Buildings	No net reduction of Listed Buildings
Number of Historic Parks and Gardens	No net reduction of Historic Parks and Gardens
Number of Scheduled Monuments	No net reduction of Scheduled Monuments
Number of Conservation Areas	No net reduction of Conservation Areas
Number of Non-Designated Heritage Assets (identified on the local list and in neighbourhood plans)	No net reduction of Non-Designated Heritage Assets
Number of Heritage Assets at Risk	Reduction of Heritage Assets at Risk
EV9 - Open Spaces, Sport and Recreation	
Area of open spaces by type (ha)	No target
Loss of designated protected open spaces to other uses	No loss of designated protected open spaces
EV10 - Indoor Sports Facilities	
Amount of developer financial contributions secured for sport facilities	No target

INDICATOR	TARGET
EV11 - Air Quality	
Number of Air Quality Management Areas with a management plan	No target
EV12 – Burial Space	
Amount of new burial space granted planning permission	No target
Delivery of 9.1 hectares of burial space identified at Nanpantan	No target
INF1 - Infrastructure and Developer Contributions	
Amount of developer financial contributions secured by type	No target
INF2 - Local and Strategic Road Network	
No Indicator - it is considered that 100% of applications would meet the policy unless material considerations justify otherwise.	

Appendix 2 – Housing & Employment Trajectory

Policy Ref.	CHARNWOOD BOROUGH	2021/2022	2022/2023	2023/2024	2024/2025	2025/2026	2026/2027	2027/2028	2028/2029	2029/2030	2030/2031	2031/2032	2032/2033	2033/2034	2034/2035	2035/2036	2036/2037	TOTALS
		16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	
	Commitments Leicester Urban Area - Birstall, Thurmaston, Syston	19	66	14														99
	Commitments Loughborough Urban Centre	398	170	33	0	0	30											631
	Commitments Shepshed Urban Area	201	135	106	11	0												453
	Commitments Service Centres – Anstey, Barrow upon Soar, Mountsorrel, Quorn, Rothley, Sileby	220	232	188	168	49	71											928
	Commitments Other Settlement– Estimated completions from commitments	22	17	10	0	0	116	45										210
	Commitments Small Village or Hamlet– Estimated completions from commitments	6	8	4														18
	TOTAL ALL – Estimated completions from commitments	866	628	355	179	49	217	45	0	0	0	0	0	0	0	0	0	2339

Policy Ref.	CHARNWOOD BOROUGH	2021/2022	2022/2023	2023/2024	2024/2025	2025/2026	2026/2027	2027/2028	2028/2029	2029/2030	2030/2031	2031/2032	2032/2033	2033/2034	2034/2035	2035/2036	2036/2037	TOTALS
		16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	
	ALLOCATIONS Leicester Urban Area - Birstall, Thurmaston, Syston	0	0	0	175	315	265	250	237	180	217	95	90	90	90	90	10	2104
HA1	Land South East of Syston				25	50	65	90	90	90	90	90	90	90	90	90	10	960
HA12	Land at Gynsill Lane & Anstey Lane, Glenfield				20	40	40	40	40	40	40							260
HA7	Land off Barkby Thorpe Lane, Thurmaston				25	40	40											105
HA4	Queniborough Lodge					25	40	40	27									132
HA11	Rear of Manor Medical Centre, Melton Road, Thurmaston										20							20
HA5	Land at Melton Road, Syston				10	21												31
HA9	Works opposite 46 Brook Street, Thurmaston										7							7
HA10	Works adjacent 46 Brook Street, Thurmaston										5							5
HA6	Brook Street, Syston										15							15
HA13	Park View Nursery Site off Gynsill Lane, Glenfield				10	20												30

Policy Ref.	CHARNWOOD BOROUGH	2021/2022	2022/2023	2023/2024	2024/2025	2025/2026	2026/2027	2027/2028	2028/2029	2029/2030	2030/2031	2031/2032	2032/2033	2033/2034	2034/2035	2035/2036	2036/2037	TOTALS
		16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	
HA14	Land off Cliffe Road/Henson Close, Birstall				20	15												35
HA2	Barkby Road, Syston				25	40	40	40	40	40	40	5						270
HA3	Land north of Barkby Road, Syston				25	40	40	40	40	10								195
HA8	Woodgate Nurseries, Barkby Lane, Thurmaston				15	24												39
	ALLOCATIONS Loughborough Urban Centre	0	0	0	70	173	180	208	155	130	298	343	282	116	90	197	0	2242
HA29	Southfields Road Car Park, Loughborough					33												33
HA28	Land off Derby Square															43		43
HA21	Part of Baxter Gate Opportunity Site, Loughborough										100	110						210
HA23	Market Street															72		72
HA24	Southfields Council Offices, Southfield Road											53	110					163
HA26	Former Limehurst Depot							25	40	40	33							138

Appendix 2 – Housing & Employment Trajectory

Policy Ref.	CHARNWOOD BOROUGH	2021/2022	2022/2023	2023/2024	2024/2025	2025/2026	2026/2027	2027/2028	2028/2029	2029/2030	2030/2031	2031/2032	2032/2033	2033/2034	2034/2035	2035/2036	2036/2037	TOTALS
		16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	
HA16	Laburnum Way, Loughborough				30	50	50	50	50	50	50	50	42					422
HA17	Moat Farm, Land south west of Loughborough.										25	40	40	40	40	20		205
HA18	Land to r/o Snells Nook Lane, Loughborough					25	40	40	15									120
HA15	Land south of Loughborough				25	65	90	50	50	40	90	90	90	60	50	23		723
HA20	Land off Beacon Road							30										30
HA19	Park Grange Farm, Newstead Way				15													15
HA25	138-144 Knightthorpe Road, Loughborough							13										13
HA27	Former Main Post Office, Sparrow Hill, Loughborough													16				16
HA22	Devonshire Square															39		39
	ALLOCATIONS Shepshed Urban Area	0	0	0	264	420	347	276	203	133	113	58	44	20	0	0	0	1878
HA34	Land off Tickow Lane (north), Shepshed				22	44	44	44	44	44	44	44	44	20				394
HA42	32 Charnwood Road, Shepshed				15													15
HA30	Land off Fairway Road				25	40	35											100

Policy Ref.	CHARNWOOD BOROUGH	2021/2022	2022/2023	2023/2024	2024/2025	2025/2026	2026/2027	2027/2028	2028/2029	2029/2030	2030/2031	2031/2032	2032/2033	2033/2034	2034/2035	2035/2036	2036/2037	TOTALS
		16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	
HA39	Land fronting Ashby Road & Ingleberry Road, Shepshed				25	40	40	40	6									151
HA35	Land North of Hallamford Road and West of Shepshed				25	40	40	40	40	40	25							250
HA32	Land off Tickow Lane (south)				22	44	44	44	44	44	44	14						300
HA40	Land to the west of the B591/Ingleberry Rd & north of Iveshead Lane				25	40	40	40	29									174
HA41	Land south of Ashby Road Central				25	24												49
HA31	Land north of Ashby Road, Shepshed				25	40	40	40	40	5								190
HA36	20 Moscow Lane, Shepshed					25	24											49
HA33	Land at Oakley Road, Shepshed				25	40	40	28										133
HA37	Land rear of 62 Iveshead Road				25	43												68
HA38	Land to rear of 54 Iveshead Road,				5													5
	ALLOCATIONS Service Centres – Anstey, Barrow upon Soar, Mountsorrel, Quorn, Rothley, Sileby	0	0	0	234	376	300	275	225	203	118	69	19	0	0	0	0	1819
HA44	Fairhaven Farm, Anstey				25	22												47
HA43	Land west of Anstey				36	75	90	90	90	75	75	50	19					600

Policy Ref.	CHARNWOOD BOROUGH	2021/2022	2022/2023	2023/2024	2024/2025	2025/2026	2026/2027	2027/2028	2028/2029	2029/2030	2030/2031	2031/2032	2032/2033	2033/2034	2034/2035	2035/2036	2036/2037	TOTALS
		16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	
HA47	Land adjoining 84 Melton Road, Barrow upon Soar																	18
HA45	Land to south of Melton Road, Barrow upon Soar				25	40	40	25										130
HA46	Land off Melton Road, Barrow upon Soar					25	40	40	15									120
HA48	Land off Willow Road, Barrow upon Soar				25	40	40	40	40	30								215
HA49	Land off Cotes Road, Barrow upon Soar					25	40	40	40	40	35							220
HA50	East of Loughborough Road, Quorn				25	40	10											75
HA55	Rear of The Maltings site High Street, Sileby				13													13
HA53	Land off Barnards Drive, Sileby				25	40	40	40	40	40	3							228
HA56	Land off Kendal Road (South of Butler Way and Gray Lane), Sileby										5	19						24
HA57	36 Charles Street, Sileby				11													11
HA58	9 King Street, Sileby				9	5												14
HA54	Homefield Road, Sileby				25	30												55
HA51	Land south of Rothley				15	25												40

Policy Ref.	CHARNWOOD BOROUGH	2021/2022	2022/2023	2023/2024	2024/2025	2025/2026	2026/2027	2027/2028	2028/2029	2029/2030	2030/2031	2031/2032	2032/2033	2033/2034	2034/2035	2035/2036	2036/2037	TOTALS
		16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	
HA52	971 Loughborough Road, Rothley					9												9
	ALLOCATIONS Other Settlements	0	0	0	149	203	160	74	55	78	70	26	0	0	0	0	0	815
HA59	Land to rear of Derry's Garden Centre, Cossington				25	40	40	19										124
HA60	Land off Melton Road, East Goscote				25	40	40	40	40	38								223
HA61	Land to the rear of 89 Loughborough Road, Hathern				18	11												29
HA63	Land off Zouch Road, Hathern				25	25												50
HA62	The Leys, Hathern				6													6
HA64	Land at Threeways Farm, Queniborough				25	40	35											100
HA65	Land off Melton Road, Queniborough					25	30											55
HA66	Land off Gaddesby Lane, Rearsby				25	22												47
HA68	Land off Old Gate Road, Thrussington									25	35							60
HA67	44 Hoby Road, Thrussington										30							30
HA69	The former Rectory & Land at Thurcaston										5	26						31
N/A	Wymeswold NP housing requirement						15	15	15	15								60

Policy Ref.	CHARNWOOD BOROUGH	2021/2022	2022/2023	2023/2024	2024/2025	2025/2026	2026/2027	2027/2028	2028/2029	2029/2030	2030/2031	2031/2032	2032/2033	2033/2034	2034/2035	2035/2036	2036/2037	TOTALS
		16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	
	TOTAL ALL – Estimated completions from DRAFT ALLOCATIONS	0	0	0	892	1487	1252	1083	875	724	816	591	435	226	180	287	10	8858
LUC2	Estimated completions from WEST OF LOUGHBOROUGH SUE			60	180	210	250	250	250	250	250	250	250	250	250	250	250	3200
LUA2	Estimated completions from NORTH EAST OF LEICESTER SUE	30	125	175	250	275	200	200	200	200	200	200	200	200	250	250	250	3205
LUA3	Estimated completions from DIRECTION OF GROWTH NORTH OF BIRSTALL		30	130	175	175	175	150	150	130	130	130	130	130	130	130	55	1950
	TOTAL ALL – Estimated completions from SUE's	30	155	365	605	660	625	600	600	580	580	580	580	580	630	630	555	8355
	Estimated total completions	896	783	720	1676	2196	2094	1728	1475	1304	1396	1171	1015	806	810	917	565	19552
	Estimated cumulative completions	896	1679	2399	4075	6271	8365	10093	11568	12872	14268	15439	16454	17260	18070	18987	19552	
	Annualised housing requirement	1111	1111	1111	1111	1111	1111	1111	1111	1111	1111	1111	1111	1111	1111	1111	1111	
	Cumulative requirement	1111	2222	3333	4444	5555	6666	7777	8888	9999	11110	12221	13332	14443	15554	16665	17776	
	MONITOR - No. dwellings above or below cumulative requirement	-215	-543	-934	-369	716	1699	2316	2680	2873	3158	3218	3122	2817	2516	2322	1776	

Policy Ref.	CHARNWOOD BOROUGH	2021/2022	2022/2023	2023/2024	2024/2025	2025/2026	2026/2027	2027/2028	2028/2029	2029/2030	2030/2031	2031/2032	2032/2033	2033/2034	2034/2035	2035/2036	2036/2037	TOTALS
		16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	
	MANAGE - Annual requirement taking account of past/projected completions	1111	1125	1150	1183	1142	1046	941	854	776	701	585	467	331	172	-147	-294	

	Apr-21 5-year supply	Apr-22 5-year supply	Apr-23 5-year supply	Apr-24 5-year supply	Apr-25 5-year supply	Apr-26 5-year supply	Apr-27 5-year supply	Apr-28 5-year supply	Apr-29 5-year supply
	5.37	6.40	7.21	7.86	7.54	6.85	6.06	5.45	4.88
5 YEAR REQUIREMENT	5555	5555	5555	5555	5555	5555	5555	5555	5555
5 YEAR REQUIREMENT + 5%	5833	5833	5833	5833	5833	5833	5833	5833	5833
5 YEAR COMPLETIONS	6271	7469	8414	9169	8797	7997	7074	6361	5692
SURPLUS	438	1636	2581	3336	2964	2164	1241	528	-141

	2021-2026	2026-2031	2031-2038	TOTAL	2021-2026	2026-2031	2031-2038
ALLOCATIONS Loughborough Urban Centre	243	971	1028	2242	10%	20%	59%
ALLOCATIONS Shepshed Urban Area	684	1072	122	1878	29%	23%	7%
ALLOCATIONS Leicester Urban Area - Birstall, Thurmaston, Syston	490	1149	465	2104	21%	24%	27%
ALLOCATIONS Service Centres – Anstey, Barrow upon Soar, Mountsorrel, Quorn, Rothley, Sileby	610	1121	88	1819	26%	24%	5%
ALLOCATIONS Other Settlements	352	437	26	815	15%	9%	2%
	2379	4750	1729	8858			

Employment Land Trajectory

LP Ref	Site Name	Parish/Settlement	Greenfield/Brownfield	2021/22	22/23	23/24	24/25	25/26	26/27	27/28	28/29	29/30	30/31	31/32	32/33	33/34	34/35	35/36	36/37	37/38	38/39	Total
ES1	Land off Sileby Road	Barrow Upon Soar	Brownfield				2															2
							0.3															0.3
ES2	North of Birstall Sustainable Urban Extension	Wanlip	Greenfield		1	2	2	1.75	1.5	1.5	1.5	1.5										12.75
								0.25	0.5	0.5	0.5	0.5										2.25
ES3	The Warren	East Goscote	Brownfield			2	1.95															3.95
																						-
ES4	West of Loughborough Sustainable Urban Extension	Loughborough	Greenfield							1	1.5	1.5	1.5	1.5	1.5	1.5	1.5	0.5				12
											0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5				4
ES5	Dishley Grange	Loughborough/Hathern	Greenfield			1	1	1	1	1.4												5.4
							1	1	1	1.6												3.6
ES6	Land at Rothley Lodge	Rothley	Brownfield	3.35																		3.35

Appendix 2 – Housing & Employment Trajectory

LP Ref	Site Name	Parish/Settlement	Greenfield/Brownfield	2021/22	22/23	23/24	24/25	25/26	26/27	27/28	28/29	29/30	30/31	31/32	32/33	33/34	34/35	35/36	36/37	37/38	38/39	Total
																						-
ES7	Land at Loughborough Road	Rothley	Greenfield	2.2																		2.20
																						-
ES8	Land off Fairway Road	Shepshed	Greenfield		1	1.75	1.5															4.25
						0.25	0.5															0.75
ES9	Watermead Business Park Phases 2 & 3	Syston	Greenfield				0.5	1	0.5	0.5	2	1.5	1.5	2								9.5
									0.5	0.5	0.5	0.5	0.5									2.5
ES10	North East of Leicester Sustainable Urban Extension	Thurmaston	Greenfield							1	1.8	1.5	1.5	1.5	2	2						11.3
										0.2	0.5	0.5	0.5									1.7
			Industry/warehouse	5.55	2	6.75	8.95	3.75	4	6.2	6.5	6	4.5	5.5	3.5	1.5	1.5	0.5	0	0	0	66.7
			OFFICE	0	0	0.25	1.8	1.25	2	1.8	2	2	1.5	0.5	0.5	0.5	0.5	0.5	0	0	0	15.1
			TOTAL	5.55	2	7	10.75	5	6	8	8.5	8	6	6	4	2	2	1	0	0	0	81.8

Appendix 2 – Housing & Employment Trajectory

LP Ref	Site Name	Parish/ Settlement	Greenfield/ Brownfield	2021/ 22	22/ 23	23/ 24	24/ 25	25/ 26	26/ 27	27/ 28	28/ 29	29/ 30	30/ 31	31/ 32	32/ 33	33/ 34	34/ 35	35/ 36	36/ 37	37/ 38	38/ 39	Total
			Industry / warehouse cumulative total	5.55	7.55	14.3	23.25	27	31	37.2	43.7	49.7	54.2	59.7	63.2	64.7	66.2	66.7	66.7	66.7	66.7	
			Office cumulative total	0	0	0.25	2.05	3.3	5.3	7.1	9.1	11.1	12.6	13.1	13.6	14.1	14.6	15.1	15.1	15.1	15.1	

Appendix 3 - Infrastructure Schedule

Location and Infrastructure Category	Infrastructure Scheme	Cost	Critical Infrastructure	Delivery	Delivery Timescale			Local Plan Policies
					2021 - 2026	2026 - 2031	2031 - 2037	
Sustainable Urban Extensions								
North East of Leicester Sustainable Urban Extension								
Highway Works and Junction Improvements	Main road via East Thurmaston from Barkby Thorpe Lane to King Street and Hamilton Lane	£16,000,000	Essential	Direct provision by developer, S.106	√	√		LUA2 INF1
	Link to Sandhills Avenue	£5,800,000	Essential	Direct provision by developer, S.106	√			INF2
	Link road from North East Leicester SUE	£7,200,000	Essential	Direct provision by developer, S.106		√		
	Capacity enhancements at A607 Barkby Thorpe Lane and Troon way / Barkby Road roundabouts	£1,275,000	Essential	Direct provision by developer, S.106		√		
Sustainable Transport Measures	Bus Service Subsidy Cap (Additional contingency of £1,095,000)	£1,687,000	Essential	S.106 developer contributions	√	√	√	LUA2 CC5
	Travel Packs and Travel Passes		Essential	S.106 developer contributions	√	√	√	INF1
	3 On Site Cycle Routes and 5 Off Site Walking and Cycling Schemes	£1,484,647 £1,042,379	Essential	S106 developer contributions	√	√	√	
Education	3 New Primary Schools: - Primary School 1: 2FE 420 pupils on 1.93ha of land - Primary School 2: 2FE 420 pupils (or 3FE 630 pupils) on 2.86ha of land - Primary School 3: 1FE 210 pupils on 1.93ha of land	Primary School 1: £5,350,000 Primary School 2: £5,350,000 (or £7,599,000)	Essential	S.106 developer contributions		√	√	LUA2 INF1

Location and Infrastructure Category	Infrastructure Scheme	Cost	Critical Infrastructure	Delivery	Delivery Timescale			Local Plan Policies
					2021 - 2026	2026 - 2031	2031 - 2037	
		Primary School 3: £3,100,000						
	Secondary School on a site of 6.03ha (also land for a relocated Roundhill Academy)	Up to £16,727,200	Essential	S.106 developer contributions		√	√	
Health	Expansion of existing healthcare facilities (or healthcare facility within the District Centre which could cost up to £1,386,082)	£873,494	Essential with means of delivery to be determined	S.106 developer contributions	√	√	√	LUA2 INF1
Open Space and Recreation	Green Infrastructure: - 48ha of Parks including a Destination Park (including 1 NEAP and 1 LEAP) - 61ha of Natural and Semi Natural Green Space - 6ha of Amenity Green Space - 4ha of Allotments - Orchards	-	Essential	Direct provision by developer		√	√	LUA2 EV9 EV10 INF1
	Play Facilities comprising 7 sites for children and 7 sites for young people	-	Essential	Direct provision by developer		√	√	
	Outdoor Sports Facilities on 28ha of land for formal and informal sports	-	Essential	Direct provision by developer		√	√	
	Indoor Sports Facilities comprising a 4-court sports hall	-	Essential	Direct provision by developer		√	√	
Burial Space	Burial Space on 0.6ha of land either within or outside the site		Essential	Direct provision by developer or S.106		√	√	LUA2 ES12 INF1

Location and Infrastructure Category	Infrastructure Scheme	Cost	Critical Infrastructure	Delivery	Delivery Timescale			Local Plan Policies
					2021 - 2026	2026 - 2031	2031 - 2037	
Community Facilities	Community Centre Facilities comprising the community hall, police facility and library hub	£1,900,000	Essential	S.106 developer contributions		√		LUA2 INF1
Libraries	Provision and/or enhancement of existing library facilities and temporary library facilities	£237,140	Essential	S.106 developer contributions	√	√	√	LUA2 INF1
Civic Amenity	Waste collection and processing at Mountsorrel civic amenity site	£209,250	Essential	S.106 developer contributions	√	√	√	LUA2 INF1
Policing	Police Force Contribution	£1,842,980	Essential	S.106 developer contributions	√	√	√	LUA2 INF1
Land for Gypsies, Travellers and Travelling Showpeople	1.1ha of prepared and serviced land for 4 pitches for gypsies and travellers and a parcel of land for 4 plots for travelling showpeople	-	Essential	Direct provision by developer		√		LUA2 H9
North of Birstall Sustainable Urban Extension								
Highway Works and Junction Improvements North of Birstall Sustainable Urban Extension	Primary Access A6 Junctions 1 and 2 and two-way connection to Rothley	£5,400,000	Essential	Direct provision by developer, S.106	√			LUA3 INF1 INF2
	A6/A46 Interchange Junction improvements	£3,200,000	Essential	Direct provision by developer, S.106	√			
	A6 Corridor Highway and Junction improvement works - Birstall Park and Ride Junction - Hallam Fields North - Greengate Lane - Bentley Road	£200,000	Essential	Direct provision by developer, S.106	√			
	Hallfields Lane / Cossington Lane Works	£500,000	Essential	Direct provision by developer, S.106	√			

Location and Infrastructure Category	Infrastructure Scheme	Cost	Critical Infrastructure	Delivery	Delivery Timescale			Local Plan Policies
					2021 - 2026	2026 - 2031	2031 - 2037	
	Red Hill Circle Highway Works	£300,000	Essential	Direct provision by developer, S.106		√		
Sustainable Transport Measures	Bus Service Subsidy for services to and from Leicester for 5 years	£150,000	Essential	S.106 developer contributions	√			LUA3 CC5
	Measures include: - Off Site Public Rights of Way Improvements - Broadnook Bike Rental Scheme	£512,101	Essential	S.106 developer contributions	√			
	Travel Planning Measures Including travel plan, travel packs and travel passes	£52 per dwelling for travel packs	Essential	S.106 developer contributions	√	√	√	
Education	Early Years Facility at a location to be agreed for up to 162 preschool children	£1,438,480	Essential	S.106 developer contributions	√			LUA3 INF1
	Primary School on 3ha of land for 3FE but initially constructed to cater for 2.73FE	£8,361,216	Essential	S.106 developer contributions	√			
	Secondary School Contribution for 378 pupils at the Cedars Academy, Birstall	£6,843,653	Essential	S.106 developer contributions	√	√		
	Special Education Needs	£1,011,680	Essential	S.106 developer contributions	√	√		
Health	Healthcare within Community Resource Centre or off site	Up to £1,172,468	Essential with means of delivery to be determined	Direct provision by developer or S.106 developer contribution		√	√	LUA3 INF1
Open Space and Recreation	Green Infrastructure comprising: - 54.7ha of Natural and Semi Natural Green Space - 18.4ha of Parks and Amenity Green Space - 1.54ha of Allotments	-	Essential	Direct provision by developer	√	√	√	LUA3 EV9 T3 INF1

Location and Infrastructure Category	Infrastructure Scheme	Cost	Critical Infrastructure	Delivery	Delivery Timescale			Local Plan Policies
					2021 - 2026	2026 - 2031	2031 - 2037	
	Children and Young People's Play Facilities comprising at least 5 LEAPs and 1 NEAP	-	Essential	Direct provision by developer	√	√	√	
	Artificial Grass Pitch (AGP) on 3.2ha of land (to be transferred to Cedars Academy subject to a CUA) and Outdoor Sports Facilities including playing pitches.	-	Essential	Direct provision by developer	√	√	√	
	Junior Football Pitch, Multi Use Games Area, Pavilion and Car Parking	£975,000	Essential	S.106 developer contributions	√	√	√	
Community Facilities	Community Resource Centre (Broadnook Hall comprising (subject to demand) the Police Facility, the Healthcare Facility, the Community Hall and community facilities	£5,000,000	Essential with details of provision subject to assessment of demand	S.106 developer contributions		√		LUA3 INF1
	Foxfield Park Pavilion including changing rooms, offices, community shop, café and library facility	-	Essential	Direct provision by developer	√			
Libraries	Library Facilities at Foxfield Park Pavilion and Community Resource Centre with enhancements at Birstall and Rothley libraries	£58,850	Essential	S.106 developer contributions	√	√		
Civic Amenity	Civic Amenity Contribution to fund all or part of a project at Mountsorrel Civic Amenity Site	£100,756	Essential	S.106 developer contributions	√	√		
Policing	Police Facility within the Community Resource Centre	-	Essential	Direct provision by developer		√		
Gypsies and Travellers	0.4ha of land within the application site for Travelling Show people	-	Essential	Direct provision by developer		√	√	LUA3 H9

Location and Infrastructure Category	Infrastructure Scheme	Cost	Critical Infrastructure	Delivery	Delivery Timescale			Local Plan Policies
					2021 - 2026	2026 - 2031	2031 - 2037	
West of Loughborough Sustainable Urban Extension								
Highway Works and Junction Improvements	Roundabout Access with A6	£1,375,000	Essential	Direct provision by developer, S.106 developer contributions	√			LUC2 INF1
	Highway Improvement Works to M1 Junction 23	£1,600,000	Essential	Direct provision by developer, S.106 developer contributions	√			
	Roundabout Access with A512	£2,600,000	Essential	Direct provision by developer, S.106 developer contributions	√			
	Dualling of A512	£8,530,000	Essential	Direct provision by developer, S.106 developer contributions	√			
	Strategic Link Road	£6,200,000	Essential	Direct provision by developer, S.106 developer contributions		√		
	Hathern Road Access	£1,800,000	Essential	Direct provision by developer, S.106 developer contributions		√		
	Off Site Footpath Improvements	£1,955	Essential	S.106 developer contributions	√	√		

Location and Infrastructure Category	Infrastructure Scheme	Cost	Critical Infrastructure	Delivery	Delivery Timescale			Local Plan Policies
					2021 - 2026	2026 - 2031	2031 - 2037	
Sustainable Transport Measures	2 Cycle ways at Clowbridge Drive and Blackbrook and junction Improvements	£912,555	Essential	S.106 developer contributions	√	√		INF1
	2 new Bus Stops on the A512 to the east of the application site access	£15,896	Essential	S.106 developer contributions	√			
	Travel Planning Measures including travel packs and travel passes for up to 2 adults per dwelling	£52.85 per dwelling	Essential	S.106 developer contributions	√	√	√	
Education <i>(Provision Subject to Education Delivery Review)</i>	Primary Schools comprising: - Primary School North on a site of 1.7ha for 1.66FE - <i>Primary School North Extension Land comprising 0.5ha of land adjoining the school site to be reserved</i> - Primary School South on a site of 1.93ha for 2FE	Primary School North: £4,960,000 Primary School South: £5,350,000	Essential	S.106 developer contributions	√	√	√	LUC2 INF1
	High School Contribution for places at Charnwood College and Iveshead School <i>Delivery, triggers and instalments set out in Education Delivery Review.</i>	£5,720,374	Essential	S.106 developer contributions	-	-	-	
	Upper School Contribution for places at Charnwood College and Iveshead School <i>Delivery, triggers and instalments set out in Education Delivery Review</i>	£3,935, 346	Essential	S.106 developer contributions	-	-	-	
Health <i>(Subject to Healthcare Needs Review))</i>	Healthcare Facility on site within the Community Hub or contribution in lieu of provision	£1,606,809	Essential with provision to be agreed	Direct provision by developer or S.106 developer contributions		√	√	LUC2 INF1

Location and Infrastructure Category	Infrastructure Scheme	Cost	Critical Infrastructure	Delivery	Delivery Timescale			Local Plan Policies
					2021 - 2026	2026 - 2031	2031 - 2037	
Open Space and Recreation	Green Infrastructure comprising: - Garendon Registered Park of 188ha - Garendon Common and parks - 35ha of Amenity Green Space - 36ha of Natural and Semi Natural Green Space - 33.5ha of proposed woodland and 52ha of existing woodland - 2.5ha of Allotments	-	Essential	Direct provision by developer	√	√	√	LUC2 EV7 EV9 INF1
	Play Facilities - 6 sites for children and young - 1 off site contribution for improvements to the Pear Tree Lane Play Area	£189,636	Essential	Direct provision by developer and S.106 developer contributions	√	√	√	
	Outdoor Sports Facilities: - Playing pitches on no less than 9ha. - Off road cycling facility. - Parkour facility, outdoor fitness and trim trail, orienteering course and a minimum of 2 multi use games areas. - 1 artificial grass pitch including tennis courts. - 13.8ha for informal sports and recreation.	-	Essential	Direct provision by developer		√	√	
Libraries	Towards provision of local library facilities at Loughborough, Shepshed and Hathern	£96,580	Essential	S.106 developer contributions	√			LUC2 INF1
Civic Amenity	To fund project at Shepshed Civic Amenity Site	£135,000	Essential	S.106 developer contributions	√	√	√	
Policing	Comprising contributions towards premises, equipment, vehicles and technology	£1,315,710	Essential	S.106 developer contributions	√	√	√	

Location and Infrastructure Category	Infrastructure Scheme	Cost	Critical Infrastructure	Delivery	Delivery Timescale			Local Plan Policies
					2021	2026	2031	
					- 2026	- 2031	- 2037	
Gypsies, Travellers and Travelling Showpeople	0.32ha for Gypsy and Travellers and 0.68ha for Travelling Showpeople	-	Essential	Direct provision by developer in accordance with S.106 Agreement		√		LUC2 H9
Loughborough Science and Enterprise Park								
Highways	To be determined through detailed transport assessment. Main access is expected to be from A512 Ashby Road with additional access points from Snells Nook Lane as required.	tbc	Essential	S.106 developer contributions	Infrastructure delivery trajectory will depend upon the timing of a planning application and the detailed assessment of the infrastructure requirements and their delivery.			LUC3 E1 INF2
Sustainable Transport	Walking and cycling routes within site and connected to wider networks	tbc	Essential	S.106 developer contributions	As above			LUC3 CC5
	Enhanced connectivity to bus network and site wide green travel plan with supporting measures to provide incentives to sustainable travel	tbc	Essential	S.106 developer contributions				
Open Space	Green Infrastructure, including strategic open space, wildlife areas, attenuation basins and drainage features, green networks and all associated structural and general landscaping.	tbc	Essential	S.106 developer contributions	As above			LUC3 CC1 CC2 EV7 EV9

Location and Infrastructure Category	Infrastructure Scheme	Cost	Critical Infrastructure	Delivery	Delivery Timescale			Local Plan Policies
					2021 - 2026	2026 - 2031	2031 - 2037	
Electricity and Gas	Provision for potential primary substation within the development	tbc	Subject to demand	S.106 developer contributions Western Power	As above			E1 INF1
Leicester Urban Area								
Education	See requirements for each location	-	-	-	√	√	√	LUA1 INF1
Health	See priorities for each location	-	-	-	√	√	√	LUA1 INF1
Water and Sewerage	All LUA served by Wanlip WwTW where additional capacity investment is planned to take place from 2025	-	Essential	Severn Trent Water		√		LUA1 CC2
Birstall								
Transport - package comprises a combination of measures to address highway capacity and sustainable travel focused on interventions across Birstall	AN6 / B12: Leicester Park and Ride service enhancement facilitating bus to bus interchange and additional services.	£1,500,000	Essential	S106 developer contributions / local authority highway funding		√	√	LUA1 CC5 INF1 INF2
	B13: New Bus Lane on A6 southbound towards the Red Hill Circle junction and revised 20mph speed limit to discourage through traffic.	£300,000	Essential	S106 developer contributions / local authority highway funding		√	√	
	B14: Wanlip Road traffic calming	£180,000	Essential	S106 developer contributions / local authority highway funding		√	√	

Location and Infrastructure Category	Infrastructure Scheme	Cost	Critical Infrastructure	Delivery	Delivery Timescale			Local Plan Policies
					2021 - 2026	2026 - 2031	2031 - 2037	
Education	Primary: Growth could be accommodated. Secondary: Cedars Academy could accommodate growth	-	Sufficient capacity at schools	-	-	-	-	DS3 LUA1 INF1
Health	Served by Birstall Medical Centre and Greengate Medical Centre. CCG to work with local partners to ensure local provision that maximises the use of available resources and supports people to access care and treatment.	-	Essential	S.106 developer contributions, GP Practices, third party developments, NHS capital funding	√	√	√	LUA1 INF1
Glenfield								
Transport	AN9: Cycle network improvements across parcel of land within Anstey Lane, A563, A50 and Gynsill Lane.	£920,000	Essential	S106 developer contributions / local authority highway funding		√	√	LUA1 CC5 INF1 INF2
Education	Primary: Reserve site for 1FE School at Gynsill Lane or new school provision within a safe walking distance from the site. Reasonable costs of making this provision to be shared amongst the developments that it would serve. Provision dependent upon ongoing discussions with promoters, Leicester City Council, Blaby District Council and Leicestershire County Council. Secondary: Martin High School has potential for growth.	£4,656,000	Essential	S.106 developer contributions		√	√	DS3 LUA1 INF1
Health	Served by Anstey Surgery.		Essential	S.106 developer contributions,	√	√	√	LUA1 INF1

Location and Infrastructure Category	Infrastructure Scheme	Cost	Critical Infrastructure	Delivery	Delivery Timescale			Local Plan Policies
					2021 - 2026	2026 - 2031	2031 - 2037	
	CCG to work with local partners to ensure local provision that maximises the use of available resources and supports people to access care and treatment.			GP Practices, third party developments, NHS capital funding				
System								
Transport - package comprises a combination of sustainable travel interventions and smaller-scale highway capacity interventions at key junctions and on road links in and around Syston - package for the broad location of Syston also includes schemes in Sileby, East	SY3: Syston - Queniborough Road-Barkby Road Junction Improvement	£500,000	Essential	S.106 developer contributions / local authority highway funding		√	√	LUA1 CC5 INF1 INF2
	SY5: Syston - Melton Road – Streetscape enhancement including traffic management measures.	£90,000	Essential	S.106 developer contributions / local authority highway funding		√	√	

Location and Infrastructure Category	Infrastructure Scheme	Cost	Critical Infrastructure	Delivery	Delivery Timescale			Local Plan Policies
					2021 - 2026	2026 - 2031	2031 - 2037	
Goscote and Queniborough.								
Education	Primary: Site of 2-3 ha would need to be reserved for a new 2 FE Primary School on land South East of Syston HA1). The Reasonable costs of making this provision to be shared amongst the developments that it would serve with contributions towards construction cost. Secondary: Wreake Valley or Roundhill Academy. Sufficient places at Wreake Valley	£6,982,000	Essential	S.106 developer contributions with the costs shared amongst developments that it would serve.		√	√	DS3 LUA1 INF1
Health	Served by Jubilee Practice and County Practice, Syston. CCG to work with local partners to ensure local provision that maximises the use of available resources and supports people to access care and treatment.		Essential	S.106 developer contributions, GP Practices, third party developments, NHS capital funding	√	√	√	LUA1 INF1
Water and Sewerage	Capacity improvements requirements to be reviewed in more detail and implement if required. Served by Wanlip WwTW where additional capacity investment is planned to take place from 2025. Kirby Lane Pumping Station also likely to require capacity improvements to serve growth.		To be determined following more detailed assessment of requirements.	Severn Trent Water would fund and deliver scheme if it is prioritised for investment.		√		LUA1 CC2
Thurmaston								
Education	Primary: Potential to accommodate in existing Thurmaston Primary Schools.		Sufficient Capacity		-	-	-	DS3 LUA1

Location and Infrastructure Category	Infrastructure Scheme	Cost	Critical Infrastructure	Delivery	Delivery Timescale			Local Plan Policies
					2021 - 2026	2026 - 2031	2031 - 2037	
	Secondary: Wreake Valley or Roundhill Academy. Sufficient places at Wreake Valley							INf1
Health	Served by Thurmaston, Silverdale and Manor Medical Centres. CCG to work with local partners to ensure local provision that maximises the use of available resources and supports people to access care and treatment.		Essential	S.106 developer contributions, GP Practices, third party developments, NHS capital funding		√	√	LUA1 INF1
Water and Sewerage	Capacity improvements requirements to be reviewed in more detail and implemented if required. Thurmaston Canal Street pumping station is likely to require upsizing to serve growth.		To be determined following more detailed assessment of requirements	Severn Trent Water would fund and deliver scheme if it is prioritised for investment.	√	√		LUA1 CC2
Loughborough								
Transport - package comprises a combination of highway capacity interventions at key junctions and sustainable travel interventions	LO1: A6/A6004 One Ash Roundabout Junction Improvements	£1,600,000	Essential	S.106 developer contributions / local authority highway funding		√	√	LUC1 LUC2 LUC3 CC5
	LO2: Loughborough Smarter Choices personalised travel planning	£250,000	Essential	S.106 developer contributions / local authority highway funding		√	√	INF1 INF2
	LO3: Loughborough Smarter Choices bus service and infrastructure enhancements	£400,000	Essential	S.106 developer contributions / local authority highway funding		√	√	

Location and Infrastructure Category	Infrastructure Scheme	Cost	Critical Infrastructure	Delivery	Delivery Timescale			Local Plan Policies
					2021 - 2026	2026 - 2031	2031 - 2037	
across Loughborough	LO4: Loughborough Smarter Choices cycle hire schemes.	£13,000	Essential	S.106 developer contributions / local authority highway funding		√	√	
	LO5 / SH1: Loughborough-Shepshed - A512 bus service diversion from Shepshed to Loughborough via the hospital, Belton Road (industrial estates), railway station and town centre	£281,000 (Same scheme as SH1)	Essential	S.106 developer contributions / local authority highway funding		√	√	
	LO6: A6004 Epinal Way-Beacon Road Junction Improvements	£300,000	Essential	S.106 developer contributions / local authority highway funding		√	√	
	LO7: A6004 Epinal Way-Beacon Road Junction Improvements	£750,000	Essential	S.106 developer contributions / local authority highway funding		√	√	
	LO8: A6004 - Epinal Way-Warwick Way-Sandringham Drive-Maxwell Drive - Extend 2 lane flares on Epinal Way and Warwick Way arms by 30m each	£300,000	Essential	S.106 developer contributions / local authority highway funding		√	√	
	LO9: A6004 - Epinal Way-Alan Moss Road Junction Improvements	£750,000	Essential	S.106 developer contributions / local authority highway funding		√	√	
Education	Primary: Site for a new 2 FE Primary School to be located on land South of Loughborough (HA15). Reasonable costs of making this	£6,892,000	Essential	S.106 developer contributions		√	√	DS3 LUC1 INF1

Location and Infrastructure Category	Infrastructure Scheme	Cost	Critical Infrastructure	Delivery	Delivery Timescale			Local Plan Policies
					2021 - 2026	2026 - 2031	2031 - 2037	
	<p>provision to be shared amongst the developments that it would serve.</p> <p>Secondary: Loughborough Secondary Schools have capacity and scope to expand schools in Loughborough area</p>							
Health	<p>Served by Dishley Grange, Charnwood, Woodbrook, Bridge Street, Pinfold, Park View Medical Practices</p> <p>CCG to work with local partners to ensure local provision that maximises the use of available resources and supports people to access care and treatment.</p>		Essential	S.106 developer contributions, GP Practices, third party developments, NHS capital funding	√	√	√	LUC1 INF1
Water and Sewerage	Treatment capacity would need to be increased at Loughborough wastewater treatment works by about 2030 to cater for growth in Loughborough		Essential. Timing and specification to be determined following more detailed assessment of requirements	Severn Trent Water would fund and deliver scheme if it is prioritised for investment.		√	√	LUC1 CC2
Shepshed								
Transport - package is the only option put forward	LO5/SH1: Loughborough-Shepshed - A512 bus service diversion from Shepshed to Loughborough via the hospital, Belton Road	£281,000 (Same scheme as LO5)	Essential	S.106 developer contributions / local authority highway funding		√	√	SUA1 CC5 INF1 INF2

Location and Infrastructure Category	Infrastructure Scheme	Cost	Critical Infrastructure	Delivery	Delivery Timescale			Local Plan Policies
					2021 - 2026	2026 - 2031	2031 - 2037	
for Shepshed and comprises a combination of sustainable travel (including bus service and cycle route improvements) and highways capacity focused intervention (in discouraging cross-country trips between Shepshed and Charley Road)	(industrial estates), railway station and town centre							
	SH2: A512 Charley Road/Tickow Lane - Junction Improvement	£120,000	Essential	S.106 developer contributions / local authority highway funding		√	√	
	SH3: Shepshed-Loughborough - A512 - cycle route upgrade	£1,380,000	Essential	S.106 developer contributions / local authority highway funding		√	√	
	SH4: Nanpantan - Nanpantan Road - New off-road cycle route between Nanpantan and Loughborough	£750,000	Essential	S.106 developer contributions / local authority highway funding		√	√	
	SH5: Nanpantan - Nanpantan Road – Increased bus frequencies	£250,000	Essential	S.106 developer contributions / local authority highway funding		√	√	
	SH7: Iveshead Road, Shepshed traffic calming	£90,000	Essential	S.106 developer contributions / local authority highway funding		√	√	
	SH6/STRAT14: M1 Junction 23 Junction improvements	£1,350,000	Essential	S.106 developer contributions /		√	√	

Location and Infrastructure Category	Infrastructure Scheme	Cost	Critical Infrastructure	Delivery	Delivery Timescale			Local Plan Policies
					2021 - 2026	2026 - 2031	2031 - 2037	
				local authority highway funding				
Education	Primary: 3ha site and infrastructure for a new 3 FE Primary School on land at Tickow Lane (South), Shepshed (HA32), but contributions to reflect the yield of 562 pupils and contributions (2 classrooms less than 3FE school). Reasonable costs of making this provision to be shared amongst the developments that it would serve Secondary: Leicestershire County Council developing proposals to accommodate growth.	£12,769,000	Essential	S.106 developer contributions with the costs shared amongst all developments in Shepshed that it would serve.	√	√	√	DS3 SUA1 INF1
Health	Most new allocations served by Forest House and Field Street Surgeries. Forest Edge, Dishley Grange and also Manor House, Belton in North West Leicestershire also in proximity to some allocations. CCG to work with local partners to ensure local provision that maximises the use of available resources and supports people to access care and treatment.		Essential.	S.106 developer contributions, GP Practices, third party developments, NHS capital funding	√	√	√	SUA1 INF1
Water and Sewerage	Additional treatment capacity expected to be required. Severn Trent Design Team to determine extent of additional requirements.		Essential	Severn Trent Water would fund and deliver scheme if it is prioritised for investment.		√	√	SUA1 CC2

Location and Infrastructure Category	Infrastructure Scheme	Cost	Critical Infrastructure	Delivery	Delivery Timescale			Local Plan Policies
					2021	2026	2031	
					- 2026	- 2031	- 2037	
Service Centres								
Anstey								
Transport - package comprises interventions which will deliver increased highway capacity on key roads and junctions surrounding Anstey, in addition to complementary cycle route improvements which will improve connectivity between Anstey and north west Leicester.	AN1: A46/Leicester Road/A5630 Anstey Lane junction	£650,000	Essential	S.106 developer contributions / local authority highway funding		√	√	SC1 CC5 INF1 INF2
	AN2: A46/A50 Junction Improvement	£2,075,000	Essential	S.106 developer contributions / local authority highway funding		√	√	
	AN3: A50/Anstey Lane Junction Improvement	£1,000,000	Essential	S.106 developer contributions / local authority highway funding		√	√	
	AN5: Anstey southern cycle route (and link to Beaumont Leys)	£603,000	Essential	S.106 developer contributions / local authority highway funding		√	√	
	AN7: Anstey to Glenfield cycle route Cycle Network Improvement	£750,000	Essential	S.106 developer contributions / local authority highway funding		√	√	
Education	Primary: Site for a new 1 FE Primary School located on land West of Anstey (HA43) with a	£4,656,000	Essential	S.106 developer contributions	√	√	√	DS3 SC1

Location and Infrastructure Category	Infrastructure Scheme	Cost	Critical Infrastructure	Delivery	Delivery Timescale			Local Plan Policies
					2021 - 2026	2026 - 2031	2031 - 2037	
	co-ordinated approach to development across the three land parcels that make up the site to ensure that it provides land for the school and the other infrastructure necessary to support the development as a whole. Reasonable costs of making this provision to be shared amongst the developments that it would serve Secondary: Martin High School has potential to accommodate proposed growth.							INF1
Health	Served by the Anstey Surgery. CCG to work with local partners to ensure local provision that maximises the use of available resources and supports people to access care and treatment.		Essential	S.106 developer contributions, GP Practices, third party developments, NHS capital Funding	√	√	√	SC1 INF1
Barrow Upon Soar								
Transport - package comprises sustainable travel interventions including footway and cycle route improvements, in addition to one	BA1: Footway improvements to the station from key development site(s).	£70,000	Essential	S.106 developer contributions / local authority highway funding	√	√	√	SC1 CC5 INF1 INF2
	BA2: Cycle route improvements to the station from key development site(s)	£1,367,625	Essential	S.106 developer contributions / local authority highway funding		√	√	
	BA4: Cycle parking facilities at station	£13,000	Essential	S.106 developer contributions / local authority highway funding	√	√	√	

Location and Infrastructure Category	Infrastructure Scheme	Cost	Critical Infrastructure	Delivery	Delivery Timescale			Local Plan Policies
					2021 - 2026	2026 - 2031	2031 - 2037	
highway capacity improvement at key pinch points - the High Street-South Street-Bridge Street roundabout	BA5: High Street-South Street-Bridge Street Junction Improvement	£50,000	Essential	S.106 developer contributions / local authority highway funding	√	√	√	
Education	Primary: Provide site for a new 1 FE Primary School located on land at Cotes Road, Barrow (HA49). Reasonable costs of making this provision to be shared amongst the developments that it would serve. Secondary: Humphrey Perkins may require expansion during the plan period.	£4,656,000	Essential	S.106 developer contributions	√	√	√	DS3 SC1 INF1
Health	Served by Barrow Health Centre, Charnwood Surgery, Mountsorrel, The Banks and Highgate Surgery, Sileby. CCG to work with local partners to ensure local provision that maximises the use of available resources and supports people to access care and treatment.		Essential	S.106 developer contributions, GP Practices, third party developments, NHS capital funding	√	√	√	SC1 INF1
Water and Sewerage	Additional treatment capacity will be required at Barrow upon Soar by 2030		Essential. Timing and specification to be	Severn Trent Water would fund and deliver scheme if it		√		SC1 CC2

Location and Infrastructure Category	Infrastructure Scheme	Cost	Critical Infrastructure	Delivery	Delivery Timescale			Local Plan Policies
					2021 - 2026	2026 - 2031	2031 - 2037	
			determined following more detailed assessment of requirements	is prioritised for investment.				
Quorn								
Education	<p>Primary: Quorn St Bartholomew's CofE Primary School is on a confined site and unable to expand so additional places will need to be provided elsewhere in Barrow upon Soar and South Loughborough.</p> <p>Secondary: Rawlins Academy is at capacity and sited on a large site, but the current configuration would make it difficult to extend. Further discussions will be required so that growth can be accommodated.</p>					√	√	SC1 INF1
Health	<p>Served by Quorn Medical Centre and also the Cottage Surgery, Woodhouse Eaves, Barrow Health Centre, Beaumont Road Surgery, Loughborough and Alpine House Surgery, Mountsorrel.</p> <p>CCG to work with local partners to ensure local provision that maximises the use of available resources and supports people to access care and treatment.</p>		Essential	S.106 developer contributions, GP Practices, third party developments, NHS capital funding	√	√	√	SC1 INF1
Water and Sewerage	Additional treatment capacity will be required at Quorn by 2030		Essential. Timing and	Severn Trent Water would fund and		√		SC1 CC2

Location and Infrastructure Category	Infrastructure Scheme	Cost	Critical Infrastructure	Delivery	Delivery Timescale			Local Plan Policies
					2021 - 2026	2026 - 2031	2031 - 2037	
			specification to be determined following more detailed assessment of requirements	deliver scheme if it is prioritised for investment.				
Rothley								
Education	<p>Primary: Rothley CofE Primary School is at capacity as a result of past growth and cannot be extended on current site. Leicestershire County Council is looking at alternatives to make provision.</p> <p>Secondary: 50:50 split between Rawlins and Cedars Academy</p>				√	√		DS3 SC1 INF1
Health	<p>No current provision in Rothley.</p> <p>Served by Highgate Medical Centre, Sileby, Quorn Medical Centre, Charnwood Surgery, Mountsorrel, Birstall and Greengate Medical Centres in Birstall.</p> <p>CCG to work with local partners to ensure local provision that maximises the use of available resources and supports people to access care and treatment.</p>		Essential	S.106 developer contributions, GP Practices, third party developments, NHS capital funding	√	√		SC1 INF1

Location and Infrastructure Category	Infrastructure Scheme	Cost	Critical Infrastructure	Delivery	Delivery Timescale			Local Plan Policies
					2021 - 2026	2026 - 2031	2031 - 2037	
Water and Sewerage	Served by Wanlip WwTW where additional capacity investment is planned to take place from 2025		Essential	Severn Trent Water		√		SC1 CC2
Sileby								
Transport - Sileby transport schemes are part of the broad location of Syston for transport modelling purposes.	SY6: Sileby - Footway route improvements to the station from key development site(s).	£300,000	Essential	S.106 developer contributions / local authority highway funding		√	√	SC1 CC5 INF1 INF2
	SY7: Sileby - Cycle route improvements to the station from key development site(s).	£13,000	Essential	S.106 developer contributions / local authority highway funding	√	√	√	
	SY9: Sileby - Cycle parking facilities at station.	£13,000	Essential	S.106 developer contributions / local authority highway funding	√	√	√	
	SY10: Sileby - Swan Street-Highgate Road-Ratcliffe Road-The Banks – Junction improvement.	£352,000	Essential	S.106 developer contributions / local authority highway funding		√	√	
	SY11: Sileby - Ratcliffe Road - traffic calming features between Cemetery Rd and Peashill Close.	£108,000	Essential	S.106 developer contributions / local authority highway funding		√	√	
	SY12: Sileby - Brook Street-High Street-Cossington Road - Convert to mini roundabout	£15,000	Essential	S.106 developer contributions /		√	√	

Location and Infrastructure Category	Infrastructure Scheme	Cost	Critical Infrastructure	Delivery	Delivery Timescale			Local Plan Policies
					2021 - 2026	2026 - 2031	2031 - 2037	
				local authority highway funding				
Education	Primary: Site for a 0.5 FE extension of Cossington Primary School located on land to the Rear of Derrys Garden Centre (HA59). Reasonable costs of making this provision to be shared amongst the developments that it would serve Secondary: Humphrey Perkins may require further expansion during the plan period.	c £2,500,000	Essential	S.106 developer contributions	√	√		DS3 SC1 INF1
Health	Served by Highgate and the Banks surgeries, Sileby and Charnwood Surgery, Mountsorrel. CCG to work with local partners to ensure local provision that maximises the use of available resources and supports people to access care and treatment.		Essential	S.106 developer contributions, GP Practices, third party developments, NHS capital funding	√	√	√	SC1 INF1
Other Settlements								
Cossington								
Education	Primary: 0.5FE extension to Cossington CofE School (see above) Secondary: Cumulative effect of developments in Cossington, Barrow upon Soar and Sileby would require additional places. Humphrey Perkins may require further expansion during the plan period		Essential	S.106 developer contributions	√	√		DS3 OS1 SC1 INF1
Health	Served by Highgate and the Banks surgeries, Sileby and Charnwood Surgery, Mountsorrel.		Essential	S.106 developer contributions, GP	√	√		OS1 INF1

Location and Infrastructure Category	Infrastructure Scheme	Cost	Critical Infrastructure	Delivery	Delivery Timescale			Local Plan Policies
					2021 - 2026	2026 - 2031	2031 - 2037	
	CCG to work with local partners to ensure local provision that maximises the use of available resources and supports people to access care and treatment.			Practices, third party developments, NHS Capital Funding				
East Goscote								
Transport - East Goscote transport scheme is part of the broad location of Syston for transport modelling purposes.	SY14: East Goscote - Broome Lane, north of East Goscote – traffic calming	£144,000	Essential	S.106 developer contributions /	√	√		OS1 CC5 INF1 INF2
Education	Primary: Scope for provision of additional places at Broomfield Primary School who are content to expand. Secondary: Sufficient places at Wreake Valley Academy		Sufficient capacity at local schools	S.106 developer contributions	√	√		DS3 OS1 INF1
Health	Served by the Jubilee Medical Practice, and the County Practice, Syston. CCG to work with local partners to ensure local provision that maximises the use of available		Essential	S.106 developer contributions, Practices, NHS capital funding	√	√		OS1 INF1

Location and Infrastructure Category	Infrastructure Scheme	Cost	Critical Infrastructure	Delivery	Delivery Timescale			Local Plan Policies
					2021 - 2026	2026 - 2031	2031 - 2037	
	resources and supports people to access care and treatment.							
Hathern								
Education	Primary: Additional provision in Shepshed and Loughborough may serve Hathern. Secondary: Capacity and scope to expand schools in Loughborough		Sufficient capacity at existing and planned schools likely to be available	S.106 developer contributions	√	√		DS3 OSH1 INF1
Health	Served by Dishley Grange, Charnwood, Woodbrook, Pinfold and Bridge Street Practices. CCG to work with local partners to ensure local provision that maximises the use of available resources and supports people to access care and treatment.		Essential	S.106 developer contributions, GP Practices, third party developments, NHS capital funding	√	√		OSH1 INF1
Queniborough								
Transport - Queniborough transport scheme is part of the broad location of Syston for transport	SY13: Queniborough - Barkby Road traffic calming	£180,000	Essential	S.106 developer contributions /	√	√		OS1 CC5 INF1 INF2

Location and Infrastructure Category	Infrastructure Scheme	Cost	Critical Infrastructure	Delivery	Delivery Timescale			Local Plan Policies
					2021 - 2026	2026 - 2031	2031 - 2037	
modelling purposes.								
Education	Primary: Queniborough CofE Primary School is at capacity and school is on a confined site and unable to expand without additional land. Additional places could be provided in Syston schools. Secondary: Sufficient places at Wreake Valley.			s.106 developer contributions	√	√		DS3 OS1 INF1
Health	Served by the Jubilee Medical Practice and the County Practice, Syston. CCG to work with local partners to ensure local provision that maximises the use of available resources and supports people to access care and treatment.		Essential	S.106 developer contributions, GP Practices, NHS capital funding	√	√		OS1 INF1
Rearsby								
Education	Primary: Broomfield School is content to expand to accommodate growth in Rearsby. Secondary: Sufficient places at Wreake Valley.		Sufficient capacity at existing schools	s.106 developer contributions	√	√		DS3 OS1 INF1
Thrussington								
Health	Served by the Banks Surgery, Sileby and the Jubilee Medical Practice and the County Practice, Syston. CCG to work with local partners to ensure local provision that maximises the use of available		Essential	S.106 developer contributions, GP Practices, NHS capital funding	√	√		OS1 INF1

Location and Infrastructure Category	Infrastructure Scheme	Cost	Critical Infrastructure	Delivery	Delivery Timescale			Local Plan Policies
					2021 - 2026	2026 - 2031	2031 - 2037	
	resources and supports people to access care and treatment							
Thurcaston								
Health	Served by Greengage and Birstall Medical Centres and Alpine House, Mountsorrel. CCG to work with local partners to ensure local provision that maximises the use of available resources and supports people to access care and treatment		Essential	S.106 developer contributions, GP Practices, third party developments, NHS capital funding	√	√		OS1 INF1
Strategic Infrastructure								
Strategic Transport Projects	STRAT6: A46 - Smart technology to manage build-up of traffic flows on A46 between M1 J21a and north of the Hobby Horse roundabout	£10,000,000	A46 Corridor is an investment priority in Midlands Connect Strategy	tbc		√	√	INF1 INF2 CC5
All projects likely to require a combination of local and national funding from private and public sector including:	STRAT1: A46/Wanlip Road slip road layout changes.	£1,500,000	A46 Corridor is an investment priority in Midlands Connect Strategy	tbc		√	√	

Location and Infrastructure Category	Infrastructure Scheme	Cost	Critical Infrastructure	Delivery	Delivery Timescale			Local Plan Policies
					2021 - 2026	2026 - 2031	2031 - 2037	
<ul style="list-style-type: none"> – S.106 developer contributions – Large Local Majors capital funding – Regional and Pan Regional prioritisation – Highways Agency development funding – Road Investment Strategy funding <p>Note that SH6/STRAT14 included under Shepshed in the table above.</p>	STRAT 1 / 2: A46/A607 Hobby Horse Roundabout improvements with segregated A46 west to east link	£15,000,000	A46 Corridor is an investment priority in Midlands Connect Strategy	tbc		√	√	
	STRAT 13: A46/A6 Loughborough Road Interchange including lane changes on westbound approach; lane changes, widening of A6 southbound on exit from the junction to provide third lane access for Park and Ride.	£4,000,000	A46 Corridor is an investment priority in Midlands Connect Strategy	tbc		√	√	
	STRAT4: M1 Leicester Western Access - Smart Motorway scheme J21-J21a	£20,000,000	Leicester Western Access and North Leicestershire Extra Capacity detailed in RIS2 as RIS3 pipeline	tbc		√	√	
	STRAT5: M1 North Leicestershire Extra Capacity - Smart Motorway Scheme J21a-J23	£75,000,000	Leicester Western Access and North Leicestershire	tbc		√	√	

Location and Infrastructure Category	Infrastructure Scheme	Cost	Critical Infrastructure	Delivery	Delivery Timescale			Local Plan Policies
					2021 - 2026	2026 - 2031	2031 - 2037	
			Extra Capacity detailed in RIS2 as RIS3 pipeline					
	STRAT10: M1 Junction 21 - M1/M69/A5460 - Interim Intervention to introduce a fourth lane on the eastbound circulatory, signalling and control on M69 approach.	£2,725,000	Smart Motorway M1 J19 –J23 is a Strategic Growth Plan priority	tbc			√	
	STRAT3: M1 Junction 21 - M1/M69/A5460 - Free flow interchange links between M1 and M69	£120,000,000	Smart Motorway M1 J.19 - J.23 is a Strategic Growth Plan priority	tbc			√	

Appendix 4 – Design Guidance

This appendix sets out design guidance to support Policy DS5 High Quality Design on the design of development. The first part provides more general guidance on responding to the landscape, the relationships between the different elements that make up developments and the design of open spaces. The second part provides more detailed, illustrated guidance on house extensions, amenity and car parking.

Part 1: General Guidance

A. Responding to the Landscape

When designing developments on the edge of towns and larger villages a crucial consideration is making sure that the new built form represents a harmonious extension to the existing settlement edge. This can be achieved by:

- responding creatively to topographical changes in the landscape;
- avoiding private amenity space backing directly onto open countryside;
- creating a network of varied amenity spaces and other green spaces, e.g. wildlife corridors, creating a transition between the Countryside and the development;
- retaining existing mature trees, hedgerows and other planting throughout the development including at the boundary with the Countryside. Solitary existing trees in particular can become important and distinctive landmarks on new developments, contributing to the character of a place. Existing groups of trees can also serve as attractive natural buffers that can soften the impact new development can have on adjacent buildings and spaces;
- using building materials on dwellings that assimilate to the colour palette and texture of the open countryside and the sensitive use of street lighting at the settlement edge.

For developments within smaller villages in the Borough, siting is an important design consideration. Proposals in these areas should not appear out of place amongst skylines viewed from open countryside, respecting the existing building scales, mass, rooflines and materials.

B. Relationships Between Elements

It can be helpful in achieving good design to consider how the various elements that make up a development combine to create a whole. The following relationship is a fundamental part of this approach:

- The street pattern provides for movement routes and establishes the blocks in which built development can take place.
- Street blocks are divided into individual plots part of which is occupied by built forms.
- Built forms are made up of easily recognisable components such as walls, roofs, doors and windows which are made of different materials.

Street Pattern

For large developments proposing a network of new streets, the streets should be organised in a hierarchy of primary, secondary and minor routes.

Primary routes form the main connections through the development. They will usually be the widest routes in the scheme, accommodating vehicle, pedestrian and cycle flows in equal measure. On primary routes, the inclusion of street trees (ideally larger species), planting and street furniture such as benches can help to avoid the dominance of hard surfaces within the highway corridor.

Secondary routes are narrower than primary routes and should be designed to ensure vehicles are required to travel at lower speeds. The priority should not be on providing efficient traffic flows but in encouraging sustainable modes of travel and creating quiet street environments in the interests of resident amenity. Street parking is more suited to secondary routes and should be embedded within their design, though it should not overly dominate the street-scene and ideally should be located on one side and not both. Secondary routes can also incorporate a well-defined and attractive public realm, by providing planting and street furniture, albeit to a lower extent than primary routes. They have narrower widths so, in terms of street tree provision, smaller species of trees may be more appropriate.

Minor routes are pedestrian and cyclist focused and should include measures in place to minimise the speed of vehicular traffic. These routes should be well connected like other routes but, ideally, they should create a sense of seclusion and calm from busier routes. Street trees and planting can help encourage this, as well as consideration of creating surfaces that are shared between vehicles and pedestrians.

Scale, Mass and Proportion of Built Forms

All new development should be of a scale, mass and height which respects its surrounding context.

Scale is the impression of a building when seen in relation to its surroundings and in relation to the size of a person. Development should have elements which relate well in size to an individual human being. The starting point for understanding the most appropriate scale for new buildings on a site is the size, height and form of the neighbouring ones, as well as the scale of any adjacent public or private spaces.

Mass refers to the impact of a building's volume, shape and arrangement on the street scene. It is commonly referred to as 'bulk'. Good massing should consider the relationship between the proposed development and existing buildings and spaces, as well as the character of the street-scene. Inappropriate development massing may lead to an assortment of problems beyond aesthetics, such as overbearing impact.

Proportion refers to the magnitude of each part of a building, and of each part of a building to another. New buildings should feature common components, such as windows and doors, as well as any other architectural details, which are in proportion with one another and with the features on neighbouring buildings.

Materials and Detailing

Red brick for walls and clay pantiles or grey slate are the most frequent types of traditional building materials in many of the Borough's settlements, particularly ones within the Wolds.

In the Charnwood Forest, stone is a common traditional building material, however, this is harder to replicate, as access to stone for building purposes is limited. Emphasis should be placed on choosing the type of stones that strongly complement the traditional stonework present on many historic buildings in the Forest.

Exposing timber on elevations could enhance the relationship between new development and the woodland character of Charnwood Forest. However, care should be given to the use of timber as a building material – exposed timber upon dwellings is often low quality and weathers poorly. The Council will encourage new outbuildings to display timber in their elevations to enhance the forest character in Charnwood.

In certain locations, the use of contrasting building materials can be a beneficial way of enhancing the character of a street and introducing a level of variety.

The choice of materials which do not deteriorate in their attractiveness over time is important in maintaining the quality of a development throughout its lifetime.

C. Open Spaces and Streets

Public Open Space

Public open space that is attractive, inviting and safe to use can enable opportunities for social interaction and help facilitate more active lifestyles, both of which are key contributors towards building a strong sense of place. In light of the Covid-19 pandemic, ensuring access to public open space has been shown to be of critical importance for maintaining health and well-being.

Successful public open spaces can be achieved by:

- integrating them as part of route hierarchy so that they are easy to find and support more sustainable movement patterns across the development, accommodating pedestrian and cycling routes as well as serving as spaces for people to participate in activities;
- clearly identifying them as part of the street scene, for example by featuring strong landmark features or characteristic styling (for example, different paving patterns);
- ensuring they are well defined spaces in their own right considering matters such as scale and proportion;
- including an appropriate level of greenery, which can help make them more relaxing and tranquil environments, as well as help towards biodiversity gain on new developments.
- making them easily adaptable to accommodate the variety of activity that is likely to take place within them.

For new public spaces it is important that long term maintenance strategies are considered at an early stage in the design process, and this should involve discussions with key stakeholders such as Leicestershire County Council as the Local Highway Authority.

Private Amenity Space

It is important that residential schemes provide an adequate level of private amenity space so that future residents can maintain more active lifestyles.

Any private amenity space provided on new development should provide an identifiable demarcation from neighbouring public space, without compromising the aesthetic quality of new development.

Communal Open Space

Communal open space provides groups of residents a form of amenity space in lieu of private space on individual plots. Communal open space should be provided with some sense of enclosure in the interests of maintaining privacy and security, whilst being reasonably overlooked by the surrounding residences that it caters to.

Opportunities to provide direct access from ground floor dwellings or apartments fronting onto communal amenity space should be balanced with the need to preserve the private amenity value of those dwellings through clearly defined boundaries.

Streets

Streets should be viewed as places in their own right and not merely designed to meet highways standards; developers should pursue opportunities to make them attractive and multi-functional, which may mean performing roles that are often associated with well-designed public space.

In approaching the design of new streets, developers should consider the needs of the most vulnerable road users first – pedestrians, then cyclists, then public transport users. Restricting some streets to pedestrians and cyclists only can increase the amount of connections within a development, in turn creating better connectivity across the whole community and help encourage people to pursue healthier lifestyles.

When designing residential development, developers should ensure that it provides a network of interconnected streets as this will improve the sustainability of the development by allowing residents and visitors quicker and more varied routes to facilities or public transportation nodes. Streets that are closed off from neighbouring ones or an over-reliance on ‘cul-de-sacs’ should be avoided as they do not make the best use of land. However, there is value in implementing cul-de-sacs in residential development to provide safer environments, reduce traffic flows and create quieter street environments. Linking cul-de-sacs to other streets via safe and attractive walking and cycling connections is a recommended approach.

Street furniture

The provision of street furniture such as benches, signage and lighting can accentuate the role of streets as public space, increasing their functionality as places facilitating social interaction as well as providing a sense of character to streets.

Street furniture should be provided proportionate to the width of the street, so as not to unnecessarily clutter the street-scene and potentially detract from the character of the area. Street furniture should be located where it would not cause danger to people with disabilities for example people with visual impairments. It should also be aligned in a linear manner, to minimise obstruction to traffic flows.

Lighting is a particularly important type of street furniture and a good lighting scheme can encourage the use of streets throughout the evening and at night-time. Lighting which illuminates buildings can be a useful means of highlighting a certain building's status within the street scene, providing visual interest and legibility at night. Lighting placed in paving can also aid with wayfinding and increase the visual interest of streets, space and pathways.

Well-designed street furniture should be a principal consideration when designing the street itself, to ensure that the type of furniture is in keeping with the character of the street. Details of street furniture should be included as part of a planning application, ideally within a design and access statement or similar accompanying document.

Highway Safety and Traffic Calming

The following key principles should be considered when designing streets serving new development:

- The majority of new residential streets should be designed so that vehicular traffic is encouraged to go slowly and carefully (i.e. at speeds of 20mph or less).
- Designing streets to even lower speeds (10mph or less) may also allow for opportunities to provide shared surfaces, accommodating all road users without the need to install kerbs. It may be more appropriate to provide these types of streets on residential schemes with higher densities, or schemes with a more enclosed street network.
- Design concepts that encourage lower traffic speeds, for example through building height to street width ratios, the presence of street trees and the placement of buildings at corners, should be considered.
- Traffic calming measures including speed humps and raised surfacing should only be relied on as additional measures to control traffic – they tend to be inappropriate for buses and may prove hazardous to cyclists.

Walking and Cycling Routes

When providing attractive and safe walking and cycling routes on proposals, developments should:

- prioritise connections to important community buildings such as schools, leisure centres and shops and ensure that they are more direct than roads, to help encourage modal shift from cars and introduce signage where appropriate;
- accommodate buildings with active frontages along pedestrian and cycle priority routes, to provide adequate natural surveillance and encourage vitality;
- avoid providing routes that pass to the rear of buildings, as these may not be able to provide adequate natural surveillance and can become underutilised as a result;
- ensure that pedestrian and cycle routes are mostly straight and continuous and do not curve in ways which may hide people from view;
- ensure that pedestrian and cycle routes are well lit, via the provision of street lamps or feature lighting that is built into the public realm;
- give attention to the amount of landscaping that aligns pathways, particularly hedges, which when fully grown can provide hiding spots for criminals.
- Ensure routes are well signed to help with wayfinding.

Crime Prevention

Design considerations such as movement patterns, the physical form of buildings and the amount of activity that is generated within a development can also reduce the risk of criminal activity within a development through the amount of natural surveillance that results from them.

Natural surveillance provides effective security measures without resorting to other surveillance features such as CCTV. Natural surveillance can be increased through the placement and layout of new buildings and open amenity space, and enabling buildings to overlook the public realm and open space through the placement of windows and building entrances. The level of surveillance of a space has a direct impact upon how people perceive the space in terms of safety and security.

Entrances to buildings should open upon streets or spaces; if an entrance is hidden from public view, it could be perceived as unsafe.

Inclusivity

Good urban design can significantly contribute to environments that address the needs of vulnerable groups, such as elderly people, people with disabilities and children. Examples of features that can make public spaces more inclusive include:

- minimising reflective or shiny surfaces and utilising contrasting colour schemes to highlight important safety features to accommodate the needs of visually impaired people;
- Including ramps and avoiding excessive level changes to cater for wheelchair users and people with prams and pushchairs;
- providing quiet or tranquil spaces or areas (an example being sensory gardens), particularly on developments which are designed to accommodate elderly people.

Children's Play Areas

When they are required on new development, children's and young people's play space should be located in parts of the development where natural and passive surveillance can be maximised, for instance surrounded by homes fronting onto the play space. There should, however, be an appropriate separation between any neighbouring dwellings and the play space in the interests of reducing any noise and disturbance. Any streets surrounding the play space should be traffic-calmed and routes to and from the space should be as safe as possible and overlooked by properties.

Part 2: Illustrated Guidance

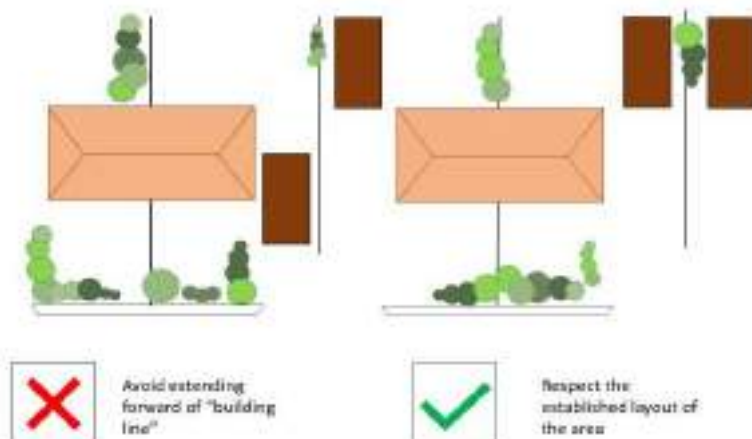
A. House Extensions

The spaces between and around buildings can be important. Extensions which fill the gaps between houses can change the whole character of the area.

One example is where an extension to a semi-detached house creates a “terracing effect”. Setting back an extension from the front line of the house and/or using a different roof form can be ways to overcome this effect. House extensions can affect the appearance and character of both the property being extended and the surrounding area.



Some streets have a well-defined building line and this can be important to the character and appearance of the area. A new building which does not follow this line can break up the street scene and change the fundamental character of an area. For example, building a garage in front of the main wall of the house is likely to look out of place where there is a line of houses and where garages are generally sited in rear gardens. What is important is that any new buildings should relate to the form and appearance of existing buildings.



It is important that any extension respects the basic shape, proportions and size of the existing property. The shape, pitch and style of roof will be of particular importance.



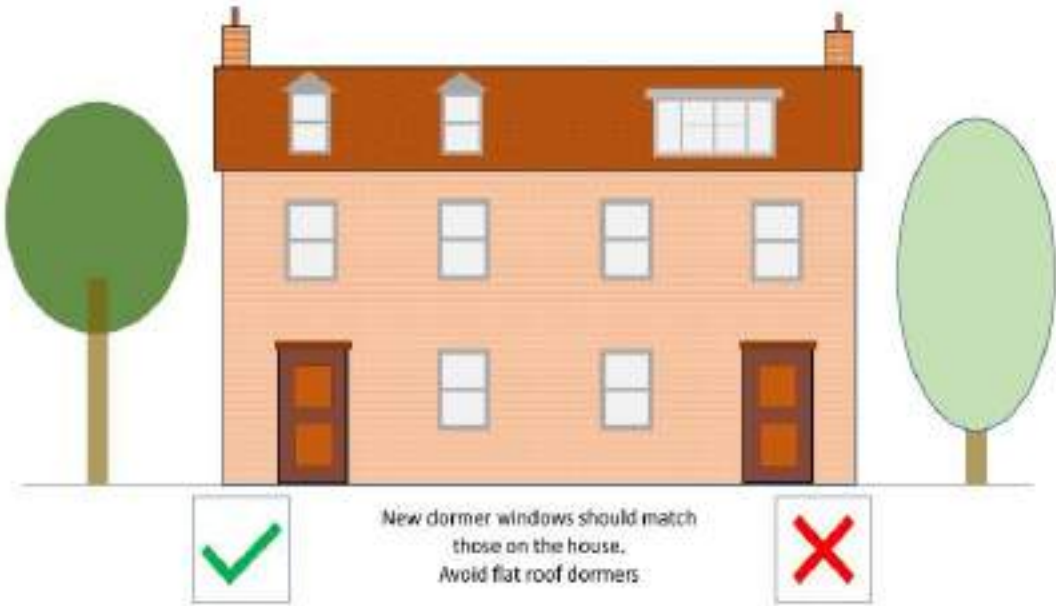
Extensions should be designed so that the main property is still the dominant building. The roof and eave lines should be lower than the existing house. Setting back the extension behind the front wall of the existing house can often help to achieve a satisfactory design.

The size, style and proportion of new doors and windows are important consideration in the design of new extensions. If too many openings are included, the balance of the building may be upset, as there may be too much window area compared to brick work. Windows with different proportions and patterns of panes on the same wall create an unsettling and unbalanced appearance.





Windows in the roof can be one useful way of opening up extra floor space. Unless there are existing dormers in the area, new dormers are likely to be out of character with its surroundings. Rooflights provide an alternative. If dormers are used, they should be as small as possible. They should match the window style and roof pitch of the existing property. Dormers should be kept as low as possible. Dormers which are higher than the ridge line are likely to be unacceptable particularly in prominent or sensitive locations. In general dormers or rooflights should be kept to those areas which are most difficult to see.



B. Amenity

Good design of homes ensures the relationship between neighbouring buildings and land uses is compatible and harmonious and does not cause unacceptable harm to, or loss of, the amenity enjoyed by those who live there.

Protecting Occupier Privacy

Protecting the privacy of the occupants of dwellings is an important element of the quality of residential environments. Proposed development should seek to provide reasonable space between buildings in order to minimise overlooking. As a general rule, transparent windows should not be placed on elevations facing windows serving main habitable rooms of dwellings, such as kitchens, living rooms and bedrooms where this would give rise to overlooking of either property. The use of obscure glass or rooflight windows can offset the loss of privacy however these types of windows may not be acceptable choices to serve main habitable rooms if they create poor standards of amenity for future occupiers. Obscured or roof mounted windows will usually be acceptable serving ancillary rooms in a home, such as hallways and bathrooms.

For dormer windows, restricting the size of the window and setting back from the eaves can be a possible solution to protect neighbouring privacy.

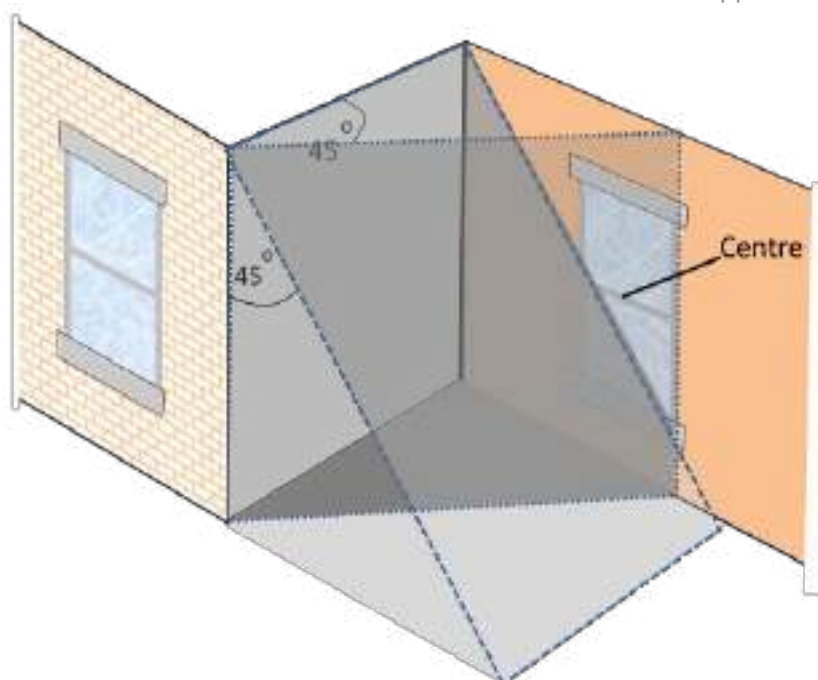
Overshadowing and Loss of Light

Access to sunlight (light directly from the sun) and daylight (other diffuse or reflected light) is beneficial for reducing the need for artificial lighting consumption and providing more natural forms of heating. New development which significantly reduces the level of sunlight or daylight enjoyed by neighbouring buildings is likely to result in a loss of amenity to the occupiers of neighbouring buildings.

For houses, the **45° degree guideline** is a helpful measure for considering whether development (particularly extensions) would cause a loss of daylight to a window. It is not valid for windows which directly face the extension. For these cases, the 25° degree guideline below should be used.

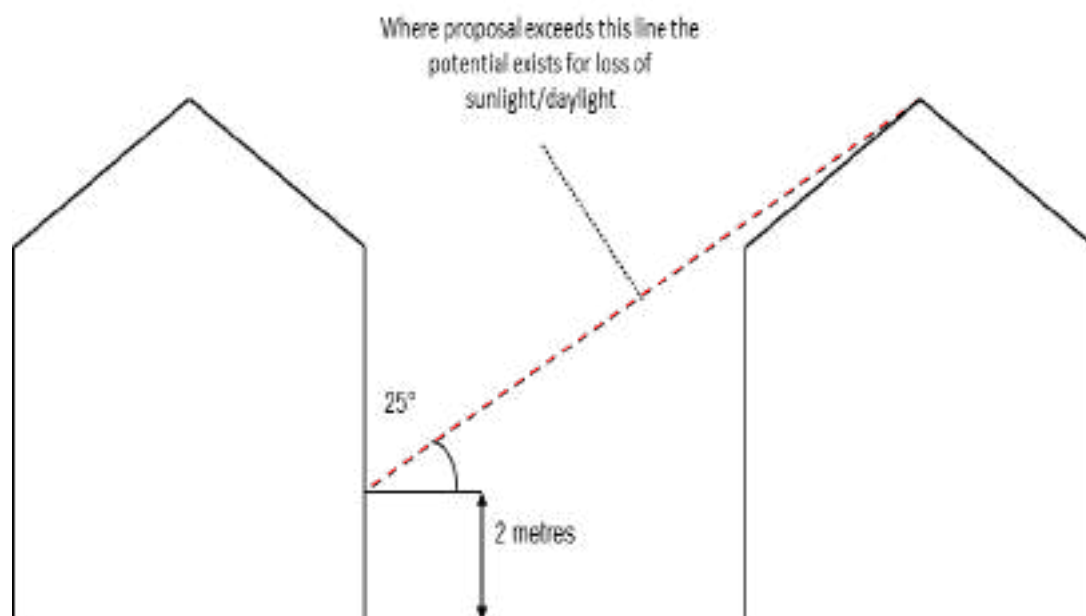
The figure below shows the application of the 45°-degree guideline and is explained as follows: Take the elevation of the window wall and draw diagonally down at an angle of 45° away from the near top corner of the extension. If the extension has a pitched roof, then the top of the extension can be taken as the height of its roof halfway along its slope. Then take the plan and draw diagonally back at an angle of 45° towards the window wall from the extension.

A significant amount of light is likely to be blocked if the centre of the window lies within 45° angle of the elevation. For patio doors the vertical midpoint of the window is usually taken to be a point 1.6m above ground level. Here the centre of the window lies outside the 45° angle on the elevation, so the impact of the extension is likely to be small.



Where a proposed building is close to a facing habitable room window (less than 3 times the height of the proposed building above the centre of the existing window), the **25° degree guideline** should be used to establish if a material loss of daylight is possible.

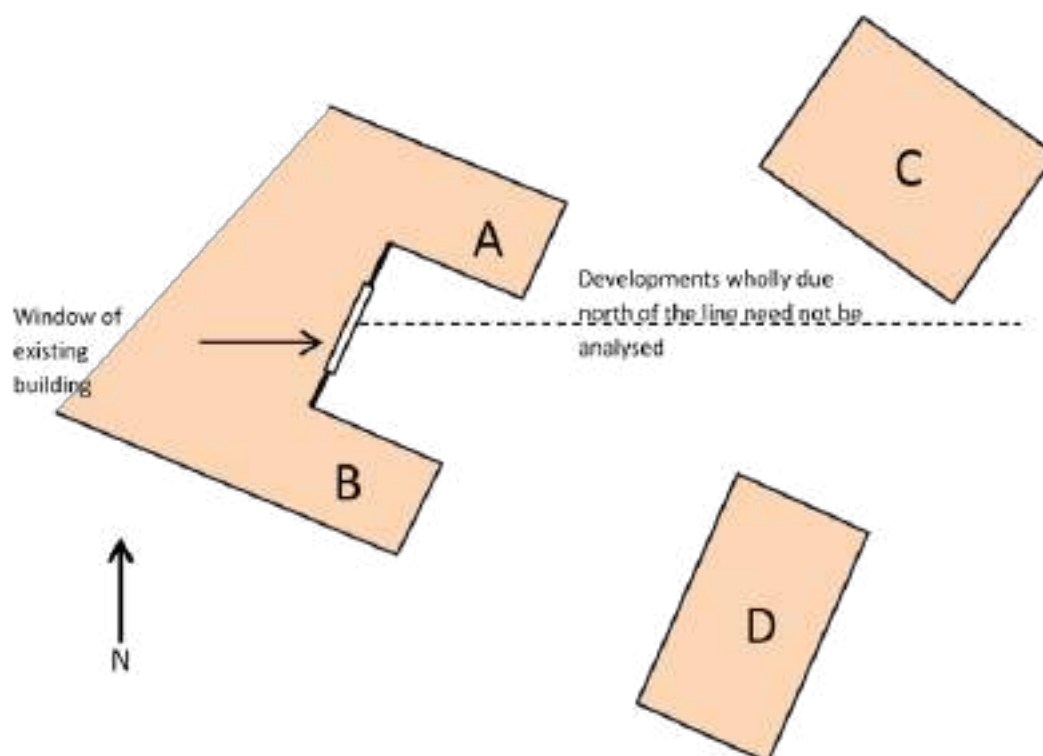
A material loss of sunlight can occur when part of the proposed development is within 90 degrees of a south facing window on an adjacent property and where the height exceeds the 25° degree angle as indicated below:



The figure below illustrates the circumstances where there is a possible material impact upon sun lighting. In analysing the sunlight impact on the existing window no check will need to be made for proposed extension A and new building C, as they lie within 90° degree of due north of the window.

Proposed extension B should be checked, as should new building D, if the building is above the 25° line described above.

Main living rooms and conservatories may be particularly sensitive to a significant reduction in sunlight, but each case should be looked at carefully as existing obstructions and the presence of other windows are all important considerations in reaching an overall conclusion.



Further guidance on planning for daylight and sunlight can be found from the Building Research Establishment¹ and the Council will use this guidance in assessing potential loss of sunlight and daylight particularly in cases where the loss of either sunlight or daylight is marginal.

Separation Distances Between Dwellings

When considering the layout of dwellings on a site, developers should consider the distance that separates rear elevations of individual dwellings in the interest of protecting the privacy and avoiding overbearing impact for both existing and future residents.

The guidance measurements for separation distances are provided below. It is important to note that these do not serve as strict requirements. The distances will be applied having regard to the

¹ Site Layout Planning for Daylight and Sunlight A Guide to Good Practice Second Edition 2011

wider design issues and site context but will generally be more important considerations when developing sites that are close to existing buildings.

Where rear building elevations containing main habitable room windows, the following distances provide a guide to protect the loss of privacy:

- 21 metres for 2 storey dwellings;
- 27.5m for 3 storey dwellings and above; and
- 27.5m where main habitable room windows above ground floor level would overlook existing conventional dwellings.

The separation distance should be increased by 1m for every 0.4m difference in floor levels between dwellings. Single storey back to back development is not so critical in terms of overlooking although differences in ground levels should be considered.

Where elevations containing main ground floor habitable room windows would face windowless flank walls, the following distances provide a guide to avoid over dominance:

- 9.5m minimum distance between the two elevations where a flank wall is single storey;
- 12.5m for 2 storey flank walls; and
- 15.5m for 3 storey flank walls.

Single storey flank walls can be sited closer where a hipped roof form is proposed. Where there is a difference in ground levels the separation distance should be adjusted by 1m for every 1m level variation.

Waste and bin storage

Bin storage areas should be seen as an important design consideration in developments. Both storage and collection points for bins need to be considered as part of the overall design in order to reduce amenity issues relating to residents' access to bins and the problem of 'bin blight' which can diminish quality of spaces within the development. Developments should demonstrate three key needs – to provide convenience for both residents and waste collectors, to be safe to use and avoid being a detracting feature of the character of the area and the development's architectural quality.

Ideally, the storage of domestic waste in wheelie bins is best located to the rear of dwellings and away from the main frontage. However, this may not always be feasible or practical so in these circumstances, waste storage areas should effectively mask or screen wheelie bins from building frontages, ideally within purpose-built structures embedded into the design of the development.

Car Parking

Poorly thought out car parking can be detrimental to the street scene, make places function less well. Car parking in the wrong place can cause obstructions to pedestrian and cycle movements and larger vehicles which may need to access the development, including emergency vehicles and waste collectors.

When designing the layout of developments, developers should use Leicestershire County Council's Highways Design Guide which provides guidance on car parking in relation to the scale

of proposals and the type of development². As such, accommodating parking should be a fundamental design consideration at the start of designing schemes.

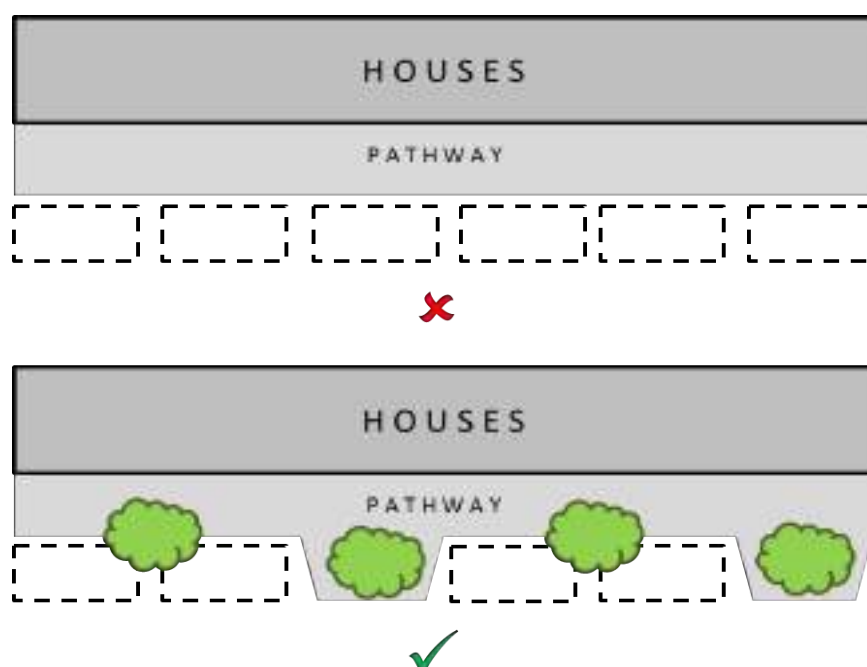
Many residential developments can accommodate a degree of parking provision on the street, but this needs to be limited to prevent parked vehicles dominating the street scene. Generally, a mix of on street and a variety of off-street provision can often be the best approach to successfully managing parking, particularly on larger schemes.

On street parking

Parking provision on streets should ensure that traffic is able to pass parked cars with adequate room. For this reason, on street parking which is not accommodated in parking bays should only be provided on one side of the street.

On street parking bays

Parallel parking can be visually intrusive upon the street-scene but with the use of recessed parking bays incorporating appropriate landscaping and street trees, the impact of vehicles on the character of building frontages can be softened.



Parking squares

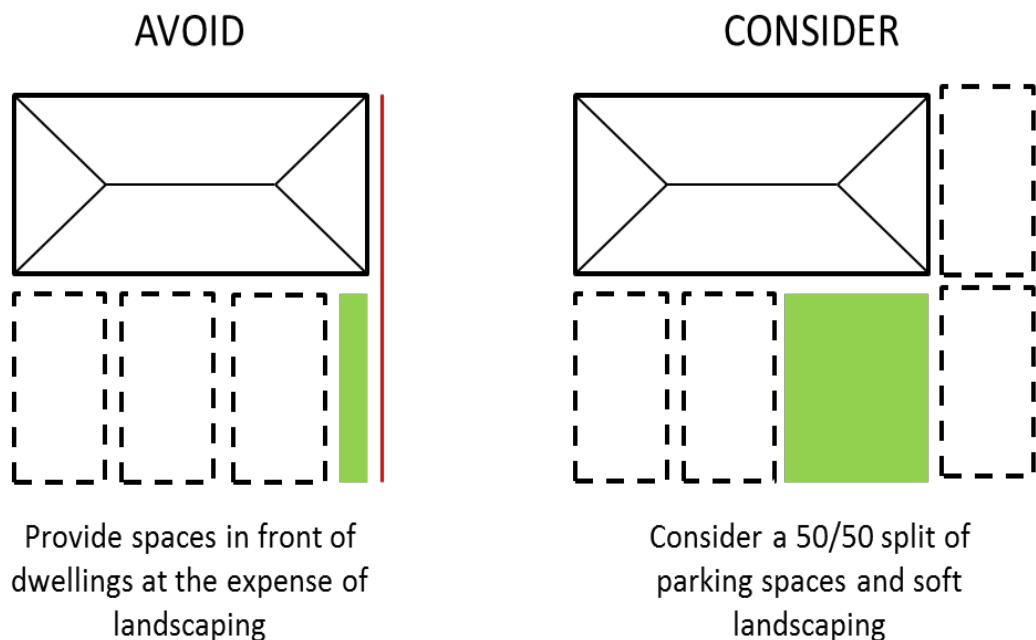
Parking squares can remove parked vehicles off streets and away from dwelling frontages, reducing the visual impact of parked cars. However, they still need to be in convenient locations. Landscaping in the form of street trees or planting beds can help break up monotony caused by expanses of tarmac or paving. Different styles of paving patterns and materials can also help provide a degree of variation in the street-scene character when providing parking squares, as well as help to easily distinguish them from other street functions.

² For general parking standards, regarding the number of spaces required for different types of residential development, please refer to the Leicestershire Highways Design Guide – Section DG14: Vehicle parking and making provision for service vehicles. These are the adopted parking standards which apply to new development in the Borough.

Off street parking

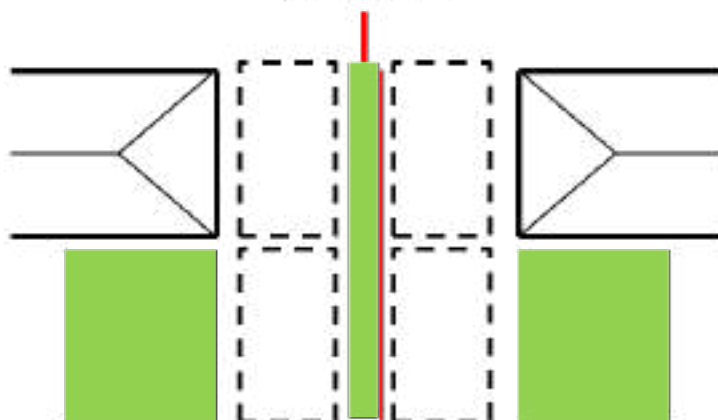
Parking provision located off the street should generally be maximised wherever possible. There are several key methods for accommodating off street parking provision..

Facing dwellings: This approach to parking provision is more likely to be used by residents to park their cars because they will be visible from within their homes. The provision of spaces in front of new dwellings should be balanced by appropriate quantities of landscaping so that the frontages are not dominated by large expanses of tarmac or paving. To help measure this, developers may want to consider applying a 50/50 approach for larger dwellings in balancing parking spaces with landscaping:



Tandem parking spaces serving two neighbouring properties should ideally be separated by landscaping strips at least a metre in width. These landscaping strips can increase permeability and reduce large expanses of hard surfacing. Any landscaping strip should serve a clear purpose such as provide planting or serve as part of a SuDs scheme.

Ensure a 1m minimum width landscaping buffer between adjoining tandem parking provision



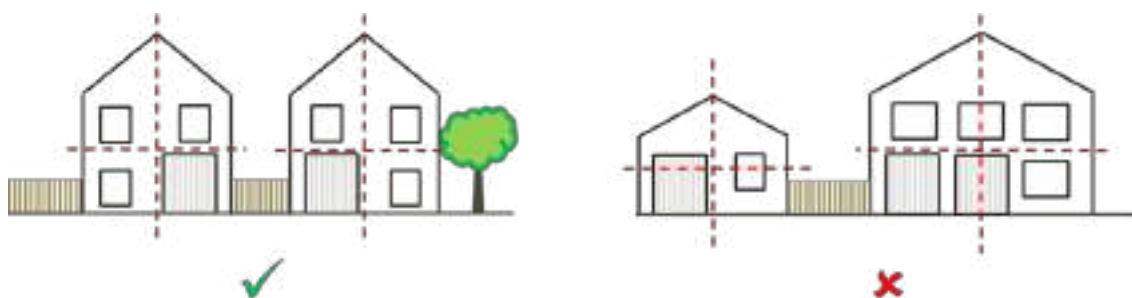
Parking courtyards can effectively remove vehicles from obstructing the street however they need to be afforded adequate levels of surveillance in order for them to be perceived as safe and therefore more likely to be used by residents. Simply adding parking areas behind houses without consideration of whether they will be well overlooked should be avoided.

When providing rear parking courtyards on residential schemes, developers should carefully consider the layout of the dwellings that surrounds them and make sure dwellings are able to provide both natural surveillance upon the courtyard and positively contribute to its character.

Although located away from the street itself, rear parking courts can still be afforded characterful street features such as landscaping, trees and appropriate street furniture. Parking courts should be afforded similar design considerations to public realm, so that they can be attractive spaces in their own right.

Garages: The placement of detached garages should positively respond to the wider layout of adjacent buildings and the neighbouring street scene – in particular, detached garages serving dwellings should not extend beyond the building line.

Integral garages can be a better use of space than detached ones but should be designed appropriately so that they do not serve to overly dominate the host dwelling or wider street-scene. Integral garages should not take up more than a quarter of the principal or front elevation of a dwelling. For this reason, integral garages would generally not be acceptable for single storey dwellings unless a sensitive design solution can be demonstrated.



Additional principles for well-designed parking

- Where there are a number of parking spaces, covered parking spaces can contribute to the continuity of built form and improve the design quality within parking courtyards.
- The use of permeable paving for parking spaces that would not create excess surface runoff should be explored, particularly in areas which suffer from surface water flooding.
- Electric car charging points should be discreetly installed and should avoid being placed on principal elevations. If they are installed in parking areas or to the front of properties, consideration should be given to their appearance so that they do not appear incongruous with the character of the surrounding area.
- The storage of bicycles on schemes should not be ignored, especially where car ownership/use is likely to be lower. Access to cycle parking facilities should be convenient, secure and adequately provide for visitors. Scope for designated space within the home to store bicycles should also be explored.

Glossary

Affordable Housing: Housing for sale or rent, for those whose needs are not met by the market. Can comprise a range of tenures including social rented, affordable rented and intermediate housing. Eligibility is determined having regard to local incomes and house prices.

Air Quality Management Area (AQMA) Designated areas where priority action is required in order to meet air quality objectives by the relevant deadline. The area could be just one or two streets, or it could be much bigger.

Areas of Local Separation: An area of open countryside that separates two neighbouring settlements, whose main purpose is preserving settlement identity, and which is based on landscape character and visual appearance of the area.

Article 4 Direction: A direction which withdraws automatic planning permission granted by the General Permitted Development Order.

Authority Monitoring Report: A report submitted to the Government by local planning authorities assessing progress with the implementation of planning policies, formerly the Annual Monitoring Report.

Biodiversity: Biodiversity is a term commonly used to describe the variety of life on Earth which encompasses the whole of the natural world and all living things with which we share the planet. It includes plants, animals, even invisible micro-organisms and bacteria which, together, interact in complex ways with the inanimate environment to create living ecosystems.

Biodiversity Action Plan: Summarises what is known about the most important areas of green space and how they provide a place for animals and plants to survive. The BAP identifies the priority habitats (spaces where plants and creatures live) and species (insects, birds and other animals) in the Borough, and targets actions to maintain and enhance the wildlife.

Brownfield Land: Land which has previously been developed encompassing vacant or derelict land, infill sites and land occupied by redundant or unused buildings.

Brownfield Land Register: A register of sites that would be appropriate for residential development, having regard to criteria in the Town and Country Planning (Brownfield Land Registers) Regulations 2017. The local register comprises two parts - Part 1 comprises all brownfield sites appropriate for residential development and Part 2 those sites granted permission in principle.

Building for Life 12: Building for Life 12 is the industry standard, endorsed by Government, for well-designed homes and neighbourhoods so that new developments can be attractive, functional and sustainable places.

Business Improvement District: An arrangement whereby businesses get together to plan how to improve their trading environment and the public realm. They decide what improvements they want to make, what it will cost them and how they are going to manage the process.

Carbon Footprint: A carbon footprint is the total set of greenhouse gases (including carbon dioxide (CO₂)) produced by the things we do.

Climate Change: Changes in climate due to human activity resulting in global warming and greater risk of flooding, droughts and heat waves. **Climate change adaptation** refers to adjustments made to natural or human systems in response to the actual or anticipated impacts of climate change, to mitigate harm or exploit beneficial opportunities. **Climate change mitigation** refers to action to reduce the impact of human activity on the climate system, primarily through reducing greenhouse gas emissions.

Community Infrastructure Levy: The Community Infrastructure Levy (CIL) is a levy that local authorities can choose to charge on new development in their area as a means of funding infrastructure required to deliver local plans.

Conservation Area: Areas of special architectural or historic interest. Conservation area designation does not prevent change but is intended to help preserve and enhance the character and appearance of the area.

Core Strategy: Spatial vision and strategy for the Borough including key policies and proposals to deliver the vision.

Deliverable: To be considered deliverable, sites for housing should be available now, offer a suitable location for development now, and be achievable with a realistic prospect that housing will be delivered on the site within five years.

Designated Heritage Asset: A World Heritage Site, Scheduled Monument, Listed Building, Protected Wreck Site, Registered Park and Garden, Registered Battlefield or Conservation Area designated under the relevant legislation.

Design Review Panel: A method of improving the quality of development proposals by offering constructive, impartial and expert advice to developers and planning authorities.

Developable: To be considered developable, sites should be in a suitable location for housing development with a reasonable prospect that they will be available and could be viably developed at the point envisaged.

Development Plan: Development Plan Documents collectively make up the Development Plan. Under the Planning Acts the Development Plan is the primary consideration in deciding planning applications.

Edge of Centre: For retail purposes a location that is well connected and up to 300m of the primary shopping area. For all other main town centre uses, a location within 300m of a town centre boundary. For office development, this includes locations outside the town centre but within 500m of a public transport interchange.

First Homes: First Homes are a specific kind of discounted market sale housing and should be considered to meet the definition of 'affordable housing' for planning purposes. Specifically, First Homes are discounted market sale units which:

- a) must be discounted by a minimum of 30% against the market value;
- b) are sold to a person or persons meeting the First Homes eligibility criteria (see Planning Practice Guidance)

c) on their first sale, will have a restriction registered on the title at HM Land Registry to ensure this discount (as a percentage of current market value) and certain other restrictions are passed on at each subsequent title transfer; and,

d) after the discount has been applied, the first sale must be at a price no higher than £250,000.

Five Year Land Supply: A 5-year land supply is a supply of specific deliverable sites sufficient to provide 5 years' worth of housing (and appropriate buffer) against a housing requirement set out in adopted strategic policies, or against a local housing need figure, using the standard method.

Functional Economic Market Area (FEMA): A geographical area which is relatively self-contained in terms of economic activity.

Geodiversity: The range of rocks, minerals, fossils, soils and landforms.

Greenfield Land: Greenfield land is land that has never been built on or where the remains of any structure or activity have blended into the landscape over time. Greenfield land should not be confused with green belt land which is a term for specially designated land around large built up areas to prevent settlement coalescence.

Green Infrastructure: A network of multi-functional green space, urban and rural, which is capable of delivering a wide range of environmental and quality of life benefits for local communities.

Green Wedge: Green wedges are a local planning policy designation that have been used in Leicestershire since the 1980s whose role is to prevent the merging of settlements, guide development form, provide a green lung into urban areas and provide a recreational resource.

Heritage Asset: A building, monument, site, place, area or landscape identified as having a degree of significance meriting consideration in planning decisions, because of its heritage interest. Heritage assets include designated assets and assets identified by the local planning authority (including local listing) or through neighbourhood plans.

House in Multiple Occupation: A house in multiple occupation (HMO) is where at least 3 tenants live together in a single dwelling and share basic facilities.

Housing Delivery Test: Measures net additional dwellings provided in a local authority area against the homes required, using national statistics and local authority data.

Housing Market Area (HMA): A geographical area which is relatively self-contained in terms of housing demand.

Infrastructure Delivery Plan: A supporting document which includes details of the infrastructure needed to support the delivery of the local plan.

Land Based Industries: In its simplest and traditional sense the land-based industries are assumed to refer to farming and forestry with an emphasis on agriculture and horticulture for primary food production.

Landscape Character Assessment: A tool that is used to help understand, and articulate, the character of a landscape, helping to identify the features that gives a locality its sense of place and pinpoints what makes it different from neighbouring areas.

Listed Building: Statutory Listed Buildings are protected for their architectural and historic value as part of the nation's heritage. There are nearly 800 such Listed Buildings and structures in Charnwood including individual buildings and groups of buildings, from modest cottages to stately houses, and structures such as bridges, monuments and milestones.

Local Development Framework (LDF): A folder of documents which includes all the Council's planning documents, for example the local plan and supplementary planning documents.

Local Development Scheme (LDS): A three-year project plan outlining the Council's programme for preparing the Local Development Framework.

Local Enterprise Partnership: A body designated by the Secretary of State for Housing, Communities and Local Government, established for the purpose of improving the conditions for economic growth in an area.

Local Housing Need: The number of homes identified as being needed through the application of the standard method as set out in the National Planning Policy Framework.

Local Nature Reserve: To qualify for Local Nature Reserve status, a site must be of importance for wildlife, geology, education or public enjoyment. Some are also nationally important Sites of Special Scientific Interest. All district and county councils have powers to acquire, declare and manage sites.

Local Plan: The plan for the future development of the local area, drawn up by the local planning authority in consultation with the community. In law, this is described as the development plan documents adopted under the Planning and Compulsory Purchase Act 2004. The current core strategies or other planning policies, which under the regulations would be considered to be development plan documents, also form part of the local plan. The term includes old policies which have been saved under the 2004 Act.

Local Wildlife Site: Local Wildlife Sites are identified and selected for their local nature conservation value. They protect threatened species and habitats acting as buffers, stepping stones and corridors between nationally designated wildlife sites.

Main Town Centre Uses: Retail development (including warehouse clubs and factory outlet centres); leisure, entertainment and more intensive sport and recreation uses (including cinemas, restaurants, drive-through restaurants, bars and pubs, nightclubs, casinos, health and fitness centres, indoor bowling centres and bingo halls); offices; and arts, culture and tourism development (including theatres, museums, galleries and concert halls, hotels and conference facilities).

Major Development: For housing, development where 10 or more homes will be provided, or the site has an area of 0.5 hectares or more. For non-residential development it means additional floorspace of 1,000sqm or more, or a site of 1 hectare or more, or as otherwise provided in the Town and Country Planning (Development Management Procedure) (England) Order 2015.

Masterplan: Strategic plan setting out the overall framework and key principles for the development of a site.

Mineral Safeguarding Area: An area designated by minerals planning authorities which covers known deposits of minerals which are desired to be kept safeguarded from unnecessary sterilisation by non-mineral development.

National Cycle Route: Part of a national network spanning the UK comprising scenic traffic-free paths, quiet roads and lanes, signed on-road routes and themed long-distance routes.

National Forest: An environmental regeneration project covering 200 square miles of Leicestershire, Staffordshire and Derbyshire.

National Planning Policy Framework: Sets out the Government's planning policies for England and how these are expected to be applied.

Neighbourhood Plan: A plan prepared by a Parish Council, Town Council or Neighbourhood Forum for a designated neighbourhood area and ultimately adopted by the Council as part of the development plan. It must be prepared in general conformity with the Council's local plan.

Open Space: All open space of public value, including not just land, but also areas of water (such as rivers, canals, lakes and reservoirs) which offer important opportunities for sport and recreation and can act as a visual amenity.

Other Settlements: Villages in the settlement hierarchy which all have a primary school and some of the other services and facilities required to meet the day to day needs of residents, though they are less well-served than Service Centres. These settlements are Barkby, Burton on the Wolds, Cossington, East Goscote, Hathern, Newtown Linford, Queniborough, Rearsby, Seagrave, Swithland, Thrussington, Thurcaston, Woodhouse Eaves and Wymeswold.

Out of Centre: A location which is not in or on the edge of a centre but not necessarily outside the urban area.

Permission in Principle: An alternative way of obtaining planning permission for housing-led development which separates the consideration of matters of principle for proposed development from the technical detail of the development.

Planning Condition: A condition imposed on a grant of planning permission (in accordance with the Town and Country Planning Act 1990) or a condition included in a Local Development Order or Neighbourhood Development Order.

Planning Obligation: A legal agreement entered into under Section 106 of the Town and Country Planning Act 1990, to mitigate the impacts of a development proposal.

Policies Map: A map identifying land-use designations and allocations.

Priority Neighbourhoods: Parts of the Borough identified as areas of relatively higher need based on higher levels of social exclusion, deprivation and lower levels of educational attainment. The priority neighbourhoods in Charnwood are Loughborough East, Loughborough West, Mountsorrel and South Charnwood (Syston and Thurmaston).

Previously Developed Land: Land which is or was occupied by a permanent structure, including the curtilage of the developed land and any associated fixed surface infrastructure. This excludes: land that is or was last occupied by agricultural or forestry buildings; land that has been developed for minerals extraction or waste disposal by landfill, land in built-up areas such as residential gardens, parks, recreation grounds and allotments; and land that was previously developed but where the remains of the permanent structure or fixed surface structure have blended into the landscape.

Primary Shopping Area: Defined area where retail development is concentrated.

Priority Habitats and Species: Species and Habitats of Principal Importance included in the England Biodiversity List published by the Secretary of State under section 41 of the Natural Environment and Rural Communities Act 2006.

Regionally Important Geological Site: Sites selected for their geological or geomorphological value and their interpretive use for earth science as well as cultural, educational, historical and aesthetic reasons.

Registered Provider: An organisation providing social housing (for example low-cost rental properties and low-cost home ownership). Registered providers include local authority landlords and private registered providers (such as not-for-profit housing associations and for-profit organisations).

Renewable and Low Carbon Energy: Includes energy for heating and cooling as well as generating electricity. Renewable energy covers those energy flows that occur naturally and repeatedly in the environment – from the wind, the fall of water, the movement of the oceans, from the sun and also from biomass and deep geothermal heat.

Rural Exception Sites: Small sites used for affordable housing in perpetuity where sites would not normally be used for housing. Rural exception sites seek to address the needs of the local community by accommodating households who are either current residents or have an existing family or employment connection.

Scheduled Monument: Scheduling is shorthand for the process through which nationally important sites and monuments are given legal protection by being placed on a list, or schedule. Historic England takes the lead in identifying sites in England which should be placed on the schedule by the Secretary of State for Culture, Media and Sport.

Section 106 Agreement: See Planning Obligation above.

Section 278 Agreement: Where a development requires works to be carried out on the existing adopted highway, an Agreement will need to be completed between the developer and the County Council under Section 278 of the Highways Act 1980.

Self-build and Custom Housebuilding: Housing built by an individual, a group of individuals, or persons working with or for them, to be occupied by that individual. Such housing can be either market or affordable housing.

Service Centre: Large villages with a good range of services and community facilities including shops, schools and health facilities which serve the more rural parts of the Borough. These settlements are Anstey, Barrow upon Soar, Mountsorrel, Quorn, Rothley and Sileby.

Sequential Test: There are two areas in which a specific logical sequence is applied to taking planning decisions. For **town centres** the Sequential Test guides main town centre uses towards town centre locations first, then, if no town centre locations are available, to edge of centre locations, and, if neither town centre locations nor edge of centre locations are available, to out of town centre locations, with preference for accessible sites which are well connected to the town centre. When dealing with **flooding risk**, the Sequential Test is used to steer new development to areas with the lowest probability of flooding. The aim is to steer new development to Flood Zone 1 (areas with a low probability of flooding). Where there are no reasonably available sites in Flood Zone 1, available sites in Flood Zone 2 (areas with a medium probability of flooding) can be considered. Only where there are no reasonably available sites in Flood Zones 1 or 2 would sites in Flood Zone 3 (areas with a high probability of flooding) be considered.

Site of Special Scientific Interest (SSSI): A site identified under the Wildlife and Countryside Act 1981 (as amended by the Countryside and Rights of Way Act 2000) as an area of special interest by reason of any of its flora, fauna, geological or physiographical features and designated by Natural England.

Small Villages and Hamlets: Small settlements which have few or no local facilities and most of which do not have a parish council of their own and are served by a parish meeting or form part of a larger parish. These are Barkby Thorpe, Beeby, Cotes, Cropston, Hoton, Prestwold, Ratcliffe on the Wreake, South Croxton, Ulverscroft, Walton on the Wolds, Wanlip, Woodhouse, and Woodthorpe.

Strategic Housing Land Availability Assessment (SHLAA): Part of the evidence base to inform local planning policies for housing which identifies sites with potential for housing and assesses their housing potential and when they are likely to be developed. May also include an assessment of employment land in which case it is called a **SHELAA**.

Strategic Road Network: Highways England is responsible for the construction and maintenance of motorways and major trunk roads in England used to move people and freight around the country which is known as the strategic network of roads.

Strategic Warehousing: Large scale commercial buildings relating to storage and distribution operations where the individual unit size is over 9,000sqm (or approximately 100,000sqft)

Supplementary Planning Documents (SPD): Documents which add further detail to policies in the development plan. They do not form part of the development plan itself but they are capable of being a material consideration in planning decisions.

Sustainable Development: Meeting our own needs without prejudicing the ability of future generations to meet their needs.

Sustainable Drainage Systems (SuDS): A sequence of management practices and control structures designed to drain surface water in a more sustainable fashion than some conventional techniques.

Sustainable Urban Extension (SUE): An urban extension which enables sustainable patterns of living to be built into all stages of planning and implementation including high quality design, well-planned infrastructure and sustainable transport options facilitating easy access to a wide range of facilities and services.

Sustainable Transport Modes: Any efficient, safe and accessible means of transport with overall low impact on the environment, including walking and cycling, low and ultra-low emission vehicles, car sharing and public transport.

Sustainability Appraisal (SA): An appraisal of the social, economic and environmental implications of a strategy, policies and proposals.

Town Centre: Area defined on the local authority's policies map, including the primary shopping area and areas predominantly occupied by main town centre uses within or adjacent to the primary shopping area. References to town centres or centres apply to city centres, town centres, district centres and local centres but exclude small parades of shops of purely neighbourhood significance. Unless they are identified as centres in the development plan, existing out-of-centre developments, comprising or including main town centre uses, do not constitute town centres.

Transport Assessment: A comprehensive and systematic process that sets out transport issues relating to a proposed development. It identifies what measures will be required to improve accessibility and safety for all modes of travel, particularly for alternatives to the car such as walking, cycling and public transport and what measures will need to be taken to deal with the anticipated transport impacts of the development.

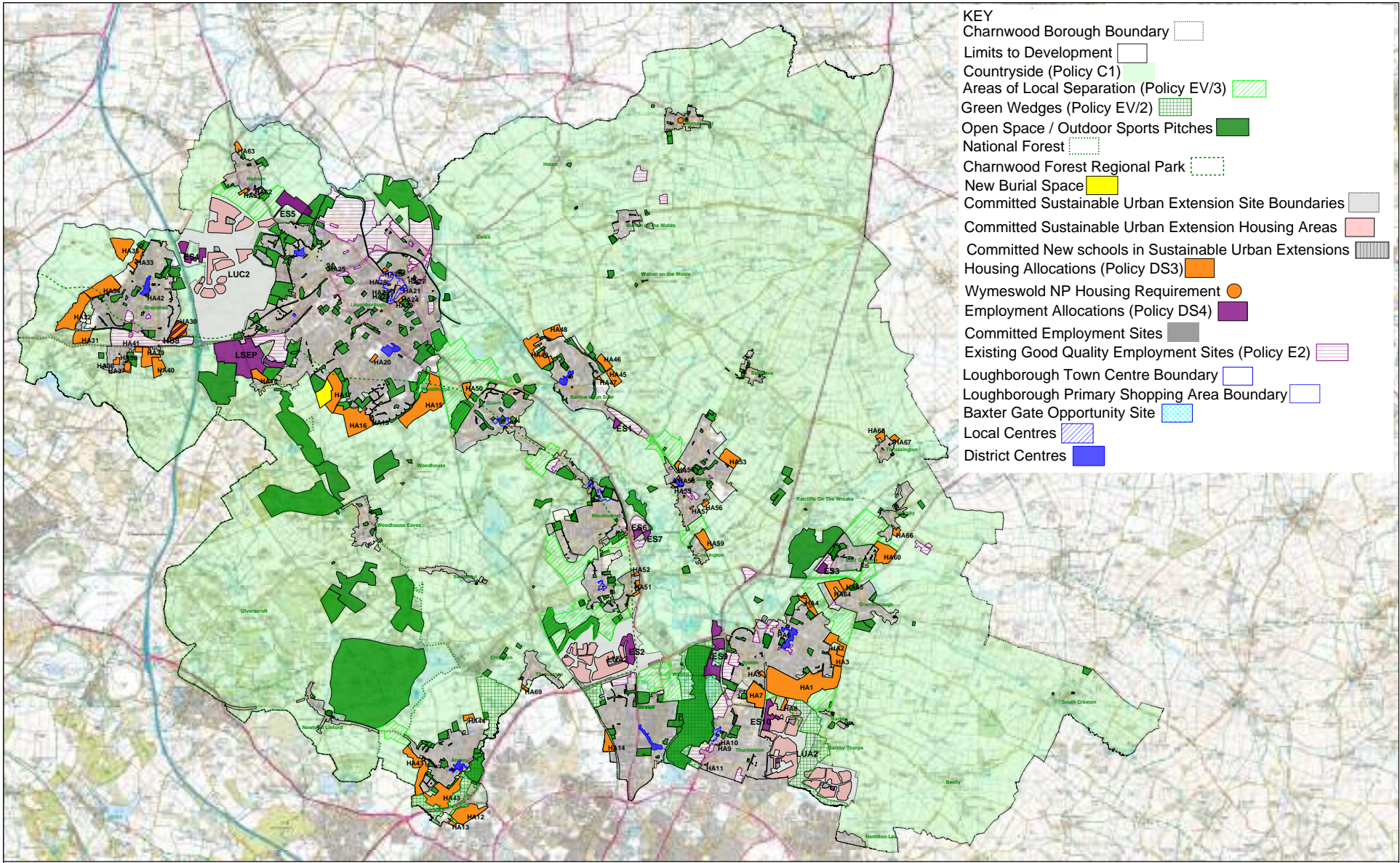
Transport Statement: A simplified version of a transport assessment where it is agreed the transport issues arising from development proposals are limited and a full transport assessment is not required.

Travel Plan: A long-term management strategy for an organisation or site that seeks to deliver sustainable transport objectives and is regularly reviewed.

Use Class: Planning use classes are the categories in which various uses of land and buildings are placed and provide the legal framework which determines what they may be used for.

Village Design Statement: Documents prepared by local communities, which give guidance to developers and individuals to encourage good design of the type that will enhance and protect the individual character of the locality, without preventing future growth.

Water Framework Directive: A European Union directive which commits member states to achieve good qualitative and quantitative status of all water bodies by 2015. It provides an opportunity to plan and deliver a better water environment through river basin management planning.

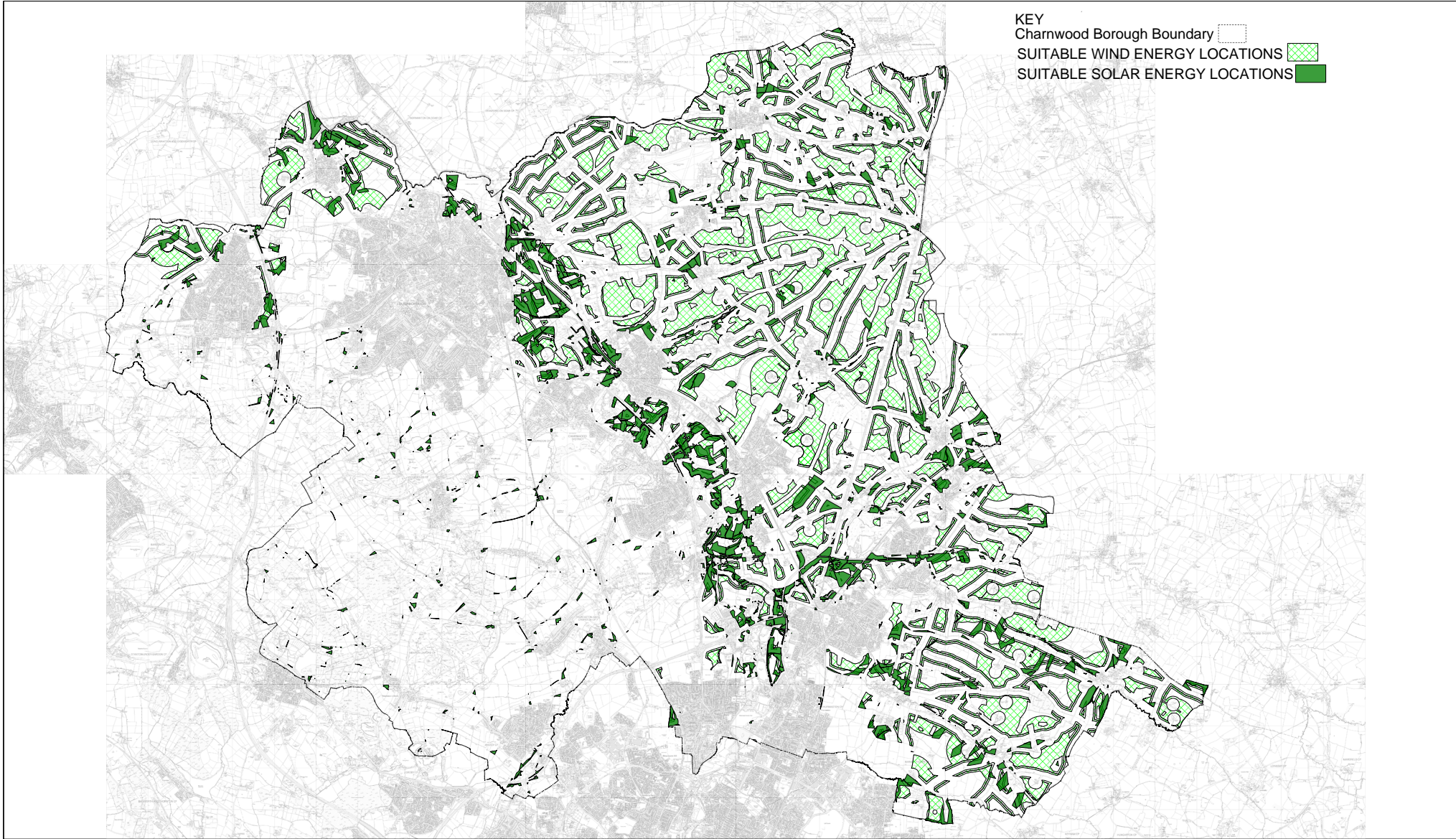


- KEY**
- Charnwood Borough Boundary
 - Limits to Development
 - Countryside (Policy C1)
 - Areas of Local Separation (Policy EV/3)
 - Green Wedges (Policy EV/2)
 - Open Space / Outdoor Sports Pitches
 - National Forest
 - Charnwood Forest Regional Park
 - New Burial Space
 - Committed Sustainable Urban Extension Site Boundaries
 - Committed Sustainable Urban Extension Housing Areas
 - Committed New schools in Sustainable Urban Extensions
 - Housing Allocations (Policy DS3)
 - Wymeswold NP Housing Requirement
 - Employment Allocations (Policy DS4)
 - Committed Employment Sites
 - Existing Good Quality Employment Sites (Policy E2)
 - Loughborough Town Centre Boundary
 - Loughborough Primary Shopping Area Boundary
 - Baxter Gate Opportunity Site
 - Local Centres
 - District Centres

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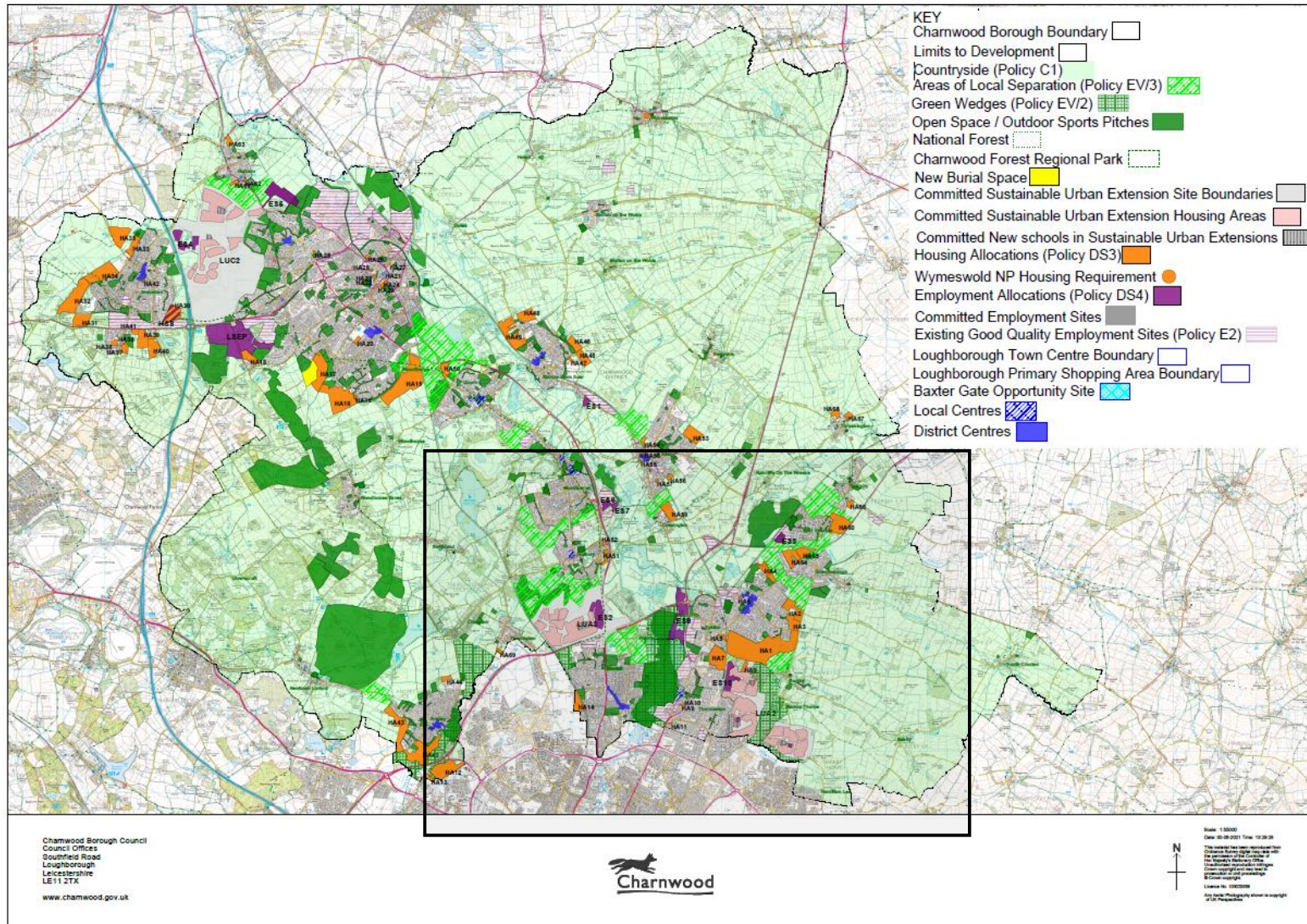
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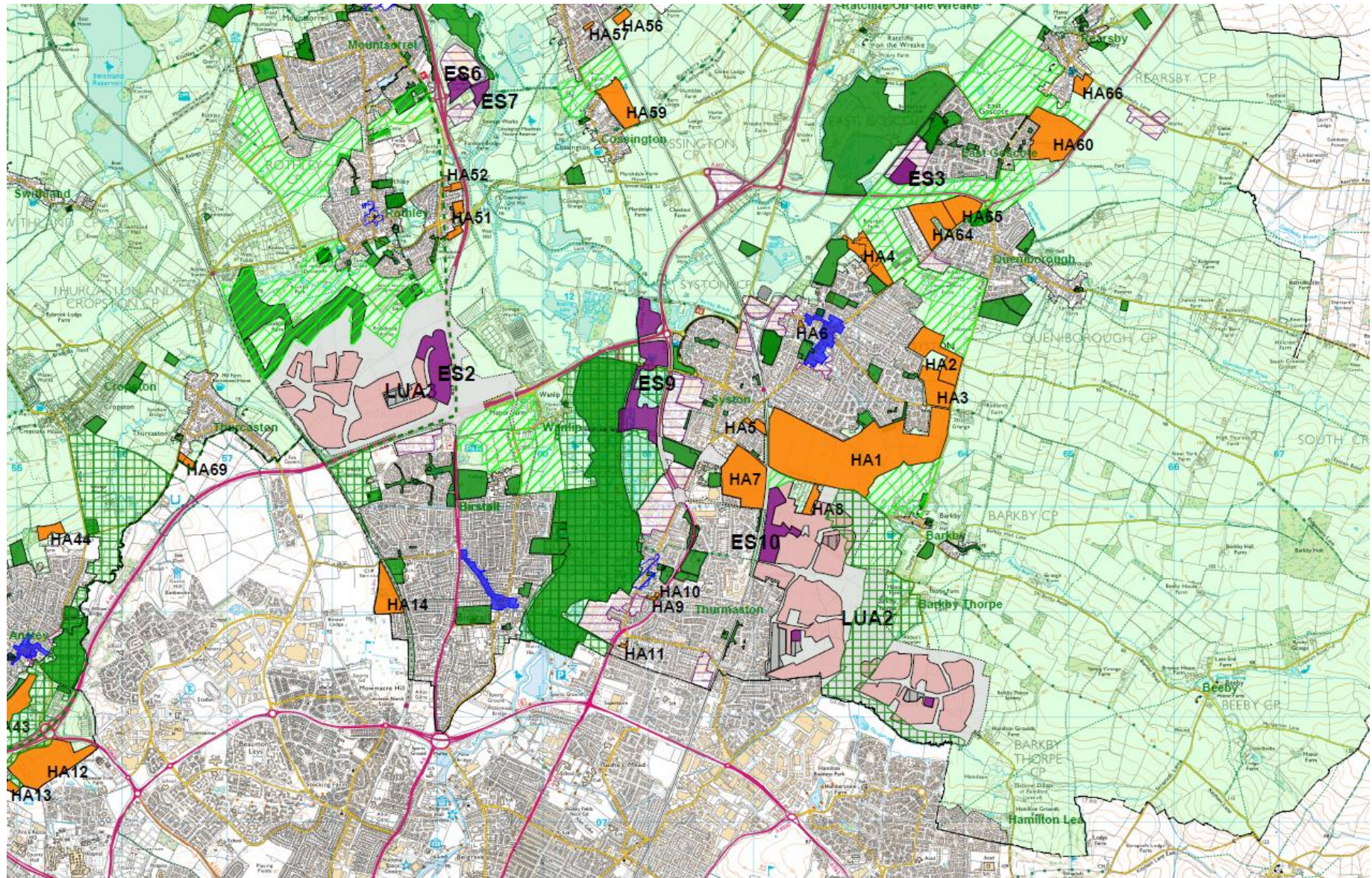
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Appendix C (ii) – Pre-Submission Draft Charnwood Policies Map





CHARNWOOD LOCAL PLAN
LOCAL DEVELOPMENT SCHEME

MARCH 2023 TO MARCH 2026

MARCH 2023

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1. Introduction

- 1.1. The Charnwood Local Development Scheme sets out the Borough Council's programme for the preparation and production of the new Charnwood Local Plan, supplementary planning documents and other related documents that support the delivery of planned-for growth across the Borough.
- 1.2. Local plans are the key to delivering sustainable development that reflects the vision and aspirations of local communities. They set the development strategy and policies for delivering the vision of the area. Having an up-to-date local plan is important because applications for planning permission must be determined in accordance with the development plan unless material considerations indicate otherwise. In this respect, local plans provide clarity for development proposals and a degree of predictability for the community.
- 1.3. Charnwood Borough Council is committed to maintaining an up-to-date local plan in accordance with National Planning Policy Framework. The programme set out in this Local Development Scheme covers the period from 2023 until 2026. It identifies the stages the Local Plan will go through and the timetable for key activity.

2. Local Plans

- 2.1. The current development plan for Charnwood is made up of the Core Strategy (2015) and the detailed 'saved' policies from the Borough of Charnwood Local Plan (2004)¹. The Core Strategy sets the strategic planning framework for Charnwood for the period 2011-2028.
- 2.2. Whilst the proposals in the Core Strategy provide for the period up to 2028, and the strategic growth sites contained within it will continue beyond 2028, the Council has a duty to maintain an up-to-date local plan. Consequently, the Council is preparing a single Charnwood Local Plan document to replace the Core Strategy and to replace the remaining 'saved' policies from the Borough of Charnwood Local Plan.
- 2.3. The Local Plan also identifies the need to prepare Supplementary Planning Documents to provide guidance on how certain policies should be interpreted and implemented. These are included in this programme.
- 2.4. Progress made on the Charnwood Local Plan is published each year in the Council's Authority Monitoring Report, which provides details on the Borough Council's performance in meeting the objectives set out in this Local Development Scheme.
- 2.5. The planning system uses a raft of technical names for different documents and the status they enjoy. Although every attempt has been made to avoid technical terminology there are occasions where names which have a legislative meaning are used. Where this is the case a glossary of terms is provided at Appendix C to assist the reader. The relationship between different documents is shown in Appendix A.

¹ The minerals and waste local plans prepared by Leicester City and Leicestershire County Councils, and made neighbourhood plans, also form a part of the development plan for Charnwood

3. Programme of work for 2023 - 2026

Local Plan

- 3.1 The Borough Council's immediate priority within the three-year period is to conclude the examination of the new Local Plan; to have it found sound; and subsequently have it adopted.
- 3.2 The emerging new Local Plan builds upon the strategy contained within the Core Strategy, setting out the strategic and detailed policies to deliver the Borough Council's vision for Charnwood up to 2037. It takes account of the commitments for housing, employment, and other developments across Charnwood, including the existing strategic allocations for Sustainable Urban Extensions and the Loughborough University Science and Enterprise Park. It identifies and allocates further sites in the borough needed to meet the needs of the community, including specific site allocations for development, and designations that reflect special character or that require protection. It also sets out specific planning policies and criteria against which planning applications for the development and use of land and buildings will be considered. The emerging new Local Plan will include a policies map for the whole Borough. Full details of the new Plan, its progress and its process milestones are set out under Appendix B.
- 3.3 The emerging new Local Plan responds to the Leicester and Leicestershire Strategic Growth Plan which has been prepared and approved by all ten partner organisations. The Strategic Growth Plan was approved by the Borough Council on 5th November 2018.
- 3.4 Early public consultation was undertaken on the scope of the new Local Plan in 2016, in accordance with Regulation 18 of the Town and Country Planning (Local Planning) (England) Regulations 2012. During April 2018 further public consultation was undertaken on the issues and options available for the new plan. This was entitled 'Towards a Local Plan for Charnwood'. A Draft version of the new Local Plan was prepared and consulted upon during November 2019. Subsequently, the Borough Council prepared a Pre-submission version of the Local Plan. This was the subject of public consultation, in accordance with Regulation 19 of the Regulations, during Summer 2022. A copy of the Pre-submission draft Local Plan is available to view on the [Borough Council website](#).
- 3.5 Following the close of the public consultation on the Pre-submission version, the Borough Council formally submitted the draft Local Plan to the Secretary of State for the purpose of examination in public on 3 December 2021. The new Local Plan had been scheduled to be examined in public through hearings sessions that were due to place during June-July 2022.

Leicester and Leicestershire Strategic Growth Plan

- 3.7 Charnwood is part of a wider housing market area that covers Leicester City and all the other Leicestershire authorities. This provides the context under which local planning authorities across the area can work together to understand the need for new homes and jobs with the objective of meeting these needs through their local plans in a coordinated way. A Strategic Growth Plan has been prepared which sets out the number of homes and jobs needed and the agreement on their distribution across Leicester and Leicestershire between 2011 and 2050. A Strategic Growth Statement was published in Summer 2016 and a draft plan was the subject of consultation in Spring 2018. Following consultations with residents, businesses, organisations, and other key stakeholders the Growth Plan was approved by all councils at a series of meetings held during November and December 2018.
- 3.8 The relationship between the Charnwood Local Plan and the Strategic Growth Plan is an important one, as the Local Plan takes its lead from the Growth Plan's broader strategy – particularly in terms of the numbers of new homes and jobs required in Charnwood. The development strategy for Charnwood is a key component of the Local Plan and can only be identified and tested now the Strategic Growth Plan has been approved. The Borough Council will continue to be engaged in this strategic work during the period covered by this Local Development Scheme. This includes the preparation of a Statement of Common Ground between the Borough Council and the other Leicestershire councils. The relationship between the Charnwood Local Plan and the Strategic Growth Plan is recognised in the risk assessment in Section 5.
- 3.9 The draft Statement of Common Ground and the associated Housing and Economic Needs Assessment were the subject of a report considered by the Member Advisory Group 27 April 2022. This sought agreement on the content of the Statement, in relation to the approach apportioning unmet need across the County and recommended all local authority partners take the Statement through their governance processes. Following this, the Statement is subsequently passing through the respective governance arrangements of the partner authorities. The Statement was considered and agreed by the Borough Council's Cabinet on 9 June 2022.

Local Plan Programme to Adoption

- 3.10 The Borough Council becoming a signatory of the Statement of Common Ground had a consequential impact upon the Charnwood Local Plan process. The previous Local Development Scheme had envisaged the Local Plan Examination hearing sessions to take place during Summer 2022. However, upon commencement, the Inspectors immediately determined that for procedural reasons it was necessary to pause the Sessions. This was because the Borough Council had during the opening day on 28 June 2022 stated the intention to respond positively to the apportionment of some of Leicester City's unmet housing and employment needs, as per the agreement through the Statement of Common Ground.
- 3.11 The pause in the examination concluded with an additional set of Hearing Sessions during October 2022 to discuss the apportionment of Leicester City's unmet needs and the implications for the Borough's housing and employment needs. The successful conclusion of these additional Sessions allowed for the examination to

resume, with the Hearing Session that had originally been planned for Summer 2022 taking place during February 2023.

3.12 Based on information available to the Borough Council a reasonable timetable for progressing the new Local Plan through to the completion of the examination and on towards adoption is:

- Examination hearing sessions conclude – February 2023
- Publication of Inspectors' Final Report – July 2023
- Adoption – September 2023

3.13 The suggested timeline assumes that the examination hearing sessions are completed successfully within their scheduled dates and that the process subsequently moves toward consultation on modifications without any further impediment. Should that be the case it is reasonable to assume a period of six months between the conclusion of the hearings and adoption.

3.14 Following the successful adoption of the new Local Plan the Borough Council will have an opportunity to reflect upon the outcomes from the examination process in terms of how it proceeds with its plan-making responsibilities across the remainder of the period covered by this Local Development Scheme. It is anticipated that at that point in time there will be further clarity on the scope and nature of the proposed changes to the national planning system.

Supplementary Planning Documents

3.15 The role of Supplementary Planning Documents (SPDs) is to provide guidance on how existing planning policy should be used and interpreted when developing proposals and taking decisions on planning applications. The Core Strategy generated the production of two SPDs, which provided additional guidance on the implementation of its design and housing policies. Following the adoption of new Charnwood Local Plan, it is anticipated that these two SPDs will fall away, as the parent policies contained within the Core Strategy will have been superseded. The new Local Plan includes policies relating to the design of new development. It also incorporates, under an annex, much of the key guidance on how these policies will be implemented through decision-taking. On that basis, it is not currently anticipated that there will be an immediate need for additional supplementary guidance on design matters. Consequently, the Local Development Scheme does plan for this eventuality during its life span. Nevertheless, the Borough Council will closely follow the development of national policy in relation to the preparation of local Design Codes. Current guidance suggests that design codes should either be included within local plans or prepared as SPDs. Regardless of the format, the Borough Council will ensure that, should they become necessary that they are based on effective community engagement and reflect local aspirations for the development of their area.

3.16 There are two new SPDs identified for preparation and production over the three-year period covered by the Local Development Scheme. These seek to provide additional planning policy guidance firstly on housing and secondly in relation to biodiversity. Both documents are linked and dependent upon parent policies

contained within the emerging new Charnwood Local Plan. Although the Borough Council is initiating their preparation and production during the first year of the new Local Development Scheme, their latter stages, particularly public consultation, will need to take place after the formal adoption of the new Local Plan has taken place. Consequently, those latter stages are anticipated to take place post-September 2023 at the earliest.

- 3.17 The first of the new SPDs will focus on Housing issues. It will seek to inform and provide guidance to decision-taking in relation to proposals that meet specific aspects of the Borough's housing need. Its full scope will be guided by the Borough Council's corporate priorities and the evolving decision-taking experience. It is anticipated that it will include guidance on housing mix of size and tenure, specialised forms of housing, space standards, and the delivery of new affordable homes. For example, the SPD could consider the introduction and delivery of First Homes and other similar products and how these can be incorporated into the delivery of planned-for growth so that they effectively meet genuine local need.
- 3.18 The Borough's dynamic growth environment, particularly in respect of new residential development proposals, has accelerated the need for the new Housing SPD. Consequently, the Local Development Scheme proposes a timetable that anticipates initial work on the SPD could commence during Spring 2023. This could upon evidence base production and those areas of housing policy that have passed uncontested through the Local Plan examination. This would prepare the way for expanding the scope of work as the Local Plan gains weight as the process progresses towards adoption. Based on the anticipated Local Plan timeline this could provide an opportunity for public consultation during the end of 2023 and formal adoption of the SPD during early 2024.
- 3.19 The proposed new Biodiversity SPD will seek to provide guidance on how the Borough Council will secure compensation for the loss of biodiversity from new development proposals. It will build and expand upon an existing interim guidance document that was adopted to support decision-taking during Summer 2022.
- 3.20 The increasing importance of biodiversity in place-making has generated the need for new guidance that sets out how the Borough Council implements net-gain, and where necessary off-setting through decision-taking. Guidance will initially seek to support Core Strategy Policy CS13 Biodiversity and Geodiversity. Upon adoption of the new Local Plan, it is anticipated that guidance will be updated to support the objectives of proposed Local Plan Policy EV6 Conserving and Enhancing Biodiversity and Geodiversity.
- 3.21 The introduction of the new Biodiversity SPD will be informed by the enactment of the Environment Act 2021, which is anticipated to come into force from 1 November 2023. The Act is an important milestone for the preparation of the new SPD as it will require mandatory biodiversity net gain, introduce statutory environmental targets, and set out the future of retained EU Law. Nevertheless, preparation of the new Biodiversity SPD could be initiated over the second half of 2023, which would allow for work to accelerate following the enactment of the Act.
- 3.22 A reasonable timetable milestones for progressing the new SPDs are:

Housing SPD

- Initial drafting/ targeted consultation Spring-Summer 2023
- Local Plan adoption September 2023
- Public Consultation Autumn-Winter 2023/ 24
- Adoption Winter-Spring 2024

Biodiversity SPD

- Initial drafting Summer 2023
- Local Plan adoption September 2023
- Environment Act enactment November 2024
- Public Consultation Spring 2024
- Adoption Summer 2024

Statement of Community Involvement

3.22 A Statement of Community Involvement (SCI) sets out how a Council intends to consult and involve the community in the preparation and review of local development documents and in development management decisions. The Charnwood SCI was adopted in January 2021. The latest version of the SCI is informed by experiences gained during the pandemic. These include the potential for hybrid mechanisms for consultation and engagement with residents and communities; such as the optimal use of virtual platforms. The Borough Council will continue to use such experiences to inform how it effectively engages with residents and communities to ensure that such engagement is inclusive and safe.

Neighbourhood Development Plans

3.23 The Localism Act makes provisions for Neighbourhood Development Plans to be prepared. More commonly referred to simply as Neighbourhood Plans, they are a community-led document initiated through a Parish/Town Council or Neighbourhood Forum and ultimately adopted by the Council as part of the development plan.

3.24 Several parishes have or are in the process of producing Neighbourhood Plans. The Council provides support to Neighbourhood Forums to help them prepare these plans and will work with Town and Parish Councils and other designated groups to accommodate this work within the existing and emerging policy framework. This Local Development Scheme does not prescribe a timetable for those documents as they are community led by the appropriate Neighbourhood Forum and not Charnwood Borough Council. However, within the period covered by this Local Development Scheme significant work is anticipated for at least two Neighbourhood Plans for Anstey and for Cossington. These plans have the potential to join the Neighbourhood Plans for Barrow upon Soar, Queniborough, Quorn, Rearsby, Rothley, Sileby, The Wolds Villages, Thurcaston and Cropston, Thrussington and Woodhouse as being 'made' by the Council and forming part of the development plan for the relevant parish area.

- 3.25 Due to the external community-led nature of neighbourhood plan production, the project management of the Borough Council's involvement can become reactionary, which may introduce risks in relation to available resources. The Borough Council will seek to manage such risks by maintaining good communications with the existing and potential neighbourhood forums to ensure that there is appropriate intelligence on emerging and in-progress neighbourhood plans. Where possible the Borough Council will seek to manage neighbourhood planning processes to minimise conflict with its own plan-making activities.
- 3.26 Whilst the Borough Council has a duty to provide a degree of technical and administrative support to neighbourhood forums, these responsibilities do not normally require the publication of supporting evidence or guidance. However, it is possible that the Borough Council may be called-upon to prepare information that aids forums in their plan-making activities. For example, this may include the publication of indicative housing requirements or information on how localised, neighbourhood level, requirements could be prepared. Where such actions are necessary the Borough Council will ensure that the information is consistent and can be utilised by all forums as part of their plan-making activities.

4. Project Management and Resources

- 4.1. The Local Plan is managed day to day by the Group Leader of the Plans, Policy and Place Making Group under the direction of the Head of Planning and Growth. The Local Development Framework Project Board (LDF Board) provides oversight and is made up of the Chief Executive, the Director Customer Experience, the Cabinet Lead Member for Planning and the Leader of the Council.
- 4.2. The Planning Policy Team provides the bulk of the Council's resource to progress the Local Plan but specialist expertise is drawn from across the Plans, Policies and Place-making Group and elsewhere across the Service when required. The close relationship between the Local Plan and the Council's corporate priorities allows additional support to be drawn from across the Council on specific corporate activities.
- 4.3. Budgetary provision is sought on an annual basis based on the Service Delivery Plan and Local Development Scheme programme. Specific costs relating to the submission of documents and the Examination process are identified in the Council's Medium Term Financial Plan.
- 4.4. The challenge of delivering growth is recognised. The Council is delivering the Local Development Scheme in a project managed environment, supported by appropriate resources.

5. Risk Assessment




- 5.1. An assessment has been carried out of the factors that could affect the ability of the council to deliver the Local Plan in accordance with the indicated programme. Actions to manage these risks have been identified.

Risk Identified	Likelihood/Impact	Management Action
Programme slippage	<p>Medium/Medium</p> <p>The Council is expected to meet the milestones in the Local Development Scheme. Failure to deliver against the key milestones will be damaging to the reputation of the local planning authority and the absence of up to date planning policies will hamper the realisation of the Council's vision and lead to unplanned developments in the Borough. The deadlines for preparing the Local Plan are very challenging given the emphasis on community engagement and the potential for development industry interest.</p>	<p>The Local Development Framework Project Board will carefully monitor progress and give priority to achieving the key milestones set out in the Local Development Scheme.</p>
Staff resources	<p>Low/High</p> <p>The Planning Policy Team currently has a stable and experienced staff resource. However, staff changes will impact on the production of the Local Plan.</p>	<p>Ensure that sufficient staff resources with the necessary experience and expertise are available for the production of the Local Plan, supplementary planning documents and manage competing work priorities, utilising agency resources as required</p>
Financial resources	<p>Low/High</p> <p>Sufficient financial resources are required to prepare the Local Plan and supplementary planning documents including for consultancy support, consultation and the examination process.</p>	<p>Ensure the Local Development Scheme informs the council's Medium Term Financial Plan.</p>
Competing work priorities	<p>High/Medium</p> <p>The Planning and Regeneration Service is involved in a wide range of spatial policy work. Work to implement the Core Strategy, engage and support the Strategic Growth Plan, Neighbourhood Plans and any major unplanned</p>	<p>The high priority of the Local Plan is recognised and at certain times other work will have to take a much lower priority. Where this is not possible consideration is given to outsourcing work to other local planning authorities or consultants.</p>

Risk Identified	Likelihood/Impact	Management Action
	developments will weigh heavily on staff resources especially with respect to appeals.	
Level of public interest cause delays	Medium/High Public interest in the Local Plan has been high during previous consultations.	Resources are drawn from across the Planning and Regeneration Service at appropriate times to ensure representations are dealt with.
Lack of capacity of statutory agencies to respond and/or engage	Low/High Decisions taken nationally to change the resources of statutory agencies, and their capacity to manage local plan consultations and other work, may cause delays to the programme	The Local Development Scheme provides forward notice of the council's Local Plan programme. Maintain contact with key agencies to minimise prospect of slippage
Change in national policy/legislation	Medium/High Changes to the statutory process or new substantive policy which affects the content and direction of local policy preparation and decisions may cause delays to the programme.	The Council will continue to monitor the evolution of the proposed Levelling-Up and Regeneration Bill, which seeks to introduce wide-ranging changes to national planning policy and the planning system. Where opportunities present themselves the Borough Council will engage in consultation and when appropriate lobby Government for changes that will benefit plan-making and decision-taking across the Borough. Where changes are introduced, the Local Development Scheme will be amended accordingly to reflect new processes.
Slippage in strategic evidence/planning or Duty to Cooperate Matters	Medium/High Strategic evidence for homes, jobs and transport will help define the relationship between Charnwood and the wider housing market area and the role of the Charnwood Local Plan. Any delays to this strategic work may cause Duty to Cooperate issues and cause	The Council will be represented in this strategic work and will carefully monitor and give priority to managing any impacts on the key milestones set out in the Local Development Scheme. A Statement of Common Ground is currently being prepared with the other authorities in the

Risk Identified	Likelihood/Impact	Management Action
	delays to the programme.	HMA.

6. Programme Chart

	2023												2024												2025											
	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D
Charnwood Local Development Documents																																				
New Local Plan																																				

KEY:

Hearing Sessions



Inspector's Report Published



Adoption



Appendix A: Charnwood Local Plan and Supporting Documents



Appendix B: Local Plan Profile

Overview	
Title	Charnwood Local Plan
Role and content	<p>Sets out the strategic policies to deliver the Council's vision for Charnwood up to 2037 within the strategic framework set by the Strategic Growth Plan 2011 - 2050</p> <p>Addresses the spatial implications of strategies prepared by other key bodies including the Strategic Growth Plan for Leicester and Leicestershire to be prepared jointly by the local authorities for the area.</p> <p>Identifies land use sites needed to meet development needs to 2037.</p> <p>Sets out specific criteria against which planning applications will be considered.</p> <p>Provides land use designations for the protection and management of natural resources.</p> <p>Includes a proposals map on ordnance survey base to identify specific policies and proposals for development or use of land.</p>
Coverage	Borough wide
Status	Development Plan Document
Chain of Conformity	In accordance with legislation, case law and national planning policies.

Timetable	
Start	April 2016
Scoping and Issues (Regulation 18 ²)	July/August 2016
Draft plan consultation	November 2019
Publication (Pre-Submission Consultation) (Regulation 19)	July 2021
Submission (Regulation 22)	December 2021
Examination hearings (Regulations 23 and 24)	February 2023 (final sessions)
Adoption and publication of the DPD (Regulation 26)	September 2023

² In accordance with the Town and Country Planning (Local Planning) (England) Regulations 2012

Management arrangements	
Organisational Lead	Head of Planning and Regeneration Services
Lead Officer	Group Leader Plans, Policies and Place-making
Management Arrangements	LDF Project Board; Cabinet and Full Council; Growth Advisory Group
Resources required	Charnwood Senior & Core Leadership Team; Planning and Regeneration Service; Housing Service; Neighbourhood Services; Open Space and Waste Service; Leisure and Culture Service; Finance and Property Services; Strategic Support Service; Leicestershire County Council including Highway Authority and Education Authority; Leicester City Council including Highway Authority and Education Authority.
Community and Stakeholder involvement	Parish and Town Councils, partner organisations, and others as identified in the Regulations and the Statement of Community Involvement.
Monitoring and review	Authority Monitoring Report

Appendix C: Glossary of Terms

Authority Monitoring Report (AMR) (formerly the Annual Monitoring Report)	An annual document that reports the progress made on plan preparation compared to the Local Development Scheme and the delivery of local plan policies including housing and employment delivery.
Core Strategy	A statutory planning document setting out the spatial vision and strategy for the Borough including key policies, proposals and strategic allocations to deliver the vision.
Development Plan Document (DPD)	Statutory documents prepared by the local planning authority with rigorous community involvement and consultation. They are subject to an examination in public by an independent Planning Inspector appointed by the Secretary of State.
Development Plan	Any adopted Development Plan Documents make up the Development Plan. Under the Planning Acts the Development Plan is the primary consideration in deciding planning applications.
Local Development Framework (LDF)	A binder of documents that provide the planning policies for the area.
Local Development Scheme (LDS)	A document that outlines the Council's three-year programme for preparing the Local Development Framework.
Local Plan	The plan for the development of the local area, drawn up by the local planning authority in consultation with the community. In law this is described as the development plan documents adopted under the Planning and Compulsory Purchase Act 2004. Current core strategies or other planning policies, which under the regulations would be development plan documents, form part of the Local Plan. The term includes old policies which have been saved under the 2004 Act.
Neighbourhood Development Plan	The Regulatory title for a planning document which may be initiated and prepared by Parish and Town Councils or Neighbourhood Forums.

	Following robust consultation, independent examination and a local referendum they become 'made' (essentially adopted) by the Council as part of the statutory development plan. They are generally referred to as Neighbourhood Plans and must be prepared in general conformity with the Local Plan.
Spatial planning	A more comprehensive approach to town planning than simple 'land-use' planning, it coordinates the development and use of land with other policies and programmes to benefit places and how they function.
Statement of Community Involvement (SCI)	A document outlining the approach of the authority to involving the community in preparing planning policy and considering significant planning applications.
Strategic Growth Plan	A non-statutory planning document that sets out the spatial planning framework for Leicester and Leicestershire.
Supplementary Planning Documents (SPD)	Documents that provide guidance on how to use and interpret planning policies when developing proposals or taking decisions.
Sustainability Appraisal (SA)	An appraisal of the social, economic and environmental implications of a strategy, policies and proposals. Will ensure that proposals contribute to the achievement of sustainable development.
Sustainable development	Meeting our own needs without prejudicing the ability of future generations to meet their needs.



Neutral Citation Number: [2019] EWHC 1524 (Admin)

Case No: CO/200/2019

IN THE HIGH COURT OF JUSTICE
QUEEN'S BENCH DIVISION
ADMINISTRATIVE COURT

Royal Courts of Justice
Strand, London, WC2A 2LL

Date: 14/06/2019

Before :

MR JUSTICE DOVE

Between :

Wavendon Properties Limited	<u>Claimant</u>
- and -	
Secretary of State of Housing Communities and Local Government	<u>1st Defendant</u>
- and -	
Milton Keynes Council	<u>2nd Defendant</u>

Peter Goatley and James Corbet Burcher (instructed by **Clyde & Co**) for the **Claimant**
Richard Honey (instructed by **Government Legal Department**) for the **1st Defendant**
Daniel Stedman Jones (instructed by **Milton Keynes Legal Department**) for the **2nd
Defendant**

Hearing dates: 7th & 9th May 2019

Approved Judgment

Mr Justice Dove :

The Facts

1. On the 20th July 2016 the Claimant submitted an application in outline for development of up to 203 dwellings together with other ancillary infrastructure. The application was reported to the Second Defendant's planning committee and, contrary to the officer's recommendation that development should be approved, it was refused on the 5th December 2016. The reasons for refusal were as follows:

“1. The Committee resolved to refuse planning permission on the basis that any such development of this site would result in the loss of future development and infrastructure options, causing significant and demonstrable harm and is therefore not sustainable development in accordance with Resolution 24/187 of the United Nations General Assembly definition of sustainable development and the National Planning Policy Framework (NPPF) in respect of future generations. The development would also therefore be contrary to paragraphs 14 and 19 of the National Planning Policy Framework, Saved Policy D1 of the adopted Milton Keynes Local Plan 2001-2011 (adopted 2005) and policy WS5 of the Woburn Sands Neighbourhood Plan 2014-2026 (adopted 2014). This does not constitute sustainable development in terms of paragraph 14 of the National Planning Policy Framework.

2. Furthermore the low density of this proposed development would not be considered sustainable given the current objectives of central government and this Council to both optimise use of land and to build both quickly and strategically.”

Subsequently, by way of the Second Defendant's Statement of Case the first reason for refusal was effectively amended to read:

“1. The development would be contrary to policy WS5 of the Woburn Sands Neighbourhood Plan 2014-2016 ([sic] adopted 2014). This does not constitute sustainable development in terms of paragraph 14 of the National Planning Policy Framework.”

2. The Claimant appealed and a public inquiry was held in July 2017. Following the close of the inquiry requests were made to the First Defendant that the appeal should be recovered for his own determination in August 2017 which were declined. Subsequently further representations were made in September 2017 by the local Member of Parliament following which, on the 31st October 2017, the First Defendant recovered the appeal for his own determination.
3. The Inspector's Report to the First Defendant in relation to the appeal was produced on the 2nd February 2018. It remained confidential until it was published alongside the First Defendant's decision on the 5th December 2018. In between the receipt of the

Inspector's Report and the First Defendant's decision there were a number of further representations submitted to the First Defendant.

4. Firstly, on the 6th April 2018, the Claimant's planning consultant wrote to the First Defendant pointing out that in two recent appeal decisions within the Second Defendant's administrative area the conclusion had been reached that the Second Defendant could not demonstrate a five year housing land supply. On the 23rd July, the Claimant's solicitors wrote to the First Defendant expressing their concern at the amount of time that had passed since the close of the inquiry, and including a recent briefing note which had been issued by the Second Defendant's Chief Planning Officer to its relevant cabinet member confirming that the council could not demonstrate a five year housing land supply, whether applying the (then current) Liverpool or the Sedgfield method of addressing undersupply in previous years. The briefing note confirmed that if the Liverpool method was used (which was the Second Defendant's preferred position) a land supply of 4.66 years arose, and if the Sedgfield method was deployed the land supply was 4.16 years. In the papers before

	Liverpool Method Total	Sedgfield Method total
Overall requirement 2016-2021	13,096	14,653
Overall supply of deliverable sites	12,920	12,920
Overall supply with 10% discount to applicable sites	12,195	12,195
Overall supply compared to requirement	-901	-2458
Overall years supply	4.66 years	4.16 years

the court a copy of a document produced by the Second Defendant in July 2018 which underpinned the observations in the briefing note has been produced in which the following table sets out the figures leading to these overall calculations as follows:

5. As part of this document (albeit not before the First Defendant) a housing supply trajectory was produced setting out in the form of a schedule each of the sites relied upon by the Second Defendant as forming part of the supply taken into account for the coming five years. In response to the Claimant's letter of the 29th April 2018 the First Defendant wrote to the Second Defendant seeking observations upon the letter referring to other appeal decisions. In response the Second Defendant sent in a briefing note detailing five recent appeal decisions, and in the four which had been decided it was concluded that the Second Defendant did not have a five year housing land supply, albeit that in two cases the appeals were dismissed.
6. On the 26th July 2018 the First Defendant wrote to the Claimant and the Second Defendant seeking observations in relation to the newly published revised National Planning Policy Framework ("the Framework", which unless it appears otherwise, is the version published in July 2018), and the emergence of the Milton Keynes Site Allocations Plan. The Second Defendant responded on the 1st August 2018 noting that the Milton Keynes Site Allocation Plan had been adopted to address any shortfall in five year housing land supply and that the site concerned in the appeal had not been allocated. The objections to the appeal were maintained. The Claimant's solicitors responded by contending that there was nothing in the new Framework which was

adverse to the Claimant's case put at the inquiry, and that there remained a shortfall in the Second Defendant's five year housing land supply.

7. On the 27th September 2018 the First Defendant wrote to the Claimant and the Second Defendant seeking views in relation to a number of further developments since the previous correspondence. First, on the 13th September 2018, revised guidance had been issued in relation to how local planning authorities should assess their housing needs. Secondly, new household projections for England had been published by the Office of National Statistics on the 20th September 2018 and, thirdly, interim findings had been issued in relation to the emerging Milton Keynes Local Plan.
8. At paragraph 5 of the letter the First Defendant sought views on the following issue:

“5. The Secretary of State particularly seeks parties' views on the applicability of paragraph 73 of the new Framework to this case, and if applicable, any implications for housing land supply. He further seeks views on the consistency of Local Plan Policy H8 (Housing Density) with the new Framework.”
9. On the 5th October 2018 the Claimant responded to the letter of the 27th September from the First Defendant. In the letter the Claimant's planning consultant addressed issues in relation to the consistency of policy H8 with the new Framework. He contended that policy H8 remained consistent with the Framework in particular in seeking a flexible approach to the density of new residential development which responded to the character and appearance of the surrounding area. Accompanying the letter was material from the Strategic Planning Research Unit of DLP Planning, addressing issues associated with the five year housing land supply (the “SPRU Report”). The SPRU Report noted that the most recent document published by the Second Defendant on housing land supply issues accepted that the Second Defendant could not demonstrate a five year housing land supply. The SPRU Report then went on to address issues arising from the new policy contained within the revised Framework. The SPRU report noted that as the housing requirement in the Second Defendant's development plan was more than five years old paragraph 73 of the Framework required the decision-taker to undertake a calculation of local housing need using the standard methodology. That calculation produced a figure for the housing requirement of 1,604 dwellings per annum.
10. Having reached conclusions as to the appropriate requirement the SPRU Report then went on to consider the calculation of the available housing land supply, applying the definition of “deliverable” provided in the Framework, and using the housing land trajectory which had been published alongside the Second Defendant's most recent assessment of their housing land supply. The SPRU Report contained some key tables which are appended to this judgment and which contain the following information. Table 10 was an analysis of extant housing allocations which the SPRU Report contended should not be counted within the housing land supply for the purposes of calculating the five year housing land supply. As a consequence of the analysis in Table 10, 1,156 units were removed from the supply. Table 11 in the SPRU Report addressed sites which had outline planning permission only, and identified from that category of site those which should not be counted as deliverable for the purposes of the five year housing land supply calculation. This analysis led to a reduction of 4,101 from the housing land supply. Table 12 contained an analysis of sites which had

detailed planning permission, and provided for an adjustment in the applicable build out rates leading to a further reduction in the deliverable supply for the purposes of calculating the five year housing land requirement. Finally, Tables 13 and 14 provided two alternative calculations of five year housing land supply incorporating the adjustments to the supply from the Second Defendant's figure to reflect the SPRU Report's analysis of whether or not that supply was deliverable, coupled with the alternative requirements of the local housing needs requirement calculated using the standard methodology and a calculation using the housing requirement from the emerging local plan. All of this analysis demonstrated that, in addition to the Second Defendant's most recent published analysis showing there was no five year land supply there was, equally, a failure to demonstrate the existence of a five year housing land supply on the basis of the SPRU Report's analysis.

11. The Second Defendant did not provide any response either to the correspondence from the First Defendant or the SPRU Report and its analysis. All of this material, alongside the Inspector's report and the documentation accompanying the inquiry, was before the First Defendant for the purposes of reaching a decision. It should be noted that the appeal was supported by an obligation under section 106 of the Town and Country Planning Act 1990 providing covenants as follows:

“The Owners covenant as follows:

1. That, subject to paragraph 2 below, the Owners will use Reasonable Endeavours to build out the Development with 5 (five) years of the Council approving the last Reserved Matters application.

2. In the event that, prior to the Development being built out, there are more than 4 (four) successive quarters of negative growth in GDP paragraph 1 shall not apply and the Owners will issue a revised date to the Council by reference to the date that the Council approves the last Reserved Matters application and use Reasonable Endeavours to build out the Development by that date.”

Planning Policy

12. There were a number of development plan and national policies which were considered in the decision-taking process. Starting with the development plan, policies from the Milton Keynes Core Strategy (the “Core Strategy”) adopted in July 2013 which particularly featured in the decision were policies S10 and H8. Policy S10 provided as follows:

“The open countryside is defined as all land outside the development boundaries defined on the Proposals Map. In the open countryside, planning permission will only be given for development that is essential for agriculture, forestry, countryside recreation or other development which is wholly appropriate to a rural area and cannot be located within a settlement.”

13. Policy H8 and relevant parts of its explanatory text provided as follows:

“Housing density

Objectives of policy:

- To encourage high densities in locations well served by public transport
- To ensure land for housing is used efficiently

...

9.53 PPG3 advocates that low density development (at less than 30 dwellings per hectare) should be avoided and puts forward minimum densities of 30-50 dwellings per hectare. However, while aiming to secure higher densities in future, Policy H8 recognises the unique character of the Borough- particularly its diverse character- and seeks realistic increases in density in the appropriate locations. Well designed development can facilitate higher densities and will be crucial in ensuring the new development is successfully integrated into the Borough.

9.54 The policy promotes lower densities in the smaller rural settlements outside the City so that new development will be more compatible with their character and also to allow choice and diversity in the type of residential development that is available within the Borough.

HOUSING DENSITY

POLICY H8

The density of new housing development should be well related to the character and appearance of development in the surrounding area.

The Council will seek the average new densities set out below for development within each zone as defined on the accompanying plan:

Zone 1: CMK (including Campbell Park) 100 dws/ha

Zone 2: Adjoining grid squares north and south of CMK, Bletchley, Kingston, Stony Stratford, Westcroft and Wolverton: 40 dws/ ha

Zone 3: The rest of the City, City Expansion Areas, Newport Pagnell, Olney and Woburn Sands 35 dws/ha

Zone 4: The rest of the Borough 30 dws/ha

Developments with an average net density of less than 30 dwellings per hectare will not be permitted.”

14. The development plan also included the Woburn Sands Neighbourhood Plan 2014-2026 (the “Neighbourhood Plan”) which contained policy WS5. That policy and the relevant explanatory text provides as follows:

“Development Boundary

6.5 The attractiveness of the wider Woburn Sands area depends to a very significant extent upon the preservation of the existing countryside both within the Woburn Sands parish and neighbouring parishes. It is essential for the health and wellbeing of the population that the current network of public footpaths and links through the wider area be maintained and this would not be possible if development encroaches on the countryside around Woburn Sands. This is the unanimous view of all the Parish Councils and residents in the area.

...

6.14 There is therefore no support for the extension of the current development boundary. However it is recognised that the future work on the preparation of the Core Strategy Review (PlanMK) may propose that the boundaries be amended in the future.

Policy WS5 The preservation of the countryside setting, existing woodland and footpath links into the countryside is key to the future of Woburn Sands. Accordingly no extension to the current Woburn Sands Development Boundary will be permitted other than in the following exceptional circumstances:

- Plan MK identified a specific need for an amendment to the Development Boundary, and
- Any proposed amendment is brought forward following full consultation with, and agreement by, Woburn Sands Town Council and
- The implications of any revised Development Boundary has been assessed in terms of the need to protect and maintain the character of the countryside setting of Woburn Sands.”

15. A feature of both the superceded 2012 and 2018 editions of the Framework is the presumption in favour of sustainable development. As articulated in the 2012 edition of the Framework the presumption was set out in paragraph 14 in relation to decision taking as follows:

“14. At the heart of the National Planning Policy Framework is a presumption in favour of sustainable development, which should be seen as a golden thread running through both plan-making and decision-taking.

...

For decision-taking this means:

- Approving development proposals that accord with the development plan without delay; and
- Where the development plan is absent, silent or relevant policies are out-of-date, granting permission unless:
 - i) any adverse impacts of doing so would significantly and demonstrably outweigh the benefits, when assessed against the policies in this Framework taken as a whole or;
 - ii) specific policies in this Framework indicate development should be restricted”

16. The revised text of the presumption in favour of sustainable development contained in the 2018 Framework provided as follows in decision taking:

“11. Plans and decisions should apply a presumption in favour of sustainable development.

...

For **decision-taking** this means:

- c) approving development proposals that accord with an up-to-date development plan without delay; or
- d) where there are no relevant development plan policies, or the policies which are most important for determining the application are out-of-date⁷, granting permission unless:
 - i. the application of policies in this Framework that protect areas or assets of particular importance provides a clear reason for refusing the development proposed⁶; or
 - ii. any adverse impacts of doing so would significantly and demonstrably outweigh the benefits, when assessed against the policies in this Framework taken as a whole. ”

17. Footnote 7 pertaining to paragraph 11 of the 2018 Framework provides as follows:

“⁷ This includes, for applications involving the provision of housing, situations where the local planning authority cannot demonstrate a five year supply of deliverable housing sites (with the appropriate buffer, as set out in paragraph 73); or

where the Housing Delivery Test indicates that the delivery of housing was substantially below (less than 75% of) the housing requirement over the previous three years. Transitional arrangements for the Housing Delivery Test are set out in Annex 1.”

18. Footnote 7 cross-refers to the requirement to demonstrate a five year supply of deliverable housing sites (together with an appropriate buffer) from paragraph 73 of the Framework. Paragraph 73 provides as follows:

“73. Strategic policies should include a trajectory illustrating the expected rate of housing delivery over the plan period, and all plans should consider whether it is appropriate to set out the anticipated rate of development for specific sites. Local planning authorities should identify and update annually a supply of specific deliverable sites sufficient to provide a minimum of five years’ worth of housing against their housing requirement set out in adopted strategic policies, or against their local housing need where the strategic policies are more than five years old. The supply of specific deliverable sites should in addition include a buffer (moved forward from later in the plan period) of:

- a) 5% to ensure choice and competition in the market for land; or 10% where the local planning authority wishes to demonstrate a five year supply of deliverable sites through an annual position statement or recently adopted plan, to account for any fluctuations in the market during that year; or
- b) 20% where there has been significant under delivery of housing over the previous three years, to improve the prospect of achieving the planned supply”

19. Paragraphs 212 and 213 of the 2018 Framework address the question of the assessment of whether or not existing policies should be considered to be out-of-date. The paragraphs provide as follows:

“212. The policies in this Framework are material considerations which should be taken into account in dealing with applications from the day of its publication. Plans may also need to be revised to reflect policy changes which this replacement Framework has made. This should be progressed as quickly as possible, either through a partial revision or by preparing a new plan.

213. However, existing policies should not be considered out-of-date simply because they were adopted or made prior to the

publication of this Framework. Due weight should be given to them, according to their degree of consistency with this Framework (the closer the policies in the plan to the policies in the Framework, the greater the weight that may be given).”

20. The 2018 Framework contains a glossary identifying the definition of various terms which are used during the course of its text. In particular so far as is pertinent to the present case it contains a definition of the term “deliverable” which is used in the context of paragraph 73. The definition provides as follows:

“Deliverable: To be considered deliverable, sites for housing should be available now, offer a suitable location for development now, and be achievable with a realistic prospect that housing will be delivered on the site within five years. Sites that are not major development, and sites with detailed planning permission, should be considered deliverable until permission expires, unless there is clear evidence that homes will not be delivered within five years (e.g. they are no longer viable, there is no longer a demand for the type of units or sites have long term phasing plans). Sites with outline planning permission, permission in principle, allocated in the development plan or identified on a brownfield register should only be considered deliverable where there is clear evidence that housing completions will begin on site within five years.”

21. The Claimant notes that further assistance is provided in relation to the concept of a deliverable site, and the evidence required in relation to it, in the following material from paragraph 3-063-20180913 of the Planning Practice Guidance (the “PPG”) and paragraph 3-047-20180913 in relation to the annual review of the five year land supply:

“What constitutes as a deliverable site in the context of housing policy?”

Annex 2 of the National Planning Policy Framework defines a deliverable site in terms of an assessment of the timescale for delivery and the planning status of the site. For sites with outline planning permission, permission in principle, allocated in a development plan or identified on a brownfield register, where clear evidence is required to demonstrate that housing completions will begin on site within 5 years, this evidence may include:

- Any progress being made towards the submission of an application;
- Any progress with site assessment work; and
- Any relevant information about site viability, ownership constraints or infrastructure provision

For example:

- A statement of common ground between the local planning authority and that site developer(s) which confirms the developers' delivery intentions and anticipated start and build-out rates.
- A hybrid planning permission for large sites which links to a planning performance agreement that sets out the timetable for conclusion of reserved matters applications and discharge of conditions.”

22. The 2018 Framework provides policies in relation to achieving appropriate densities in paragraphs 122 and 123. These paragraphs provide as follows on this topic:

“122. Planning policies and decisions should support development that makes efficient use of land, taking into account:

- a) the identified need for different types of housing and other forms of development, and the availability of land suitable for accommodating it;
- b) local market conditions and viability;
- c) the availability and capacity of infrastructure and services both existing and proposed as well as their potential for further improvement and the scope to promote sustainable travel modes that limit future car use;
- d) the desirability of maintaining an area's prevailing character and setting (including residential gardens), or of promoting regeneration and change; and
- e) the importance of securing well-designed, attractive and healthy places.

123. Where there is an existing or anticipated shortage of land for meeting identified housing needs, it is especially important that planning policies and decisions avoid homes being built at low densities, and ensure that developments make optimal use of the potential of each site. In these circumstances:

- a) plans should contain policies to optimise the use of land in their area and meet as much of the identified need for housing as possible. This will be tested robustly at examination, and should include the use of minimum density standards for city and town centres and other locations that are well served by public transport. These standards should seek a significant uplift in the average density of residential development within

these areas, unless it can be shown that there are strong reasons why this would be inappropriate;

b) the use of minimum density standards should also be considered for other parts of the plan area. It may be appropriate to set out a range of densities that reflect the accessibility and potential of different areas, rather than one broad density range;

and

c) local planning authorities should refuse applications which they consider fail to make efficient use of land, taking into account the policies in this Framework. In this context, when considering applications for housing, authorities should take a flexible approach in applying policies or guidance relating to daylight and sunlight, where they would otherwise inhibit making efficient use of a site (as long as the resulting scheme would provide acceptable living standards).”

23. The earlier provisions of the 2012 Framework required local planning authorities to “set out their own approach to housing density to reflect local circumstances” as recorded by the Inspector in paragraph 9.43 of his report (see below).

The decision

24. The essential backdrop to the decision reached by the First Defendant was the report provided to him by the Inspector following the public inquiry into the appeal. At the public inquiry the Second Defendant had contended that it was able to demonstrate an almost 5.2 year supply of deliverable housing sites. The Claimant’s case was that in truth the supply was barely 3 years. One of the key issues which the Inspector had to resolve, therefore, was the question of whether or not the Second Defendant was able to demonstrate a five year supply of housing. In his conclusions the Inspector identified a number of key issues governing the difference between the alternative analyses of the five year housing land supply position. He set out these key distinctions and disagreements as follows:

“9.5 So, how do the Council now convince themselves that a 5-year supply of housing land can be demonstrated? First, the shortfall is distributed over the rest of the Plan period rather than just over the next 5 years (the Liverpool rather than the Sedgefield approach); using the latter in place of the former would be enough to reduce the provision to well below 5 years. Second, an odd optimism is imputed to the delivery of dwellings so that everything forecast to be built within the first 4 years is deemed to materialise and a 10% non-implementation allowance only applied to dwellings expected to materialise later; numerically this amounts to a 5% reduction (roughly) to reflect the uncertainties inherent in forecasts of

housing delivery which, even if it captures the effects of non-implementation may not allow for ‘slippage’. This contrasts with a 10% reduction (quite common elsewhere) that would be sufficient on its own to reduce the provision available to below 5 years in any of the methods outlined in table 2. Third, the imputed cumulative rate of delivery and the delivery implied on some sites, appears to become unrealistically high. For example, the current trajectory (in the 2017 monitoring report) anticipates a rate of delivery increasing to over 3,500 dwellings per annum, a figure not even achieved within the last decade of the Development Corporation, about twice the average annualised requirement of the Core Strategy and close to 3 times the level recently achieved. Doubts about this inform the scale of adjustments applied to the estimates of provision; a reduction of about 670-700 dwellings for the Council and a reduction of nearly 5,000 units for the appellants (see table 2). I examine each of those disagreements below.”

25. In respect of the first of the issues the Inspector concluded that there was no reason why the Sedgefield approach should not be applied in the present case. He then went on to deal with the issues in relation to uncertainty slippage and failure in forecasts of housing delivery and reached the following conclusion at paragraph 9.9 of his report:

“9.9 An odd optimism inflates the forecasts of housing delivery. One expression of this is that past forecasts of housing delivery over successive 5-year periods from 2007/8 to 2012/13 have (apart from one year in the era of the Milton Keynes Partnership Committee) always over-estimated the delivery anticipated. That is in spite of the forecasts being based on surveys of builders and developers, thereby asking those directly involved in the industry how they anticipate development proceeding. On average, the delivery achieved has been about 25% below the delivery forecast, though the ‘failure’ varies from roughly 20% to 37%. It may be that these flawed forecasts have served to provide a false sense of security masking the real need to take appropriate action. But, whether or not that is so, the result is that the Core Strategy trajectory has simply not been met and subsequent monitoring has not galvanised effective measures to get the trajectory ‘back on track’, a good reason not to adhere to it now. Moreover, these results demonstrate that the current effective 5% reduction to reflect uncertainty is well wide of the mark. Indeed, even a reduction of 10% (common elsewhere) might not be sufficient, albeit that it would reduce the estimated supply closer to 4 years rather than 5. And, although I think that the ‘windfall’ allowance estimated by the Council is legitimate, the difference between the parties (less than 0.3% of the 5-year housing requirement) is too small to make any material difference. In my view, therefore, the current method of factoring in uncertainty, slippage or failure in the forecasts of housing

delivery fails to adequately reflect reality; reasonable adjustments would clearly reduce the result to less than 5 years.”

26. Having made this assessment of this area of disagreement, he moved to consider the rival contentions in relation to delivery on large sites, and sites in the Site Allocations Plan. His conclusions were as follows:

“9.11 It is hard to see what special circumstance might occur because, although delivery on some sites in Milton Keynes has been spectacular in the past, the current forecasts entail even greater feats in the future. As an example, the ‘eastern expansion area’ (consisting of sites at Broughton Gate and Brooklands) achieved the second highest average delivery rate in the country recorded in the NLP research into the delivery of dwellings on ‘large’ sites; an average of 268 dwellings were delivered annually over the 5 year period between 2008/9 to 2013/14. That was achieved because serviced parcels of land were delivered to the market, allowing several builders to commence building houses almost immediately; and, it partly occurred before the MK Partnership Committee was disbanded in 2011. But the current forecasts for the remaining sites at Brooklands are about 16% higher, entailing an average of about 310 dwellings per annum over the 5 years from 2017/18 to 2021/22 with peaks of around 400 dwellings delivered within 2 of those years. Moreover, the forecast delivery on 4 of the ‘outlets’ on the parcels that make up this site are substantially higher than might be expected from much of the research undertaken, including that by Savills, the HBF and NLP. Similar findings apply to several, though not all, of the other strategic sites. The implication is clear. The delivery rates implied by the forecasts used to demonstrate a 5-year provision of housing land seem unlikely to be achievable.

...

9.13 There is some agreement that not all the dwellings on sites identified in the Site Allocations Plan are likely to materialise, due to outstanding objections to the Plan and other reasons outlined by the parties. However, all the doubtful sites identified by the appellants would accommodate only some 236 dwellings (about 3% of the 5- year requirement), so that the contribution from these sites would be insufficient to affect the existence, or otherwise, of the 5-year housing land supply.”

27. The Inspector’s overall conclusions in relation to the housing land supply issues were set out in paragraph 9.18 of his report as follows:

“9.18 Applying any one of the indicated ‘corrections’ to the estimation of the housing land supply would be sufficient to reduce it to less than 5 years. Applying them all (the

‘Sedgefield’ approach, a reasonable reduction to reflect non-implementation and slippage and realistic estimates of delivery on some of the strategic sites) would reduce the estimated supply of housing land to 4 years or less. Allowing for sites that might not materialise at all, including those in the Site Allocations Plan subject to objections or still in some other productive use, would reduce the provision still further. Hence, I consider that a 5-year supply of housing land cannot be demonstrated now and, worse still, that the mechanisms specifically intended to boost the supply of housing significantly here are not in place. In those circumstances it is necessary to set the statutory requirements of the Development Plan against the important material consideration (as espoused in the Framework) derived from the absence of a 5-year supply of housing.”

28. A further issue which the Inspector had to address was the question of whether or not the scheme was at an unsustainably low density. His conclusions in that connection were as follows:

“9.43 ‘Saved’ policy H8 seeks an average net density of 35dph here, over twice the 16dph actually proposed, and it insists that projects achieving less than 30dph should be prevented. But the guidance advocating such minimum densities has long since been revoked and the Framework now advises that Local Planning Authorities should devise their own approach to density in order to reflect local circumstances, taking account of neighbouring buildings and the local area. The Core Strategy is consistent with that approach for, although it does not contain a specific density policy, it does require that a scheme should be of an ‘appropriate density for the area in which it is located’, a theme echoed in the Residential Design Guide SPD and policy WS1 in the Neighbourhood Plan requiring all new development to ‘respect the existing distinct vernacular character of the settlement’. The proposal is intended to be a direct response to the constraints of the site and to reflect the characteristics of the surrounding housing. It also responds to comments received at the public consultation event, at which local people repeatedly referred to a recent scheme as incorporating too high a density. Indeed, as the Framework indicates, a measure of good design (a key aspect of achieving sustainable development) entails responding ‘to local character and history, and reflecting the identity of local surroundings and materials, while not preventing or discouraging appropriate innovation’. The low density of the appeal proposal is commensurate with the low density of the nearby housing.

...

9.46 In order to explore the consequences of building a scheme at a higher density, a subsequent planning application for up to

303 dwellings, at a net density of 26dph, was submitted to the Council. This entailed the loss of several pieces of public open space, more development towards the settlement edge and closer to the boundaries, providing smaller back-to-back distances and smaller gardens, reducing the landscape and planting and increasing the number of flats and car parking courts. This is not a scheme that the appellants wish to pursue and it would not reflect the character and appearance of the rural surroundings or nearby dwellings to the same extent as the appeal scheme.

9.47 For all those reasons, although the proposed development would be a relatively low density scheme, I do not consider that it would be unsustainable nor contrary to the tests advocated in Government guidance or operative planning policy.”

29. The ultimate conclusions leading the Inspector to recommend to the First Defendant that planning permission should be granted were set out in the following paragraphs in which the Inspector struck the planning balance:

“9.48 A 5-year supply of housing land cannot be demonstrated and, worse still, the mechanisms intended to boost the supply of housing significantly here are not in place. In those circumstances it is necessary to set the statutory requirements of the Development Plan against the important material consideration that a 5-year supply of housing land does not exist. The Development Plan pulls both ways. The scheme would be contrary to ‘saved’ policy S10 and policy WS5, although both would undermine the aim to boost significantly the supply of housing and frustrate the provision of further housing land to address the shortfall identified. However, the scheme would accord with the aims and some specific policies of the Core Strategy and, given the characteristics and explicit designation of Woburn Sands as a ‘key settlement’, be in a sustainable location.

9.49 Are there material considerations that would constitute serious impediments to the grant of planning permission? The proposal would radically alter the character and appearance of the site and one or two adjoining fields. But, the significant visual and landscape effects would be largely confined to that area alone. Beyond those immediate surroundings, the effects would be very limited, the scheme being contained behind existing housing and topography to the west and south and filtered through existing and proposed vegetation to the north and east. The new homes would marginally affect the setting of the Listed farmhouse, but the minimal harm identified would not warrant preventing a scheme to provide much needed market and affordable housing. The scheme would provide safe and convenient highway arrangements and offer a benefit in reducing the potential use of an awkward junction. It would not

interfere with the eventual construction of the east-west expressway nor, in the absence of evidence to the contrary, unacceptably increase the competition for parking spaces in the town. Provision would also be made for any additional educational and medical facilities required. Although the proposal would entail building at a relatively low density, it would reflect the character of the surroundings and safeguard the amenities of those nearby; the density could not be regarded as unsustainable, as it would reflect the tests advocated in Government guidance and operative planning policy. Adequate measures would be in place to appropriately attenuate surface water run-off from the site and although the development would affect the local flora and fauna, mitigation measures would prevent damage and, potentially, contribute to some enhancement.

9.50 Hence, the potential impediments identified here would not be sufficient to prevent a sustainable housing development from proceeding, especially in the absence of a 5- year supply of housing land. As the Framework advises, housing applications should be considered in the context of the presumption in favour of sustainable development and, in the absence of an up-to-date Development Plan, receive planning permission unless adverse impacts of the scheme significantly and demonstrably outweigh the benefits (as assessed against the Framework as a whole), or specific policies in the Framework indicate otherwise. No specific policies in the Framework have been identified that would indicate that the scheme should be prevented.

9.51 In this case, there would be other benefits associated with the scheme. It is recognised (in the Ministerial Statement of November 2014 and in the White Paper) that the supply of housing can be ‘boosted’ by involving a greater range of developers in local housing markets and encouraging smaller house builders, thereby utilising sites of differing sizes, appealing to different sub-markets and offering distinct products. This scheme could potentially provide a product not typically available elsewhere, due to the low density proposed and the intention to create an ‘outstanding development of exceptional quality’. Moreover, the aim is to deliver the scheme within 5 years, an aim backed by a legal commitment to do so. And, although that cannot be guaranteed, for the reasons already outlined, it reflects one suggestion made in the recent White Paper.

9.52 Of course, this development would entail economic benefits. There would be temporary construction employment, both on and off-site: the range of homes to be provided would be suitable for a wide cross-section of working people:

secondary employment would be generated through increased spending in the local area by prospective residents (estimated to amount to some £5m, with £3.9m spent within the Borough): a 'new homes bonus' would be paid and additional Council Tax would accrue.

9.53 The scheme would also offer social benefits. Most importantly, it would provide 60 (or possibly 63) affordable dwellings in accordance with Council policy. This would contribute to meeting a substantial current need for such accommodation (estimated as almost 1,600 households in need of an affordable home) and meet a proportion (albeit modest) of the estimated annual future requirement for some 540 affordable dwellings. And, in providing some of the market housing needed, the scheme could contribute to improving the balance between employment and housing, reducing the need to live beyond the Borough and commute for work. Provision would also be made for any additional educational and medical facilities required.

9.54 Environmentally, the proposal would result in the loss of greenfield land. But, the visual effects would be confined and the landscape, although pleasant, is not protected or obviously 'special'. Sufficient space could be made available to mitigate the impact of the new homes on the Listed farmhouse. The new road through the site could reduce the potential use of an awkward junction. The low density would reflect the character of the surroundings and safeguard the amenities of those nearby. Adequate measures would be in place to appropriately attenuate surface water run-off and overcome some inadequacies in existing drainage arrangements. And, although the development would affect the local flora and fauna, mitigation measures would prevent damage and, potentially, contribute to some enhancement.

9.55 Taking all those matters into account, I consider that the planning balance in this case is firmly in favour of the scheme. The benefits of this sustainable housing proposal would significantly and demonstrably outweigh the adverse impacts elicited."

30. The decision reached by the First Defendant was to disagree with the Inspector's recommendation. The First Defendant commenced by addressing the contents of the development plan, which he noted were as follows:

"10. In this case the development plan consists of the saved policies of the Milton Keynes Local Plan (LP) 2001-2011 (adopted in 2005), the Core Strategy (CS) 2010-2026 (adopted in 2013), the Milton Keynes Site Allocations Plan (SAP) (adopted on 18 July 2018) and the Woburn Sands Neighbourhood Plan (NP) 2014-2026 (made in 2014). The

Secretary of State considers that the development plan policies of most relevance to this case are those set out at IR4.2-4.9. The appeal site is not allocated as one of the non- strategic sites in the SAP.”

The policies quoted in paragraph 4.2-4.9 of the Inspector’s report were policies CS1 and CS9 of the Core Strategy; policies S10 and D1 of the Local Plan and policy WS5 of the Neighbourhood plan.

31. The First Defendant’s conclusions in relation to the five year housing land supply, the relationship between the proposals and policies S10 and WS5, and the issues associated with housing density were addressed in the following paragraphs of the decision letter:

“15. The Secretary of State has considered the Inspector’s assessment of housing land supply at IR9.4-9.18, and has also taken into account the revised Framework, and material put forward by parties as part of the reference back processes.

16. As the Core Strategy was adopted in July 2013, the adopted housing requirement figure is more than 5 years old. Paragraph 73 of the Framework indicates that in that scenario, unless these strategic policies have been reviewed and found not to require updating, local housing need should be applied. The Secretary of State has therefore calculated the local housing need figure, using the standard method. He considers that local housing need is 1,604. The agent in their representation of 5 October 2018 has considered the question of the buffer to be added at paragraph 4.12-4.15. The Secretary of State considers that their proposed approach is appropriate, and agrees that for the purposes of this decision, a 5% buffer should be added. This gives a figure of 1,684.

17. The Secretary of State has also considered the deliverable supply and has taken into account both the Inspector’s analysis and the material put forward by the agent in their representation of 5 October 2018 which deals with local market evidence on past delivery, and potential delivery rates. For the reasons given at IR9.9 he agrees with the Inspector that the current method of factoring in uncertainty, slippage or failure in the forecasts of housing delivery fails to adequately reflect reality. For the reasons given in IR9.10-9.13, he further agrees with the Inspector that the delivery rates implied by the forecasts used by the Council to demonstrate a 5-year provision of housing land seem unlikely to be achievable (IR9.11).

18. The Secretary of State has further taken into account the change to the definition of ‘deliverable’ in the revised Framework, the Council’s position put forward in their

Updated Housing Land Supply Position 2018-19 (referred to in paragraph 7.2 of the agent's representation of 5 October), and the evidence on progress which is set out in the summary of site assessments put forward by the agent in that representation. Taking all these factors into consideration, he considers that on the basis of the evidence put forward at this inquiry, estimated deliverable supply is roughly in the region of 10,000– 10,500. The Secretary of State therefore considers that the housing land supply is approximately 5.9–6.2 years. He notes that on this basis, even if the emerging plan figure of 1,766 were used (1,854 with a 5% buffer added), as the agent proposes, there would still be an estimated deliverable housing land supply of over 5 years.

Location of site

19. The Secretary of State agrees with the Inspector at IR9.19 and IR9.20 that as the appeal site is beyond the development boundary of Woburn Sands and is in open countryside, it is contrary to saved LP policy S10 and NP policy WS5. He further agrees that the boundary is tightly drawn, and is defined in a Local Plan intended to guide development only up to 2011. For these reasons the Secretary of State considers that policies S10 and WS5 are out of date, and that only moderate weight attaches to them.

...

22. The Secretary of State agrees with the Inspector's analysis at IR9.21-9.22 and with his conclusion at IR9.48 that the scheme would accord with the aims and some specific policies of the Core Strategy, and given the characteristics and explicit designation of Woburn Sands as a 'key settlement', would be in a sustainable location.

23. Overall the Secretary of State considers that the conflicts with current and emerging policy arising from the appeal site's location in unallocated open countryside outside the development boundary of Woburn Sands carry moderate weight.

Housing density

24. The Secretary of State has carefully considered the Inspector's assessment of the density of the appeal scheme (IR9.42-9.47). He has also taken into account paragraphs 122-123 of the revised Framework and the agent's representation of 5 October 2018. He considers that policy H8 is consistent with the revised Framework, both in its requirement that the density of new housing development should be well related to the

character and appearance of development in the surrounding area, and in its use of a range of average net densities. His conclusion on this is not altered by the fact, as pointed out by the agent in their representation of 5 October, that the policies of the 2005 Local Plan ‘were required to accord with government policy of the time...[and] PPG3 set out a requirement for a minimum density of 30 dwellings per hectare’.

25. He has taken into account that policy H8 also requires the density of new housing development to be well related to the character and appearance of development in the surrounding area, and that the Core Strategy and NP echo these themes (IR9.43). He has also taken into account, as set out in the agent’s representation of 5 October 2018, that the draft Plan:MK does not contain a policy which sets out a minimum density, and that a higher-density scheme was put forward by the appellant (IR9.46).

26. The Secretary of State notes that policy H8 seeks an average net density of 35dph in this location, and that this is over twice the density of 16dph actually proposed (IR9.43). He considers that the proposed density is a very significant departure from policy. Even taking into account the matters set out above, the desirability of maintaining the area’s prevailing character and setting, and the rest of the factors set out at paragraph 122 of the Framework, he does not consider that such a significant departure from policy is justified. He therefore considers that the proposed development is in conflict with policy H8, and he gives this conflict significant weight.”

32. In contrast to the approach of the Inspector, the First Defendant did not consider that the section 106 obligation pertaining to the building out of the site within five years could properly amount to a material consideration. His conclusion in respect of the materiality of the obligation was as follows:

“33. ... The Obligation sets out that ‘the owners will use reasonable endeavours to build out the development within 5 years of the Council approving the last reserved matters application’. The Secretary of State considers that in the circumstances of the case there has not been an adequate demonstration of the planning harm which this Obligation addresses, and there has not been an adequate demonstration that the Obligation is necessary to make the development acceptable in planning terms. It therefore does not pass the tests set out in the Framework and the CIL Regulations and the Secretary of State has not taken it into account in reaching his conclusion on this case.”

33. The planning balance and overall conclusion of the First Defendant was articulated as follows:

“34. For the reasons given above, the Secretary of State considers that the appeal scheme conflicts with development plan policies relating to development outside settlement boundaries and density. He further considers that it is in conflict with the development plan as a whole. The Secretary of State has gone on to consider whether there are material considerations which indicate that the proposal should be determined other in accordance with the development plan.

35. The Secretary of State considers that the housing benefits of the scheme carry significant weight and the economic benefits carry moderate weight in favour of the proposal.

36. The Secretary of State considers that the low density of the appeal proposal carries significant weight against the proposal, while the location in unallocated open countryside outside the development boundary of Woburn Sands carries moderate weight, and the impact on the character of the area carries limited weight. He further considers that the minimal harm to the listed building carries little weight and that the public benefits of the scheme outbalance this ‘less than substantial’ harm. The heritage test under paragraph 196 of the Framework is therefore favourable to the proposal.

37. The Secretary of State considers that there are no material considerations which indicate the proposal should be determined other than in accordance with the development plan. He therefore concludes that the appeal should be dismissed, and planning permission should be refused.”

34. As a consequence of these conclusions the First Defendant dismissed the Claimant’s appeal and thereafter the Claimant brought this challenge pursuant to section 288 of the 1990 Act.

The Grounds

35. The Claimant pursues this application on the basis of five grounds for which permission was granted on the 18th February 2019. The sixth ground was refused permission and permission to apply was renewed at the substantive hearing.
36. Ground 1 of the claim is that the First Defendant failed to recognise that the presumption in favour of sustainable development applied to the appeal by virtue of the conclusion which he had reached at paragraph 19 of the decision letter that policy S10 of the Local Plan and policy WS5 of the Neighbourhood Plan were out-of-date. Having reached that conclusion in respect of the policies which were the “most important for determining the application”, paragraph 11(d) of the Framework and the tilted balance for decision taking ought to have been applied to reach the decision in this case. On behalf of the Claimant, Mr Peter Goatley submitted that the proper interpretation of the Framework required that once a policy which was important for determining the application had been found to be out-of-date then the tilted balance under paragraph 11(d)(ii) was engaged. It followed that the First Defendant had erred

in law in interpreting his own policy in failing to apply the tilted balance when reaching his overall conclusions in respect of the merits of the appeal. Alternatively, there was a failure to provide any reasons in relation to why paragraph 11(d)(ii) did not apply, in circumstances where the conclusion had been reached in paragraph 19 of the decision letter that two of the policies bearing upon the determination of the appeal were out-of-date.

37. Grounds 2 and 3 relate to the first Defendant's conclusion on housing land supply that it was "in the region of 10,000-10,500". The Claimant's contentions in respect of this conclusion are, firstly, that the First Defendant failed to correctly interpret paragraph 73 of the Framework and the glossary definition of deliverable and the relevant provisions of the PPG.
38. The Claimant contends that the First Defendant failed to properly interpret this policy material in that he failed to identify any findings on deliverability in relation to the specific sites review in the analysis of the SPRU Report (which had not been gainsaid by anything submitted by the Second Defendant). Given the requirement in the policy material for clear evidence on deliverability, the First Defendant had signally failed to correctly interpret the policy and identify any findings in respect of deliverability. Alternatively, the Claimant contends that the finding in relation to housing land supply standing at 10,000-10,500 dwellings is entirely unexplained and no reasons are provided as to why, bearing in mind the acceptance of the Inspector's conclusions in respect of the factors over which there was disagreement at the inquiry, and the appearance that the First Defendant had taken account of the evidence on progress put forward in the SPRU report, his figure for supply had been arrived at.
39. Ground 4 relates to the issue concerning density. Again, the Claimant contends that the First Defendant failed to properly interpret policy H8 in that he interpreted it as requiring a strict application of the numerical thresholds contained within it. The Claimant draws attention to the reference in the policy to the need for density to be "well related to the character and appearance of the area" and the Inspector's findings that the proposal was appropriate to the character of its surroundings. It is contended by the Claimant that the question of whether the density was well related to the character and appearance of the area was simply never addressed by the First Defendant, and no adequate reasons were provided for the departure from the approach of the Inspector. Furthermore, there were no adequate reasons to explain this beyond a bare assertion that the policy was inconsistent with the 2012 Framework but consistent with the 2018 Framework.
40. Ground 5 relates to regulation 17(5) of the Town and Country Planning (Inquiries Procedure) (England) Rules 2000. The statutory framework is addressed in detail below, but the essence of Ground 5 is that the Claimant contends that the First Defendant differed from the Inspector in relation to three matters of fact which required the First Defendant to afford the Claimant the opportunity to make further representations pursuant to regulation 17(5). Those matters are, firstly, the specific sites that were considered deliverable by the First Defendant; secondly the factual basis for finding that a numerical threshold only should apply for the purposes of applying policy H8; and thirdly the basis for concluding that the presumption in favour of sustainable development under paragraph 11(d)(ii) did not apply to the decision-taking process.

41. Ground 6, for which permission does not exist, but which the Claimant contends is arguable, is the contention that the First Defendant left out of account a material consideration when he refused to take account of the planning benefits secured by the section 106 obligation. The obligation was compliant with the provisions of regulation 122 of the Community Infrastructure Regulations 2010 and should have been taken into account in reaching the First Defendant's conclusions.

The Law

42. When determining an application for planning permission the decision-taker is required by section 70(2) of the 1990 Act to have regard to the provisions of the development plan so far as the material to that application. Section 38(6) of the Planning and Compulsory Purchase Act 2004 requires that a determination "must be in accordance with the plan unless material considerations indicate otherwise". The Framework (which was current at the time of the present decision and which has been subsequently superseded by a 2019 version of the Framework) is a material consideration to which regard must be had within the statutory decision-taking regime.
43. The jurisdiction of the court in relation to a statutory challenge under section 288 of the 1990 Act is an error of law jurisdiction. Since the decision in Tesco Stores Limited v Dundee City Council [2012] UKSC 13; [2012] PTSR 983 the question of the textual interpretation of planning policy is a question of law for the court to determine. As I observed in the case of Canterbury City Council v SSCLG and Gladman Developments Limited [2018] EWHC 1611 (Admin) questions of interpretations of planning policy are to be resolved applying the following principles which emerge from the authorities:

"i) The question of the interpretation of the planning policy is a question of law for the court, and it is solely a question of interpretation of the terms of the policy. Questions of the value or weight which is to be attached to that policy for instance in resolving the question of whether or not development is in accordance with the Development Plan for the purposes of section 38(6) of the 2004 Act are matters of judgment for the decision-maker.

ii) The task of interpretation of the meaning of the planning policy should not be undertaken as if the planning policy were a statute or a contract. The approach has to recognise that planning policies will contain broad statements of policy which may, superficially, conflict and require to be balanced in ultimately reaching a decision (see Tesco Stores at paragraph 19 and Hopkins Homes at paragraph 25). Planning policies are designed to shape practical decision-taking, and should be interpreted with that practical purpose clearly in mind. It should also be taken into account in that connection that they have to be applied and understood by planning professionals and the public for whose benefit they exist, and that they are primarily addressed to that audience.

iii) For the purposes of interpreting the meaning of the policy it is necessary for the policy to be read in context: (see Tesco Stores at paragraphs 18 and 21). The context of the policy will include its subject matter and also the planning objectives which it seeks to achieve and serve. The context will also be comprised by the wider policy framework within which the policy sits and to which it relates. This framework will include, for instance, the overarching strategy within which the policy sits.

iv) As set out above, policies will very often call for the exercise of judgment in considering how they apply in the particular factual circumstances of the decision to be taken (see Tesco Stores at paragraphs 19 and 21). It is of vital importance to distinguish between the interpretation of policy (which requires judicial analysis of the meaning of the words comprised in the policy) and the application of the policy which requires an exercise of judgment within the factual context of the decision by the decision-taker (see Hopkins Homes at paragraph 26).”

44. The decision in relation to the determination of appeals or applications which are called in for the First Defendant’s determination are governed by the Town and County Planning (Inquiries Procedure) (England) Rules 2000. Rule 17 has the following relevant provisions for the purposes of the present case:

“17. Procedure after inquiry

(1) After the close of an inquiry, the inspector shall make a report in writing to the Secretary of State which shall include his conclusions and his recommendations or his reasons for not making any recommendations.

(5) If, after the close of an inquiry, the Secretary of State-

(a) differs from the inspector on any matter of fact mentioned in, or appearing to him to be material to, a conclusion reached by the inspector; or

(b) takes into consideration any new evidence or new matter of fact (not being a matter of government policy),

and is for that reason disposed to disagree with a recommendation made by the inspector, he shall not come to a decision which is at variance with the recommendation without first notifying in writing the persons entitled to appear at the inquiry who appeared at it of his disagreement and the reasons for it; and affording them an opportunity of making written representations to him or (if the Secretary of State has taken into consideration any new evidence or matter or fact, not being

a matter of government policy) of asking for the reopening of the inquiry.”

45. In addition, rule 18 provides as follows:

“Notification of decision

18(1) The Secretary of State shall, as soon as practicable, notify his decision on an application or appeal, and his reasons for it in writing to- (a) all persons entitled to appear at the inquiry who did appear, and (b) any other person who, having appeal at the inquiry, has asked to be notified of the decision.”

46. It follows from Rule 18 of the 2000 Rules that in reaching his decision the First Defendant is under a duty to provide reasons for the decision. The question which arises is as to whether or not those reasons are legally adequate. There are two dimensions to the consideration of that issue, and I am grateful to all counsel in the case who helpfully identified agreed legal propositions which assist both as to the correct approach to section 288 challenges, and also the allied question of whether or not the reasons provided in the decision are legally adequate. So far as the approach to challenges under section 288 of the 1990 Act is concerned, Lindblom LJ in St Modwen v SSCLG [2017] EWCA Civ 1643 summarised 7 principles to be applied in considering such cases, at paragraph 19 of his judgment as follows:

“19. The relevant law is not controversial. It comprises seven familiar principles:

1) Decisions of the Secretary of State and his inspectors in appeals against the refusal of planning permission are to be construed in a reasonably flexible way. Decision letters are written principally for parties who know what the issues between them are and what evidence and argument has been deployed on those issues. An inspector does not need to “rehearse every argument relating to each matter in every paragraph”

2) The reasons for an appeal decision must be intelligible and adequate, enabling one to understand why the appeal was decided as it was and what conclusions were reached on the “principle important controversial issues”. An inspector’s reasoning must not give rise to a substantial doubt as to whether he went wrong in law, for example by misunderstanding a relevant policy or by failing to reach a rational decision on relevant grounds. But the reasons need refer only to the main issue in the dispute, not to every material consideration.

3) The weight to be attached to any material consideration and all matters of planning judgment are within the exclusive jurisdiction of the decision-maker. They are not for the court. A local planning authority determining an application for

planning permission is free, “provided that it does not lapse into Wednesbury irrationality” to give material considerations “whatever weight [it] thinks fit or no weight at all”

4) Planning policies are not statutory or contractual provisions and should not be construed as if they were. The proper interpretation of planning policy is ultimately a matter of law for the court. The application of relevant policy is for the decision-maker. But statements of policy are to be interpreted objectively by the court in accordance with the language used and in its proper context. A failure to properly understand and apply relevant policy will constitute a failure to have regard to a material consideration, or will amount to having regard to an immaterial consideration.

5) When it is suggested that an inspector has failed to grasp a relevant policy one must look at what he thought the important planning issues were and decide whether it appears from the way he dealt with them that he must have misunderstood the policy in question.

6) Because it is reasonable to assume that national planning policy is familiar to the Secretary of State and his inspectors, the fact that a particular policy is not mentioned in the decision letter does not necessarily mean that it has been ignored.

7) Consistency in decision-making is important both to developers and local planning authorities, because it serves to maintain public confidence in the operation of the development control system. But it is not a principle of law that like cases must always be decided alike. An inspector must exercise his own judgment on this question, if it arises. ”

47. So far as the test for the adequacy for reasons is concerned it is an agreed proposition that the principles are set out (albeit not necessarily exhaustively) in the speech of Lord Brown in South Bucks v Porter (No.2) [2004] 1 WLR 1953 at paragraph 36 (which cross refers to the second principle from St Modwen) in which he provided as follows:

“36. The reasons for a decision must be intelligible and they must be adequate. They must enable the reader to understand why the matter was decided as it was and what conclusions were reached on the principle important controversial issues, disclosing how any issue of law or fact was resolved. Reasons can be briefly stated, the degree of particularity required depending entirely on the nature of the issues falling for decision. The reasoning must not give rise to a substantial doubt as to whether the decision-maker erred in law, for example by misunderstanding some relevant policy or some other important matter or by failing to reach a rational decision on relevant grounds. But such adverse inference will not readily

be drawn. The reasons need refer not to the main issues in the dispute, not to every material consideration. They should enable disappointed developers to assess their prospects of obtaining some alternative development permission, or, as the case may be, their unsuccessful opponents to understand how the policy or approach underlying the grant of permission may impact upon such future application. Decision letters must be read in a straightforward manner, recognising that they are addressed to parties well aware of the issues involved and the arguments advanced. A reasons challenge will only succeed if the party aggrieved can satisfy the court that he has genuinely been substantially prejudiced by the failure to provide an adequately reasoned decision.”

48. The question of the meaning of “out-of-date” in the context of paragraph 14 of the 2012 Framework was considered by Lindblom J (as he then was) in the case of Bloor Homes Limited v Secretary of State for Communities and Local Government [2014] EWHC 754 (Admin); [2017] PTSR 1283 at paragraph 45 of the judgment as follows:

“45 These [“absence”, “silence” and “out-of-date”] are three distinct concepts. A development plan will be “absent” if none has been adopted for the relevant area and the relevant period. If there is such a plan, it may be “silent” because it lacks policy relevant to the project under consideration. And if the plan does have relevant policies these may have been overtaken by things that have happened since it was adopted, either on the ground or in some change in national policy, or for some other reason, so that they are now “out-of-date”. Absence will be a matter of fact. Silence will be either a matter of fact or a matter of construction, or both. And the question of whether relevant policies are no longer up-to-date will be either a matter of fact or perhaps a matter of both fact and judgment.”

49. It was uncontroversial that the approach taken by the court in Bloor was of equal application to the phrase “out-of-date” in paragraph 11 of the version of the Framework pertinent to the present case and published in 2018.
50. The Court of Appeal have relatively recently considered the provisions of the 2012 Framework in relation to the five year housing land supply in Hallam Land Management Limited v SSCLG & Eastleigh Borough Council [2018] EWCA Civ 1808; [2019] JPL 63. The facts of that case were that the appeal in question had been recovered by the First Defendant for his own consideration. There was a dispute as to the extent of the five year housing land supply. At the inquiry the Appellant contended that it was 2.9 years or 1.78 years, and the local planning authority conceded that it could not demonstrate a five year housing land supply. Further representations were made after the close of the inquiry, in particular by the local planning authority, who contended they had a 4.93 year supply. This was contested by the Appellant. Prior to the determination of the appeal under challenge, two further appeal decisions were issued, one at Bubb Lane where the Inspector found there to be a significant shortfall in housing supply, and another at Botley Road in which, again, an Inspector concluded there was a significant shortfall of housing in the local

planning authority's area. In giving the principal judgment of the Court of Appeal, Lindblom LJ characterised the issue in the appeal in the following terms:

“1. In deciding an appeal against the refusal of planning permission for housing development, how far does the decision-maker have to go in calculating the extent of any shortfall in the five-year supply of housing land? That is the central question in this appeal.”

51. Having considered a variety of first instance decisions Lindblom LJ concluded that there were three main points to emerge from the extant authority and they were as follows:

“50. First, the relationship between housing need and housing supply in planning decision-making is ultimately a matter of planning judgment, exercised in the light of the material presented to the decision-maker, and in accordance with the policies in paragraphs 47 and 49 of the NPPF and the corresponding guidance in the Planning Practice Guidance (“the PPG”). The Government has chosen to express its policy in the way that it has – sometimes broadly, sometimes with more elaboration, sometimes with the aid of definitions or footnotes, sometimes not (see *Oadby and Wigston Borough Council v Secretary of State for Communities and Local Government* [2016] EWCA Civ 1040, at paragraph 33; *Jelson Ltd.*, at paragraphs 24 and 25; and *St Modwen Developments Ltd. v Secretary of State for Communities and Local Government* [2017] EWCA Civ 1643, at paragraphs 36 and 37). It is not the role of the court to add to or refine the policies of the NPPF, but only to interpret them when called upon to do so, to supervise their application within the constraints of lawfulness, and thus to ensure that unlawfully taken decisions do not survive challenge.

51. Secondly, the policies in paragraphs 14 and 49 of the NPPF do not specify the weight to be given to the benefit, in a particular proposal, of reducing or overcoming a shortfall against the requirement for a five-year supply of housing land. This is a matter for the decision-maker's planning judgment, and the court will not interfere with that planning judgment except on public law grounds. But the weight given to the benefits of new housing development in an area where a shortfall in housing land supply has arisen is likely to depend on factors such as the broad magnitude of the shortfall, how long it is likely to persist, what the local planning authority is doing to reduce it, and how much of it the development will meet.

52. Thirdly, the NPPF does not stipulate the degree of precision required in calculating the supply of housing land when an application or appeal is being determined. This too is left to the decision-maker. It will not be the same in every case. The parties will sometimes be able to agree whether or not there is a five-year supply, and if there is a shortfall, what that shortfall actually is. Often there will be disagreement, which the decision-maker will have to resolve with as much certainty as the decision requires. In some cases the parties will not be able to agree whether there is a shortfall. And in others it will be agreed that a shortfall exists, but its extent will be in dispute. Typically, however, the question for the decision-maker will not be simply whether or not a five-year supply of housing land has been demonstrated. If there is a shortfall, he will generally have to gauge, at least in broad terms, how large it is. No hard and fast rule applies. But it seems implicit in the policies in paragraphs 47, 49 and 14 of the NPPF that the decision-maker, doing the best he can with the material before him, must be able to judge what weight should be given both to the benefits of housing development that will reduce a shortfall in the five-year supply and to any conflict with relevant “non-housing policies” in the development plan that impede the supply. Otherwise, he will not be able to perform the task referred to by Lord Carnwath in *Hopkins Homes Ltd.*. It is for this reason that he will normally have to identify at least the broad magnitude of any shortfall in the supply of housing land.

53. With those three points in mind, I do not think that in this case the Secretary of State could fairly be criticized, in principle, for not having expressed a conclusion on the shortfall in the supply of housing land with great arithmetical precision. He was entitled to confine himself to an approximate figure or range – if that is what he did. Government policy in the NPPF did not require him to do more than that. There was nothing in the circumstances of this case that made it unreasonable for him in the “Wednesbury” sense, or otherwise unlawful, not to establish a mathematically exact figure for the shortfall. It would not have been an error of law or inappropriate for him to do so, but if, as a matter of planning judgment, he chose not to do it there was nothing legally wrong with that.”

52. Lindblom LJ went on to conclude that whilst it was lawful for the Secretary of State to have concluded that the level of housing land supply fell “within a clearly identified range below the requisite five years” there was a fatal defect in the decision in the First Defendant’s failure to deal with the recent decision at Bubb Lane and Botley Road. He expressed his conclusions in this connection as follows:

“61. At least by the time the parties in this appeal were given the opportunity to make further representations, an important

issue between them, and arguably the focal issue, was the extent of the shortfall in housing land supply. This was, or at least had now become, a “principal controversial issue” in the sense to which Lord Brown of Eaton-under-Heywood referred in *South Bucks District Council v Porter* (at paragraph 36 of his speech). A related issue was the weight to be given to restrictive policies in the local plan – in particular, policy 3.CO. These were, in my view, clearly issues that required to be properly dealt with in the Secretary of State’s decision letter, in the light of the representations the parties had made about them, so as to leave no room for doubt that the substance of those representations had been understood and properly dealt with. This being so, it was in my view incumbent on the Secretary of State to provide intelligible and adequate reasons to explain the conclusions he had reached on those issues, having regard to the parties’ representations.

62. There is no explicit consideration of the inspectors’ decisions in the Bubb Lane and Botley Road appeals in the Secretary of State’s decision letter, nor any reference to them at all, despite the fact that they had been brought to his attention and their implications addressed in the further representations made to him after the inquiry. The inspectors’ conclusions on housing land supply in those two decisions, and the consequences of those conclusions for the weight to be given to local plan policies, clearly were material considerations in this appeal. They would, in my view, qualify as material considerations on the basis of the case law relating to consistency in decision-making (see the judgment of Mann L.J. in *North Wiltshire District Council v Secretary of State for the Environment* (1993) 65 P. & C.R. 137, at p.145, most recently followed by this court in *DLA Delivery Ltd. v Baroness Cumberlege of Newick and Secretary of State for Communities and Local Government* [2018] EWCA Civ 1305, at paragraphs 29, and 42 to 56). But leaving aside the principle of consistency, they would have been, it seems to me, material considerations if only on the basis that they represented an up to date independent assessment of housing land supply in the council’s area, which had been squarely put before the Secretary of State. Yet he said nothing at all about them. Nor is there any explicit reference to the relevant content of the representations the parties had made. It is clear that the reference in paragraph 19 of the decision letter to the council’s view that it was now able to demonstrate 4.86 years’ supply of housing land was taken from the “Update on Housing Land Supply” that it produced on 23 June 2016. But he did not refer to the very firm and thoroughly reasoned conclusions of the inspector in the Botley Road appeal, which were reached in the light of that evidence.

63. So it is not clear whether the Secretary of State confronted the conclusions of the inspectors in the Bubb Lane and Botley Road appeals, and in particular the latter. Had he done so, he would have appreciated that the conclusions they had reached on the scale of the shortfall in housing land supply could not reasonably be reconciled with his description of that shortfall, in paragraph 17 of his decision letter, as “limited”. The language used by those two inspectors was distinctly different from that expression, and incompatible with it unless some cogent explanation were given. No such explanation was given. In both decision letters the shortfall was characterized as “significant”, which plainly it was. This was more akin to saying that it was a “material shortfall”, as the inspector in Hallam Land’s appeal had himself described it in paragraph 108 of his decision letter. Neither description – a “significant” shortfall or a “material” one – can be squared with the Secretary of State’s use of the adjective “limited”. They are, on any view, quite different concepts.

64. Quite apart from the language they used to describe it, the inspectors’ findings and conclusions as to the extent of the shortfall – only “something in the order of four year supply” in the Bubb Lane appeal and only “4.25 years’ supply” in the Botley Road appeal – were also substantially different from the extent of the shortfall apparently accepted or assumed by the Secretary of State in his decision in this case, which was as high as 4.86 years’ supply on the basis of evidence from the council that had been before the inspector in the Botley Road appeal and rejected by him.

65. One is left with genuine – not merely forensic – confusion on this important point, and the uncomfortable impression that the Secretary of State did not come to grips with the inspectors’ conclusions on housing land supply in those two very recent appeal decisions. This impression is not dispelled by his statement in paragraph 7 of the decision letter that he had given “careful consideration” to the relevant representations.”

53. Lindblom LJ thus concluded that the First Defendant’s reasons in that case failed to measure up to the requirements contained in the South Buckinghamshire case. In a concurring judgment Davis LJ offered further views in respect of the need where appropriate to identify the extent of the shortfall in housing land supply as follows:

“82. Here, it was common ground that there was such a shortfall. That being so, I have the greatest difficulty in seeing how an overall planning judgment thereafter could properly be made without having at least some appreciation of the extent of the shortfall. That is not to say that the extent of the shortfall will itself be a key consideration. It may or not be: that is itself a planning judgment, to be assessed in the light of the various policies and other relevant considerations. But it ordinarily will

be a relevant and material consideration, requiring to be evaluated.

83. The reason is obvious and involves no excessive legalism at all. The extent (be it relatively large or relatively small) of any such shortfall will bear directly on the weight to be given to the benefits or disbenefits of the proposed development. That is borne out by the observations of Lindblom LJ in the Court of Appeal in paragraph 47 of *Hopkins Homes*. I agree also with the observations of Lang J in paragraphs 27 and 28 of her judgment in the *Shropshire Council* case and in particular with her statements that "...Inspectors generally will be required to make judgments about housing need and supply. However these will not involve the kind of detailed analysis which would be appropriate at a "Development Plan inquiry" and that "the extent of any shortfall may well be relevant to the balancing exercise required under NPPF 14." I do not regard the decisions of Gilbert J, cited above, when properly analysed, as contrary to this approach."

Submissions and conclusions

54. As set out above, in respect of ground 1 Mr Goatley submits that in the light of the First Defendant's conclusions in paragraph 10 and 19 of the decision letter the First Defendant misinterpreted paragraph 11(d) of the 2018 Framework in that he failed to recognise that the consequence of these findings was that the tilted balance should apply. It has to be recognised, as Mr Goatley did, that this ground depends upon the examination of the correct interpretation of paragraph 11(d) of the Framework. Mr Goatley drew attention to the change in the wording of paragraph 11(d) when compared with the 2012 Framework. The 2012 Framework at paragraph 14 simply referred to "relevant policies are out-of-date" as a trigger to the application of the tilted balance. By contrast, the 2018 version of the Framework uses the language "or the policies which are most important for determining the application are out-of-date". Mr Goatley submitted that it was significant that the drafting did not say that "all" the most important policies must be out-of-date before the tilted balance would arise, and since there may be only one policy which might be the most important for determining the application the policy ought to be approached as if both the plural included the singular and, furthermore, that once one of the most important policies for determining the application had been concluded to be out-of-date the tilted balance would apply. On the basis of this interpretation the First Defendant's conclusions that policy S10 and WS5 were out-of-date and, as listed in the Inspector's report at paragraph 4.2 and 4.9 of "most relevance" (and therefore uncontroversially of most importance) to the decision, the tilted balance ought to have applied.
55. By contrast Mr Richard Honey on behalf of the First Defendant, supported by Mr Daniel Stedman Jones on behalf of the Second Defendant, submitted that the correct interpretation of paragraph 11(d) had been applied by the First Defendant. Mr Honey submitted that the correct interpretation is that the exercise required by paragraph 11(d) in relation to the assessment of the question as to whether or not the policies which were of most importance for determining the application were out-of-date is as follows. Akin with Mr Goatley, he contended that the first step was to identify which

were the policies which were most important for determining the application. Having done so, it is then necessary for the decision-taker to examine each of those policies, applying the Framework and the approach in the Bloor case, to see whether they are out-of-date. Having done so, the next step required by paragraph 11(d) is an assessment of all the basket of policies most important to the decision in the round to reach a conclusion as to whether, taken overall, they could be concluded to be out-of-date or not for the purposes of the decision. If they were out-of-date then the presumption would be triggered.

56. Mr Honey contended that there was no warrant for the interpretation that once one of the most important policies for determining the application had been found out-of-date the tilted balance would apply. He observed that the policy specifically does not say that the tilted balance would apply when “one of” or “any of” the important policies for determining the application has been found to be out-of-date. To answer the question posed by paragraph 11(d) it is necessary, having identified those policies which are most important for the determination of the application, to examine them individually and then consider whether taken in the round, bearing in mind some may be consistent and some in-consistent with the Framework, and some may have been overtaken by events and others not, whether the overall assessment is that the basket of policies is rightly to be considered out-of-date. That will, of course, be a planning judgment dependent upon the evaluation of the policies for consistency with the Framework (see paragraph 212 and 213) taken together with the relevant facts of the particular decision at the time it is being examined.
57. Mr Honey submitted that the First Defendant’s decision was consistent with that approach. He drew attention to the fact that the policies referred to in paragraph 10 of the decision letter by reference to the Inspector’s report ranged wider than simply policy S10 and WS5. Bearing in mind a larger basket of policies was involved in considering the application of paragraph 11(d) there was nothing in the First Defendant’s decision to suggest that paragraph 11(d) had been overlooked or misinterpreted. The First Defendant could be taken to be familiar with the provisions of his own policy, and the fact that he did not apply the tilted balance to the decision in the present case carries the clear inference that his evaluation of all of the policies that were of most importance in determining the application when examined individually and then taken as a whole and in the round were not properly to be considered to be out-of-date.
58. I am satisfied that Mr Honey’s interpretation of the Framework in this connection is correct. It needs to be remembered, in accordance with the principles of interpretation set out above, that this is a policy designed to shape and direct the exercise of planning judgment. It is neither a rule nor a tick box instruction. The language does not warrant the conclusion that it requires every one of the most important policies to be up-of-date before the tilted balance is not to be engaged. In my view the plain words of the policy clearly require that having established which are the policies most important for determining the application, and having examined each of them in relation to the question of whether or not they are out of date applying the current Framework and the approach set out in the Bloor case, an overall judgment must be formed as to whether or not taken as a whole these policies are to be regarded as out-of-date for the purpose of the decision. This approach is also consistent with the Framework’s emphasis (consonant with the statutory framework) that the decision-

taking process should be plan-led, and the question of consistency with the development plan is to be determined against the policies of the development plan taken as a whole. A similar holistic approach to the consideration of whether the most important policies in relation to the decision are out-of-date is consistent with the purpose of the policy to put up-to-date plans and plan-led decision-taking at the heart of the development control process. The application of the tilted balance in cases where only one policy of several of those most important for the decision was out-of-date and, several others were up-to-date and did not support the grant of consent, would be inconsistent with that purpose.

59. Bearing in mind that the list of policies in the present case ranged beyond policies S10 and WS5, it is in my view not possible to contend either that the First Defendant did not undertake the assessment required by what is effectively the centre piece of his policy or, alternatively, that he misinterpreted that policy in his application of it. It is true to observe, as Mr Goatley does in his submissions, that these issues are not matters which are directly addressed in the First Defendant's decision letter. The conclusion that the First Defendant correctly applied the policy arises from, in effect, an inference that he properly interpreted and applied his policy in circumstances where it is entirely reasonable to infer without specific reference that he would have applied his policy, and there is no evidence to support any suggestion that he misinterpreted it. Again, I am satisfied that Mr Honey's submissions in relation to the reasons dimension of ground 1 are sound for the following reasons.
60. Mr Honey submitted that there was no need for the First Defendant to provide particular reasons for his conclusion in relation to the application of paragraph 11(d) on the basis of the most important policies for the decision being out-of-date in circumstances where it was not a principal or main controversial issue in the decision which he was reaching. Neither before the Inspector, nor in their submissions to the First Defendant, had the Claimant contended that there was any alternative justification for the application of the tilted balance apart from the shortfall in housing land supply. The contentions made in the context of this challenge have been made solely as part of the grounds of the challenge itself. As is clear on the authorities, and in particular the South Buckinghamshire case (as applied in Hallam Land), it is incumbent upon the decision-taker to provide reasons in relation to the principal or main controversial issues, but not every dimension of the basis upon which the decision has been reached. In that this alternative argument for the application of the tilted balance was not a matter which had ever been relied upon by the Claimant prior to this challenge there was in my view no necessity for the First Defendant to provide reasons in relation to his conclusions on paragraph 11(d), and whether or not the most important policies for determining the application were out-of-date, when it had not been raised as a basis for applying the tilted balance by the Claimant during the decision-taking process. For all of these reasons I am not satisfied that there is substance in the Claimant's ground 1.
61. As set out above grounds 2 and 3 fall to be considered together. They relate to the conclusion reached in paragraphs 15-18 of the decision letter that the "estimated deliverable supply" of housing is roughly in the region of 10,000-10,500 homes. It will be recalled that these grounds proceed upon two bases. The first is that the First Defendant must have misinterpreted his policy, since the requirements of the policy in relation to whether or not a site is to be counted as deliverable, and therefore within

the available supply of housing, requires (in terms of the definition in the Framework's glossary) in relation to sites with outline planning permission or allocated in a development plan, that there should be "clear evidence that housing completions will begin on site within five years". This requirement for specific evidence is, it is submitted, reinforced by the further guidance contained in the PPG, which reiterates this language and provides potential sources or kinds of evidence which might support this conclusion. Evidence of this nature was contained in the SPRU Report and the tables which it contained. Mr Goatley submits that the simple assertion that there was a supply of 10,000-10,500 units was one which must have been based upon a misinterpretation of the policy since no evidence, let alone clear evidence, was anywhere identified in the decision letter to support the First Defendant's conclusions.

62. In the alternative Mr Goatley contends that the reasons provided by the First Defendant were inadequate and failed the South Buckinghamshire test. The question of what was the deliverable housing land supply was one of the main controversial issues and it is entirely unclear, he submits, how the First Defendant arrived at the figure of 10,000-10,500 units. There is no means of understanding how this issue was resolved by the First Defendant and why the Claimant's figures as advanced in the material in the SPRU Report had been rejected. Furthermore, the absence of reasons for the conclusion about the housing land supply left the parties in the dark as to how to approach future consideration of the issue.
63. In response to these submissions Mr Honey relied upon the Hallam Land case and contended that the conclusions of that case supported the approach of the First Defendant, in the sense that it was observed in the Hallam Land case that a definitive conclusion as to the housing land supply would not be required in every case, and it was not necessary for the First Defendant to set out all of the workings or details of his analysis of the housing land supply for his reasons to be adequate. He further submitted that there was no evidence that the Framework had been misinterpreted. The decision letter at paragraph 18 specifically referred to the change in the definition of "deliverable" in the revised Framework and there was no evidence that the First Defendant failed to properly apply it. He submitted that there was no basis for the contention that the First Defendant had to provide specific findings in relation to each of the sites concerned.
64. Mr Honey responded to the Claimant's contention that the figure of 10,000-10,500 was simply inexplicable by observing in his submissions that firstly, the figure of 10,000-10,500 fell in the range between the Council's figure for supply of 12,920 and the SPRU Report's figure for supply of 7,108. He further observed that, for instance, in relation to Table 11 there were three different types of comment in relation to sites which had outline planning consent only, namely sites where conditions were discharged, sites where reserved matters were pending and one site where an alternative application had been approved. He submitted that each of these characterisations was a form of evidence on progress of the type referred to in the PPG. He further submitted that it was open to the First Defendant to have taken into account some of these sites depending on their characteristics, and that there were permutations of that exercise which would explain how the First Defendant had come to the conclusion that the housing supply was in the range of 10,000-10,500. Thus, the

First Defendant's figure was explicable on the evidence before him and there was no need for him to provide further reasons on this aspect of his decision.

65. In my view it is important when evaluating these submissions to observe, firstly, that the measure of whether reasons are adequate will depend on the facts of the case. Whether reasons are legally adequate is a fact-sensitive exercise and falls to be considered against the particular facts of a case, and the principles must be applied on a case by case basis. In the present case the following factual matters are of significance.
66. Firstly, at the time when the First Defendant came to address the issue of the five year housing land supply, which was undoubtedly one of the principle important controversial issues in the case, the position in the evidence before him from both the Claimant and the Second Defendant was that a five year housing land supply could not be demonstrated. That, moreover, was the position of the Inspector in the conclusions of his report. The First Defendant was, therefore, for the first time in the decision-taking process concluding that a five year housing land supply was available to the Second Defendant. That was a decision that was open to him, obviously, but equally obviously, and in particular where the First Defendant was alighting upon a figure for housing land supply which had not featured anywhere in the material presented to him by either of the main parties or the Inspector, it called for explanation. Secondly, it is important to observe that in paragraph 17 of the decision letter the First Defendant had accepted and adopted conclusions of the Inspector in relation to uncertainty, slippage or failure in forecasting housing delivery, as well as the conclusions in relation to the delivery rates on sites being unlikely to be achievable. The Inspector had taken account of these matters generally rather than to arrive at a specific figure because, as set out in his conclusions, taking any one of the contentious consumptions against the Second Defendant would amount to a failure to demonstrate the five year supply. The First Defendant, by clear contrast, arrived at a specific and entirely new figure purporting to have taken account of the Inspector's conclusion on these issues. Thirdly, as is clear from paragraph 18 of the decision letter, the First Defendant took account of the site assessments set out in the SPRU Report in arriving at his figures for supply, figures which are clearly inconsistent with his overall assessment.
67. All of these factors lead me to the conclusion that the reasons provided by the First Defendant in relation to the figure were not adequate in the particular and perhaps unusual circumstances of this case. By simply asserting the figures as his conclusion, the First Defendant has failed to provide any explanation as to what he has done with the materials before him in order to arrive at that conclusion, bearing in mind that it would have been self-evident that it was a contentious conclusion. Simply asserting the figures does not enable any understanding of what the First Defendant made of the Inspector's conclusions which he accepted in paragraph 17 of the decision letter, and how they were taken into account in arriving at the final figures in his range. Whilst Mr Honey was in my view correct to point out in his submissions that arriving at the range of 10,000-10,500 was not inexplicable, in the sense that the First Defendant had the materials before him to alight upon those figures, nonetheless the exercise which Mr Honey undertook in his submissions set out above demonstrated the difficulty with the absence of reasons in this case. There were, no doubt, any number of adjustments or permutations which might have been taken to the figures in the SPRU

Report to arrive at the First Defendant's conclusion. However, by simply asserting the figures in a range makes it a matter of pure speculation as to how the First Defendant arrived at the figures which he did. How he arrived at the range and had resolved the issues in relation to the deliverable supply on the evidence before him is entirely undisclosed.

68. Having failed to disclose how the First Defendant arrived at the range which he did, the Claimant is entitled to contend that it is left without any understanding of the treatment of the evidence (including the SPRU Report) so as to arrive at the range stated, and unable to evaluate, therefore, how the relevant policy on deliverability was applied and how the conclusion was reached. I accept the Claimant's submission that the need for the range to be in some way explained is not requiring reasons for reasons, it is simply requiring reasons for a conclusion which was pivotal in relation to the application of the tilted balance in this case, and which derived from figures which had not been canvassed as an answer to the question of what the Second Defendant's housing land supply was anywhere in any of the material before the First Defendant prior to the decision letter. In terms of the South Buckinghamshire test, it also left both the Claimant and the Second Defendant unable to assess how future evaluation of housing deliverability should be undertaken. Indeed, in the Second Defendant's five year housing land supply position statement published in January 2019, after the decision, they noted, having observed that the First Defendant felt the Second Defendant could demonstrate a supply of between 10,000-10,500 dwellings, that "no detailed explanation has however been provided by the SoS as to how this figure has been calculated."
69. Turning to Mr Honey's reliance upon Hallam Land, in my view the issue which arises in the present case differs from the question which was being evaluated in that case. Firstly, the question in the present case was not how far the First Defendant had to go in calculating the extent of any shortfall in the five year housing land supply. In fact, the First Defendant provided an answer as to what was considered to be the five year supply of land. The issue here is whether or not having arrived at wholly new figures for the housing land supply, and taken account of various conclusions both the Inspector and the SPRU Report, the First Defendant was required to give some reasons for having arrived at the figures he did, those figures for the first time suggesting that the Second Defendant could demonstrate a five year housing land supply. I am in no doubt that the First Defendant was required to provide some reasoning to explain how he had treated the material before him so as to arrive at his conclusion as to the range of the supply of deliverable land available to the Second Defendant. Further, I am satisfied that the Claimant has been prejudiced by the absence of those reasons since without them the Claimant is unable to understand why the conclusions of the SPRU Report have not been accepted, and what was done in relation to either the Inspector's conclusions or the material in that report so as to arrive at the conclusion which had the significant effect upon their case of depriving them of the tilted balance when the decision came to be forged. In my view the Claimant's case in relation to grounds 2 and 3 is made out.
70. I turn to ground 4 which, it will be recalled, relates to policy H8 and the objections to the Claimant's proposals based upon their low density. The Claimant contends that the First Defendant has illegitimately prioritised the numerical assessment of density without having proper regard for the need for density to relate to the character and

appearance of the surrounding area, and the Inspector's conclusions that the lower density proposed properly reflected the surrounding area. In response Mr Honey on behalf of the First Defendant contends that paragraphs 24-26 of the decision letter properly explained, firstly, the conclusion of the First Defendant that policy H8 was consistent with the 2018 Framework which contained a more specific policy in paragraph 122-123 than the treatment which density had received in the 2012 Framework used by the Inspector, where density was treated as part of design, and a local planning authority had a broader discretion to set its own approach to density. Mr Honey further submits that it is clear that the First Defendant had regard to the points in relation to the character of the area but concluded in paragraph 26 that the scale of departure from policy H8 which had been found to be consistent with the 2018 Framework could not be justified.

71. Having considered Mr Goatley's submissions I am satisfied that the decision which the First Defendant reached was one which was, in the circumstances, lawful. Firstly, it is clear that the content of national policy had changed between the policy which the Inspector needed to apply to that which fell to be applied by the First Defendant. The question of whether or not policy H8 was consistent with the 2018 Framework was a matter of planning judgment for the First Defendant to evaluate. I can see no error of law in the judgment reached that policy H8 was consistent with the revised Framework both in relation to the reference to density being well related to the character and appearance of the surrounding area, and also the use of a range of average net densities. Having reached that conclusion, the reasoning in paragraphs 25 and 28 demonstrates that the First Defendant was alive to, and took account of, the Inspector's conclusions in relation to the relationship of the density of the proposal to its surroundings. Nevertheless, the First Defendant was entitled to reach the conclusion which he did that the scale of the departure from the policy requirement of H8 was a matter which amounted to a conflict with policy H8 to which significant weight should be ascribed. I am unable to read these paragraphs as founding in Mr Goatley's contention that the First Defendant had illegitimately overemphasised the numerical requirements as compared to the analysis of the proposals suitability by reference to the surrounding area. All of these factors are clearly taken into account in the assessment undertaken in paragraphs 24-26 of the decision and the First Defendant's view is clear and properly reasoned. In my view there is no substance in the Claimant's ground 4.
72. Turning to ground 5 there are three factors relied upon by Mr Goatley as being differences on matters of fact between the Inspector and the First Defendant which called for a reference back to the parties pursuant to rule 17(5) of the 2000 rules. Those matters were the decisions in relation to deliverable sites forming part of the housing land supply, the numerical basis of policy H8 and its application and the application of paragraph 11(d) of the Framework.
73. In my view the difficulty with Mr Goatley's contentions in respect of these issues is that they are all, in truth, matters of opinion and not questions of fact. The evaluation of whether or not sites were deliverable was a question of judgement for the First Defendant to consider. "Deliverability" is obviously an exercise of judgement based upon what is known about the site or sites which are under consideration. The assessment of H8 and the application of its numerical requirements was again not a question of fact (the facts as to the density of the proposed development and its

relationship to the numerical requirements of H8 being known and uncontentionous). The issue which arose was a question of planning judgment as to the relationship between the proposed density and the application of policy H8 and lastly, the question of whether or not policies were out-of-date and whether or not that provided a trigger for the application of the tilted balance under paragraph 11(d) of the 2018 Framework was again a matter for the judgment of the decision-taker. Thus, whilst there were undoubtedly differences on these topics between the findings of the Inspector and the conclusions of the First Defendant none of them amounted to questions of fact which engaged rule 17(5) of the 2000 Rules.

74. I turn finally to ground 6 and the challenge to the conclusion of the First Defendant that the obligation to use reasonable endeavours to complete the development within five years was not addressed to any demonstrated planning harm and was not necessary to make the development acceptable in planning terms. As such the requirements of regulation 122 of the Community Infrastructure Levy Regulations 2010 precluded the obligation from being a material consideration. I am not satisfied that this ground is properly arguable for a number of reasons. Firstly, in circumstances where the Second Defendant could demonstrate that it had a five year supply of housing there was no harm which this obligation was addressing. Mr Goatley's response that there remains a requirement in the Framework to boost the supply of housing does not substantiate the suggestion that the obligation addressed any harm or was necessary to properly regulate the development but, rather suggests that in circumstances where there was a five year land supply, the obligation was affording a benefit and not securing a matter which was required to make the development acceptable. In the circumstances ground 6 is not arguable and must be dismissed.

Conclusions

75. I am satisfied that the Claimant must succeed under grounds 2 and 3, in particular in relation to the inadequacy of the First Defendant's reasons and that permission must be refused for ground 6 and substantive relief declined in respects of grounds 1, 4 and 5. Given the conclusions which I have reached there is no need to determine the Claimant's application for specific disclosure which was made at the hearing: such disclosure was at the very least not required to enable the court to determine the matters arising in this case. I am satisfied that for the reasons set out above the First Defendant's decision must be quashed.

Appendix:

Annex 1

Table 10 Sites which are extant housing allocations

Site Address	Status	MKC Supply (2018-2023)	SPRU Supply (2018-2023)	Difference	SPRU Comments
Campbell Park Remainder (Northside)	Allocated in 2005 Local Plan	300	0	-300	No planning application submitted or approved.
Land off Hampstead Gate (SAP7)	SAP Allocation	16	0	-16	No planning application submitted or approved.
Land off Harrowden (SAP8)	SAP Allocation	25	0	-25	No planning application submitted or approved.
Reserve Site off Hendrix Drive	Reserve Site in 2005 Local Plan	10	0	-10	No planning application submitted or approved.
Land off Singleton Drive (SAP1)	SAP Allocation	22	0	-22	No planning application submitted or approved.
Land north of Vernier Crescent (SAP3)	SAP Allocation	14	0	-14	No planning application submitted or approved.
Site 4 Vernier Crescent	Reserve site in the 2005 Local Plan	10	0	-10	No planning application submitted or approved.
Manifold Lane (SAP10)	SAP Allocation	18	0	-18	No planning application submitted or approved.
Land at Daubeney Gate (SAP6)	SAP Allocation	60	0	-60	No planning application submitted or approved.
Lakes Estate Neighbourhood Plan Sites	NP Allocation	130	0	-130	No planning applications submitted or approved on any of the sites in the NP.
Reserve Site Hindhead Knoll	Reserve site in 2005 Local Plan	30	0	-30	No planning application submitted or approved.
Reserve Site Lichfield Down	Reserve site in 2005 Local Plan	50	0	-50	No planning application submitted or approved.
Land at Walton Manor, Groveway/Simpson Road (SAP13)	SAP Allocation	110	0	-110	No planning application submitted or approved.
Reserve Site 3, East of Snehsall Street (SAP11)	SAP Allocation	22	0	-22	No planning application submitted or approved.
Tickford Fields	NP Allocation	325	0	-325	No planning application submitted or approved.

Police Station Houses, High Street	NP Allocation/ 2005 LP Allocation	14	0	-14	No planning application submitted or approved.
Total		1,156	0	-1,156	

Annex 2

Table 11 Sites with Outline Planning Consent only

Site Address	Outline	MKC Supply (2018-2023)	SPRU Supply (2018-2023)	Difference	SPRU Comments
Land at Brooklands 2,501 Units Outline	06/00220/MKPCO	291	0	-291	Outline Permission only. No change since publication of Council's data. Various conditions discharged.
Tattenhoe Park 2	06/00856/MKPCO	82	0	-82	Outline Permission only. No change since publication of Council's data. Various conditions discharged.
Tattenhoe Park 3	06/00856/MKPCO	120	0	-120	Outline Permission only. No change since publication of Council's data. Various conditions discharged.
Tattenhoe Park 4	06/00856/MKPCO	70	0	-70	Outline Permission only. No change since publication of Council's data. Various conditions discharged.
Tattenhoe Park 5	06/00856/MKPCO	20	0	-20	Outline Permission only. No change since publication of Council's data. Various conditions discharged.
WEA AREA 10.1 - 10.3 REMAINDER	05/00291/MKPCO	912	0	-912	Outline Permission only. Only change since publication of data is there is now a RM Pending for 129 dwellings under 18/01724/REM submitted by Bovis Homes.
WEA Area 11 Remainder	06/00123/MKPCO	550	0	-550	Outline permission only. Only change since publication of data is there is now a RM pending for 347 dwellings under reference 18/02142/REM submitted by Barratt/David Wilson Homes.
Ripper Land	17/00303/OUT	120	0	-120	Outline Permission only. No change since publication of Council's data. No conditions discharged. Outline application submitted by Minton Wavendon.
Haynes Land	14/02167/OUTEIS	164	0	-164	164 Dwellings in the supply comprises the element of land remaining with outline permission only. RM now pending under 18/02183/REM submitted by Barratt/David Wilson Homes for 174 dwellings on Phase 3, Parcel B3.
Eagle Farm	13/02381/OUTEIS	125	0	-125	125 dwellings comprises element of land remaining with outline permission only. No RM applications have yet been submitted.
Golf Course Land	14/00350/OUTEIS	100	0	-100	Outline Permission only. No change since publication of Council's data. No conditions discharged. Application was submitted by Merton College, University of Oxford and

					Wavendon Residential Properties LLP.
Church Farm (Connolly Homes)	14/01610/OUT	100	0	-100	Outline Permission only. No change since publication of Council's data. One condition discharged in March 2018. Application was submitted by Connolly Homes.
Newton Leys	02/01337/OUT	62	0	-62	Outline Permission only. No change since publication of Council's data. Various conditions discharged. Conditions are being discharged by Taylor Wimpey.
Eaton Leys	15/01533/OUTEIS	270	0	-270	Outline Permission only. No change since publication of Council's data. Various conditions discharged by Gallagher Estates.
Land at Skew Bridge Cottage, Drayton Road	16/02174/OUT	10	0	-10	Outline Permission only. No change since publication of Council's data. No conditions discharged. Application submitted by the landowner, not a housebuilder.
Broughton Atterbury (SAP14) Self Build Plots	SAP Allocation/ 17/00736/OUT	15	0	-15	Outline application approved in August 2018 and was submitted by Morris Homes for 15 self-build units. No RM or conditions discharged.
76-83 Shearmans	15/00268/OUT	14	0	-14	No reserved matters application submitted, and no conditions discharged. Application was submitted by the landowner not a housebuilder.
Land At Towergate, Groveway (SAP12)	17/03205/OUT	105	0	-105	Outline Permitted September 2018. Submitted by HCA. One Condition discharged.
Railcare Maintenance Depot, Stratford Road	15/02030/OUTEIS	75	0	-75	Outline planning permission only. No reserved matters application or conditions discharged. Application submitted by St Modwen.
SW of BWMC, Duncombe Street	16/01430/OUT	12	0	-12	Outline application is still pending, and therefore does not yet have planning permission. Went to committee in December 2016 recommend for approval. Committee minutes not available online, but presumption is approved subject to S106. Application was submitted by the landowner not a housebuilder.
Timbold Drive (SAP9)	17/02616/OUT	130	0	-130	Hybrid application: outline for 148 dwellings, details for 47 bed hospital. No conditions discharged. No change since publication of Council's data. Application was submitted by MKDP and Spire Healthcare, not a housebuilder.
Land east of Tillbrook Farm	16/00762/OUT	36	0	-36	Outline Permission only. No change since publication of Council's data. No conditions discharged. Application was submitted by Paliser Investments Ltd. who are t a housebuilder
Maltings Field	17/01536/OUT	32	0	-32	Outline Permission only. No change since publication of Council's data. No conditions discharged. Application was submitted by The Trustees of Lord Carrington's 1963 Settlement (1 & 2) Funds. who are not a housebuilder

Off Long Street Road	16/02937/OUT	101	0	-101	Outline permission only. RM pending under 18/01608/REM for 141 dwellings submitted by Davidson Developments. Various applications to discharge conditions are pending.
Land off Olney Road, Lavendon	17/00165/OUT	65	0	-65	Outline Permission only. No change since publication of Council's data. No conditions discharged. Application was submitted by Gladman Developments who are a lead developer but not a housebuilder.
Former Employment Allocation Phase 2	14/02060/OUT	33	0	-33	RM Pending for 33 dwellings under reference 18/00799/REM by Lioncourt Homes. No conditions discharged.
Land West of Yardley Road and West of Aspreys Olney	17/00939/OUT	250	0	-250	Only permitted in July 2018. No RM and no conditions discharged. Application submitted by Providence Land who aren't a housebuilder?]
Land south of Lavendon Road Farm	16/00688/OUT	50	0	-50	No RM and no conditions have been discharged. Submitted by Francis Jackson Homes.
Frosts Garden Centre, Wain Close	14/00703/OUT	53	0	-53	Application to vary approved plans was approved in June 2018 by Careys New Homes.
Land North of Wavendon Business Park	15/02337/OUT	134	0	-134	Outline only. No RM. Various conditions have been discharged by Abbey Development.
Total		4,101	0	-4,101	

Annex 3:

Table 12 Adjusted Trajectory of Sites with Detailed Planning Permission

Site	MKC Supply (2018-2023)	SPRU Supply (2018-2023) (RGB Proof)	Adjusted to be 2018 Framework Compliant (Removal of outline and allocation with no clear evidence of delivery)	Adjusted to be 2018 Framework Compliant incl. Build Out Rates for Sites with FUL/RM Consent as per RGB Proof	Difference
WEA	2,820	1,600	1,358	1,358	-1,462
Brooklands	1,307	800	1,016	800	-507
Strategic Reserve	1,888	940	1,279	940	-948
Tattenhoe Park	292	300	0	0	-292
Total	6,307	3,640	3,653	3,098	-3,209

Annex 4:

Table 13 Five-year Supply Calculation using Standard Methodology

	MKC (No Adjustments)	SPRU (with adjustments to be 2018 Framework Compliant)	SPRU (with adjustments to be 2018 Framework Compliant and adjustments to delivery rates on sites with FUL/RM Consent)
Standard Methodology	1,604	1,604	1,604
5 year supply requirement (1,604x5)	8,020	8,020	8,020

5 year supply requirement (2018-2023) including 5% buffer	8,421	8,421	8,421
Annual supply required	1,684	1,684	1,684
Supply	12,920	7,663	7,108
Difference	+4,499	-758	-1,313
5 year housing land supply position	7.67 years	4.55 years	4.22 years

Annex 5:

Table 14 Five-year Supply Calculation using Inspector’s Housing Requirement from LP Examination

	MKC (No Adjustments)	SPRU (with adjustments to be 2018 Framework Compliant)	SPRU (with adjustments to be 2018 Framework Compliant and adjustments to delivery rates on sites with FUL/RM Consent)
Local Plan	1,766	1,766	1,766
5 year supply requirement (1,766x5)	8,830	8,830	8,830
5 year supply requirement (2018-2023) including 5% buffer	9,272	9,272	9,272
Annual supply required	1,854	1,854	1,854
Supply	12,920	7,663	7,108
Difference	+3,649	-1,609	-2,164
5 year housing land supply position	6.97 years	4.13 years	3.83 years

Appendix G – Leicester and Leicestershire Statement of Common Ground June 2022

Leicester & Leicestershire Authorities - Statement of Common Ground relating to Housing and Employment Land Needs (June 2022)

1.0 The Leicester and Leicestershire HMA and FEMA

1.1 The Leicester and Leicestershire Housing Market Area (HMA) and Functional Economic Area (FEMA) covers the administrative areas of eight local planning authorities and two transport authorities. The eight local planning authorities responsible for plan making are:

- Blaby District Council
- Charnwood Borough Council
- Harborough District Council
- Hinckley & Bosworth Borough Council
- Leicester City Council (Unitary)
- Melton Borough Council
- North West Leicestershire District Council
- Oadby & Wigston Borough Council

1.2 The two upper tier authorities in Leicester and Leicestershire (L&L), with statutory responsibilities for transportation, education, social care, flooding, minerals & waste planning and public health are:

- Leicester City Council (Unitary)
- Leicestershire County Council

1.3 This Statement has been prepared jointly by the eight plan making authorities and Leicestershire County Council as an additional signatory given their statutory responsibilities, hereafter referred to as “the authorities”. The Map in Appendix D shows the location and administrative areas covered by this statement. The Housing & Economic Needs Assessment 2022 (HENA) identifies this area as the Leicester & Leicestershire HMA and FEMA.

2.0 Purpose

2.1 The key strategic matters addressed in this statement are; Duty to Cooperate; L&L Housing and Employment Needs to 2036; Unmet Need to 2036; and the Apportionment of unmet need to 2036. This statement will be reconfirmed and updated as necessary for subsequent authorities’ Local Plans.

3.0 Key Strategic Matters on which Authorities Agree

Duty to Cooperate

3.1 The authorities agree there is a long track record of effective joint working on strategic matters across L&L. The authorities have continuously engaged with each other on the strategic matters set out in this statement and throughout the preparation of Local Plans across the area. This is most clearly evidenced through:

- The establishment of the Leicester & Leicestershire Members Advisory Group
- The joint preparation of evidence, including the Housing & Economic Needs Assessment (2022), Strategic Growth Options & Constraints Study (2022), and Strategic Transport Assessment (2022).

- The adoption of a non-statutory [Strategic Growth Plan 2018](#) which includes ‘notional’ housing figures.
- The preparation of a Joint Sustainability Appraisal to consider reasonable alternatives for apportionment of Leicester’s unmet need to 2036.
- The agreement of Joint Statements of Cooperation in 2017, 2018, 2020 and 2021 (Appendix E, F, G and H)

3.2 More information and details of engagement will be set out in individual authorities Duty to Cooperate Statements that accompany Local Plans. Authorities will continue to engage on an ongoing basis.

The June 2021 Statement of Common Ground (Appendix H)

3.3 The June 2021 Statement (Appendix H) was agreed by all authorities and included the following:

“The authorities agree to carry out the following programme of work to inform the apportionment of unmet need from Leicester to the L&L Districts/Boroughs:

- *Housing and Economic Needs Assessment*
- *Strategic Growth Options and Constraints Mapping*
- *Strategic Transport Assessment*
- *Sustainability Appraisal*

This work will be commissioned in Spring 2021 and used to inform a Statement of Common Ground apportioning unmet need which is anticipated to be completed in Winter 2021/2022.”

3.4 The Housing & Economic Needs Assessment (HENA) and the Sustainability Appraisal are now complete. These are the key pieces of evidence informing this Statement of Common Ground apportioning Leicester’s unmet need to 2036.

3.5 The Strategic Transport Assessment and the Strategic Growth Options & Constraints Mapping take a longer-term perspective that will inform the next steps for the [Strategic Growth Plan](#) to 2050 and will form part of the strategic evidence for Local Plans. This work will be completed later this year.

L&L Housing Need to 2036

3.6 The authorities agree the appropriate way to calculate local housing need is using the current standard method set out in government guidance which currently uses the 2014 based household projections. The authorities agree that local housing need (2020 - 2036) is as follows:

Table 1: Local Housing Need

Local Planning Authority	Total Housing Need 2020 – 2036	Houses per year 2020 - 2036
Blaby District Council	5,456	341
Charnwood Borough Council	17,776*	1,111*
Harborough District Council	8,544	534
Hinckley and Bosworth Borough Council	7,552	472
Leicester City Council	39,424	2,464
Melton Borough Council	3,696	231
North West Leicestershire District Council	5,952	372
Oadby and Wigston Borough Council	3,008	188
Leicester and Leicestershire HMA Total	91,408	5,713

* In accordance with government guidance Charnwood's Local Housing Need is set using the data from 2021 (including household growth for the 2021-31 and 2020 affordability ratio) as it submitted its Local Plan for Examination in December 2021.

- 3.7 The Government's current standard method for calculating housing need suggests L&L need to provide 91,408 homes (5,713 per year 2020 to 2036).
- 3.8 The NPPF requires authorities to have a clear understanding of the land available in their area to meet housing need through the preparation of a strategic housing land availability assessment (SHLAA). In L&L, the SHLAAs have been prepared using an agreed methodology across the HMA as a whole.
- 3.9 Appendix A and B to this Statement have been prepared using the outputs of the standard method for calculating housing need and SHLAAs. It provides a summary of the need for new homes, and the theoretical capacity of both the HMA and each local authority.
- 3.10 To 2036 there is a theoretical capacity for some 173,721 homes across the HMA as a whole (Appendix B). When set against the need of 91,408 (2020-36), the authorities agree there is flexibility to meet L&L housing need within the HMA, including unmet need.

L&L Employment Need to 2036

- 3.11 The authorities agree the appropriate way to calculate employment need is using the jointly prepared Housing and Economic Needs Assessment 2022 (HENA) unless an up-to-date local assessment has been undertaken. Based on the HENA and local assessments of employment land need the authorities agree the need is as follows:

Table 2: Employment Land Needs

	Need		Total	Source
	B1	B2/B8 (small)		
Blaby	9.1	29.0	38.1	2021-36 need, HENA 2022
Charnwood	7.5	35.7	43.2	2021-36 need, HENA 2022
Harborough	6.8	39.3	46.1	2021-36 need, HENA 2022
H&B	4.2	53.4	57.6	2021-36 need, HENA 2022
Leicester	46,100 sqm (2.3 ha)	67.3	69.6	2019-36 need, City EDNA 2020
Melton	2	38.1	40.1	2021-36 need, HENA 2022
NWL	8.9	31.8	40.7	2021-36 need, HENA 2022
O&W	1	3.1	4.1	2021-36 need, HENA 2022
L&L Total	41.8	297.7	339.5	

3.12 Table 2 above shows L&L have to provide 340 hectares of employment land to 2036. Appendix C has been prepared using outputs from the HENA and local assessments of employment need, and employment land supply. It provides a summary of the need for new employment land, and the supply of both the FEMA and each local authority. To 2036 there is a supply for some 354 hectares across the FEMA as a whole (Appendix C). When set against the need of 340 (2021-36), the authorities agree there is flexibility to meet L&L Employment Need within the FEMA, including unmet need.

Unmet need to 2036

3.13 The authorities agree that Leicester City Council is the only authority in the HMA to have declared and quantified (with evidence) an unmet need 2020 to 2036. Assisting Leicester to meet its unmet need is therefore a key element of the Duty to Co-operate across the HMA.

3.14 Leicester City Council consulted on a Draft Local Plan (regulation 18) in September to December 2020, with a view to publishing the Submission Version (regulation 19) in 2021. Leicester City declared an unmet housing need in February 2017 (Appendix I) which remained unquantified while further evidence was gathered to support the publication of their Draft Local Plan. During this time several authorities have adopted local plans.

3.15 The L&L authorities were made aware of the potential scale of unmet need in December 2019. Consultation on the Leicester Draft Local Plan (and associated evidence) was delayed due to the COVID-19 Pandemic until September to December 2020.

3.16 Leicester's Draft Local Plan consultation indicates a potential unmet need of 7,742 homes and 23 Hectares of employment land (B2 General Industrial and B8 Small Warehousing Units less than 9,000 sq.m) 2019 to 2036.

3.17 However, immediately after the consultation closed in December 2020 the Government published a new standard method for calculating housing need. The new method increased Leicester's housing need by 35%, adding a further 9,712 homes to their need between 2020 and 2036 (607 homes per year).

- 3.18 Although the supply of homes in Leicester may evolve as their local plan progresses, providing for this amount of additional homes in the City would require more than a doubling of the allocations set out in their recent Draft Local Plan. In this context the City consider that it will not be possible to meet NPPF policy obligations of a sound and deliverable plan, and so in the revised PPG context (Paragraph: 035 Reference ID: 2a-035-20201216) it will be necessary to seek to agree a Statement of Common Ground to deal with the recent increase in housing need.
- 3.19 Leicester's standard method Local Housing Need figure is now 2,464 homes per year generating a need for 39,424 dwellings over the 2020-36 period (see Table 1 above). This includes the 'cities and urban areas uplift' and the 2021 affordability ratios published in March 2022. Appendix A and B, and the June 2021 Statement of Common Ground (Appendix H) was informed by the evidence from the Leicester's Draft Local Plan which sets out the City's capacity to accommodate growth over this period as 20,721 dwellings. An unmet need of 18,700 dwellings is therefore identified based on the evidence at the current time. An unmet need figure of 18,700 dwellings is a reasonable working assumption for the City's unmet housing need to 2036.
- 3.20 The authorities acknowledge that the quantity of Leicester's unmet need may change as the Local Plan progresses (e.g. as evidence on land supply is developed further or the need for homes changes (see section 4.0 below)). The authorities therefore agree a working assumption of Leicester's unmet need of 18,700 homes and 23 Hectares of employment land (2020 – 2036). These figures are subject to testing through the Leicester Local Plan.

Apportionment of Leicester's Unmet Need (2020 – 2036)

- 3.21 The authorities agree the L&L Statement of Common Ground Sustainability Appraisal (2022), the Housing & Economic Needs Assessment (2022) and the associated Housing and Employment Distribution Papers provide the latest cooperatively produced evidence to inform the apportionment of Leicester's unmet needs.
- 3.22 This work is based on the agreed working assumption of an unmet need from Leicester of 18,700 homes. The work considers housing provision across the HMA as a whole having regard to a range of factors including, the functional relationship of each District/Borough with Leicester City, the balance of jobs and homes in each district/borough, and deliverability of the distribution of development. When all of these factors are brought together, they address the unmet need and result in a redistributed housing provision that differs from the standard method starting point. This evidence has informed the following apportionment:

Table 3: Apportionment of Leicester City’s Unmet Local Housing Need 2020 to 2036

Local Planning Authority	Average Annual unmet housing need contribution 2020 to 2036 (dwellings)*
Blaby District Council	346
Charnwood Borough Council	78
Harborough District Council	123
Hinckley and Bosworth Borough Council	187
Melton Borough Council	69
North West Leicestershire District Council	314
Oadby and Wigston Borough Council	52
Total	1,169

*Note: the figures are presented as annual averages 2020-36. This does not imply that an authority’s unmet need apportionment must be phased evenly over this period. It will be for each Local Plan to determine appropriate phasing.

- 3.23 The authorities agree that the figures in the Table 3 above represent the agreed apportionment by District/Borough (apart from Hinckley & Bosworth – see Matters Not Agreed in Section 4 below), of the unmet housing need for Leicester, in order to meet the overall objectively assessed need for additional housing within the Leicester and Leicestershire Housing Market Area to 2036. These figures are subject to testing through each individual Local Planning Authority’s plan making.
- 3.24 Based on the agreed working assumption of an unmet need from Leicester of 23 hectares of employment land (B2 - General Industrial and B8 - Small Warehousing units less than 9,000sq.m), the joint evidence has informed the following apportionment:

Table 4: Apportionment of Leicester City’s Unmet Employment Need 2020 to 2036

Local Planning Authority	Apportionment (Hectares)
Blaby District Council	0
Charnwood Borough Council	23
Harborough District Council	0
Hinckley and Bosworth Borough Council	0
Melton Borough Council	0
North West Leicestershire District Council	0
Oadby and Wigston Borough Council	0
Total	23

3.25 The authorities agree that the figures in the Table 4 above represent the agreed apportionment by District/Borough, of the unmet employment need for Leicester, in order to meet the overall objectively assessed need for employment land within the Leicester and Leicestershire FEMA to 2036. These figures are subject to testing through each individual Local Planning Authority's plan making.

4.0 Key Strategic Matters on which Authorities Do Not Agree

4.1 Hinckley & Bosworth Borough Council (HBBC) do not agree to the step in the HENA Housing Distribution Paper (2022) methodology from paragraph 6.21 to 6.24 and the subsequent table 6.9 which apportions 187 dwellings per year of Leicester's unmet housing need. HBBC note the capping of the redistribution of Charnwood's numbers to 1189 and believe that the accommodation of the resulting 187 dpa shortfall should be tested as part of each LPAs Local Plan process, including the current Charnwood Local Plan. HBBC consider that an apportionment of 102 dwellings per year (85 dwellings per year lower than the apportionment in Table 3) to be an initial justified apportionment of Leicester's unmet need for HBBC to test through their Local Plan work and through further strategic work. HBBC disagrees with the methodology from para 6.21 to 6.24 and the subsequent table 6.9 as it is not suitably justified and does not follow the evidence. The use of stock growth is not a measure of deliverability. It does not consider housing need, does not reflect market demand or the deliverability of developing housing in a particular area. The capping of redistribution based on 1.4% stock growth levels is considered to be arbitrary and is not supported by the evidence. Para 6.24 seeks to justify the uplift for HBBC by referencing job opportunities but this has already been considered earlier in the methodology.

4.2 HBBC is of the view that the June 2021 SoCG was clear that the apportionment of unmet need would be informed by 4 pieces of work. Only two of these pieces have been completed, the HENA and the SA. Therefore, as reflected in this Statement, the apportionment is a starting point for testing and may be amended based on the completion of the Strategic Growth Options and Constraints mapping work and the Strategic Transport Assessment and the subsequently updated Sustainability Appraisal and the outcome of any local plan 'testing'.

4.3 The other authorities do not agree with HBBC and consider the apportionment of 187 dwellings per year in Table 3 is justified by the evidence.

5.0 Maintaining and Updating this Statement

5.1 The authorities acknowledge the Government intend to reform the planning system and have previously consulted on potential future changes, including the Planning for the Future - White Paper (August 2020). The Levelling Up and Regeneration Bill, introduced to Parliament on 11th May 2022, proposes a number of reforms to the planning system, including potentially repealing the 'duty to cooperate' contained in existing legislation.

5.2 At present these reforms do not impact housing need or emerging Local Plans as they are proposals (rather than legislation) and could be subject to significant change before achieving Royal Assent and becoming law.

5.3 Government advice is that authorities should get up-to-date Local Plans in place (Appendix J) and some authorities in L&L are at an advanced stage of plan preparation.

- 5.4 The authorities agree the Duty to Cooperate is an ongoing process, and should the amount of unmet need change significantly, the apportionment of unmet need will be jointly reviewed to assess whether it needs updating. The process for updating and maintaining this statement will be managed through ongoing joint work between the authorities.
- 5.5 The above apportionment (Table 3 and 4 above) is intended to be implemented through individual local plans. These figures will therefore need to be tested through each authority's Local Plan process. The authorities agree that if an authority's local plan process identifies that it is not able to provide for their own objectively assessed needs as well as any unmet need apportioned in this statement (as set out in paragraph 11b of the NPPF), the apportionment of unmet need will need to be jointly reviewed and updated as necessary. The process used for this review will be proportionate to the scale of the issue and should not cause undue delay to the preparation of Local Plans.

Appendix A - Leicester and Leicestershire Housing Land Supply, 2020 to 2031

The table below compares housing land supply to local housing need based on the Governments Standard Method.

	A	B	C	D	E	F	G	H
Authority	Local Housing Need 2020 - 2031	Commitments¹ projected for delivery 2020 to 2031	Allocations in an adopted Plan²	Emerging allocations in a draft plan²	Allowance for small site or windfall development to 2031	Total Projected Delivery to 2031 (B+C+D+E)	SHLAA Capacity to 2031³	Total Theoretical Capacity to 2031 (F+G)
Blaby	3,751	4,467	758		240	5,465	5,408	10,873
Charnwood	12,221	7,080	1,385	7,894	640	16,999	10,529	27,528
Harborough	5,874	3,693	4,332		864	8,889	5,873	14,762
Hinckley & Bosworth	5,192	2,692	557		584	3,833	15,902	19,735
Leicester City	27,104	9,047		6,602	1,650	17,299	0	17,299
Melton	2,541	2,704	3,145		189	6,038	1,108	7,146
NW Leics	4,092	5,862	790		320	6,972	3,821	10,793
Oadby & Wigston	2,068	1,010	1,203		189	2,402	0	2,402
HMA total	62,843	36,555	12,173	14,496	4,676	67,897	42,041	109,938

¹ Includes sites under construction; with planning permission (including sites with a resolution to grant), as at 31/03/2020

² projected delivery up to 31/03/2031; includes allocated sites from local and neighbourhood plans

³ To avoid duplication SHLAA sites that have planning permission or are allocated in an adopted or emerging plan have been removed from this figure

Appendix B - Leicester and Leicestershire Housing Land Supply, 2020 to 2036

The table below compares housing land supply to local housing need based on the Governments Standard Method.

	A	B	C	D	E	F	G	H
Authority	Local Housing Need 2020 - 2036	Commitments¹ projected for delivery 2020 to 2036	Allocations in an adopted Plan²	Emerging allocations in a draft plan²	Allowance for small site or windfall development to 2036	Total Projected Delivery to 2036 (B+C+D+E)	SHLAA Capacity to 2036³	Total Theoretical Capacity to 2036 (F+G)
Blaby	5,456	4,918	984		440	6,342	18,956	25,298
Charnwood	17,776	8,820	1,990	9,024	1,040	20,874	19,938	40,812
Harborough	8,544	3,693	5,679		864	10,236	9,819	20,055
Hinckley & Bosworth	7,552	2,992	1,497		949	5,438	23,130	28,568
Leicester City	39,424	9,865		8,456	2,400	20,721	0	20,721
Melton	3,696	2,704	3,891		334	6,929	3,635	10,564
NW Leics	5,952	7,013	1,427		520	8,960	13,281	22,241
Oadby & Wigston	3,008	1,010	1,203		189	2,402	3,060	2,402
HMA total	91,408	41,015	16,671	17,480	6,736	81,902	91,819	173,721

¹ Includes sites under construction; with planning permission (including sites with a resolution to grant), as at 31/03/2020

² projected delivery up to 31/03/2036; includes allocated sites from local and neighbourhood plans

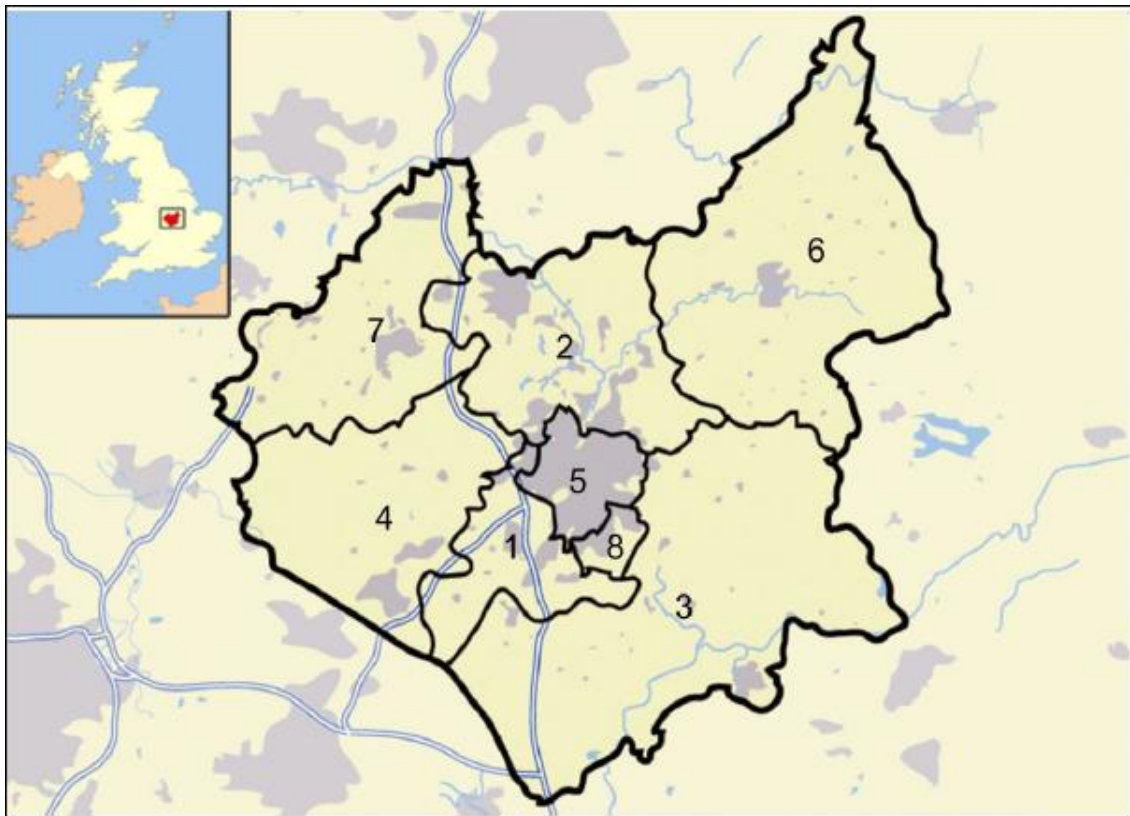
³ To avoid duplication SHLAA sites that have planning permission or are allocated in an adopted or emerging plan have been removed from this figure

Appendix C - Employment Demand and Supply Balance 2021 to 2036 (excluding Strategic Warehousing)

	Need		Supply		Balance		Notes*
	B1	B2/B8 (small)	B1	B2/B8 (small)	B1	B2/B8 (small)	
Blaby	9.1	29.0	10.5	13.3	1.4	-15.7	2021-36 need, HENA '21 . Supply based on permissions pipeline. Mixed permissions divided by use class. Supply at April 2020
Charnwood	7.5	35.7	15.1	66.7	7.6	31.0	2021-36 need, HENA '21. Supply based on Local Plan trajectory Exc. Loughborough Science and Enterprise Park.
Harborough	6.8	39.3	18.0	41.7	11.2	2.4	2021-36 need, HENA '21 . Supply based on net permissions pipeline at April 2020
H&B	4.2	53.4	4.2	38.9	0.0	-14.5	2021-36 need, HENA '21. Supply based on Local Plan Reg19 Feb '22
Leicester	46,100 sqm (2.3 ha)	67.3	43,000 sqm (2.1 ha)	44.0	-3,100 sqm (-0.2 ha)	-23.3	2019-36 need / office supply, City EDNA '20 (sqm, converted to ha at 2.0 ratio) Industrial supply based on Local Plan Reg19 Feb '22.
Melton	2	38.1	2.6	34.4	0.6	-3.7	2021-36 need, HENA '21 . Supply based on permissions and allocations pipeline. Supply at April 2020
NWL	8.9	31.8	17.1	36.5	8.2	4.7	2021-36 need, HENA '21 . Supply based on permissions and allocations pipeline. Supply at April 2020
O&W	1	3.1	2.8	5.7	1.8	2.6	2021-36 need, HENA '21 . Supply based on permissions and allocations pipeline. Supply at April 2020
L&L Total	41.8	297.7	72.4	281.2	30.6	-16.5	Excludes 50 ha at Loughborough Science and Enterprise Park. Excludes -44,600 sqm offices for Leicester

Source: Various as identified in notes

Appendix D – Location and Administrative Areas



Key to Map Two

- | | |
|--|---|
| 1. Blaby District Council | 5. Leicester City Council |
| 2. Charnwood Borough Council | 6. Melton Borough Council |
| 3. Harborough District Council | 7. North West Leicestershire District Council |
| 4. Hinckley and Bosworth Borough Council | 8. Oadby and Wigston Borough Council |

Appendix E – L&L Joint Statement of Cooperation, November 2017

L&L Joint Statement of Cooperation

Leicester & Leicestershire Authorities

Joint Statement of Co-operation Relating to Objectively Assessed Need for Housing November 2017

1.0 The Leicester and Leicestershire HMA

1.1 The Leicester and Leicestershire Housing Market Area (HMA) covers the administrative areas of eight local authorities and two highway authorities. The eight local planning authorities are:

1. Blaby District Council
2. Charnwood Borough Council
3. Harborough District Council
4. Hinckley & Bosworth Borough Council
5. Leicester City Council
6. Melton Borough Council
7. North West Leicestershire District Council
8. Oadby & Wigston Borough Council

1.2 The two highways authorities are:

1. Leicester City Council
2. Leicestershire County Council

1.3 The purpose of this Joint Statement of Co-operation (the 'Joint Statement') is to support those authorities which are seeking to produce a Local Plan in advance of the Strategic Growth Plan (SGP), and to set out how the local authorities will collaborate further to ensure that the necessary joint evidence is in place to support subsequent Local Plans. The document has been received by the Members' Advisory Group overseeing the preparation of the Strategic Growth Plan and will proceed through the normal governance procedures of individual authorities as necessary.

2.0 Background

Duty to Cooperate

2.1 The Joint Statement is intended to provide evidence of effective co-operation on planning for issues with cross-boundary impacts. A Housing and Economic Development Needs Assessment (HEDNA) has been completed, the purpose of which is to identify the Objectively Assessed Need (OAN) for housing and employment for the HMA and Functional Economic Market Area (FEMA) in the periods 2011-2031 and 2011-2036. In the case of Leicester & Leicestershire, the HMA and FEMA are coincident. The HEDNA was commissioned jointly by the nine

local authorities together with the Leicester & Leicestershire Enterprise Partnership (LLEP).

Objectively Assessed Need for Housing

- 2.2 The National Planning Policy Framework (NPPF) requires local planning authorities to ensure that their Local Plans meet the full OAN for market and affordable housing in the HMA as far as is consistent with the policies set out in the NPPF (paragraph 47).
- 2.3 To enable an understanding of capacity to accommodate additional housing, the NPPF further requires local planning authorities to prepare a Strategic Housing Land Availability Assessment (SHLAA) to establish realistic assumptions about availability, suitability and likely economic viability of land to meet the identified need for housing over the plan period (paragraph 159). In Leicester & Leicestershire, the SHLAAs have been prepared using an agreed methodology across the HMA as a whole.
- 2.4 Table 1 has been prepared using the outputs of the joint HEDNA and SHLAAs. It provides a summary of the agreed OAN for housing, and the theoretical capacity of both the HMA and each local authority; the theoretical capacity has been derived from an understanding of existing commitments and SHLAA information. The partner authorities agree that the OAN for the HMA (and each local authority) is that set out in the table.
- 2.5 The HEDNA explains that the OAN is set at the level of the HMA although the OAN for each local authority is also identified; the OAN for each individual authority is considered to be secondary to that of the HMA as a whole. Table 1 indicates that the OAN for the HMA as a whole, based on demographic analysis, is some 96,580 dwellings for the period 2011-31 (4,829 dpa). For the period, 2011-2036, the figure is some 117,900 dwellings (4,716 dpa).
- 2.6 A similar analysis has been undertaken of the need for housing based on the economic development needs of the area; in this case, it has been concluded that the need for new housing, based on economic development needs across the FEMA, is lower than the demographic need. On that basis, there is no need for adjustment of this figure at the level of the HMA/FEMA although there is some misalignment at the level of individual authorities. As a result, there may be an alternative distribution of housing to meet economic needs whilst still ensuring that the demographic need of 4,829 or 4,716 dpa is met across the HMA/FEMA as a whole in line with paragraph 47 of the NPPF.
- 2.7 In terms of the housing capacity, Table 1 also indicates that there is a theoretical capacity for some 207,069 dwellings across the HMA as a whole. When this is set against the OAN of 96,580 (2011-31) and 117,900 (2011-36) dwellings, it is clear that there is considerable flexibility to meet the defined housing need across the HMA.
- 2.8 It is recognised that the ability of each local authority to meet its own OAN will vary. Table 1 demonstrates that, theoretically, and with the exception of Leicester City Council, all authorities are able to accommodate their own needs in the period 2011-36. In the period 2011-36, neither Leicester City Council nor Oadby & Wigston Borough Council will be able to meet their needs. It is important to note, however, that further testing will be required by the respective authorities through their Local Plan processes. Should an HMA authority identify, quantify and provide robust evidence to demonstrate an unmet need in the future, it will be incumbent upon the

HMA authorities jointly to resolve any cross-boundary matters with HMA partners under the Duty to Co-operate.

- 2.9 Following publication of the HEDNA, both Leicester City Council and Oadby & Wigston Borough Council declared that they would not be able to accommodate their full objectively assessed needs (OAN) for housing within their own boundaries. Letters were sent out by Leicester City Council in February 2017 and by Oadby & Wigston Borough Council in March 2017, to all other authorities within the Leicester & Leicestershire Housing Market Area, setting out the position and their formal declarations of unmet housing need. Since that time, and based on evidence, Oadby & Wigston Borough Council has determined that it will be able to accommodate its needs in the period 2011-2031 but not in respect of the period 2011-36. Oadby & Wigston Borough Council issued a further letter in November 2017 confirming its position. Both Leicester City Council and Oadby & Wigston Borough Council are yet to formally and finally evidence the extent of their unmet need, however it is necessary to include provision to accommodate unmet need arising from these two Council areas, for the relevant periods, within the HMA as a whole; this may include an element of a flexibility allowance in local plans currently in preparation, should the need arise.
- 2.10 In terms of determining housing targets to be included in their Local Plans, local planning authorities should take account of the requirements of both national policy and local circumstances, including the need to base Local Plans on a strategy that seeks to meet the OAN for housing. In this regard, it is recognised that all authorities are at different stages of plan preparation and that this situation must be accommodated. In determining their housing target over the relevant plan period, therefore, each authority will take into account the HEDNA and other relevant evidence.
- 2.11 In addition, the nine local authorities and the LLEP have jointly agreed to produce a Strategic Growth Plan, a non-statutory strategic plan looking forward to around 2050. As part of their work on the Strategic Growth Plan, the partner organisations may choose to redistribute development across the HMA as appropriate but the process of preparing the Strategic Growth Plan is not anticipated to be complete until the end of 2018 and will not, therefore, be available for all authorities to use prior to preparing their Local Plans. At the same time, Government has made it clear that it wants Local Plans for individual authorities to be in place without delay; and where no Local Plan has been produced, Government may choose to intervene in the process. As a result, the partner organisations understand that some authorities might wish to progress their Local Plans in advance of the Strategic Growth Plan.
- 2.12 The Written Ministerial Statement by the Minister for Housing and Local Government (21 July 2015) re-emphasises that Local Authorities cannot plan in isolation and must work together to provide the land for the housing needed across HMAs. It states: "*As we have made clear in planning guidance a commitment to an early review of a Local Plan may be appropriate as a way of ensuring that a Local Plan is not unnecessarily delayed by seeking to resolve matters which are not critical to the plans soundness or legal competence as a whole*". It also refers to a note prepared by the Planning Advisory Service which local authorities should consider; this sets out circumstances in which Local Plans have been found sound, subject to a commitment to an early review.

2.13 Taking this into account, the HMA authorities reached agreement in summer 2016 on appropriate trigger mechanisms that would be inserted into all Local Plans coming forward before the Strategic Growth Plan. In this respect the partner authorities agree that should the Strategic Growth Plan identify a significant change which would require local authorities to re-consider the amount of housing and employment land, an early review or partial review of affected Plan(s) will be brought forward to address this matter, unless there is sufficient flexibility already provided for within the Plan. Such flexibility may, for example, be secured by a Local Plan that specifies a requirement which materially exceeds the FOAN identified by the HEDNA. The agreement is based on the principle that the trigger mechanisms would be applied on a consistent basis across the HMA, ensuring that all Local Plans submitted in advance of the Strategic Growth Plan contain the necessary flexibility to respond to any significant change that might arise.

Table 1: OAN as defined in HEDNA (January 2017) and Theoretical Capacity based on assumptions set out in notes.

	OAN* ¹ (2011- 2031)	OAN* ¹ (2011 - 2036)	Theoretical Total Capacity* ²
Blaby	7,400	9,025	24,096* ³
Charnwood	20,620	24,850	34,756* ³
Harborough	10,640	12,850	30,578* ³
Hinckley & Bosworth	9,420	11,350	25,498* ³
Leicester City	33,840	41,700	26,230* ³
Melton	3,720	4,250	36,650* ³
Northwest Leics	9,620	11,200	26,301* ³
Oadby & Wigston	2,960	3,875	2,960* ³
HMA Total*⁴	96,580	117,900	207,069*³

*¹ The OAN is set out in the agreed HEDNA (January 2017)

*² This figure is based on information on completions, commitments, windfalls (in some authorities) and SHLAAs as at 1st April 2016.

*³ The final figure will be determined by each authority through the Local Plans process.

*⁴ The Total received OAN for the HMA is lower than the sum of the OAN for individual authorities because the OAN for Melton BC and North West Leicestershire DC has been increased in the HEDNA to meet economic needs locally.

Note:

It should be noted that nothing in this statement should be taken to prejudice any representations made by individual authorities on any partner Local Plan.

Appendix F – L&L Joint Position Statement, March 2018



**Leicester & Leicestershire
Joint Position Statement on Housing and
Employment Land Supply
2011 to 2031**

March 2018



Evidence Base – the Leicester and Leicestershire HEDNA (January 2017)

The Leicester and Leicestershire Housing and Economic Development Needs Assessment (January 2017) provides the baseline for the identification of housing and employment land requirements to 2031. This report is known as the HEDNA and it assesses future housing needs, the scale of future economic growth and the quantity of land required for certain economic development uses. The HEDNA report was prepared by a consultancy team comprising GL Hearn, Justin Gardner Consulting and Oxford Economics. It took into account feedback from the development industry, including local estate, letting and commercial agents, on the proposed assessment geography and methodologies.

The HEDNA identifies Leicester and Leicestershire as the relevant Housing Market Area (HMA) and Functional Economic Market Area (FEMA) for plan-making purposes. The HMA definition reflects the high level of self-containment of migration flows. 84% of the households moving into a home in the area are moving from a different home elsewhere within Leicester or Leicestershire; there are strong migration flows between Leicester and its adjoining authorities. The definition also reflects similarities in housing costs, whilst recognising an urban/rural distinction and local influences on prices. It is also supported by analysis of commuting flows.

The Leicester Travel to Work Area, as defined by the Office for National Statistics (ONS) and based on 2011 Census data, extends across much of Leicestershire and includes all of the main towns within the County, supporting the definition of common housing and functional economic market areas. Around 78% of commuting flows are contained within the Leicester and Leicestershire authorities. The FEMA definition is also supported by wider evidence including Leicester's role as a retail, leisure and cultural destination. The HEDNA recognises that the economic geography can vary for different sectors of the economy and that, for the logistics and distribution sector in particular, the area forms part of a wider Midlands market area. There is a particular concentration of activity and demand within the 'Golden Triangle' formed broadly by the M42, M1 and M6 motorways which sit at the heart of the country. The triangle has strong accessibility to the major UK consumer markets and represents an optimum location for national distribution centres.

The HEDNA was produced having full regard to the National Planning Policy Framework and the relevant National Planning Practice Guidance documents. It uses trend-based demographic projections as its starting point, but then considers economic dynamics and growth potential, market signals and affordable housing need to produce an objective assessment of housing needs (OAN) to 2031 both at overall HMA level and for individual authority areas. The annual requirement for the HMA to 2031 is 4,829 dwellings, or 96,580 for the period 2011-2031. It goes on to identify a range of factors which influence the need for different types of homes. This includes demographic trends, and in particular a growing older population; market dynamics and affordability; the Government's ambitions and initiatives to boost home-ownership and self/custom-build development; and the growth in student numbers and accommodation.



Housing Land Supply

Housing schemes already in the development pipeline are poised to deliver the overwhelming majority of the identified need to 2031. As at April 2017 over 22,000 homes had been built (2011-2017), while a further 41,000 homes are committed (under construction or with planning permission and projected to be built by 2031). Land for a further 19,000 homes projected for delivery by 2031 is identified by allocations made in a mixture of adopted and published draft local plans.

The table shown below includes an allowance for delivery on small scale sites that are currently unidentified. Whilst for plan-making purposes such allowances are sometimes discounted, it can reasonably be expected that a number of suitable sites will continue to be promoted through the development management process. Based on local experience, the estimate is that around 5,000 additional homes will be delivered on these small sites.

Finally, the plan period for each of the current Local Plans for Charnwood, Hinckley & Bosworth and the City of Leicester ends before 2031. These plans are in the process of being rolled forward to cover a longer term period, but the draft plans are not yet published. For the purposes of this position statement a provisional figure has been shown in the table for each of these three areas to illustrate the approximate level at which notional new housing capacity (to 2031) could be made in future local plans. They are provided solely to inform estimates of overall capacity and do not pre-empt or fetter the due local plan process. Whilst this in no way pre-determines the plan making process for any of these areas, in the absence of such estimates this statement would not have provided a proper overview of the potential overall position.

The delivery trajectory illustrates an anticipated shortage of housing land supply in the City of Leicester. The published Joint Statement of Co-operation (November 2017) confirms that any shortfall can be met in other parts of the HMA when a shortfall is identified and robustly quantified. The proposed distribution is to be confirmed via the agreement of a memorandum of understanding (MoU).

In early 2017 it was anticipated that the MoU would be adopted by January 2018, having regard to the anticipated programme for preparing the new Leicester Local Plan. That programme has been revised; it is now anticipated that the MoU will be published once the City Council's unmet need is robustly quantified, probably in summer 2018, and that it will accompany the publication of the City's draft plan, also in summer 2018. In the meantime, this Joint Position Statement is being produced as evidence to show that the OAN can be met across the HMA for the 2011 – 31 period.



The MoU, when published, will reflect the City Council's confirmed position on the extent of its unmet need to 2031 and the arrangements then agreed across Leicestershire to meet the unmet need in other parts of the HMA. This joint position statement does not constitute the MoU and neither does it avoid the need for the MoU. It has been prepared to illustrate that the supply of housing land across the HMA (as assessed at 31 March 2017) is likely to be sufficient to meet the overall needs of the HMA over the period 2011 to 2031.

It is understood by all partners that should the MoU, once adopted, set out a housing requirement for an area that differs significantly to that contained in an adopted plan for that area then, unless there is sufficient flexibility already provided for within that plan, an early review or partial review of the affected plan will be brought forward to address this matter. To take this into account appropriate trigger mechanisms will be inserted in all local plans coming forward.

In considering the supply it is appreciated that in the short term there will be a limited number of largely small scale permissions that will lapse. However, the Government's stated commitment to accelerate the delivery of new homes makes it reasonable to believe that the vast majority of the homes now 'in the pipeline' will be built by 2031. Indeed, on those large-scale sites where the delivery trajectory extends beyond 2031, it may prove possible to deliver a greater number of new homes by that date than is currently expected.

Having regard to the above, the authorities are satisfied that the overall supply collectively arising from these processes will see new homes provided in numbers sufficient to meet, at the minimum, the OAN for housing across the HMA over the period 2011-2031. It is notable that the current commitments already identify sites that are expected to deliver over 7,000 homes in the period beyond 2031.



Housing Land Supply as at 31 March 2017

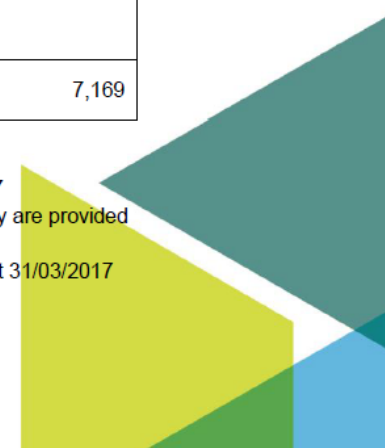
Authority	OAN 2011-2031	Completions 2011 to 2017	Commitments ¹ projected for delivery 2017 to 2031	Allocations in an adopted Local Plan ²	Emerging allocations in a draft plan ²	Allowance for small site or windfall development ²	Notional guide figure for estimated supply in currently unpublished plans ³	Projected total delivery to 2031	Commitments ⁴ not projected for delivery until beyond 2031
Blaby	7,400	2,749	5,561		795	420		9,525	398
Charnwood	20,620	4,259	7,741	3,100		720	4,800	20,620	3,390
Harborough	10,640	2,462	5,056		4,267	1,015		12,800	
Hinckley & Bosworth	9,420	2,973	4,636	1,817		560	1,878	11,864	570
Leicester City	33,840	5,955	9,373	3,675		2,100	2,900	24,003	
Melton	3,720	639	1,588		3,198	100		5,525	
NW Leics	9,620	3,073	6,591	790		560		11,014	2,811
Oadby & Wigston	2,960	578	768		1,614	70		3,030	
HMA total	96,580	22,688	41,314	9,382	9,874	5,545	9,578	98,381	7,169

¹ Includes sites under construction or with the benefit of planning permission, including sites with a resolution to grant, as at 31/03/2017

² In each case the figure relates solely to projected delivery during the period prior to 31/03/2031; includes plans published since 31/03/2017

³ The figures given represent working assumptions of the notional capacity (to 2031) of new allocations to be made in future local plans; they are provided solely to inform estimates of overall capacity and do not pre-empt due local plan process.

⁴ Includes sites with the benefit of planning permission, including sites with a resolution to grant, plus allocations in an adopted plan, all as at 31/03/2017



Employment Land Supply

Turning to employment growth, the HEDNA assessment is based on modelling which relates the sectors used in the economic forecasting to the planning use classes. This exercise uses an average employment density (sqm floorspace per job) to estimate net growth in floorspace. It then makes assumptions on plot ratios to assess the land area required.

There is an assessed need for between 142ha and 198ha of land for office development (use classes B1a and B1b), 132ha of land for industrial development (use classes B1c and B2) and 93ha for 'non-strategic' warehouse/distribution floorspace (use class B8). The HEDNA advises that these be regarded as minimum figures as the quantitative analysis does not take account of the potential 'replacement' demand for floorspace arising from the loss (planned or otherwise) of existing poorer quality employment buildings.

As regards strategic warehouse/distribution floorspace (defined as involving units in excess of 9,000m²), the HEDNA references the separate study undertaken by MDS Transmodal and corroborates the strong market demand for additional development land. The assessed need to 2031 is for a minimum additional 361ha.

In terms of employment land supply, the table below summarises the known position for B class uses excluding strategic warehousing/distribution. It is expected that, particularly as regards land for office development, the authority-level distribution of sites is likely to differ from that projected in the HEDNA. The supply figures show the net position and it is evident that, most notably around Hinckley, land previously in employment use has been redeveloped to provide strategic B8 units (as reflected in the separate analysis below).

Employment Land Supply as at 31 March 2017

Authority	Assessed need 2011-2031 (ha)	Projected supply 2011-2031 (ha)	Notes
Blaby	62-70	62	Completions at 3ha plus commitments at 44ha, emerging allocations of 15ha
Charnwood	46-69	67	Completions at 8ha plus commitments at 59ha, emerging allocations tbc
Harborough	44-51	75	Completions at 5ha plus commitments at 12ha, emerging allocations of 58ha
Hinckley & Bosworth	41-62	17	Completions at -14ha plus commitments at 31ha, emerging allocations tbc
Leicester	53-57	17	Completions at 12ha plus commitments at 5ha, emerging allocations tbc
Melton	45-53	49	Completions at 12ha plus commitments at 6ha, emerging allocations of 31ha
NW Leics	65-66	50	Completions at 5ha plus commitments at 29ha, allocations of 16ha
Oadby & Wigston	5	9	Commitments at 3ha, emerging allocations of 6ha
FEMA Total	367-423	346	

Note – figures are net and are rounded to the nearest hectare



Whilst completions, commitments and sites in published plans collectively fall just short of identifying sufficient land to meet the minimum requirements, it is known that three authorities (as identified in the housing supply commentary) are working towards the publication of new local plans that will identify fresh proposed allocations of land. In addition North West Leicestershire DC is about to commence a plan review process that will address the shortfall in that district. Taking all this into account, it is a reasonable expectation that the available supply will mean that the minimum requirements for additional land over the period to 2031 will be exceeded.

In terms of the need for strategic warehousing/distribution land, the position across Leicester and Leicestershire, again as at March 2017, is that 98ha has been built out, a further 322ha has the benefit of planning permission and 135ha is allocated for development. This represents a total of 555ha against the minimum requirement figure of 361ha. As such it is again a reasonable expectation that the available supply will mean that the minimum requirements for additional land will be met (and are likely to be exceeded) over the period to 2031.

Endorsement of this Joint Statement

Each of the nine local planning authorities that have contributed to the preparation of this statement confirm that the information provided for their area is accurate as at 31 March 2017 and therefore that the joint position shown here as regards the supply of housing and employment land for the period 2011 to 2031 is both fair and robust.

The joint statement has been prepared by the following authorities:

- Blaby District Council
- Charnwood Borough Council
- Harborough District Council
- Hinckley & Bosworth Borough Council
- Leicester City Council
- Leicestershire County Council
- Melton Borough Council
- North West Leicestershire District Council
- Oadby & Wigston Borough Council

March 2018





Leicester & Leicestershire Authorities

Joint Position Statement relating to Leicester's Housing and Employment Land Needs

September 2020




1. The Leicester and Leicestershire HMA and FEMA

- 1.1 The Leicester and Leicestershire Housing Market Area (HMA) and Functional Economic Area (FEMA) covers the administrative areas of eight local planning authorities and two highway authorities. The eight local planning authorities are:
2. Blaby District Council
 3. Charnwood Borough Council
 4. Harborough District Council
 5. Hinckley & Bosworth Borough Council
 6. Leicester City Council
 7. Melton Borough Council
 8. North West Leicestershire District Council
 9. Oadby & Wigston Borough Council
- 1.2 The two upper tier authorities in Leicester and Leicestershire, with statutory responsibilities for transportation, education, social care, flooding, minerals & waste planning and public health are:
10. Leicester City Council
 11. Leicestershire County Council
- 1.3 The purpose of this Statement is to set out how the authorities continue to work together to accommodate a potential unmet need for housing and employment land identified in the Leicester City Draft Local Plan Consultation (Sept 2020). The authorities have a long track record of cooperation across Leicester and Leicestershire (L&L) and have adopted a non-statutory Strategic Growth Plan which includes 'notional' housing figures (<http://www.llstrategicgrowthplan.org.uk/wp-content/uploads/2019/01/Final-LL-SGP-December-2018-1.pdf>). It is envisaged a Statement of Common Ground will be completed in 2021, setting out how any unmet need from Leicester will be redistributed amongst the other authorities in L&L.

2.0 Background

Summary

- 2.1 The National Planning Policy Framework (NPPF) requires local plans, as a minimum, to provide for the objectively assessed need for housing and other uses, as well as any needs that cannot be met within neighbouring areas (unless the NPPF provides a strong reason for restricting development; or the adverse impacts of doing so significantly and demonstrably outweigh the benefits when assessed against the NPPF).
- 2.2 Plans should be informed by agreements with other authorities so that unmet need from neighbouring areas is accommodated where practical and sustainable to do so, and based on effective cross-boundary joint working as evidenced in a Statement of Common Ground (SCG).
- 

- 2.3 Leicester City Council is consulting on a Draft Local Plan (regulation 18) in September 2020, with a view to publishing the Submission Version (regulation 19) in 2021. Leicester City declared an unmet housing need in February 2017 which remained unquantified while further evidence was gathered to support the publication of their Draft Local Plan. During this time several authorities have adopted local plans.
- 2.4 The L&L authorities were made aware of the potential scale of unmet need in December 2019. Consultation on the Leicester Draft Local Plan (and associated evidence) was delayed due to the COVID-19 Pandemic and is anticipated to start in September 2020.
- 2.5 Leicester's Draft Local Plan consultation indicates a potential unmet need of 7,742 homes and 23 Hectares of employment land 2019 to 2036. The authorities in L&L have been progressing work on a Sustainability Appraisal to assess options for where this unmet need could be appropriately distributed across L&L. This will inform a Statement of Common Ground setting out how any unmet need from Leicester will be distributed amongst the HMA authorities, which is intended for completion in early 2021.

3.0 Unmet Need in Context

Housing


- 3.1 The Governments current Standard Method for calculating housing need uses 2014-based household projections, and suggests L&L have to provide 82,739 homes (4,867 per year 2019 to 2036). In this context an unmet need in Leicester of 7,742 homes is about 9% of the overall need for L&L over this period.
- 3.2 The NPPF requires authorities to have a clear understanding of the land available in their area to meet housing need through the preparation of a strategic housing land availability assessment (SHLAA). In L&L, the SHLAAs have been prepared using an agreed methodology across the HMA as a whole.
- 3.3 Appendix A and B to this Statement have been prepared using the outputs of the Standard Method for calculating housing need and SHLAAs. It provides a summary of the need for new homes, and the theoretical capacity of both the HMA and each local authority.
- 3.4 To 2036 there is a theoretical capacity for some 174,412 homes across the HMA as a whole (Appendix B). When set against the need of 82,793 (2019-36), it is clear there is considerable flexibility to meet housing need within the HMA, including Leicester's unmet need of 7,742 homes.
- 3.5 Housing supply in L&L is strong. Up to 2031 (Appendix A) there is already sufficient supply in the pipeline to meet the needs of the HMA. The L&L housing need 2019-31 is 58,404 using the standard method. Taking into account commitments, allocations (including emerging allocations in Leicester and Charnwood Draft Plans) and windfalls, there is a supply of 70,371 which is 11,967 (20%) higher than the HMA-wide need. Leicester City Council is the only authority to declare an unmet need at present.

- 3.6 Up to 2036 (Appendix B) the supply situation remains relatively strong given that most local plans cover up to, or close to, 2031. The L&L housing need to 2036 is 82,739 using the standard method. Assuming as minimum all District and Borough authorities will meet their own housing need, housing commitments, allocations (including emerging allocations in Leicester and Charnwood Draft plans) and windfalls suggest there is a supply of 85,767 which is 3,028 (4%) higher than the HMA wide need.

Employment

- 3.7 The most up-to-date FEMA-wide assessment of employment needs is the Housing and Economic Development Needs Assessment (2017). It identifies a need for 459 to 497 Hectares of employment in L&L (2011-2036). In this context, an unmet need of 23 Hectares is less than 5% and relatively small.

4.0 Changing Context

- 4.1 The Government intends to reform the planning system and is consulting on potential future changes, including:
- Planning for the Future - White Paper
 - Changes to the Current Planning System
- 4.2 At present these reforms do not impact housing need or emerging Local Plans as they are consultations. The Planning for the Future White Paper sets out plans for fundamental reform of the planning system and explains this would be accompanied by shorter-term measures. The 'Changes to the Current Planning System' consultation sets out potential shorter-term measures to improve the effectiveness of the current system, including a potential new standard method for calculating housing need.
- 4.3 There is no timetable for the reforms and the proposals could change following consultation. Against this background the Government encourages authorities to get up-to-date Local Plans in place and some authorities in L&L are at an advanced stage of plan preparation. In light of the uncertainty surrounding the content and timing of government reforms, the L&L authorities continue to cooperate on how Leicester's current unmet need could be distributed.
- 4.4 If the proposed changes to the Standard Method for calculating housing need (as set out in the 'Changes to the Current Planning System' consultation) are introduced unchanged, it would have implications for unmet need in L&L. For example, Leicester's unmet need for housing would be substantially lower or may not exist. On the other hand, most other authorities would see a significant increase in the number of homes needed.
- 4.5 The emerging situation will be kept under review as work progresses. The Duty to Cooperate is an ongoing process, and although Government reforms may remove the Duty, the Government also recognise the need for further consideration to the way in which strategic cross-boundary issues can be adequately planned for.
- 

Appendix A - Leicester and Leicestershire Housing Land Supply, 2020 to 2031

The table below compares housing land supply to local housing need based on the Governments Standard Method. The calculations are based on data available at 1st April 2020.

	A	B	C	D	E	F	G	H
Authority	Local Housing Need 2020 - 2031	Commitments ¹ projected for delivery 2020 to 2031	Allocations in an adopted Plan ²	Emerging allocations in a draft plan ²	Allowance for small site or windfall development to 2031	Total Projected Delivery to 2031 (B+C+D+E)	SHLAA Capacity to 2031 ³	Total Theoretical Capacity to 2031 (F+G)
Blaby	4,068	4,935	758		280	5,973	12,150	18,123
Charnwood	12,984	8,734	1,385	5,761	720	16,660	13,948	30,608
Harborough	6,504	4,064	4,526		330	8,920	4,835	13,755
Hinckley & Bosworth	5,484	3,139	185		603	4,039	23,105	27,144
Leicester City	20,544	9,827		7,131	1,800	18,758	0	18,758
Melton	2,412	2,353	2,891		223	5,467	1,108	6,575
NW Leics	4,548	6,647	990		360	7,997	4,052	12,049

Oadby & Wigston	1,860	791	1,449		159	2,399	0	2,399
HMA total	58,404	40,490	12,184	12,892	4,475	70,371	59,198	129,299

¹ Includes sites under construction; with planning permission (including sites with a resolution to grant), as at 31/03/2020

² projected delivery up to 31/03/2031; includes allocated sites from local and neighbourhood plans

³ To avoid duplication SHLAA sites that have planning permission or are allocated in an adopted or emerging plan have been removed from this figure

Appendix B - Leicester and Leicestershire Housing Land Supply, 2020 to 2036

The table below compares housing land supply to local housing need based on the Governments Standard Method. The calculations are based on data available at 1st April 2020.

	A	B	C	D	E	F	G	H
Authority	Local Housing Need 2020 - 2036	Commitments ¹ projected for delivery 2020 to 2036	Allocations in an adopted Plan ²	Emerging allocations in a draft plan ²	Allowance for small site or windfall development to 2036	Total Projected Delivery to 2036 (B+C+D+E)	SHLAA Capacity to 2036 ³	Total Theoretical Capacity to 2036 (F+G)
Blaby	5,763	5,314	878		480	6,672	15,003	21,675
Charnwood	18,394	10,474	1,990	7,252	1,120	20,836	20,161	40,997
Harborough	9,214	4,064	5,526		640	10,230	8,975	19,205
Hinckley & Bosworth	7,769	3,949	185		938	5,184	30,114	35,298
Leicester City	29,104	9,827		8,985	2,550	21,362	0	21,362
Melton	3,417	2,350	3,886		358	6,594	3,635	10,229
NW Leics	6,443	7,775	1,317		560	9,652	13,707	23,359

Oadby & Wigston	2,635	791	1,449		159	2,399	0	2,399
HMA total	82,739	44,544	15,231	16,237	6,805	82,817	91,595	174,412

¹ Includes sites under construction; with planning permission (including sites with a resolution to grant), as at 31/03/2020

² projected delivery up to 31/03/2036; includes allocated sites from local and neighbourhood plans

³ To avoid duplication SHLAA sites that have planning permission or are allocated in an adopted or emerging plan have been removed from this figure



Appendix H - Leicester & Leicestershire Authorities - Statement of Common Ground relating to Housing and Employment Land Needs (June 2021)

1.0 The Leicester and Leicestershire HMA and FEMA

1.1 The Leicester and Leicestershire Housing Market Area (HMA) and Functional Economic Area (FEMA) covers the administrative areas of eight local planning authorities and two transport authorities. The eight local planning authorities responsible for plan making are:

- Blaby District Council
- Charnwood Borough Council
- Harborough District Council
- Hinckley & Bosworth Borough Council
- Leicester City Council (Unitary)
- Melton Borough Council
- North West Leicestershire District Council
- Oadby & Wigston Borough Council

1.2 The two upper tier authorities in Leicester and Leicestershire (L&L), with statutory responsibilities for transportation, education, social care, flooding, minerals & waste planning and public health are:

- Leicester City Council (Unitary)
- Leicestershire County Council

1.3 This Statement has been prepared jointly by the eight plan making authorities and Leicestershire County Council as an additional signatory given their statutory responsibilities, hereafter referred to as “the authorities”. The Map in Appendix C shows the location and administrative areas covered by this statement. The [Housing & Economic Development Needs Assessment 2017](#) (HEDNA) identifies this area as the Leicester & Leicestershire HMA and FEMA.

1.4 Local planning authorities across L&L are currently progressing plans at different stages. Appendix D sets out the latest position.

2.0 Purpose

2.1 This statement has been prepared by the authorities to support the Charnwood Local Plan. The key strategic matters covered in this statement under the Duty to Cooperate are; L&L Housing and Employment Needs to 2036; Unmet Need to 2036; and the process of apportioning unmet need to 2036. This statement will be reconfirmed and updated as necessary, including for subsequent authorities’ Local Plans.



3.0 **Key Strategic Matters on which Authorities Agree**

Duty to Cooperate

3.1 The authorities agree there is a long track record of effective joint working on strategic matters across L&L. The authorities have continuously engaged with each other on the strategic matters set out in this statement and throughout the preparation of Local Plans across the area. This is most clearly evidenced through:

- The establishment of the Leicester & Leicestershire Members Advisory Group
- The joint preparation of evidence, including the Housing & Economic Development Needs Assessment (2017)
- The adoption of a non-statutory [Strategic Growth Plan](#) 2018 which includes 'notional' housing figures.
- The agreement of Joint Statements in 2017, 2018 and 2020 (Appendix E, G and F)
- The publication of this Statement of Common Ground.

3.2 More information and details of engagement will be set out in individual authorities Duty to Cooperate Statements that accompany Local Plans. Authorities will continue to engage on an ongoing basis.

L&L Housing Need to 2036

3.3 The authorities agree the appropriate way to calculate local housing need is using the current standard method set out in Government guidance which currently uses the 2014 based household projections. The authorities agree that local housing need (2020 - 2036) is as follows:

Local Planning Authority	Total Housing Need 2020 – 2036	Houses per year 2020 - 2036
Blaby District Council	5,520	345
Charnwood Borough Council	17,680	1,105
Harborough District Council	8,800	550
Hinckley and Bosworth Borough Council	7,232	452
Leicester City Council	37,456	2,341
Melton Borough Council	3,216	201
North West Leicestershire District Council	5,744	359
Oadby and Wigston Borough Council	2,672	167
Leicester and Leicestershire HMA Total	88,320	5,520

Table 1: Local Housing Need

3.4 The Government's current standard method for calculating housing need suggests L&L need to provide 88,320 homes (5,520 per year 2020 to 2036).



- 3.5 The NPPF requires authorities to have a clear understanding of the land available in their area to meet housing need through the preparation of a strategic housing land availability assessment (SHLAA). In L&L, the SHLAAs have been prepared using an agreed methodology across the HMA as a whole.
- 3.6 Appendix A and B to this Statement have been prepared using the outputs of the standard method for calculating housing need and SHLAAs. It provides a summary of the need for new homes, and the theoretical capacity of both the HMA and each local authority.
- 3.7 To 2036 there is a theoretical capacity for some 173,147 homes across the HMA as a whole (Appendix B). When set against the need of 88,320 (2020-36), the authorities agree there is flexibility to meet L&L housing need within the HMA, including unmet need.
- 3.8 Housing supply in L&L is strong. Up to 2031 (Appendix A) there is already sufficient supply in the pipeline to meet the needs of the HMA. The L&L housing need 2020-31 is 60,720 using the standard method. Taking into account commitments, allocations (including emerging allocations in Leicester and Charnwood Draft Plans) and windfalls, there is a supply of 69,403 which is 8,683 (14%) higher than the HMA-wide need. Leicester City Council is the only authority to declare an unmet need at present.
- 3.9 Up to 2036 (Appendix B) the supply situation remains relatively strong given that most local plans cover up to, or close to, 2031. The L&L housing need to 2036 is 88,320 using the standard method. Taking into account housing commitments, allocations (including emerging allocations in Leicester and Charnwood Draft plans) and windfalls suggest there is a supply of 84,388 which is close to the HMA wide need.

L&L Employment Need to 2036

- 3.10 The authorities agree the appropriate way to calculate employment need is using the jointly prepared Housing and Economic Development Needs Assessment (HEDNA) unless a more recent assessment has been undertaken. Based on the HEDNA and local assessments of employment land need the authorities agree the need is as follows:



Local Planning Authority	Employment Need 2019 to 2036 (Hectares)*	Source
Blaby District Council	74.84 - 75.85 ha	HEDNA
Charnwood Borough Council	55.9 ha	HEDNA + Charnwood Employment Land Review (2018)
Harborough District Council	45 - 52 ha	HEDNA
Hinckley and Bosworth Borough Council	38.5 - 50 ha	EL&PS
Leicester City Council	67 ha	City Economic Development Needs Assessment 2020
Melton Borough Council	33.05ha	Employment Land Study 2015
North West Leicestershire District Council	47.7 ha	North West Leicestershire – The need for employment land (November 2020) Stantec
Oadby and Wigston Borough Council	10.31 ha	Employment Land and Premises Study, October 2017
Leicester and Leicestershire HMA Total	372 - 392 ha	

Table 2: Employment Land Needs. *Note: the need has been adjusted to a base-date of 2019 taking into account completions as appropriate.

3.11 Table 2 above shows L&L have to provide 372 - 392 ha hectares of employment land to 2036. The authorities agree the L&L employment land needs (including unmet need) can be met within the FEMA.

Unmet need to 2036

3.12 The authorities agree that Leicester City Council is the only authority in L&L to have declared and quantified (with evidence) an unmet need to 2036. Assisting Leicester to meet its unmet need is therefore a key element of the Duty to Co-operate across L&L.

3.13 Leicester City Council consulted on a Draft Local Plan (regulation 18) in September to December 2020, with a view to publishing the Submission Version (regulation 19) in 2021. Leicester City declared an unmet housing need in February 2017 (Appendix H) which remained unquantified while further evidence was gathered to support the publication of their Draft Local Plan. During this time several authorities have adopted local plans.

3.14 The L&L authorities were made aware of the potential scale of unmet need in December 2019. Consultation on the Draft Leicester Local Plan (and associated evidence) was delayed due to the COVID-19 Pandemic until September to December 2020.

3.15 Leicester's Draft Local Plan consultation indicates a potential unmet need of 7,742 homes and 23 Hectares of employment land (B2 General Industrial and B8 Small Warehousing Units less than 9,000 sq.m) 2019 to 2036.



- 3.16 However, immediately after the consultation closed in December 2020 the Government published a new standard method for calculating housing need. The new method increased Leicester's housing need by 35%, adding a further 9,712 homes to their need between 2020 and 2036 (607 homes per year).
- 3.17 Although the supply of homes in Leicester may evolve as their local plan progresses, providing for this amount of additional homes in the City would require more than a doubling of the allocations set out in their recent Draft Local Plan. In this context the City consider that it will not be possible to meet NPPF policy obligations of a sound and deliverable plan, and so in the revised PPG context (Paragraph: 035 Reference ID: 2a-035-20201216) it will be necessary to seek to agree a Statement of Common Ground to deal with the recent increase in housing need.
- 3.18 The authorities agree the Government changes to the standard method on 16 December 2020 has significantly increased housing need in Leicester and acknowledge the quantity of Leicester's unmet need may change as the Local Plan progresses (e.g. as evidence on land supply is developed further).

Apportionment of Leicester's Unmet Need to 2036

- 3.19 The authorities remain committed to cooperating on strategic cross boundary matters, including agreeing the redistribution of any unmet housing and employment need. The authorities have been engaged in a process of testing reasonable alternative options for meeting Leicester's unmet need through a Sustainability Appraisal process with a view to agreeing an apportionment of the unmet need ahead of the submission of the Charnwood Local Plan (as set out in the agreed Joint Statement of September 2020 – Appendix G).
- 3.20 However, the authorities agree the change in Leicester's housing need on 16 December 2020 (resulting from Government changes to the standard method for calculating housing need) is so significant that it requires additional evidence. This means the Charnwood Local Plan will now be submitted ahead of the apportionment of housing being agreed.
- 3.21 The authorities agree to carry out the following programme of work to inform the apportionment of unmet need from Leicester to the L&L Districts/Boroughs:
- Housing and Economic Needs Assessment
 - Strategic Growth Options and Constraints Mapping
 - Strategic Transport Assessment
 - Sustainability Appraisal
- 3.22 This work will be commissioned in Spring 2021 and used to inform a Statement of Common Ground apportioning unmet need which is anticipated to be completed in Winter 2021/2022.



- 3.23 On 19th January 2021 the Government published a Written Ministerial Statement and wrote to all Local Planning Authorities in England reminding them of the continued importance of maintaining progress on producing up-to-date Local Plans (Appendix I). In the letter the Government make clear “it is essential that plans are kept up to date” and “it is critical that work should continue to progress Local Plans through to adoption by the end of 2023 to help ensure that the economy can rebound strongly from the COVID-19 emergency”. The Charnwood Local Plan is also critical to demonstrating and maintaining a five year supply of deliverable housing sites. Delay will lead to unplanned development and lack of certainty for communities, and private and public sector investors in the intervening period.
- 3.24 To maintain progress on producing an up-to-date Local Plan for Charnwood, the authorities agree that Charnwood Borough Council will continue to actively engage in the programme of work to redistribute unmet need and include a trigger policy to review and update the Local Plan, if the agreed apportionment of unmet need requires it.
- 3.25 Employment: The authorities agree a working assumption unmet need figure of 23 Hectares (B2 and Small B8) for Leicester. This will be subject to testing through the Leicester Local Plan. The authorities agree there is a sufficient supply of employment land in the Charnwood Local Plan (submission version) to accommodate this level of unmet need if this is found to be a sustainable approach, in the context of the programme of evidence work to inform the apportionment of unmet need.

4.0 Maintaining and Updating this Statement

- 4.1 The authorities acknowledge the Government intend to reform the planning system and recently consulted on a White Paper - Planning for the Future.
- 4.2 There is no timetable for the reforms and the proposals could change following consultations. Against this background the Government is encouraging authorities to get up-to-date Local Plans in place and some authorities in L&L are at an advanced stage of plan preparation.
- 4.3 This statement includes an agreed programme of work to apportion unmet need from Leicester. The authorities agree the Duty to Cooperate is an ongoing process and this statement will be kept up to date to reflect the latest position. The process for updating and maintaining this statement will be managed through ongoing joint work between the authorities. Once the agreed work is complete, the authorities agree this statement will be updated to include the apportionment of unmet need across L&L based on the evidence.



Appendix I – Letter from Leicester City Council

Please ask for: Grant Butterworth
Telephone: (0116) 454 1000
Email: planning@leicester.gov.uk
Date: 13th February 2017



Leicester
City Council

Mr J Newton
North West Leicestershire District Council
Council Offices
Coalville
Leicestershire
LE67 3FJ

Planning
115 Charles Street
Leicester LE1 1FZ

www.leicester.gov.uk/planning

Dear Mr Newton

Implications for Leicester City Council, of the Housing and Economic Development Needs Assessment (HEDNA).

The Housing and Economic Development Needs Assessment (HEDNA) was approved by the Members Advisory Group on Thursday 26 January 2017. The HEDNA establishes a new objectively assessed need (OAN) for the Leicester and Leicestershire Housing Market Area (HMA), and for each local planning authority within the HMA. The HEDNA OAN replaces the OAN set out in the Strategic Housing Market Assessment (SHMA 2014).

The HEDNA establishes an OAN for the HMA of 96,580 dwellings for the period 2011-2031 (or 4,829 per year). For Leicester City over the same period the OAN is 33,840 dwellings (or 1,692 per year). Just over one third of the total OAN for the HMA arises within the city.

The HEDNA sets out a housing need significantly above that established in previous assessments of housing need, including the SHMA 2014 and in previous local, sub-regional and regional plans (including the Leicester Core Strategy 2014, Regional Plan 2009 and Structure Plan 2005).

The HEDNA also sets out increased new requirements for Employment land for Leicester :-

- 115,000 sqm (6ha) required for offices
- 15ha for warehousing/distribution
- 36ha for general employment

The HEDNA has significant implications regarding the ability of the city to continue to accommodate its full objectively assessed need for housing and employment within the administrative area of the city. The city's tightly drawn boundaries and built up nature, coupled with areas of significant flood risk means that there is limited land

available for further development. Whilst the City is currently unable to provide a definitive figure for the shortfall in the city (in advance of work on the emerging local plan), the scale of the need set out in the HEDNA is of such magnitude that it is concluded that there will be an unmet need arising in the city.

We will be working to meet these needs in our new Local Plan. However we will need support and co-operation from HMA partners. The Strategic Growth Plan will be the vehicle for these conversations.

The City Council looks forward to working closely with yourselves and the other HMA partners on ensuring the full OAN for the HMA is accommodated within the HMA by ensuring emerging plans are flexible enough to respond to addressing any unmet need which may be required to be addressed within those plans.

The attached note (Appendix 1) provides further background on the emerging land supply position in the city however it should be noted that further work on the capacity of the city, including potential new land allocations, is currently being undertaken through work on the new local plan for the city.

Yours sincerely,



Grant Butterworth
Head of Planning
Leicester City Council

Appendix 1

Housing Completions in Leicester since 2011

The table below shows housing completions in Leicester since 2011 compared to the HEDNA OAN. The table shows that the rate of housing completions in the city falls significantly below the HEDNA OAN. There is already a shortfall of 2,917 dwellings since 2011 (around 580 per year). Completions rates in the city have been relatively constant since the mid-2000s at around 1,100 per year. It does not seem likely that the rate of completions in the city will increase significantly above that level.

Year	Completions	HEDNA 2017 (2031)	Shortfall
2011/12	977	1,692	-715
2012/13	1,147	1,692	-545
2013/14	1,126	1,692	-566
2014/15	1,162	1,692	-530
2015/16	1,131	1,692	-561
Total	5,543	8,460	2,917

Should rates of completions in the city remain at around 1,100 per year, around 22,000 dwellings could be built between 2011 and 2031. This would leave a shortfall of around 11,840 against the HEDNA OAN to 2031.

It should also be noted that student completions account for a significant proportion of completions up to 2015/16 and, in light of the HEDNA (paragraphs 9.53-9.54), the City Council are currently reviewing the way in which student completions are counted towards meeting the OAN.

Current supply of housing land in Leicester

The City Council are in the process of finalising an updated SHLAA to represent the position as at 31st March 2016, and this is due to be published shortly. The draft figures from this were used to set out the city's total capacity figure in table 1 of the Statement of Co-operation.

The draft SHLAA currently shows a total capacity for the city up to 2031 of 25,006 (including completions since 2011, commitments, windfall and other SHLAA sites). This is a shortfall of 8,834 over the HEDNA OAN to 2031).

Emerging Local Plan position

The City Council intend to consult on the next stage of the new local plan later this year. This will include consultation on a wide range of sites. Following this the City Council will work towards a draft plan which is due to be published in spring 2018. Submission of the plan will follow in early 2019.

Given that the city currently does not have sufficient land allocated or identified to meet the level of need set out in the HEDNA we will be seeking to allocate new sites to help meet this need.

However at this early stage in the plan process it is not possible to know how many sites will be suitable, available and viable for housing development, nor how many of those will be successfully allocated in the final adopted plan. It is therefore not possible to know with any certainty, what contribution those sites can make towards addressing the housing OAN for the city and any consequent reduction in any unmet need remaining in the city. However it is clear that even if a significant number of new sites are identified, the scale of the need set out in the HEDNA is of such magnitude that it is concluded that there will be an unmet need arising in the city.

Appendix J - Written Ministerial Statement



Ministry of Housing,
Communities &
Local Government

To: All Council Leaders in England
CC: Local Authority Chief Executives

Rt Hon Christopher Pincher MP
Minister of State for Housing

*Ministry of Housing, Communities and Local
Government*
Fry Building
2 Marsham Street
London
SW1P 4DF

Tel: 0303 444 3430
Email: christopher.pincher@communities.gov.uk

www.gov.uk/mhclg

19 January 2021

Dear Local Authority Leader,

CONTINUING PROGRESS TO GET UP-TO-DATE LOCAL PLANS IN PLACE

I am writing to all local planning authorities in England to remind you of the continued importance of maintaining progress on producing up-to-date Local Plans.

Despite the significant challenges that have been caused by the COVID-19 pandemic, I know that the majority of local planning authorities continue to do all they can to get Local Plans in place and keep them up to date. I would like to thank you for the important work that you do to deliver the homes, jobs and supporting infrastructure that make such a difference to your local communities.

The country needs more, better and greener homes in the right places. This Government's ambition is to deliver 300,000 homes per year by the mid 2020s and one million homes over this Parliament. Increasing the number of up-to-date Local Plans across England is central to achieving that goal. Local Plans not only unlock land for development and ensure that the right number of new homes are being built in the right places, they also provide local communities with an opportunity to have their say on how their local areas will change over the coming years, and how the local environment can be protected and enhanced.

Nine in ten local planning authorities have now adopted a Local Plan, which is excellent. My Department is committed to working with the remaining 10% to get a plan in place as soon as possible, and across the board it is essential that plans are kept up to date. In March 2020, the Government set a deadline of December 2023 for all authorities to have up-to-date Local Plans in place. It is critical that work should continue to progress Local Plans through to adoption by the end of 2023 to help ensure that the economy can rebound strongly from the COVID-19 emergency. Progressing Local Plans will help to ensure that we can build back better and continue to deliver the homes that are needed across England. As such, a Written Ministerial Statement was made today to remind all local planning authorities of the importance of maintaining progress to get up-to-date plans in place.

To support this, we recently rolled forward temporary changes that we made over the summer to ensure the planning system continues to operate effectively during the pandemic. In addition, we recently announced changes to the methodology for assessing Local Housing Need and published the 2020 Housing Delivery Test measurement. This should provide plan-makers with greater certainty over the homes they should plan for and whether they need to take additional measures to encourage delivery in their area.

The Housing Delivery Test measurement shows that the majority of local planning authorities continue to deliver the number of homes needed in their communities. However, 55 authorities

delivered less than three quarters of their housing need, and are therefore subject to the presumption in favour of sustainable development. Of these, 40 have a Local Plan that is more than 5 years old. This clearly demonstrates the importance of having an up to date Local Plan in place.

We also want to see Neighbourhood Plans continue to progress with the support of local planning authorities, to give more communities a greater role in shaping the development and growth of their local areas.

The Planning for the Future White Paper consultation closed in October. The White Paper sets out proposals to deliver a significantly simpler, faster and more predictable system. These proposals will need further development and it is important that authorities do not use this period as a reason to delay plan-making activities. Authorities who have an up-to-date plan in place will be in the best possible position to adapt to the new plan-making system.

I will consider contacting those authorities where delays to plan-making have occurred to discuss the reasons why this has happened, and to explore what support my Department can offer.



RT HON CHRISTOPHER PINCHER MP



Charnwood Local Plan Examination
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Mr R Bennett
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18 November 2022

Dear Mr Bennett,

Charnwood Local Plan Examination – Leicester and Leicestershire Housing and Employment Land Needs

We would like to thank the Council, Mr Kemp and the staff at Loughborough Town Hall for the efficient and effective arrangements made at the hearing session on 25 and 26 October 2022 and we also acknowledge the contributions from the Council's team and all other participants, including the Leicester and Leicestershire local planning authorities.

As we indicated at the hearing session and as set out in our letter of 10 August 2022 (Exam 42b), we are writing to set out our initial findings in relation to Charnwood's apportionment of Leicester's unmet need for housing and employment land. The detailed reasons for our findings will be in our final report, but we set them out broadly here to make clear our position on the issue of unmet need and to inform the range of matters that need to be completed at the next hearing session.

The points set out in this letter have been informed by our consideration of the evidence base including the Housing and Employment Needs Assessment (HENA) (Exam 44a) and accompanying documents, the responses to our Matters, Issues and Questions in the Matter 10 hearing statements and the discussion at the hearing session on 25 and 26 October 2022. We emphasise that our findings are based on the evidence before us which has been submitted to the Charnwood Local Plan Examination. It does not, therefore, prejudice the testing of the local

housing need figure or the employment land need within the Plans of the other Leicester and Leicestershire authorities as they come forward.

Unmet Need for Housing

Based on all that we have read and heard at the hearing session, and in so far as it relates to Charnwood, we see no reason to disagree with the HENA's conclusion that the standard method establishes a minimum local housing need of 91,408 dwellings across the Housing Market Area (HMA) to 2036.

The implications of the initial results of the 2021 Census and the Office for National Statistics 2018 based Sub-National Household Projections for Charnwood do not indicate any exceptional circumstances to deviate from the 2014-based figures which are incorporated into the Standard Method. In Charnwood's case, a further uplift to support economic growth is also not justified since the standard method would support sufficient growth in the workforce to support jobs growth in the baseline economic projections.

The HMA authorities are at various stages of Plan making. There is a degree of uncertainty about the deliverability of allocated housing sites in both the Leicester City Local Plan and the Plans of the other HMA authorities, and therefore the precise scale of unmet need across the HMA cannot be precisely established at this time. However, we consider that waiting for further clarity on this matter would lead to considerable delays in Plan making and would lead to further delays in the housing delivery which is necessary to address needs that exist now. Further, we do not consider that the Examination should wait for the outcome of the Strategic Transport Assessment and Strategic Growth Options and Constraints Mapping which are underway to inform the review of the Strategic Growth Plan to 2050 (EB/DS/6) and which may trigger the need for a Plan review.

Based on the evidence at this stage and pending further testing of housing delivery through the Leicester Local Plan Examination, we consider that a figure of 18,700 dwellings represents a reasonable working assumption for the scale of Leicester's unmet housing need from 2020 – 2036.

Policy DS2 of the submitted Plan sets out a review policy which refers to the now published SoCG. It has, therefore, been overtaken by events and a main modification to the policy will be necessary for soundness. The flexibility of the Charnwood Local Plan to respond to changing circumstances and therefore the scope of any main modification to Policy DS2 will be a matter for testing at the next hearing session.

The Apportionment of the Unmet Housing Need

The Planning Practice Guidance (PPG) does not advise how unmet need should be distributed across an HMA. The factors that have informed the proposed distribution of the unmet need set out in the Housing Distribution Paper (Exam 45) appear to be a logical and reasonable starting point for the apportionment of Leicester City's unmet housing need between the HMA authorities. The functional relationship between Charnwood and Leicester City which is underpinned by high levels of commuting and inter-dependency for jobs would support a 1.6% increase in Charnwood's housing stock, a figure which is supported by some representors. However, that level of stock growth would require a delivery rate of 1,400 dwellings per year (dpy), compared with average completions of 1,055 dpy from 2016 – 2021.

Whilst the evidence indicates that stock growth of 2.1% has been achieved in other parts of the East Midlands, we cannot be certain that the circumstances in those locations including the policy framework, market conditions, infrastructure and funding are comparable with the situation in Charnwood.

To some extent, the reference to a 'cap' in the Housing Distribution Paper implies a constraint on housing delivery, whereas the approach set out in the Paper is seeking to achieve a realistic and equitable distribution of the unmet need. We consider that the use of a 'headline' figure of 1.4% stock growth to inform the distribution of the unmet need represents a realistic approach in the case of Charnwood. We acknowledge that the 'manual adjustments' applied in paragraph 6.23 of the Housing Distribution Paper are not agreed by Hinckley and Bosworth Borough Council, however we consider that the resulting shortfall of 85 dpy to meet overall need is a matter that should be addressed by the HMA partners on an ongoing basis under the Duty to Cooperate and does not have implications for the soundness of the Charnwood Local Plan.

The PPG's list of circumstances where it is appropriate to consider whether actual need is higher than the standard method includes where an authority agrees to take on unmet need, which is the case for Charnwood and the other Leicestershire HMA authorities. Based on the proposed apportionments set out in Table 6.9 of Exam 45 and agreed in the SoCG, Charnwood's minimum local housing need figure to 2036 is, therefore, 1,189 dpy. However, whilst the HENA does not find a case for upward adjustments to overall housing need across the HMA, it recognises that there may be a case for considering some flexibility for specific Plans, including due to declining affordability.

Therefore, whilst the minimum local housing need is 1,189 dpy, that figure will be subject to further testing at the next hearing session as part

of Matter 4, taking into account local circumstances particular to Charnwood that are evidenced in the Housing Needs Assessment (EB/HSG/1).

The supply of sites and the delivery of housing land over the Plan period to meet the Plan's requirement form Matters 6 and 7 for the Examination. Based on our findings above, an increase in supply to meet Charnwood's local housing need plus Leicester's unmet need will be necessary. However, pending further testing of the housing requirement and the soundness of the proposed site allocations, the scale of the increase is still uncertain at this stage. In these circumstances, it would be prudent for the Council to consider the options for an increase in supply, but within the context of some uncertainty about the precise figure that will be needed.

Unmet Need for Employment

We consider that the HENA's assessment of Leicester and Leicestershire's employment land need, including in so far as it relates to Charnwood, is based on robust evidence and logical methods, including the use of the labour demand model for predicting future office floorspace needs and the use of gross completions to identify the need for B2/small B8¹ land. Informed by the HENA, the figure of 23 hectares in the SoCG represents a reasonable working assumption for the scale of Leicester's unmet need for employment land from 2020 – 2036, with the main need being for B2/small B8 land. The submitted Plan already includes provision to meet Leicester's unmet need for employment land, and the Council's position on meeting that need has not changed.

However, it is not clear which of the allocated employment sites in the Charnwood Local Plan make up the 23 hectares. Whilst business needs are 'footloose' and will not necessarily choose to locate in Charnwood if their needs cannot be met in Leicester, we consider that further evidence is needed to demonstrate that at least some of the allocated employment sites would meet the principles set out in the HENA Employment Distribution Paper (Exam 46). This would provide some assurance that the sites have at least a reasonable prospect of helping to meet Leicester's unmet need for employment. Those principles are a location adjoining Leicester, proximity to the City, preferably adjacent to the existing urban area and sites well connected to the City by A roads and ideally connected to the wider strategic network (A road/motorway network). We do not require a separate piece of work to address this and we would suggest that the Council can provide the necessary evidence as part of any response to our supplementary questions (see below). The employment land requirement and the supply of sites to meet that requirement will be tested as part of Matter 5 at the next hearing session.

¹ Defined as 9000 square metres or less in the HENA (Exam 44a)

Next Steps

We would invite the Council's broad response to the findings outlined above, particularly the minimum local housing need figure, in order that we can establish the direction of travel for the rest of the Examination. Pending the Council's response, we would envisage publishing a Guidance Note and supplementary MIQs which will:

1. Confirm the Matters 1 – 3 MIQs that were dealt with during the Week 1 hearing session;
2. Confirm the Matters 1 - 3 MIQs that were not dealt with during the Week 1 hearing session but which are still relevant and need to be covered following the Matter 10 hearing session;
3. In relation to Matters 4 – 9, set out any supplementary questions that may be necessary; and
4. Invite participants and the Council to respond to the supplementary questions, and if they consider it to be necessary, provide any updates to the hearing statements that they have already been submitted.

The Council's responses to the supplementary questions would be likely to be sufficient to provide any additional evidence or information that is necessary for the next hearing session, accompanied by a Technical or Topic Paper if that would be the most efficient format to present the required information.

On a separate matter, we would also draw the Council's attention to the judgement of 31 October 2022 in the case of *Lisa Smith v SSLUHC* [2022]², regarding the interpretation of the Planning Policy for Traveller Sites (PPTS) and the application of that policy to Gypsies and Travellers who have ceased to pursue nomadic lifestyles. We intend to ask the Council whether there are any implications for the Accommodation Assessment and the Plan as part of the Matter 4 hearing session, but we raise the matter now as an early indication.

If there are any queries on the contents of this letter, please let us know via Mr Kemp. This letter should be put on the Examination web site.

² EWCA Civ 1391

Other parties should please note that at this stage we are not seeking a response from anyone other than the Council on the matters covered in this letter.

Yours sincerely

Sarah Housden and Hayden Baugh Jones

INSPECTORS

Charnwood Settlement Hierarchy Assessment

October 2020 Update

1. Introduction

- 1.1 This assessment identifies the range of services and facilities within individual settlements in Charnwood and explores the relationship settlements have with larger urban areas in terms of homes and jobs and the accessibility of services by public transport. The assessment provides evidence that enables the identification of a settlement hierarchy for Charnwood.
- 1.2 The National Planning Policy Framework (the Framework) advocates development in locations where the need to travel is minimised and the use of sustainable transport modes can be maximised (para 103). The Framework sets out that planning policies should aim for a balance of land uses within their area so that people can be encouraged to minimise journey lengths for employment, shopping, leisure, education and other activities (para 104).
- 1.3 The Framework promotes the retention and development of accessible local services and community facilities in rural areas, such as local shops, meeting places, sports venues, cultural buildings, public houses and places of worship (para 83) and highlights that the development of high speed broadband technology plays a vital role in enhancing economic growth and social well-being (para 112).
- 1.4 The settlement hierarchy is a key part of the evidence which will inform the Council's Local Plan for the Borough up to 2036, including decisions about where new development should be located in the future to achieve sustainable patterns of movement and how local services and facilities can be supported.
- 1.5 The assessment will examine:
 - settlement pattern and context;
 - local housing markets;
 - travel to work patterns;
 - retail catchments;
 - employment provision;
 - access to public transport; and
 - the services and facilities available within each settlement.
- 1.6 The assessment draws on data and evidence from a number of sources, including:
 - Census 2011 including travel to work data (Office for National Statistics)

- Leicester and Leicestershire Housing and Economic Development Needs Assessment (HEDNA) for information on the local housing market (2017)
 - Charnwood Delivery Evidence (2018)
 - Affordable Housing Economic Viability Assessment (2010)
 - Charnwood Affordable Housing Viability Assessment (2019)
 - Charnwood Retail and Town Centre Study (2013)
 - Charnwood Retail and Town Centres Study (2018)
 - Charnwood Employment Land Review (2018)
 - Leicestershire County Council School Admissions (2018/19 Academic Year)
 - Loughborough and Leicestershire Network Bus Map and Guide (Leicestershire County Council, April 2017)
 - Find a Childcare Provider (Leicestershire County Council, December 2017)
 - Superfast Leicestershire Partnership Update (October 2017)
 - Your Local Branch Finder (Post Office, 2017)
 - Charnwood Open Space & Recreation Built Facilities and Playing Pitch Strategy (2018)
 - Find a GP and Pharmacy Service (NHS Choices, 2017)
- 1.7 This information will be used to understand the opportunities available to the communities within individual settlements to meet their day to day needs without the need to travel or by using sustainable modes of transport. These findings are considered together to identify a settlement hierarchy for Charnwood which, alongside a range of other evidence base, will be used to inform the preparation of the Charnwood Local Plan (2011-36).

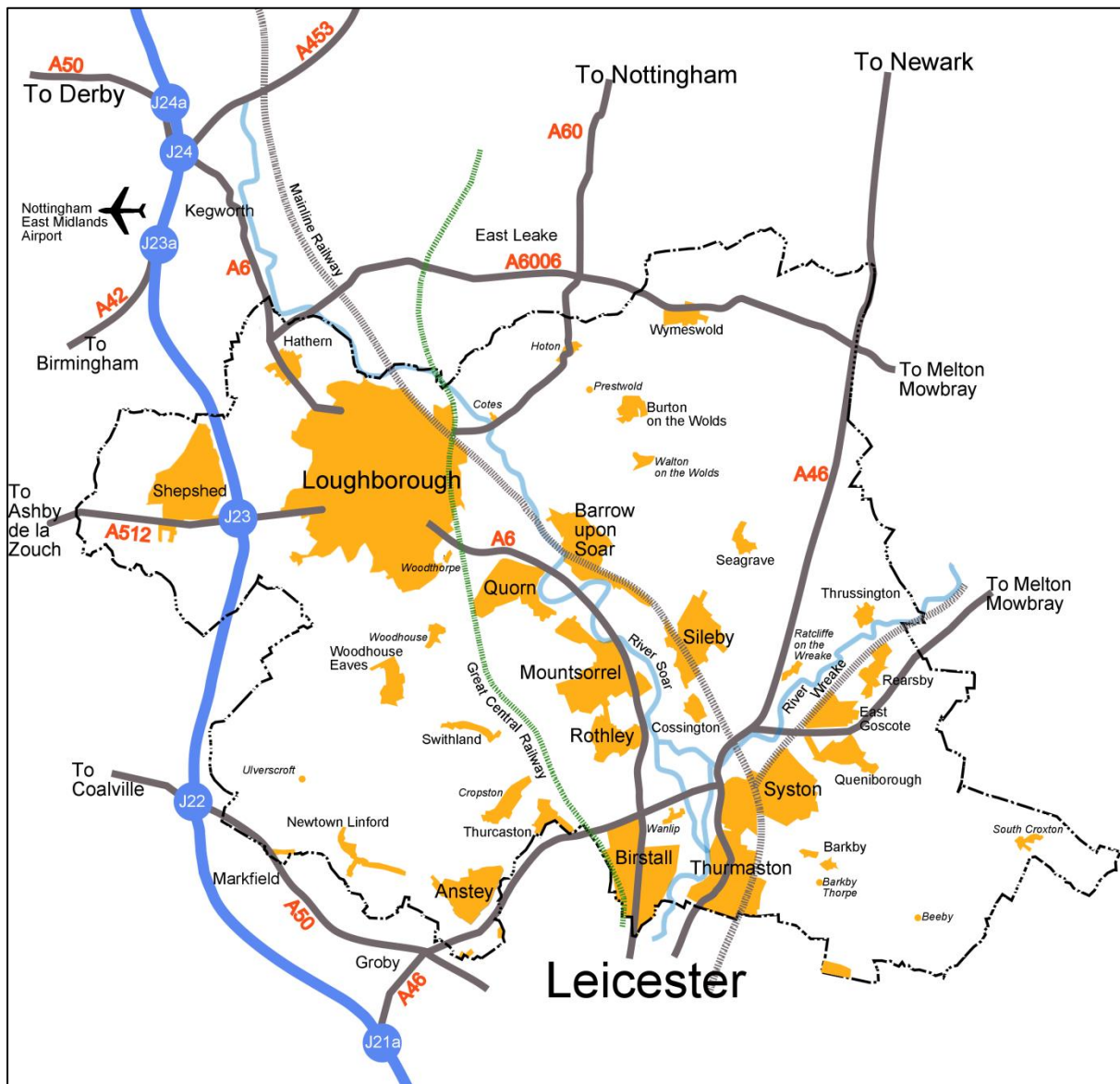
2. Settlement Pattern and Context

Pattern of Settlements

- 2.1 Charnwood Borough is located centrally between the three cities of Leicester, Derby and Nottingham. As can be seen from Figure 1 below, the Borough is well connected with the M1 running through the west of the Borough and the Midland Mainline Railway running through the centre. The strategic road network provides connections to all the neighbouring authorities and the wider area.
- 2.2 The market and university town of Loughborough is the main town in the Borough and the largest settlement in Leicestershire outside Leicester City. Loughborough provides a social and economic focus in the north of the Borough.

2.3 Leicester City borders the Borough to the south and provides a social and economic focus for the south of the Borough and the wider Leicestershire area. There are a number of settlements located in the south of the Borough close to the northern edge of the City including Birstall and Thurmaston, which physically adjoin the built up area of the City but continue to have their own separate identity and local centres. There is also a new extension of Leicester known as Hamilton Lea which is located in Charnwood Borough, north east of the City. Hamilton Lea has its own parish council, with the settlement enjoying an extensive range of services and facilities provided by the adjoining neighbourhood of Hamilton in the city.

Figure 1: Charnwood Borough Settlement Pattern and Context Diagram



- 2.4 There are two other towns in the Borough, Shepshed and Syston, which although smaller than Loughborough are home to large communities in the Borough. Shepshed is in the north-west of the Borough adjacent to Loughborough with the M1 running between the two towns. Syston is in the south of the Borough, to the north-east of the City with the A46/A607 circling the town to the west and north.
- 2.5 The two main urban areas of Loughborough and Leicester are connected by the M1, A6, Midland Mainline, the local Ivanhoe railway line, the Soar River Valley and the heritage Great Central Railway line.
- 2.6 There are a string of settlements along the Soar Valley and A6 corridor between the two urban areas. A second string of settlements runs along the Wreake Valley and A607 corridor which runs eastwards from the A46 to the north of Leicester City towards Melton Mowbray.
- 2.7 There are three main rural areas of the Borough; the Wolds in the north east, the Charnwood Forest in the west and High Leicestershire in the south east. These areas are more rural in nature but are not remote from the urban areas.

Population

- 2.8 At the last census the Borough had a total population of 166,100 people with 60,122 people living in the main urban centre of Loughborough. Loughborough has the largest population with 36% of the Borough's population living there. The Figure 2 below shows the population of each settlement in size order.

Figure 2: Charnwood Settlement Population

Parish/Settlement	Census 2011 Population
Loughborough including Woodthorpe	60,122
Shepshed	13,505
Syston	12,804
Birstall	12,216
Thurmaston	9,668
Mountsorrel	8,223
Sileby	7,835
Anstey	6,528
Barrow Upon Soar	5,956
Quorn	5,177
Rothley	3,897

East Goscote	2,866
Queniborough	2,326
Woodhouse & Woodhouse Eaves	2,319
Thurcaston & Cropston	2,074
Hathern	1,866
Wymeswold	1,296
Burton on the Wolds	1,218
Newtown Linford	1,103
Rearsby	1,097
Cossington	598
Thrussington	581
Seagrave	546
Hoton	353
Barkby	316
Wanlip	305
Walton on the Wolds	288
South Croxton	261
Swithland	217
Ratcliffe on the Wreake	179
Beeby	115
Ulverscroft	85
Prestwold	70
Barkby Thorpe	61
Cotes	29
Hamilton Lea	N/A
Total	166,100

2.9 Loughborough, Shepshed, Syston and Birstall all have a population of 10,000 people or more and therefore fall within the government's definition of an urban settlement (Rural Urban Classification, DCLG 2011). Thurmaston is very close to falling into this definition with a population of 9,668 people at the 2011 Census and estimated to exceed 10,000 before by the next census in 2021.

2.10 Outside these urban settlements, the majority of people live in a number of larger villages, with a population of more than 3,000 people, located close to the edge of Leicester City and along the Soar Valley. These villages are Anstey in the south of the Borough and close to the City and Mountsorrel, Sileby, Barrow Upon Soar, Quorn and Rothley in the Soar Valley.

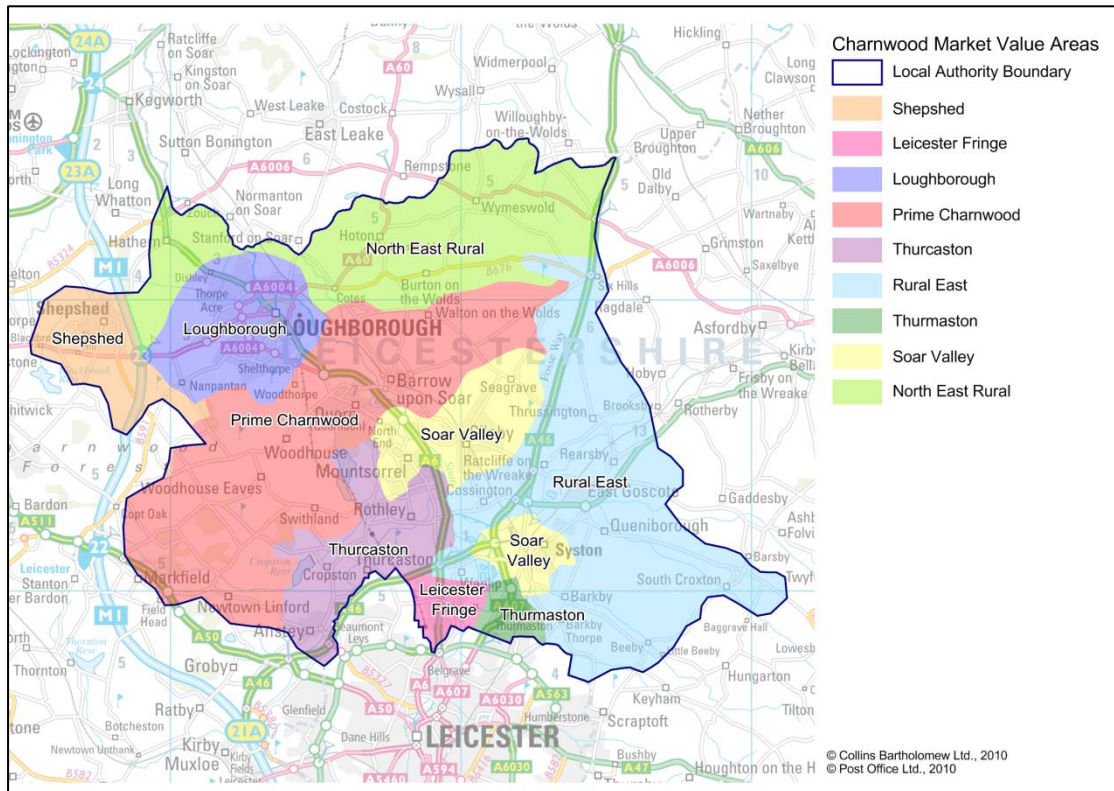
- 2.11 In total there are 35 settlements in the Borough. 24 of these settlements have a population of less than 3,000 people and 15 of these have a population of less than 1,000 people.

3. Housing Market

- 3.1 Leicester and Leicestershire Housing and Economic Development Needs Assessment (HEDNA 2017) showed that Charnwood Borough falls within the Leicester and Leicestershire Housing Market Area (HMA) centred on the City of Leicester. The assessment found that taking account of the latest available data on house prices, migration and commuting flows, there is a high level of self-containment across Leicester and Leicestershire. 84% of people moving to the area moving within it and 91% of those moving from a location within the area staying within it (para 1.7 and Appendix 1).
- 3.2 HEDNA found that Charnwood has its strongest migration relationship with Leicester, including both from people moving out of the city into Charnwood and from Charnwood into the City. There are also strong migration interrelationships between Charnwood and a number of Leicestershire authorities including North West Leicestershire, Blaby, Hinckley and Bosworth and Melton, as well as Rushcliffe in Nottinghamshire (Table 6, Appendix 1).
- 3.3 In identifying a Housing Market Area, HEDNA considered the research study led by the Centre for Urban and Regional Development Studies (CURDS) to define HMAs across England, published by Government in November 2014. This defined a consistent set of HMAs across England based on migration and commuting data from the 2001 Census. Although based on the previous census, it provides a useful analysis of both Strategic and Local Housing Market Areas, based on areas with 75% and 50% self-containment of migration flows respectively (using 2001 Census data). This showed that the majority of Charnwood falls within three Local Housing Market Areas described at Loughborough, Leicester East and Leicester West with small areas falling within the Nottingham, Melton Mowbray and Coalville Local Housing Market Areas.
- 3.4 The Charnwood Affordable Housing Economic Viability Study (2010) provided an assessment of more localised housing sub-markets within the Borough based on a broad analysis of house prices using HM Land Registry data. This analysis identified nine sub-areas in the Borough (see Figure 3 below). The study found that Charnwood is characterised by a very wide range of market values. This results in high values in the three main rural areas of Prime Charnwood (Charnwood Forest and parts of the Soar Valley), Rural East (High Leicestershire and parts of the Wreake Valley) and North East Rural

(the Wolds and Hathern), relatively robust residual values in Leicester Fringe (Birstall), Thurmaston (including Anstey and Rothley), Loughborough and Soar Valley (including Syston) and lower residual values in Shepshed and Thurmaston.

Figure 3: Charnwood Market Value Areas



3.5 An assessment has also been undertaken of housing sub-markets around the urban edges of Loughborough and Leicester as part of market testing of potential growth locations (The Residual Housing Strategic Market Testing 2012). This found that the Loughborough and North Leicester housing markets are quite distinct. Estate Agents highlighted three sub-market areas around Loughborough (excluding the town itself); South Loughborough and the northern Soar Valley, West of Loughborough including Shepshed (associated with the M1 corridor) and the rural “Wolds” East of Loughborough. Agents also identified Thurmaston, Birstall, Syston and Anstey as part of the Leicester market and highlighted that each settlement forms a distinct sub-market. These findings align well with the market value areas identified in 2010.

3.6 The Charnwood Affordable Housing Viability Assessment (2019) also provided a more simplistic, higher level re-examination of the evidence above and identified three broad areas, Leicester Fringe; Loughborough/Shepshed and adjacent; and Wider Charnwood. This more broad brush approach was

sufficient to test the Council's policy as required by the NPPF. However, it is accepted that there are nuances and variables within the three areas compared to the finer grained approach of previous studies.

4. Travel to Work Patterns

- 4.1 The Office for National Statistics (ONS) has identified 228 Travel to Work Areas within which at least 75% of the area's resident workforce work in the area and at least 75% of the people who work in the area also live in the area.
- 4.2 Charnwood falls almost entirely within the Leicester Travel to Work Area which extends across most of Leicestershire and includes all of the main towns within the County. The Leicester and Leicestershire Housing and Economic Needs Assessment (HEDNA 2017) used Travel to Work Area data and other data on economic activity to define a Functional Economic Market Area (FEMA) that covers all the Leicester and Leicestershire authority areas. HEDNA showed that around 78% of all commuting flows are contained within this area (para 1.84).
- 4.3 The Census data can also be used to understand the travel to work patterns of people in Charnwood in more detail. This provides an indication of how far people travel to work, where the key employment opportunities are found, the level of self-containment of each settlement and the relationship between settlements.
- 4.4 The Census data considered below is aggregated from super output areas to a settlement level as far as possible although it should be noted that the super output areas do not always align well with settlements (Hathern for example is within one of the Loughborough areas, a number of smaller settlements are grouped together and a small part of the north of Mountsorrel is included with the Quorn and Mountsorrel Castle).

People who live in Charnwood but work elsewhere

- 4.5 Overall 43% of the economically active living in Charnwood, work in the Borough (see Figure 4 below). In the south of the Borough the proportion of people living and working in the Borough is lower than in the north, with less than a quarter of the economically active living in Anstey, Birstall and Thurmaston working in Charnwood. The main destination for employment in these southern settlements is Leicester City.
- 4.6 Over 15,350 (20%) of the economically active people living in Charnwood work in the city. This is therefore the main destination for work outside the

Borough. There are particularly strong travel to work links with the city from Birstall (2,447 people), Syston (2,215 people), Thurmaston (1,996 people) and Anstey (1,167 people) where between 34% and 44% of residents living in these settlement working across the administrative boundary in Leicester. There are also 1,927 people commuting from Loughborough to Leicester, although in percentage terms this is only 8% of the economically active people who live in the town.

4.7 5% of the economically active in Charnwood commute to Blaby and 4% to North West Leicestershire. The majority of those travelling to North West Leicestershire live in Loughborough or Shepshed (62%), whereas those working in Blaby are from a number of Charnwood settlements including Anstey, Birstall, Syston, Thurmaston and Loughborough.

4.8 Very few people in Charnwood work in either Derby or Nottingham (3%). The highest proportion of people who work in Nottingham from any area within Charnwood is 6% of the economically active living in the Wolds.

Figure 4: Location of Usual Residence and Place of Work

ONS Crown Copyright Reserved Source: Census 2011

Place of Residence	Economically active: In employment	Place of Work - % of Economically Active (in employment)									
		Charnwood	Blaby	Harborough	Hinckley and Bosworth	Leicester	Melton	North West Leicestershire	Oadby and Wigston	Nottingham	Derby
Anstey	3,185	19	10	2	4	37	1	3	2	1	0
Barrow Upon Soar	3,249	41	5	1	2	17	2	4	1	3	1
Birstall	6,022	23	8	1	2	41	1	2	2	1	0
East Goscote	1,454	35	5	1	1	31	5	2	2	1	1
Forest Bradgate	1,505	26	6	1	4	20	1	4	1	2	0
Loughborough	23,650	62	2	1	1	8	1	5	0	2	1
Mountsorrel	3,599	39	6	1	2	24	2	3	1	1	1
Queniborough	1,518	27	6	2	1	30	4	2	1	2	0
Quorn & Mountsorrel Castle	3,248	40	4	1	1	16	1	4	1	3	1
Rothley	3,021	27	6	2	2	26	1	3	1	2	1
Shepshed	6,808	51	3	0	1	7	1	11	0	2	1
Sileby	3,809	44	5	1	1	21	2	4	1	1	0
Syston	6,504	31	6	2	2	34	2	2	2	1	0

The Wolds	1,645	31	3	1	1	10	3	3	1	6	1
Thurmaston	4,583	23	6	2	2	44	1	2	3	1	0
Wreake Villages	1,436	30	4	2	1	20	3	3	1	1	0
Total	75,236	43	5	1	1	20	1	4	1	2	1

People who live and work in Charnwood

- 4.9 Figure 5 below shows where those that stay within the Borough live and work. The data shows that 53% of the economically active people living in Loughborough (over 12,500 people) work in the town, making it the most self-contained settlement in the Borough. The next most self-contained settlement is Shepshed with 20% of those living in the town also working there. The table highlights a particularly strong relationship between Loughborough and Shepshed with 27% of the economically active people living in Shepshed working in Loughborough. Over 700 people also travel to Shepshed from Loughborough for work (3% of the economically active people who live in Loughborough).
- 4.10 In the south of the Borough, Syston and Thurmaston are found to have a relatively high level of self-containment compared to other settlements with 14% of economically active people living in Syston working there and 12% of the economically active people who live in Thurmaston working there. There are notable movements between Thurmaston and Syston with 5% of the economically active living in Syston travelling to Thurmaston and 4% in Thurmaston travelling to Syston. There are also notable movements to Syston and Thurmaston from East Goscote (10% to Syston and 6% to Thurmaston), Queniborough (7% to Syston and 3% to Thurmaston) and Wreake Villages (5% to Syston and 3% to Thurmaston).
- 4.11 As the main urban centre Loughborough is also the main destination for employment in the Borough, with over 18,600 (25% overall) economically active people who live in the Borough, working in the town. After Shepshed, the largest movements into Loughborough for work are from Barrow Upon Soar, Quorn and Mountsorrel Castle, Mountsorrel, Sileby and the Wolds Villages where between 15-20% of the economically active people who live in these villages working in the town (over 2,700 people).
- 4.12 Other notable travel to work movements, albeit on a smaller scale, can be found within the Soar Valley from:
- Mountsorrel to Quorn (5%) and Rothley (4%);
 - Sileby to Quorn (3%) and Barrow Upon Soar (3%); and
 - Barrow Upon Soar to Quorn (3%).
- 4.13 Overall the data shows that the main destinations for work for people living in Charnwood are Loughborough (25%) and Leicester (20%).

Figure 5: Location of Usual Residence and Place of Work

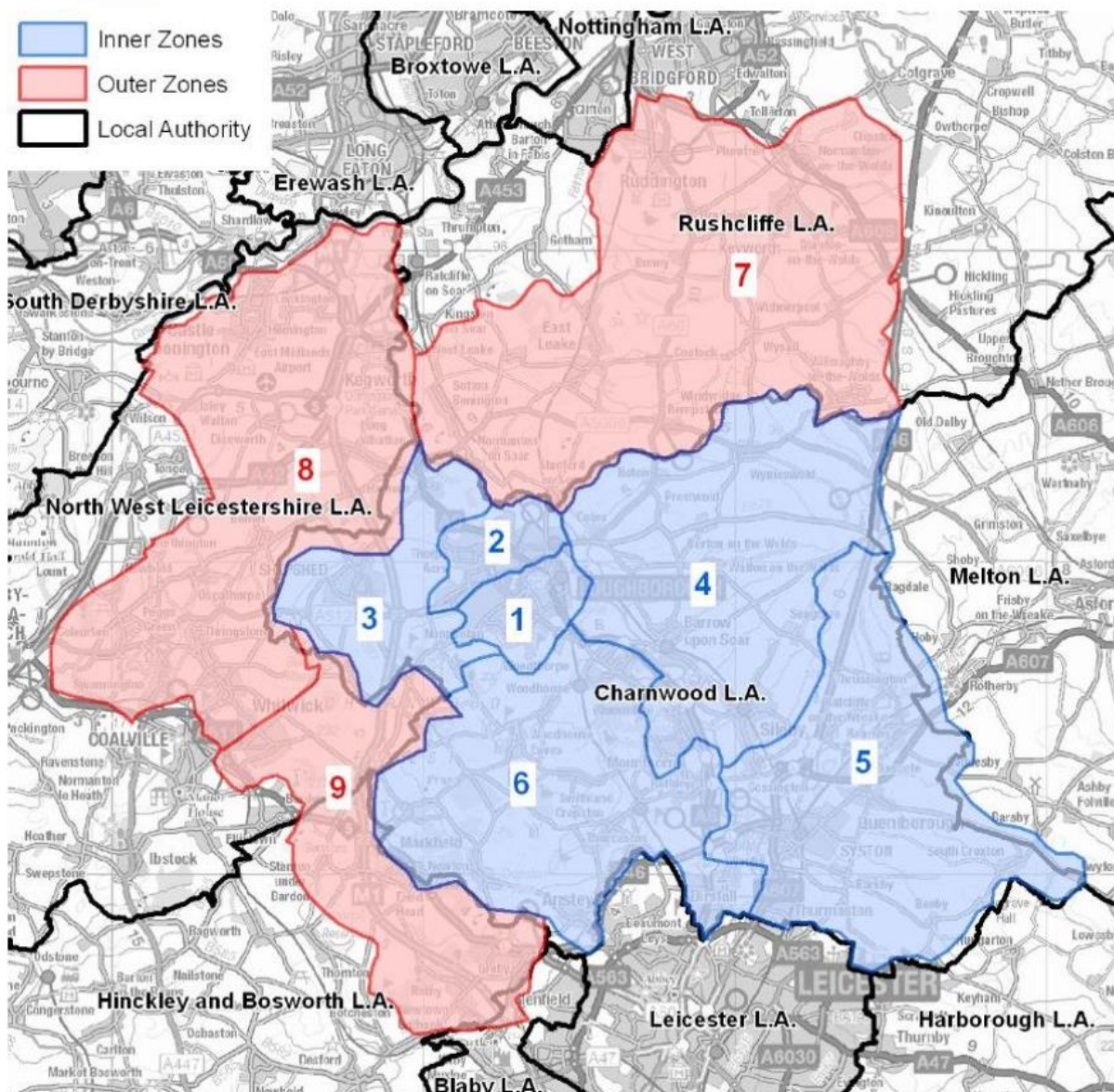
ONS Crown Copyright Reserved Source: Census 2011

Place of Residence	Economically active: 16 and over in employment	Place of Work - % of Economically Active (in employment)															
		Anstey	Barrow Upon Soar	Birstall	East Goscote	Forest Bradgate	Loughborough	Mountsorrel	Queniborough	Quorn & Mountsorrel Castle	Rothley	Shepshed	Sileby	Syston	The Wolds	Thurmaston	Wreake Villages
Anstey	3,185	7	0	1	0	1	4	0	0	1	1	0	0	1	0	1	0
Barrow Upon Soar	3,249	0	6	1	0	1	20	0	0	3	1	1	2	2	1	1	1
Birstall	6,022	0	1	8	0	0	5	0	0	1	1	0	0	2	0	3	0
East Goscote	1,454	0	1	1	6	0	4	0	2	1	0	1	1	10	0	6	2
Forest Bradgate	1,505	1	1	1	0	4	13	0	0	2	1	1	1	1	0	0	0
Loughborough	23,650	0	1	0	0	0	53	0	0	1	0	3	0	1	1	0	0
Mountsorrel	3,599	1	1	1	0	1	17	4	0	5	4	1	1	3	0	1	0
Queniborough	1518	0	1	0	2	0	6	0	5	1	0	0	1	7	0	3	1
Quorn & Mountsorrel Castle	3,248	0	2	1	0	1	19	1	0	8	1	2	1	1	1	1	1
Rothley	3,021	1	1	1	0	1	10	1	0	2	6	1	1	2	0	1	1
Shepshed	6,808	0	0	0	0	1	27	0	0	1	0	20	0	0	0	0	0
Sileby	3,809	0	3	1	1	0	15	0	0	3	1	2	9	3	1	2	3
Syston	6,504	0	0	1	1	0	4	0	1	1	0	0	1	14	0	5	1
The Wolds	1,645	0	1	0	0	0	16	0	0	1	0	1	1	1	6	1	1
Thurmaston	4,583	0	0	0	1	0	2	0	1	0	0	0	0	4	0	12	0
Wreake Villages	1,436	0	1	1	1	0	7	0	1	1	1	0	2	5	1	3	5
Total	75,236	1	1	1	0	1	25	0	0	2	1	3	1	3	1	2	1

5. Retail and Town Centre Patterns

5.1 The Charnwood Retail and Town Centre Study 2013 Update provides information about shopping patterns and catchment areas in the Borough. The study divides Charnwood into a number of study zones for the analytical reasons. The study assesses retention rates; the amount of money within an area that is available to spend on retail goods and is spent within that zone. The zones can be seen in Figure 6 below.

Figure 6: Charnwood Retail and Town Centre Study Zones



Comparison Goods

- 5.2 Within Charnwood, only Loughborough and Thurmaston / Syston retain significant levels of expenditure on comparison goods. North Loughborough retains 18%, south Loughborough 49% whilst Thurmaston / Syston retains 35% of residents' expenditure on such goods. Remaining areas within the borough have a limited retention of comparison goods expenditure, ranging from 3% in the Soar Valley to 9% in Shepshed.
- 5.3 For the survey zones within Charnwood, the most popular destinations for shopping on comparison goods are either Loughborough or Leicester. Loughborough Town Centre attracts 24.9% of expenditure from within the borough area, whilst Leicester attracts 36.5% (this includes Leicester City, Fosse Park, and Beaumont Leys). The trade draw from residents in Charnwood Borough to Nottingham is more limited (11% of total expenditure) when compared to the trade draw to Leicester (32% of total expenditure). Derby exerts only a very limited influence over shopping patterns for residents of Charnwood Borough (only 2% of total expenditure) despite the recent improvements to its retail offer.

Convenience Goods

- 5.4 The zone with the highest localised retention rate is (Loughborough Central & South), where 82% of residents who live in the zone also undertake food shopping in the zone. There is a good range of supermarkets available to residents in this zone, including two Tesco supermarkets, Sainsbury's and Marks & Spencer Simply Food. Foodstore provision on the north side of Loughborough is more limited, and many residents in this zone choose to shop at foodstores elsewhere in Loughborough.
- 5.5 The other zone which shows a strong localised retention rate is Syston / Thurmaston at 81% of expenditure. Key provision in this zone includes the large Asda at Thurmaston, Aldi and the Tesco and Co-Operative stores within and adjacent to the Syston district centre. The only other zone with a notable localised retention rate is Shepshed at 36% of expenditure.
- 5.6 Other zones within Charnwood Borough have lower localised retention rates, reflecting the absence of any higher-order centres in the zones. As such, the foodstores are (with a couple of exceptions) much smaller stores that cater for top up shopping to meet day to day needs.
- 5.7 Overall, the evidence from the Retail and Town Centre Study 2013 indicates that the best retention rates for retail spending in Charnwood are in Loughborough and Thurmaston / Syston. Improved convenience retail

provision in Shepshed has improved how much retail spending is retained in the town, but 52% of Shepshed's convenience expenditure is spent within Loughborough compared to 36% of expenditure which is retained within Shepshed.

- 5.8 The Charnwood Retail and Town Centres Report (2018) has since been undertaken to update the current provision and future needs identified in the retail and commercial leisure sectors within the Borough over the plan period. It has also undertaken an audit of the role, vitality and viability of centres in Charnwood.
- 5.9 The catchment plan for the defined centres shows that the main of Loughborough, Shepshed, the string of villages along the A6 corridor to Leicester, and the villages at the northern fringe of Leicester, are primarily served by the retail provision in the borough's main centre of Loughborough town centre, along with the defined district and local centres.
- 5.10 All of the main areas of population within the borough therefore fall within the areas immediately served by the existing network of centres in Charnwood Borough. Whilst there are a number of small rural settlements in the north east, south west and south east of the borough without a defined district or local centre; substantial retail provision in such locations would not be appropriate given the scale of settlement and access to existing provision is good, particularly by car.
- 5.11 In terms of expenditure, the 2018 study demonstrates that in total 69.9% (£341.3m) of convenience expenditure generated by residents in the Study Area is spent at destinations within Charnwood Borough. This has fallen from 2013 when the corresponding market share was 71.9%.
- 5.12 In relation to the principal destinations for top-up convenience shopping, the retention rates and proportion of expenditure spent at stores located in the same zone in which residents live is substantially higher. The smaller foodstores such as Co-op and Tesco Express stores perform important roles in meeting residents' top-up shopping needs, demonstrating also that residents will choose destinations in close proximity to meet their day-to-day convenience needs (i.e. to purchase bread and milk).
- 5.13 Loughborough town centre is the principal comparison destination in Charnwood attracting 25.8% of the available comparison expenditure within the Study Area. This proportion has increased from 2013, when the proportion of available expenditure spent in Loughborough town centre was 23.7%, demonstrating an increase in market share.

- 5.14 Comparison goods expenditure from residents in the Study Area spent at destinations in Charnwood Borough is 53.9% (£405.5m) of the available comparison expenditure an increase from 48.3% in 2013 which is a positive sign of the attraction of destinations within the borough.

6. Employment Patterns

- 6.1 The Charnwood Employment Land Review (2018) provides an overview of where employment is located in the Borough and assesses the opportunities for future employment development. The study uses Office of National Statistics data on employment which is shown below in Figure 7 and has been aggregated to settlement level where possible.

Figure 7: Business Register and Employment Survey (ONS 2016)

Location	Number of Jobs	% of Jobs in the Borough
Anstey	1,300	2
Barrow Upon Soar	2,000	3
Birstall	1,825	3
East Goscote	800	1
Forest Bradgate	1,150	2
Loughborough	34,125	50
Mountsorrel	650	1
Queniborough	900	1
Quorn & Mountsorrel Castle	2,550	4
Rothley	1,525	2
Shepshed	5,400	8
Sileby	1,625	2
Syston	5,825	9
The Wolds	1,100	2
Thurmaston	6,050	9
Wreake Villages	1,650	2
Total	68,475	100

- 6.2 The data shows that 50% of the Borough's jobs are located in Loughborough (34,125 jobs in total). There are also smaller concentrations of jobs in other locations within the Borough, in particular Thurmaston and Syston with 9% of all the borough jobs in each of these settlements and Shepshed with 8% of all the borough jobs.
- 6.3 This has a close synergy with the findings from the assessment of the travel to work data and suggests the main employment areas are Loughborough

and Leicester with concentrations of jobs in Shepshed, Syston and Thurmaston where there are relatively greater levels of self-containment.

7. Access to Public Transport

- 7.1 The Borough is well served by national and local bus and rail services. Loughborough railway station sits on the Midland Mainline which provides access north to Nottingham, Derby, Sheffield and Leeds and south to Leicester and London. There are also a number of national bus routes which pick up in Loughborough connecting the town to Nottingham, Derby, London, Manchester, Newcastle and Portsmouth.
- 7.2 In terms of local services there is a frequent daytime service (every 15 mins) between Leicester and Loughborough through Birstall, Rothley, Mountsorrel and Quorn and on to Shepshed (No. 127). In the evening these settlements have an hourly service to Loughborough and Leicester (No. 126). Birstall also benefits from the Park and Ride which provides a frequent daytime and early evening service (every 15 mins until 7pm) to Leicester.
- 7.3 In the south of the Borough there are frequent daytime services from Anstey (No. 74 every 15 mins) and Thurmaston (No. 6 every 10 mins) into Leicester. The 74 service also provides an hourly evening service between Anstey and Leicester and the No. 5 service provides a 30 mins evening service between Thurmaston and Leicester.
- 7.4 All these settlements are able to access either Leicester or Loughborough in less than 30 minutes travel time, with services at least every 15 minutes in the daytime.
- 7.5 There are less frequent but good services available elsewhere in the Borough with a daytime service available between Loughborough and Leicester which runs through Barrow Upon Soar, Quorn, Sileby and Cossington (No. 2). This route also provides an hourly frequency evening service to these villages.
- 7.6 Hathern is served by the Skylink Bus Service to East Midlands Airport and therefore has a 20 minute daytime and hourly evening service to Loughborough or Leicester. Cotes and Hoton have a 30 minute daytime and 2 hourly evening service to Loughborough and Nottingham (No. 9).
- 7.7 All the settlements served by the No. 2, Skylink or No.9 bus services are able to access either Leicester or Loughborough in less than 30 minutes travel time, with services leaving at least every 30 minutes in the daytime.

- 7.8 The Wreake Valley villages of Rearsby, East Goscote and Queniborough and Syston have access to a 20 minute daytime service to Leicester through Thurmaston (No. 5 and 5A). This service also provides an evening service every 30 minutes for all these settlements with the exception of Rearsby.
- 7.9 However, only those travelling from Syston are able to access Leicester within 30 minutes travel time. The other Wreake Valley villages are able to access employment within Syston and Thurmaston within 30 minutes travel time.
- 7.10 There are a number of other regular, but less frequent, hourly or 2 hourly bus and rail services available to settlements in the Wolds, High Leicestershire, across the remainder of the Wreake Valley and within the Charnwood Forest. This includes the hourly Ivanhoe Rail Line service between Lincoln, Nottingham and Leicester which stops at Loughborough, Barrow upon Soar, Sileby and Syston.
- 7.11 Public transport is changing in Leicestershire and the County Council has developed a new Passenger Transport Policy and Strategy (PTPS) to ensure its passenger transport provision is fit for purpose and cost-effective. They are currently reviewing all contracted services across the county and will be providing regular updates on the progress of the review. The changes to services of which we are currently aware will not affect access higher order services by public transport from any of our settlements as the settlements involved will continue to be connected by more regular services.

8. Key Services and Facilities Audit

Defining Key Services and Facilities

- 8.1 The services and facilities considered to be most important to meet people's day to day needs are set out below in Figure 8. Essential services and facilities are those which are considered to be accessed with a high frequency and essential to meet day to day needs. Desirable services and facilities are those which are considered necessary to meet day to day needs but unlikely to be accessed with the same frequency by the majority of the community.

Figure 8: Essential and Desirable Services and Facilities

Essential	Desirable
Food shop	Higher order services access
Primary school	Secondary school access
Employment access	Doctors surgery

High speed broadband	Range of recreation, leisure and community facilities Post office Pharmacy Pre-school care provision
----------------------	---

8.2 Whilst there will be other services and facilities that are important to people, for certain periods of their lives or for a particular group of people, this list has been compiled to help understand the ability of people who live in a community to generally be able to meet their day to day needs.

8.3 As there are a greater range of services and facilities available in the larger settlements the audit considers whether there is good access to larger settlements for individual communities, in particular for access to employment, secondary schools and higher order services. This information is used together with the travel to work, retail, employment and housing market information to inform the assessment of the relationships between settlements.

Services and Facilities Audit Methodology

8.4 Figure 9 below sets out the methodology for the audit of each service and facility.

Figure 9: Methodology for Audit of Services and Facilities

Services and Facilities	Methodology for Assessment
Food shop	Located in the settlement, open 7 days a week and sells a range of products which include bread, milk, fresh fruit and vegetables.
Primary school	Located in the settlement.
Employment access	<p>Access to a range of employment types using sustainable modes of travel.</p> <p>The travel to work data and the Employment Land Review found that the main destinations for work for residents in Charnwood are Loughborough and Leicester, where there are a diverse range of employers with regular job vacancies for a variety of skills and experience and therefore a good prospect of local people being able to access work. There are also concentrations of jobs available in Thurmaston, Syston and Shepshed which will be taken into account where relevant.</p>

	<p>Access to this range of employment types in Leicester or Loughborough will be assessed on the following basis*:</p> <p>Excellent access: a range of employment types are accessible within the settlement and/or within 30 minutes travel time using a frequent bus or train service (every 15 minutes) during peak times (Mon-Fri 7.30-9.30am to 4-7pm).</p> <p>Very Good access: a range of employment types are accessible within 30 minutes travel time using a very regular (every 20 minutes) bus or train service during peak times (Mon-Fri 7.30-9.30am to 4-6.30pm).</p> <p>Good access: a range of employment types are accessible within 30 minutes travel time using a regular (every 30 minutes) bus or train service during peak times (Mon-Fri 7.30-9.30am to 4-6.30pm).</p> <p>Travel times taken from Leicestershire County Council Choose How You Move Journey Planner and reflect the journey time from the bus stop closest to the centre of settlement to Baxter Gate in Loughborough or the Haymarket or St Margaret's Bus Station in Leicester.</p>
High speed broadband	<p>High speed broadband is available to the majority of properties in the settlement or will be within the next 12 months. High speed is defined as the fastest broadband connection currently widely available.</p>
Higher order services access	<p>Access to a range of higher order services using sustainable modes of travel.</p> <p>Higher order services are those services used only occasionally e.g. shops that sell more expensive goods that are less frequently required such as furniture, clothes or larger electrical items and services such as a general needs hospital, leisure centre and cultural facilities such as entertainment venues.</p> <p>There are a range of higher order services in the nearest main centres of Leicester and Loughborough.</p> <p>Access will be assessed on the following basis*:</p> <p>Excellent access: available in the settlement or within 30 minutes travel time using a frequent (every 15 minutes) bus or train service during peak times (Mon-Fri 7.30-9.30 and 4-6.30pm) and an evening service to at least one of the nearest main centres.</p> <p>Very Good access: available within 30 minutes travel time using a very regular (every 20 minutes) bus or train service during peak times (Mon-Fri 7.30-9.30 and 4-6.30pm) to at least one of the nearest main centres.</p> <p>Good access: within 30 minutes travel time using a</p>

	<p>regular (every 30 minutes) bus or train service during peak times (Mon-Fri 7.30-9.30am and 4-6.30pm) to at least one of the nearest main centres.</p> <p>Travel times to be taken from Leicestershire County Council Choose How You Move Journey Planner and reflect the journey time from the bus stop closest to the centre of settlement to Baxter Gate in Loughborough or the Haymarket or St Margaret's Bus Station in Leicester.</p>
Secondary school access	<p>Access will be graded on the following basis:</p> <p>Excellent access: located in the settlement.</p> <p>Good access: accessible via a bus or train service which enables pupils to attend school core times**.</p>
Range of recreation, leisure and community facilities	<p>Two or more of the following are available in the settlement (available for the general public to use and/or book):</p> <ul style="list-style-type: none"> • Community Hall • Public House • Formal sports provision (indoor or outdoor) • Place of worship • Meeting places • Cultural buildings • Library
Doctors surgery	Located in the settlement with appointments available to book five days a week.
Post Office	Located in the settlement and available to access six days a week.
Cash machine	Located in the settlement and available to access seven days a week.
Pharmacy	Located in the settlement and available to access six days a week.
Pre-School Provision	Located in the settlement and available to access five days a week 8am – 6pm.

* Access has been assessed against bus and train service availability and frequency, where the facility or service being audited is not available in the settlement itself. Walking and cycling are also important sustainable modes of travel for local journeys but have not been considered in this settlement level assessment.

** Leicestershire County Council provide free school transport to secondary age children who live more than 3 miles walking distance to their nearest school.

8.5 A range of sources of information were used to undertake the audit which also benefited from consultation with Town and Parish Councils and Charnwood Borough Council local ward Members during December 2017.

8.6 A summary of the audit is presented in Figure 10 below with more detailed information for individual settlements in Appendix A.

- 8.7 The audit of services and facilities found that Loughborough has a full range of services and facilities available within the town itself. The town is served by a number of bus and train services which allow people from other settlements in the Borough and elsewhere to access the range of employment opportunities and higher order services available in the town.
- 8.8 There are nine other settlements (Anstey, Barrow upon Soar, Birstall, Mountsorrel, Quorn, Sileby, Shepshed, Syston and Thurmaston) with all the essential and desirable services and facilities as well as access to employment opportunities, higher order services and a secondary school either within the settlement or in Loughborough or Leicester. However, the Post Offices at Barrow Upon Soar and Mountsorrel are only open five days a week. Rothley has all of the essential services and facilities and all but one of the desirable services and facilities audited, a Doctors Surgery. There is, however, a Doctors Surgery available in Mountsorrel which is adjacent to Rothley and accessible on a frequent bus service.
- 8.9 No other settlements have access to all the essential and desirable services and facilities as well as access to employment opportunities, higher order services and a secondary school. Woodhouse Eaves and Hathern both have nine of the eleven services and facilities audited but neither have all the essential services and facilities. Woodhouse Eaves has many services and facilities available in the settlement but poor accessibility to employment and higher order services. Hathern has very good access to employment and higher order services but no food shop which makes it possible to do a weekly shop, nor does it have a pharmacy.
- 8.10 Queniborough and East Goscote have eight of the eleven services and facilities surveyed, including six within the settlement, as well as access to employment and secondary schools. Cossington has six of the services and facilities audited, including three within the village, and access to employment, higher order services and a secondary school. Wymeswold and Rearsby have five; Wymeswold four within the village and Rearsby three, both have access to a secondary school and Rearsby access to employment.
- 8.11 There are a group of seven settlements (Barkby, Burton on the Wolds, Newtown Linford, Seagrave, Swithland, Thrussington and Thurmaston) which have four of the services and facilities audited but poor access to employment and higher order services. All of these settlements have the essential services of a primary school and high speed broadband and the desirable services of a range of recreation, leisure and community facilities and access to a Secondary School.

- 8.12 Ratcliffe on the Wreake, Cotes and Hoton also have four services. Ratcliffe on the Wreake has three services within the village but only one essential service of high speed broadband. Cotes and Hoton only have one service in the village, high speed broadband, but do benefit from access to employment, higher order services and secondary school.
- 8.13 There are five settlements (Cropston, South Croxton, Walton on the Wolds, Wanlip and Woodhouse) that have poor accessibility to employment and higher order services but access to a secondary school, high speed broadband and a range of recreation, leisure and community facilities. The final five settlements (Barkby Thorpe, Beeby, Prestwold, Woodthorpe and Ulverscroft) only have high speed broadband and access to a Secondary School.

Figure 10 Settlement Audit Summary

Village	Food Shop	Primary School	Employment Access*	High Speed Broadband	Higher Order Services Access*	Secondary School Access*	Range of Recreation, Leisure and Community Facilities (at least 2) ¹	Doctors Surgery	Post Office	Pharmacy	Pre-School Provision	Total available in Settlement	Total
Loughborough	13	15	Excellent	Yes	Excellent	Excellent	7	11	7	22	12	11	11
Shepshed	4	4	Excellent	Yes	Excellent	Excellent	5	2	2	3	4	10	11
Thurmaston	3	3	Excellent	Yes	Excellent	Excellent	6	3	2	5	2	10	11
System	2	2	Excellent	Yes	Very Good	Excellent	6	2	1	3	1	10	11
Anstey	1	2	Excellent	Yes	Excellent	Excellent	6	1	1	1	1	9	11
Birstall	2	2	Excellent	Yes	Excellent	Excellent	6	2	1	5	4	9	11
Quorn	2	1	Excellent	Yes	Excellent	Excellent	5	1	1	1	2	9	11
Sileby	2	2	Good	Yes	Good	Good	5	2	1	2	2	8	11
Barrow Upon Soar	1	1	Good	Yes	Good	Excellent	6	1	1	1	1	8	10
Mountsorrel	2	1	Excellent	Yes	Excellent	Good	6	2	1	1	1	7	10
Rothley	3	1	Excellent	Yes	Excellent	Good	6	0	1	1	1	7	10
Woodhouse Eaves	1	1	Limited	Yes	Limited	Good	4	1	1	1	1	8	9
Hathern	0	1	Very Good	Yes	Very Good	Good	5	2	1	0	1	6	9
Queniborough	1	1	Good	Dec 18	Limited	Good	4	0	1	0	1	6	8
East Goscote	0	1	Good	Yes	Limited	Good	5	1	1	1	0	6	8
Cossington	0	1	Good	Yes	Good	Good	4	0	0	0	0	3	6
Wymeswold	0	1	Limited	Yes	Limited	Good	4	0	0	1	0	4	5

¹ Note on scoring: scores take into account the range of facilities available in a settlement and not the total number of individual facilities.

Village	Food Shop	Primary School	Employment Access*	High Speed Broadband	Higher Order Services Access*	Secondary School Access*	Range of Recreation, Leisure and Community Facilities (at least 2) ¹	Doctors Surgery	Post Office	Pharmacy	Pre-School Provision	Total available in Settlement	Total
Rearsby	0	1	Good	Yes	Limited	Good	4	0	0	0	0	3	5
Barkby	0	1	Limited	Yes	Limited	Good	4	0	0	0	0	3	4
Burton on the Wolds	0	1	Limited	Yes	Limited	Good	3	0	0	0	0	3	4
Newtown Linford	0	1	Limited	Yes	Limited	Good	4	0	0	0	0	3	4
Seagrave	0	1	Limited	Dec 18	Limited	Good	3	0	0	0	0	3	4
Swithland	0	1	Limited	Yes	Limited	Good	3	0	0	0	0	3	4
Thrussington	0	1	Limited	Yes	Limited	Good	3	0	0	0	0	3	4
Thurcaston	0	1	Limited	Yes	Limited	Good	3	0	0	0	0	3	4
Ratcliffe on the Wreake	0	0	Limited	Dec 18	Limited	Good	3	0	0	0	1	3	4
Cotes	0	0	Good	Dec 18	Good	Good	0	0	0	0	0	1	4
Hoton	0	0	Good	Yes	Good	Good	1	0	0	0	0	1	4
Cropston	0	0	Limited	Yes	Limited	Good	3	0	0	0	0	2	3
South Croxton	0	0	Limited	Dec 18	Limited	Good	2	0	0	0	0	2	3
Walton on the Wolds	0	0	Limited	Yes	Limited	Good	3	0	0	0	0	2	3
Wanlip	0	0	None	Yes	None	Good	2	0	0	0	0	2	3
Woodhouse	0	0	Limited	Yes	Limited	Good	2	0	0	0	0	2	3
Barkby Thorpe	0	0	None	Yes	None	Good	0	0	0	0	0	1	2
Beeby	0	0	Limited	Dec 18	Limited	Good	0	0	0	0	0	1	2
Prestwold	0	0	Limited	Dec 18	Limited	Good	1	0	0	0	0	1	2
Woodthorpe	0	0	None	Dec 18	None	Good	0	0	0	0	0	1	2

Village	Food Shop	Primary School	Employment Access*	High Speed Broadband	Higher Order Services Access*	Secondary School Access*	Range of Recreation, Leisure and Community Facilities (at least 2) ¹	Doctors Surgery	Post Office	Pharmacy	Pre-School Provision	Total available in Settlement	Total
Ulverscroft	0	0	None	Dec 18	None	Good	0	0	0	0	0	1	2

* The methodology for assessing access is set out in Figure 9

9. Establishing a Settlement Hierarchy

- 9.1 The audit of the key services and facilities available has provided an understanding of which settlements can cater for the day to day needs of the people living there and which settlements provide for the needs of people living in other settlements. The assessment has also considered the relationships between places and the role and function of each settlement. Taken together, this information provides an understanding of the settlements that have the greatest potential to minimise the need to travel and maximise the use the sustainable transport.
- 9.2 This information has been used to place the Borough's settlements in a hierarchy using the criteria set out in Figure 11 below. Whilst the hierarchy uses criteria that have been defined to categorise the settlements, there is also a degree of professional judgement in establishing and applying the criteria taking account of the pattern of provision found by the audit and how settlements are found to relate to one another through the evidence of housing sub-markets, retail catchments, accessibility and travel to work patterns. Where a judgement has been made the reasons have been given.

Figure 11: Charnwood Settlement Hierarchy

Hierarchy	Criteria	Settlements
<p>Urban Centre</p> <p><i>A settlement that has a range of employment opportunities and higher order services that meet all of the day to day needs of residents and are accessible to the surrounding area.</i></p>	<p>A range of employment and higher order services and facilities available within the settlement.</p> <p>Excellent public transport connectivity to the wider area.</p>	Loughborough
<p>Urban Settlement</p> <p><i>A settlement that has a range and choice of services and facilities that meet the day to day needs of residents and physically or functionally forms part of a wider urban area.</i></p>	<p>Provides all the essential and desirable services and facilities including very good or excellent accessibility to employment and higher order services.</p> <p>Strong physical or functional connection to an urban area.</p>	<p>Shepshed Birstall Thurmaston Syston</p>
<p>Service Centre</p> <p><i>A settlement that has a range of services and facilities to meet most of the day to day needs of the community and good accessibility to services not available within the settlement.</i></p>	<p>Provides all the essential services and facilities including good accessibility to employment and at least six of the desirable services and facilities.</p>	<p>Anstey Barrow Upon Soar Mountsorrel Quorn Rothley Sileby</p>

<p>Other Settlement</p> <p><i>A settlement that has some of the services and facilities to meet the day to day needs of the community.</i></p>	<p>At least two of the essential services and facilities within the settlement.</p>	<p>Barkby Burton on the Wolds Cossington Hathern East Goscote Newtown Linford Queniborough Rearsby Seagrave Swithland Thrussington Thurcaston Woodhouse Eaves Wymeswold</p>
<p>Small Village or Hamlet</p> <p><i>A settlement that has limited services and facilities to meet the day to day needs of the residents.</i></p>	<p>Less than two essential services and facilities within the settlement.</p>	<p>Barkby Thorpe Beeby Cotes Cropston Hoton Prestwold Ratcliffe on the Wreake South Croxton Walton on the Wolds Wanlip Woodhouse Woodthorpe Ulverscroft</p>

Urban Centre

- 9.3 Loughborough is the main social and economic focus for the Borough and performs an important role at the top of the hierarchy described as an 'Urban Centre'. Loughborough is the largest settlement in the Borough, a market and university town and the only urban centre in the Borough. It provides accessible employment opportunities and higher order services to a wider area. Loughborough, along with Leicester City to the south of the Borough, provide the social and economic focus for residents in the Borough. Loughborough and Leicester are the main travel to work destinations for the economically active, the focus for public transport in the Borough and the most popular locations for comparison shopping.
- 9.4 Loughborough has a range of employment opportunities and higher order services that meet all of the day to day needs of residents and are accessible to the surrounding area.

Urban Settlements

- 9.5 The hierarchy identifies four settlements as 'Urban Settlements' in the Borough. Three of these settlements, Shepshed, Birstall and Syston have a population of more than 10,000 and therefore fall in the government's definition of an urban area (Rural Urban Classification 2011). The fourth, Thurmaston has a population of 9,668 (2011 Census) and with natural and planned growth in this area, is expected to have a population of over 10,000 by the next census.
- 9.6 All four settlements provide all the services and facilities audited including very good or excellent connections to Leicester or Loughborough and a secondary school. These settlements also provide a choice of services, with more than one option available to residents for many of the services including food shops, primary schools, doctor's surgeries, pharmacies and cash machines. Shepshed, Thurmaston and Syston have the highest concentrations of employment outside the urban centres with between 8-9% of the Borough's total employment located in each of these settlements. Almost certainly related to this, these settlements also have a relatively high level of self-containment for travel to work journeys compared to other settlements.
- 9.7 Despite having a greater choice of services and facilities and more employment opportunities, these settlements still depend on Loughborough and Leicester for higher order services and employment. Birstall and Thurmaston are physically adjoined to the built up area of Leicester City and all four have strong links in terms of travel to work patterns with 27% of the economically active in Shepshed work in Loughborough, 37% in Syston work in Leicester and over 40% in Birstall and Thurmaston work in Leicester.
- 9.8 These four settlements have a range and choice of services and facilities that meet the day to day needs of residents and physically or functionally form part of a wider urban area either with Loughborough or Leicester.

Service Centres

- 9.9 Six settlements are identified as Service Centres; Anstey, Barrow Upon Soar, Mountsorrel, Quorn, Rothley and Sileby. These settlements are the Borough's largest villages and all have a population of more than 3,000 people.
- 9.10 These settlements have all the essential and desirable services and facilities, with the exception of Rothley which does not have a doctor's surgery (desirable facility) but does have excellent connectivity to Mountsorrel and

Quorn, where there are doctor's surgeries available to Rothley residents. All these settlements have good connectivity to Loughborough and/or Leicester.

- 9.11 All of the Service Centres are located along the Soar Valley between Leicester and Loughborough with the exception of Anstey which is located northwest of Leicester City. Anstey has a strong relationship with the City with 37% of the economically active residents working in Leicester and excellent transport connections to the City. Anstey is however a much smaller settlement which does not enjoy the same level of facilities and services as Syston, Thurmaston or Birstall. Overall, Anstey is able to meet the day to day needs of the community and notwithstanding the proximity to the City it is more comparable with the other Service Centres.
- 9.12 These settlements are assessed to have a range of services and facilities to meet most of the day to day needs of the community and good accessibility to services not available within the settlement.

Other Settlements

- 9.13 The remainder of the settlements in the Borough have a population of less than 3,000. 14 settlements are identified as 'Other Settlements' (Barkby, Burton on the Wolds, Cossington, Hathern, East Goscote, Newtown Linford, Queniborough, Rearsby, Seagrave, Swithland, Thurcaston, Thrussington, Woodhouse Eaves and Wymeswold).
- 9.14 These settlements have some of the services and facilities needed to meet resident's day to day needs. All have the essential services of a primary school and high speed broadband.

Small Villages and Hamlets

- 9.15 The remaining 13 settlements are identified as 'Small Villages and Hamlets' (Barkby Thorpe, Beeby, Cotes, Cropston, Hoton, Prestwold, Ratcliffe on the Wreake, South Croxton, Walton on the Wolds, Wanlip, Woodhouse, Woodthorpe, Ulverscroft).
- 9.16 Three of these settlements; Ratcliffe on the Wreake, Cotes and Hoton have a similar number of overall services and facilities as some of the Other settlements. However, whilst Ratcliffe on the Wreake has three services and facilities within the settlement only one of these, high speed broadband, is an essential service and the other two are a range of recreation, leisure and community facilities and pre-school childcare provision which are both desirable services. Cotes and Hoton provide good access to employment, higher order services and secondary schools in Loughborough but only have

high speed broadband within the settlement. Ratcliffe on the Wreake, Cotes and Hoton are therefore assessed to be more comparable with the Small Villages and Hamlets having limited services and facilities to meet the day to day needs of the residents.

9.17 The ten other settlements only provide very limited services and facilities and only one of the essential services within the settlement, in all cases high speed broadband.

9.18 These Small Villages and Hamlets are assessed to have limited services and facilities to meet the day to day needs of the residents.

APPENDIX A: Services and Facilities Audit – Settlement Summaries

ANSTEY		
SERVICES & FACILITIES CRITERIA	KNOWN FACILITIES	SUMMARY
<p>Food Shop Located in the settlement, open 7 days a week and possible to do the equivalent of a weekly shop.</p>	Co-op	1
<p>Primary School Located in the settlement</p>	The Latimer Primary School Woolden Hill Primary School	2
<p>Employment Access Access to a range of employment types using sustainable modes of travel. Excellent: a range of employment types are accessible within the settlement and/or in a main urban centre within 30 minutes travel time using a frequent bus or train service (every 15 minutes) during peak times. Very Good: a range of employment types are accessible in a main urban centre within 30 minutes travel time using a very regular (every 20 minutes) bus or train service during peak times. Good: a range of employment types are accessible in a main urban centre within 30 minutes travel time using a regular (every 30 minutes) bus or train service during peak times.</p>	<p>74 Bus Service to Leicester (15 mins daytime service - 25 min journey to Leicester)</p> <p>54A Bus Service to Leicester (20-30 min daytime service)</p> <p>154 Bus Service to Leicester and Loughborough (hourly daytime service)</p> <p>120 Bus Service to Leicester and Coalville (2 hourly daytime service) (review due Sept/Oct 2019)</p>	Excellent
<p>High Speed Broadband High speed broadband is available to the majority of properties in the settlement.</p>	Superfast broadband is now available in this area	Yes
<p>Higher order services access Access to a range of higher order services using sustainable modes of travel. Excellent: available in the settlement or in a main urban centre within 30 minutes travel time using a frequent (every 15 minutes) bus or train service during peak times and an evening service. Very Good: available in a main urban centre within 30 minutes travel time using a very regular (every 20 minutes) bus or train service during peak times. Good: available in a main urban centre within 30 minutes travel time using a regular (every 30 minutes) bus or train service during peak times.</p>	<p>74 Bus Service to Leicester (15 mins daytime and hourly evening service - 25 min journey to Leicester)</p> <p>54A Bus Service to Leicester (20-30 min daytime service)</p> <p>154 Bus Service to Leicester and Loughborough (hourly daytime service)</p> <p>120 Bus Service to Leicester and Coalville (2 hourly daytime service) (review due Sept/Oct 2019)</p>	Excellent
<p>Secondary School access Access will be graded on the following basis: Excellent: located in the settlement. Good: accessible via a bus or train service which enables pupils to attend school core times.</p>	The Martin High School, Anstey	Excellent
<p>Range of recreation, leisure and community facilities Two or more of the following are available to general public in the settlement: Community Hall, Public House, Formal sports provision (indoor or outdoor), Place of worship, Meeting places, Cultural buildings, Library</p>	<p>Community Hall</p> <ul style="list-style-type: none"> - Jubilee Hall (Anstey Parish Council) Meeting Place - Anstey United Reform Church - St Marys Church Rooms - Leicester and District MS Society <p>Public House</p> <ul style="list-style-type: none"> - The Old Hare & Hounds - Crown Inn 	6

ANSTEY

SERVICES & FACILITIES CRITERIA	KNOWN FACILITIES	SUMMARY
	<ul style="list-style-type: none"> - Coach & Horses Library Place of Worship - Anstey Parish Church, (C of E) - Anstey Methodist Church Formal Sports Provision - Gynsill Close (Gynsill Tennis Club) - Anstey Nomads Fc - Anstey Rugby Pitch - Recreation Ground - The Martin High School 	
<p>Doctors Surgery Located in the settlement with appointments available to book five days a week.</p>	Dr N W Osborne & Partners (Anstey Surgery)	1
<p>Post Office Providing key services including mail and current account services six day a week</p>	Anstey Sub Post Office Ltd	1
<p>Pharmacy Located in the settlement and available to access six days a week.</p>	The Co-operative Pharmacy - Well Anstey - Bradgate Road	1
<p>Pre-School Provision Located in the settlement and available to access five days a week 8am – 6pm.</p>	Lilliput Montessori Day Nursery	1
<p>SUMMARY</p> <p>Anstey is located in the south of the Borough, northwest of Leicester City and at the last census had a population of 6,528.</p> <p>Anstey has a full range of services and facilities, including a secondary school.</p> <p>Anstey has a strong relationship with the city. 37% of the economically active residents in Anstey work in Leicester and there are excellent transport connections to the city with a 15 minute daytime service and hourly evening service that gets residents into the city centre within 30 minutes travel time. This ensures there is excellent access to both jobs and higher order services.</p> <p>Anstey has a similar relationship with the city as Birstall, Syston and Thurmaston, however it does not enjoy the same level of facilities and services as these settlements which have greater choice available to residents. Anstey is much more similar in size and service provision to Barrow Upon Soar, Mountsorrel, Quorn, Rothley and Sibleby.</p> <p>Anstey is identified as a 'Service Centre' in the third 'tier' of the hierarchy with a range of services and facilities to meet most of the day to day needs of the community and good accessibility to services not available within the settlement.</p>		

BARKBY		
SERVICES & FACILITIES CRITERIA	KNOWN FACILITIES	SUMMARY
Food Shop Located in the settlement, open 7 days a week and possible to do the equivalent of a weekly shop.		0
Primary School Located in the settlement	The Pochin School	1
Employment Access Access to a range of employment types using sustainable modes of travel. Excellent: a range of employment types are accessible within the settlement and/or in a main urban centre within 30 minutes travel time using a frequent bus or train service (every 15 minutes) during peak times. Very Good: a range of employment types are accessible in a main urban centre within 30 minutes travel time using a very regular (every 20 minutes) bus or train service during peak times. Good: a range of employment types are accessible in a main urban centre within 30 minutes travel time using a regular (every 30 minutes) bus or train service during peak times.	100 Bus Service to Leicester and Melton Mowbray (2 hourly daytime service)	Doesn't meet the criteria
High Speed Broadband High speed broadband is available to the majority of properties in the settlement.	Superfast broadband is now available in this area	Yes
Higher order services access Access to a range of higher order services using sustainable modes of travel. Excellent: available in the settlement or in a main urban centre within 30 minutes travel time using a frequent (every 15 minutes) bus or train service during peak times and an evening service. Very Good: available in a main urban centre within 30 minutes travel time using a very regular (every 20 minutes) bus or train service during peak times. Good: available in a main urban centre within 30 minutes travel time using a regular (every 30 minutes) bus or train service during peak times.	100 Bus Service to Leicester and Melton Mowbray (2 hourly daytime service)	Doesn't meet the criteria
Secondary School access Access will be graded on the following basis: Excellent: located in the settlement. Good: accessible via a bus or train service which enables pupils to attend school core times.	Leicestershire County Council provides free school transport to secondary age children who live more than 3 miles walking distance to their nearest school.	Good
Range of recreation, leisure and community facilities Two or more of the following are available to general public in the settlement: Community Hall, Public House, Formal sports provision (indoor or outdoor), Place of worship, Meeting places, Cultural buildings, Library	Community Hall - Barkby Village Hall Public House - The Malt Shovel - The Brookside Inn Place of Worship - St Mary's Church Formal Sports Provision - Barkby United Cricket Club	4
Doctors Surgery Located in the settlement with appointments available to book five days a week.		0

BARKBY

SERVICES & FACILITIES CRITERIA	KNOWN FACILITIES	SUMMARY
Post Office Providing key services including mail and current account services six day a week		0
Pharmacy Located in the settlement and available to access six days a week.		0
Pre-School Provision Located in the settlement and available to access five days a week 8am – 6pm.		0
SUMMARY Barkby is located in the south of the Borough, northeast of Leicester City close to Syston and Thurmaston. At the last census Barkby had a population of 316. Barkby has three of the services and facilities audited. This includes a primary school and high speed broadband which are essential services and facilities located in the settlement. Barkby has limited access to employment and higher order services with only a 2 hourly daytime service to Leicester. Barkby is identified as an 'Other Settlement' in the fourth 'tier' of the hierarchy with some of the services and facilities to meet the day to day needs of the community.		

BARKBY THORPE		
SERVICES & FACILITIES CRITERIA	KNOWN FACILITIES	SUMMARY
Food Shop Located in the settlement, open 7 days a week and possible to do the equivalent of a weekly shop.		0
Primary School Located in the settlement		0
Employment Access Access to a range of employment types using sustainable modes of travel. Excellent: a range of employment types are accessible within the settlement and/or in a main urban centre within 30 minutes travel time using a frequent bus or train service (every 15 minutes) during peak times. Very Good: a range of employment types are accessible in a main urban centre within 30 minutes travel time using a very regular (every 20 minutes) bus or train service during peak times. Good: a range of employment types are accessible in a main urban centre within 30 minutes travel time using a regular (every 30 minutes) bus or train service during peak times.		Doesn't meet the criteria
High Speed Broadband High speed broadband is available to the majority of properties in the settlement.	Superfast broadband is now available in this area	Yes
Higher order services access Access to a range of higher order services using sustainable modes of travel. Excellent: available in the settlement or in a main urban centre within 30 minutes travel time using a frequent (every 15 minutes) bus or train service during peak times and an evening service. Very Good: available in a main urban centre within 30 minutes travel time using a very regular (every 20 minutes) bus or train service during peak times. Good: available in a main urban centre within 30 minutes travel time using a regular (every 30 minutes) bus or train service during peak times.		Doesn't meet the criteria
Secondary School access Access will be graded on the following basis: Excellent: located in the settlement. Good: accessible via a bus or train service which enables pupils to attend school core times.	Leicestershire County Council provides free school transport to secondary age children who live more than 3 miles walking distance to their nearest school.	Good
Range of recreation, leisure and community facilities Two or more of the following are available to general public in the settlement: Community Hall, Public House, Formal sports provision (indoor or outdoor), Place of worship, Meeting places, Cultural buildings, Library		0
Doctors Surgery Located in the settlement with appointments available to book five days a week.		0
Post Office Providing key services including mail and current		0

BARKBY THORPE

SERVICES & FACILITIES CRITERIA	KNOWN FACILITIES	SUMMARY
account services six day a week		
Pharmacy Located in the settlement and available to access six days a week.		0
Pre-School Provision Located in the settlement and available to access five days a week 8am – 6pm.		0
SUMMARY Barkby Thorpe is located in the south of the Borough, northeast of Leicester City close to Syston and Thurmaston and at the last census had a population of 61. Barkby Thorpe has high speed broadband but none of the other services and facilities audited and no public transport links to Leicester or surrounding settlements to access employment or higher order services. Barkby is identified as a ‘Small Village or Hamlet’ in the bottom ‘tier’ of the hierarchy with limited services and facilities to meet the day to day needs of the residents.		

BARROW UPON SOAR		
SERVICES & FACILITIES CRITERIA	KNOWN FACILITIES	SUMMARY
<p>Food Shop Located in the settlement, open 7 days a week and possible to do the equivalent of a weekly shop.</p>	Co-op	1
<p>Primary School Located in the settlement</p>	Barrow Hall Orchard Church of England Primary School	1
<p>Employment Access Access to a range of employment types using sustainable modes of travel. Excellent: a range of employment types are accessible within the settlement and/or in a main urban centre within 30 minutes travel time using a frequent bus or train service (every 15 minutes) during peak times. Very Good: a range of employment types are accessible in a main urban centre within 30 minutes travel time using a very regular (every 20 minutes) bus or train service during peak times. Good: a range of employment types are accessible in a main urban centre within 30 minutes travel time using a regular (every 30 minutes) bus or train service during peak times.</p>	<p>2 Bus Service to Loughborough and Leicester (30 mins daytime service - 20 min journey to Loughborough)</p> <p>East Midlands Train Service to Loughborough and Leicester (1 hr daytime service and evening service)</p> <p>27 Bus Service to Loughborough and Sileby (1hr 15min daytime service)</p> <p>100 Bus Service to Leicester and Melton Mowbray (2 hourly daytime service)</p>	Good
<p>High Speed Broadband High speed broadband is available to the majority of properties in the settlement.</p>	Superfast broadband is now available in this area	Yes
<p>Higher order services access Access to a range of higher order services using sustainable modes of travel. Excellent: available in the settlement or in a main urban centre within 30 minutes travel time using a frequent (every 15 minutes) bus or train service during peak times and an evening service. Very Good: available in a main urban centre within 30 minutes travel time using a very regular (every 20 minutes) bus or train service during peak times. Good: available in a main urban centre within 30 minutes travel time using a regular (every 30 minutes) bus or train service during peak times.</p>	<p>2 Bus Service to Loughborough and Leicester (30 mins daytime service and hourly evening service - 20 min journey to Loughborough)</p> <p>East Midlands Train Service to Loughborough and Leicester (1 hr daytime service and evening service)</p> <p>27 Bus Service to Loughborough and Sileby (1hr 15min daytime service)</p> <p>100 Bus Service to Leicester and Melton Mowbray (2 hourly daytime service)</p>	Good
<p>Secondary School access Access will be graded on the following basis: Excellent: located in the settlement. Good: accessible via a bus or train service which enables pupils to attend school core times.</p>	Humphrey Perkins School	Excellent
<p>Range of recreation, leisure and community facilities Two or more of the following are available to general public in the settlement: Community Hall, Public House, Formal sports provision (indoor or outdoor), Place of worship, Meeting places, Cultural buildings, Library</p>	<p>Community Hall</p> <ul style="list-style-type: none"> - Barrow upon soar Community Centre, Humphrey Perkins - Methodist Church Hall <p>Meeting Place</p> <ul style="list-style-type: none"> - Bishop Beveridge Club - Trinity Rooms 	6

BARROW UPON SOAR		
SERVICES & FACILITIES CRITERIA	KNOWN FACILITIES	SUMMARY
	<ul style="list-style-type: none"> - Conservative Club - Barrow Football Club Public House <ul style="list-style-type: none"> - The Navigation Inn - The Three Crowns - Soar Bridge Inn - The Boat House - The Hunting Lodge - The Blacksmith's Arms Place of Worship <ul style="list-style-type: none"> - Methodist Church - Holy Trinity Church - Baptist Church Library Formal Sports Provision <ul style="list-style-type: none"> - Barrow Football Club - Barrow Town Cricket Club - Humphrey Perkins High School - King George's Field - King Georges Playing Field 	
Doctors Surgery Located in the settlement with appointments available to book five days a week.	Barrow Health Centre Dr N H R Simpson & Partners	1
Post Office Providing key services including mail and current account services six day a week	Barrow upon Soar Post Office in Gulf Barrow Filling Station (only open Mon to Fri)	1
Pharmacy Located in the settlement and available to access six days a week.	Boots	1
Pre-School Provision Located in the settlement and available to access five days a week 8am – 6pm.	Lime Tree Day Nursery Ltd	1
SUMMARY <p>Barrow Upon Soar is located in the north of the Borough, south of Loughborough in the Soar Valley and had a population of 5,956 at the last census.</p> <p>Barrow Upon Soar has a full range of the essential services and facilities, including a secondary school, and the majority of the desirable services. Barrow Upon Soar Post Office is only open 5 days a week; however this is accessible at both Quorn and Sileby which can be accessed using a good 30 min daytime bus service.</p> <p>Barrow Upon Soar has good transport connections to Loughborough with a 30 minute daytime service and hourly evening service that gets residents into the town centre within 30 minutes travel time. This ensures there is good access to both jobs and higher order services.</p> <p>Barrow Upon Soar is identified as a 'Service Centre' in the third 'tier' of the hierarchy with a range of services and facilities to meet most of the day to day needs of the community and good accessibility to services not available within the settlement.</p>		

BEEBY		
SERVICES & FACILITIES CRITERIA	KNOWN FACILITIES	SUMMARY
<p>Food Shop Located in the settlement, open 7 days a week and possible to do the equivalent of a weekly shop.</p>		0
<p>Primary School Located in the settlement</p>		0
<p>Employment Access Access to a range of employment types using sustainable modes of travel. Excellent: a range of employment types are accessible within the settlement and/or in a main urban centre within 30 minutes travel time using a frequent bus or train service (every 15 minutes) during peak times. Very Good: a range of employment types are accessible in a main urban centre within 30 minutes travel time using a very regular (every 20 minutes) bus or train service during peak times. Good: a range of employment types are accessible in a main urban centre within 30 minutes travel time using a regular (every 30 minutes) bus or train service during peak times.</p>	100 Bus Service to Leicester and Melton Mowbray (2 hourly daytime service)	Doesn't meet the criteria
<p>High Speed Broadband High speed broadband is available to the majority of properties in the settlement.</p>		Superfast broadband expected December 2018
<p>Higher order services access Access to a range of higher order services using sustainable modes of travel. Excellent: available in the settlement or in a main urban centre within 30 minutes travel time using a frequent (every 15 minutes) bus or train service during peak times and an evening service. Very Good: available in a main urban centre within 30 minutes travel time using a very regular (every 20 minutes) bus or train service during peak times. Good: available in a main urban centre within 30 minutes travel time using a regular (every 30 minutes) bus or train service during peak times.</p>	100 Bus Service to Leicester and Melton Mowbray (2 hourly daytime service)	Doesn't meet the criteria
<p>Secondary School access Access will be graded on the following basis: Excellent: located in the settlement. Good: accessible via a bus or train service which enables pupils to attend school core times.</p>	Leicestershire County Council provides free school transport to secondary age children who live more than 3 miles walking distance to their nearest school.	Good
<p>Range of recreation, leisure and community facilities Two or more of the following are available to general public in the settlement: Community Hall, Public House, Formal sports provision (indoor or outdoor), Place of worship, Meeting places, Cultural buildings, Library</p>		0
<p>Doctors Surgery Located in the settlement with appointments available to book five days a week.</p>		0

BEEBY

SERVICES & FACILITIES CRITERIA	KNOWN FACILITIES	SUMMARY
Post Office Providing key services including mail and current account services six day a week		0
Pharmacy Located in the settlement and available to access six days a week.		0
Pre-School Provision Located in the settlement and available to access five days a week 8am – 6pm.		0
SUMMARY Beeby is located in the south of the Borough, northeast of Leicester City and at the last census had a population of 115. Beeby is expected to have high speed broadband by the end of 2018 but has none of the other services and facilities audited and only a 2 hourly daytime bus service to Leicester and Melton Mowbray to access employment and higher order services. Beeby is identified as a 'Small Village or Hamlet' in the bottom 'tier' of the hierarchy with limited services and facilities to meet the day to day needs of the residents.		

BIRSTALL

SERVICES & FACILITIES CRITERIA	KNOWN FACILITIES	SUMMARY
<p>Food Shop Located in the settlement, open 7 days a week and possible to do the equivalent of a weekly shop.</p>	<p>Coop Tesco Express</p>	2
<p>Primary School Located in the settlement</p>	<p>Riverside Community Primary School Highcliffe Primary School <i>ALP Leicester (special educational needs school not counted)</i></p>	2
<p>Employment Access Access to a range of employment types using sustainable modes of travel. Excellent: a range of employment types are accessible within the settlement and/or in a main urban centre within 30 minutes travel time using a frequent bus or train service (every 15 minutes) during peak times. Very Good: a range of employment types are accessible in a main urban centre within 30 minutes travel time using a very regular (every 20 minutes) bus or train service during peak times. Good: a range of employment types are accessible in a main urban centre within 30 minutes travel time using a regular (every 30 minutes) bus or train service during peak times.</p>	<p>127 Bus Service to Leicester or Loughborough (12 mins daytime service - 16 min journey) Park and Ride to Leicester (15 mins daytime service until 7pm) 2 Bus Service to Leicester or Loughborough (30 min daytime) 22A & 22B to Evington via Leicester (30 min daytime service)</p>	Excellent
<p>High Speed Broadband High speed broadband is available to the majority of properties in the settlement.</p>	<p>Superfast broadband is now available in this area</p>	Yes
<p>Higher order services access Access to a range of higher order services using sustainable modes of travel. Excellent: available in the settlement or in a main urban centre within 30 minutes travel time using a frequent (every 15 minutes) bus or train service during peak times and an evening service. Very Good: available in a main urban centre within 30 minutes travel time using a very regular (every 20 minutes) bus or train service during peak times. Good: available in a main urban centre within 30 minutes travel time using a regular (every 30 minutes) bus or train service during peak times.</p>	<p>127 Bus Service to Leicester or Loughborough (12 mins daytime service - 16 min journey to Leicester) 126 Bus Service to Leicester or Loughborough (hourly evening service) Park and Ride to Leicester (15 mins daytime service until 7pm) 2 Bus Service to Leicester or Loughborough (30 min daytime and hourly evening service) 22A & 22B to Evington via Leicester (30 min daytime service)</p>	Excellent
<p>Secondary School access Access will be graded on the following basis: Excellent: located in the settlement. Good: accessible via a bus or train service which enables pupils to attend school core times.</p>	<p>The Cedars Academy</p>	Excellent
<p>Range of recreation, leisure and community facilities Two or more of the following are available to general</p>	<p>Community Hall - Birstall Community Centre - Birstall Village Hall</p>	6

BIRSTALL		
SERVICES & FACILITIES CRITERIA	KNOWN FACILITIES	SUMMARY
public in the settlement: Community Hall, Public House, Formal sports provision (indoor or outdoor), Place of worship, Meeting places, Cultural buildings, Library	Public House - The White Horse - The Old Plough - The Earl of Stamford Place of Worship - Birstall Methodist Church Meeting Places - Birstall Youth Café Formal Sports Provision - The Cedars Academy - Harrowgate Drive - Meadow Lane - School Lane Playing Fields - School Lane Fields (Bowling Club) - St Margarets Bowling Club Library	
Doctors Surgery Located in the settlement with appointments available to book five days a week.	Birstall Medical Centre Greengate Medical Centre	2
Post Office Providing key services including mail and current account services six day a week	Birstall Post Office	1
Pharmacy Located in the settlement and available to access six days a week.	Birstall Pharmacy Boots Well Birstall - Greengate MC Pharmak Chemist The Co-operative Pharmacy	5
Pre-School Provision Located in the settlement and available to access five days a week 8am – 6pm.	Birstall Rainbow Nursery Woodlands Day Nursery The Hunny Hive Day Nursery Children 1st @ Woodlands	4
<p>SUMMARY</p> <p>Birstall is located in the south of the Borough, north of Leicester and at the last census had a population of 12,216.</p> <p>Birstall has a full range of services and facilities including a secondary school and a choice of services within the settlement.</p> <p>Birstall has a strong physical and functional relationship with the city. 41% of the economically active residents in Birstall work in Leicester and there are excellent transport connections to the city with a 12 minute daytime bus service and hourly evening bus service that gets residents into the city centre within 30 minutes travel time. This ensures there is excellent access to both jobs and higher order services.</p> <p>Birstall is identified as an 'Urban Area' in the second 'tier' of the hierarchy with a range and choice of services and facilities that meet the day to day needs of residents and physically or functionally forms part of a wider urban area.</p>		

BURTON ON THE WOLDS		
SERVICES & FACILITIES CRITERIA	KNOWN FACILITIES	SUMMARY
Food Shop Located in the settlement, open 7 days a week and possible to do the equivalent of a weekly shop.		0
Primary School Located in the settlement	Burton-on-the-Wolds Primary School	1
Employment Access Access to a range of employment types using sustainable modes of travel. Excellent: a range of employment types are accessible within the settlement and/or in a main urban centre within 30 minutes travel time using a frequent bus or train service (every 15 minutes) during peak times. Very Good: a range of employment types are accessible in a main urban centre within 30 minutes travel time using a very regular (every 20 minutes) bus or train service during peak times. Good: a range of employment types are accessible in a main urban centre within 30 minutes travel time using a regular (every 30 minutes) bus or train service during peak times.	8 Bus Service to Loughborough (hourly daytime service)	Doesn't meet the criteria
High Speed Broadband High speed broadband is available to the majority of properties in the settlement.	Superfast broadband is now available in this area	Yes
Higher order services access Access to a range of higher order services using sustainable modes of travel. Excellent: available in the settlement or in a main urban centre within 30 minutes travel time using a frequent (every 15 minutes) bus or train service during peak times and an evening service. Very Good: available in a main urban centre within 30 minutes travel time using a very regular (every 20 minutes) bus or train service during peak times. Good: available in a main urban centre within 30 minutes travel time using a regular (every 30 minutes) bus or train service during peak times.	8 Bus Service to Loughborough (hourly daytime service)	Doesn't meet the criteria
Secondary School access Access will be graded on the following basis: Excellent: located in the settlement. Good: accessible via a bus or train service which enables pupils to attend school core times.	Leicestershire County Council provides free school transport to secondary age children who live more than 3 miles walking distance to their nearest school.	Good
Range of recreation, leisure and community facilities Two or more of the following are available to general public in the settlement: Community Hall, Public House, Formal sports provision (indoor or outdoor), Place of worship, Meeting places, Cultural buildings, Library	Community Hall - Burton on the Wolds Village Hall Public House - The Greyhound Inn Formal Sports Provision - Towles Field	3
Doctors Surgery Located in the settlement with appointments available to book five days a week.		0
Post Office Providing key services including mail and current		0

BURTON ON THE WOLDS

SERVICES & FACILITIES CRITERIA	KNOWN FACILITIES	SUMMARY
account services six day a week		
Pharmacy Located in the settlement and available to access six days a week.		0
Pre-School Provision Located in the settlement and available to access five days a week 8am – 6pm.		0
SUMMARY Burton on the Wolds is located in the north of the Borough, east of Loughborough and at the last census had a population of 1,218. Burton on the Wolds has three of the services and facilities audited. This includes a primary school and high speed broadband which are essential services and facilities located in the settlement. Burton on the Wolds has limited access to employment and higher order services with only an hourly daytime service to Loughborough. Burton on the Wolds is identified as an 'Other Settlement' in the fourth 'tier' of the hierarchy with some of the services and facilities to meet the day to day needs of the community.		

COSSINGTON

SERVICES & FACILITIES CRITERIA	KNOWN FACILITIES	SUMMARY
<p>Food Shop Located in the settlement, open 7 days a week and possible to do the equivalent of a weekly shop.</p>		0
<p>Primary School Located in the settlement</p>	Cossington Church of England Primary School	1
<p>Employment Access Access to a range of employment types using sustainable modes of travel. Excellent: a range of employment types are accessible within the settlement and/or in a main urban centre within 30 minutes travel time using a frequent bus or train service (every 15 minutes) during peak times. Very Good: a range of employment types are accessible in a main urban centre within 30 minutes travel time using a very regular (every 20 minutes) bus or train service during peak times. Good: a range of employment types are accessible in a main urban centre within 30 minutes travel time using a regular (every 30 minutes) bus or train service during peak times.</p>	2 Bus Service to Loughborough and Leicester (30 mins daytime - 20 mins journey to Leicester)	Good
<p>High Speed Broadband High speed broadband is available to the majority of properties in the settlement.</p>	Superfast broadband is now available in this area	Yes
<p>Higher order services access Access to a range of higher order services using sustainable modes of travel. Excellent: available in the settlement or in a main urban centre within 30 minutes travel time using a frequent (every 15 minutes) bus or train service during peak times and an evening service. Very Good: available in a main urban centre within 30 minutes travel time using a very regular (every 20 minutes) bus or train service during peak times. Good: available in a main urban centre within 30 minutes travel time using a regular (every 30 minutes) bus or train service during peak times.</p>	2 Bus Service to Loughborough and Leicester (30 mins daytime and hourly evening service - 20 min journey to Leicester)	Good
<p>Secondary School access Access will be graded on the following basis: Excellent: located in the settlement. Good: accessible via a bus or train service which enables pupils to attend school core times.</p>	Leicestershire County Council provides free school transport to secondary age children who live more than 3 miles walking distance to their nearest school.	Good
<p>Range of recreation, leisure and community facilities Two or more of the following are available to general public in the settlement: Community Hall, Public House, Formal sports provision (indoor or outdoor), Place of worship, Meeting places, Cultural buildings, Library</p>	Community Hall - Cossington Village Hall Public House - The Royal Oak Place of Worship - All Saints Church Formal Sports Provision - Platts Lane Playing Fields Outside Gym - Cossington Recreation Ground	4
<p>Doctors Surgery Located in the settlement with appointments</p>		0

COSSINGTON

SERVICES & FACILITIES CRITERIA	KNOWN FACILITIES	SUMMARY
available to book five days a week.		
Post Office Providing key services including mail and current account services six day a week		0
Pharmacy Located in the settlement and available to access six days a week.		0
Pre-School Provision Located in the settlement and available to access five days a week 8am – 6pm.		0
SUMMARY Cossington is located in the Soar Valley, south of Sileby, north of Syston and at the last census had a population of 598. Cossington has five of the services and facilities audited, including a primary school and high speed broadband which are essential services within the village. Cossington also has good access to employment and higher order services in Leicester with a 30 mins daytime bus service within 30 mins journey to Leicester. Cossington is identified as an 'Other Settlement' in the fourth 'tier' of the hierarchy with some of the services and facilities to meet the day to day needs of the community.		

COTES		
SERVICES & FACILITIES CRITERIA	KNOWN FACILITIES	SUMMARY
<p>Food Shop Located in the settlement, open 7 days a week and possible to do the equivalent of a weekly shop.</p>		0
<p>Primary School Located in the settlement</p>		0
<p>Employment Access Access to a range of employment types using sustainable modes of travel. Excellent: a range of employment types are accessible within the settlement and/or in a main urban centre within 30 minutes travel time using a frequent bus or train service (every 15 minutes) during peak times. Very Good: a range of employment types are accessible in a main urban centre within 30 minutes travel time using a very regular (every 20 minutes) bus or train service during peak times. Good: a range of employment types are accessible in a main urban centre within 30 minutes travel time using a regular (every 30 minutes) bus or train service during peak times.</p>	<p>9 Bus Service to Loughborough and Nottingham (30 min daytime service - 5 min journey to Loughborough)</p> <p>8 Bus Service to Loughborough (hourly daytime service)</p>	Good
<p>High Speed Broadband High speed broadband is available to the majority of properties in the settlement.</p>		Superfast broadband expected December 2018
<p>Higher order services access Access to a range of higher order services using sustainable modes of travel. Excellent: available in the settlement or in a main urban centre within 30 minutes travel time using a frequent (every 15 minutes) bus or train service during peak times and an evening service. Very Good: available in a main urban centre within 30 minutes travel time using a very regular (every 20 minutes) bus or train service during peak times. Good: available in a main urban centre within 30 minutes travel time using a regular (every 30 minutes) bus or train service during peak times.</p>	<p>9 Bus Service to Loughborough and Nottingham (30 min daytime and 2 hourly evening service - 5 min journey to Loughborough)</p> <p>8 Bus Service to Loughborough (hourly daytime service)</p>	Good
<p>Secondary School access Access will be graded on the following basis: Excellent: located in the settlement. Good: accessible via a bus or train service which enables pupils to attend school core times.</p>	Leicestershire County Council provides free school transport to secondary age children who live more than 3 miles walking distance to their nearest school.	Good
<p>Range of recreation, leisure and community facilities Two or more of the following are available to general public in the settlement: Community Hall, Public House, Formal sports provision (indoor or outdoor), Place of worship, Meeting places, Cultural buildings, Library</p>		0
<p>Doctors Surgery Located in the settlement with appointments available to book five days a week.</p>		0

COTES

SERVICES & FACILITIES CRITERIA	KNOWN FACILITIES	SUMMARY
<p>Post Office Providing key services including mail and current account services six day a week</p>		0
<p>Pharmacy Located in the settlement and available to access six days a week.</p>		0
<p>Pre-School Provision Located in the settlement and available to access five days a week 8am – 6pm.</p>		0
<p>SUMMARY</p> <p>Cotes is located in the north of the Borough, east of Loughborough and at the last census had a population of 29, the smallest population in the Borough.</p> <p>Cotes is expected to have high speed broadband by the end of 2018 but has none of the other services and facilities audited within the settlement. Cotes does however have a good bus service with a 30 min daytime and 2 hourly evening service providing access employment and higher order services in Loughborough within a 30 min journey time.</p> <p>Cotes is identified as a ‘Small Village or Hamlet’ in the bottom ‘tier’ of the hierarchy with limited services and facilities to meet the day to day needs of the residents.</p>		

CROPSTON		
SERVICES & FACILITIES CRITERIA	KNOWN FACILITIES	SUMMARY
Food Shop Located in the settlement, open 7 days a week and possible to do the equivalent of a weekly shop.		0
Primary School Located in the settlement		0
Employment Access Access to a range of employment types using sustainable modes of travel. Excellent: a range of employment types are accessible within the settlement and/or in a main urban centre within 30 minutes travel time using a frequent bus or train service (every 15 minutes) during peak times. Very Good: a range of employment types are accessible in a main urban centre within 30 minutes travel time using a very regular (every 20 minutes) bus or train service during peak times. Good: a range of employment types are accessible in a main urban centre within 30 minutes travel time using a regular (every 30 minutes) bus or train service during peak times.	154 Bus Service to Leicester and Loughborough (hourly daytime service)	Doesn't meet the criteria
High Speed Broadband High speed broadband is available to the majority of properties in the settlement.	Superfast broadband is now available in this area	Yes
Higher order services access Access to a range of higher order services using sustainable modes of travel. Excellent: available in the settlement or in a main urban centre within 30 minutes travel time using a frequent (every 15 minutes) bus or train service during peak times and an evening service. Very Good: available in a main urban centre within 30 minutes travel time using a very regular (every 20 minutes) bus or train service during peak times. Good: available in a main urban centre within 30 minutes travel time using a regular (every 30 minutes) bus or train service during peak times.	154 Bus Service to Leicester and Loughborough (hourly daytime service)	Doesn't meet the criteria
Secondary School access Access will be graded on the following basis: Excellent: located in the settlement. Good: accessible via a bus or train service which enables pupils to attend school core times.	Leicestershire County Council provides free school transport to secondary age children who live more than 3 miles walking distance to their nearest school.	Good
Range of recreation, leisure and community facilities Two or more of the following are available to general public in the settlement: Community Hall, Public House, Formal sports provision (indoor or outdoor), Place of worship, Meeting places, Cultural buildings, Library	Community Hall - Church Hall Public House - The Badgers Sett - Bradgate Arms Formal Sports Provision - Cropston Cricket Club - Sandham Bridge Road Sports Field	3
Doctors Surgery Located in the settlement with appointments available to book five days a week.		0
Post Office		0

CROPSTON

SERVICES & FACILITIES CRITERIA	KNOWN FACILITIES	SUMMARY
Providing key services including mail and current account services six day a week		
Pharmacy Located in the settlement and available to access six days a week.		0
Pre-School Provision Located in the settlement and available to access five days a week 8am – 6pm.		0
SUMMARY Cropston is located in the south of the Borough, north of Anstey close to Thurcaston and at the last census had a combined population of 2,074 with Thurcaston. Cropston has high speed broadband and three recreation, leisure and community facilities but none of the other services and facilities audited. Cropston only has an hourly daytime bus service to Leicester or Loughborough to access employment and higher order services. Cropston is identified as a ‘Small Village or Hamlet’ in the bottom ‘tier’ of the hierarchy with limited services and facilities to meet the day to day needs of the residents.		

EAST GOSCOTE		
SERVICES & FACILITIES CRITERIA	KNOWN FACILITIES	SUMMARY
<p>Food Shop Located in the settlement, open 7 days a week and possible to do the equivalent of a weekly shop.</p>		0
<p>Primary School Located in the settlement</p>	Broomfield Community Primary School	1
<p>Employment Access Access to a range of employment types using sustainable modes of travel. Excellent: a range of employment types are accessible within the settlement and/or in a main urban centre within 30 minutes travel time using a frequent bus or train service (every 15 minutes) during peak times. Very Good: a range of employment types are accessible in a main urban centre within 30 minutes travel time using a very regular (every 20 minutes) bus or train service during peak times. Good: a range of employment types are accessible in a main urban centre within 30 minutes travel time using a regular (every 30 minutes) bus or train service during peak times.</p>	<p>5 Bus Services to Leicester (20 mins daytime service – however this is a 40 min journey to Leicester so doesn't meet the criteria. This bus service does however provide access to employment opportunities at Thurmaston and Syston within 30 mins journey time and therefore have been rated as having 'Good' access)</p> <p>5A Bus Services to Leicester or Melton Mowbray (20 mins daytime service)</p>	Good
<p>High Speed Broadband High speed broadband is available to the majority of properties in the settlement.</p>	Superfast broadband is now available in this area	Yes
<p>Higher order services access Access to a range of higher order services using sustainable modes of travel. Excellent: available in the settlement or in a main urban centre within 30 minutes travel time using a frequent (every 15 minutes) bus or train service during peak times and an evening service. Very Good: available in a main urban centre within 30 minutes travel time using a very regular (every 20 minutes) bus or train service during peak times. Good: available in a main urban centre within 30 minutes travel time using a regular (every 30 minutes) bus or train service during peak times.</p>	<p>5 Bus Service to Leicester (20 mins daytime and 30 min evening service - 40 min journey to Leicester)</p> <p>5A Bus Service to Leicester or Melton Mowbray (20 min daytime service)</p> <p>BT2 to Beaumont Centre (infrequent daytime service)</p>	Doesn't meet the criteria
<p>Secondary School access Access will be graded on the following basis: Excellent: located in the settlement. Good: accessible via a bus or train service which enables pupils to attend school core times.</p>	Leicestershire County Council provides free school transport to secondary age children who live more than 3 miles walking distance to their nearest school.	Good
<p>Range of recreation, leisure and community facilities Two or more of the following are available to general public in the settlement: Community Hall, Public House, Formal sports provision (indoor or outdoor), Place of worship, Meeting places, Cultural buildings, Library</p>	<p>Community Hall</p> <ul style="list-style-type: none"> - East Goscote Village Hall Meeting Place - St Hildas Church Centre Place of Worship - St Hildas C of E Church Library <p>Formal Sports Provision</p> <ul style="list-style-type: none"> - Tennis Courts, Jubilee Playing Fields - Beedles Lake Golf Centre 	5
<p>Doctors Surgery Located in the settlement with appointments</p>	Mahaur Medical Centre Dr B J Shah	1

EAST GOSCOTE

SERVICES & FACILITIES CRITERIA	KNOWN FACILITIES	SUMMARY
available to book five days a week.		
Post Office Providing key services including mail and current account services six day a week	East Goscote Post Office	1
Pharmacy Located in the settlement and available to access six days a week.	Parkem Ltd, East Goscote Pharmacy	1
Pre-School Provision Located in the settlement and available to access five days a week 8am – 6pm.		0
SUMMARY East Goscote is located in the Wreake Valley, north east of Syston and at the last census had a population of 2,866. East Goscote has eight of the services and facilities audited, including a primary school and high speed broadband which are essential services within the village. East Goscote also has good access to employment with a 20 mins daytime bus service within 30 mins journey time to Thurmaston and Syston. The same bus services provided more limited access to Leicester for jobs and higher order services with a journey time over 30 mins. East Goscote is identified as an 'Other Settlement' in the fourth 'tier' of the hierarchy with some of the services and facilities to meet the day to day needs of the community.		

HATHERN		
SERVICES & FACILITIES CRITERIA	KNOWN FACILITIES	SUMMARY
<p>Food Shop Located in the settlement, open 7 days a week and possible to do the equivalent of a weekly shop.</p>		0
<p>Primary School Located in the settlement</p>	Hathern Church of England Primary School	1
<p>Employment Access Access to a range of employment types using sustainable modes of travel. Excellent: a range of employment types are accessible within the settlement and/or in a main urban centre within 30 minutes travel time using a frequent bus or train service (every 15 minutes) during peak times. Very Good: a range of employment types are accessible in a main urban centre within 30 minutes travel time using a very regular (every 20 minutes) bus or train service during peak times. Good: a range of employment types are accessible in a main urban centre within 30 minutes travel time using a regular (every 30 minutes) bus or train service during peak times.</p>	<p>Skylink Bus Service to Loughborough, Leicester, East Midlands Airport and Derby (20 min daytime service - 11 min journey to Loughborough)</p> <p>Skylink Service to Loughborough, East Midlands Airport and Nottingham (hourly daytime service)</p>	Very Good
<p>High Speed Broadband High speed broadband is available to the majority of properties in the settlement.</p>	Superfast broadband is now available in this area	Yes
<p>Higher order services access Access to a range of higher order services using sustainable modes of travel. Excellent: available in the settlement or in a main urban centre within 30 minutes travel time using a frequent (every 15 minutes) bus or train service during peak times and an evening service. Very Good: available in a main urban centre within 30 minutes travel time using a very regular (every 20 minutes) bus or train service during peak times. Good: available in a main urban centre within 30 minutes travel time using a regular (every 30 minutes) bus or train service during peak times.</p>	<p>Skylink Bus Service to Loughborough, Leicester, East Midlands Airport and Derby (20 min daytime and hourly evening - 11 min journey to Loughborough)</p> <p>Skylink Service to Loughborough, East Midlands Airport and Nottingham (hourly daytime service)</p>	Very Good
<p>Secondary School access Access will be graded on the following basis: Excellent: located in the settlement. Good: accessible via a bus or train service which enables pupils to attend school core times.</p>	Leicestershire County Council provides free school transport to secondary age children who live more than 3 miles walking distance to their nearest school.	Good
<p>Range of recreation, leisure and community facilities Two or more of the following are available to general public in the settlement: Community Hall, Public House, Formal sports provision (indoor or outdoor), Place of worship, Meeting places, Cultural buildings, Library</p>	<p>Community Hall - Hathern Community Centre - Hathern Village Hall</p> <p>Public House - The Anchor Inn - The Kings Arms - The Packe Arms</p> <p>Place of Worship - Hathern Baptist Church - Hathern Parish Church Peter & St. Paul</p> <p>Library Formal Sports Provision</p>	5

HATHERN

SERVICES & FACILITIES CRITERIA	KNOWN FACILITIES	SUMMARY
	<ul style="list-style-type: none"> - Hathern Football Club - Charnwood Golf Complex - Pasture Lane Playing Fields 	
<p>Doctors Surgery Located in the settlement with appointments available to book five days a week.</p>	Dishley Grange Medical Practice, Cross Street Surgery	2
<p>Post Office Providing key services including mail and current account services six day a week</p>		1
<p>Pharmacy Located in the settlement and available to access six days a week.</p>		0
<p>Pre-School Provision Located in the settlement and available to access five days a week 8am – 6pm.</p>	Moors Farm Day Nursery	1
<p>SUMMARY</p> <p>Hathern is located in the north of the Borough, north of Loughborough and at the last census had a population of 1,866.</p> <p>Hathern has nine of the services and facilities audited, including a primary school and high speed broadband which are essential services within the village. Hathern also has very good access to employment and higher order services in Loughborough with a 20 min daytime and hourly evening service within 30 mins journey to the town.</p> <p>Hathern is identified as an ‘Other Settlement’ in the fourth ‘tier’ of the hierarchy with some of the services and facilities to meet the day to day needs of the community.</p>		

HOTON		
SERVICES & FACILITIES CRITERIA	KNOWN FACILITIES	SUMMARY
Food Shop Located in the settlement, open 7 days a week and possible to do the equivalent of a weekly shop.		0
Primary School Located in the settlement		0
Employment Access Access to a range of employment types using sustainable modes of travel. Excellent: a range of employment types are accessible within the settlement and/or in a main urban centre within 30 minutes travel time using a frequent bus or train service (every 15 minutes) during peak times. Very Good: a range of employment types are accessible in a main urban centre within 30 minutes travel time using a very regular (every 20 minutes) bus or train service during peak times. Good: a range of employment types are accessible in a main urban centre within 30 minutes travel time using a regular (every 30 minutes) bus or train service during peak times.	9 Bus Service to Loughborough and Nottingham (30 min daytime service - 8 min journey to Loughborough) 8 Bus Service to Loughborough (hourly daytime service)	Good
Higher order services access Access to a range of higher order services using sustainable modes of travel. Excellent: available in the settlement or in a main urban centre within 30 minutes travel time using a frequent (every 15 minutes) bus or train service during peak times and an evening service. Very Good: available in a main urban centre within 30 minutes travel time using a very regular (every 20 minutes) bus or train service during peak times. Good: available in a main urban centre within 30 minutes travel time using a regular (every 30 minutes) bus or train service during peak times.	9 Bus Service to Loughborough and Nottingham (30 min daytime and 2 hourly evening service - 8 min journey to Loughborough) 8 Bus Service to Loughborough (hourly daytime service)	Good
High Speed Broadband High speed broadband is available to the majority of properties in the settlement.	Superfast broad is available in parts of this area	Yes
Secondary School access Access will be graded on the following basis: Excellent: located in the settlement. Good: accessible via a bus or train service which enables pupils to attend school core times.	Leicestershire County Council provides free school transport to secondary age children who live more than 3 miles walking distance to their nearest school.	Good
Range of recreation, leisure and community facilities Two or more of the following are available to general public in the settlement: Community Hall, Public House, Formal sports provision (indoor or outdoor), Place of worship, Meeting places, Cultural buildings, Library	Community Hall - Hoton Village Hall	1
Doctors Surgery Located in the settlement with appointments available to book five days a week.		0
Post Office Providing key services including mail and current		0

HOTON		
SERVICES & FACILITIES CRITERIA	KNOWN FACILITIES	SUMMARY
account services six day a week		
Pharmacy Located in the settlement and available to access six days a week.		0
Pre-School Provision Located in the settlement and available to access five days a week 8am – 6pm.		0
SUMMARY Hoton is located in the north of the Borough, east of Loughborough and at the last census had a population of 353. Hoton has high speed broadband and a community hall (which didn't alone meet the criteria for a range of recreation, leisure and community facilities). Hoton has none of the other services and facilities audited within the settlement. Hoton does however have a good bus service with a 30 min daytime and 2 hourly evening service providing access employment and higher order services in Loughborough within a 30 min journey time. Hoton is identified as a 'Small Village or Hamlet' in the bottom 'tier' of the hierarchy with limited services and facilities to meet the day to day needs of the residents.		

LOUGHBOROUGH

SERVICES & FACILITIES CRITERIA	KNOWN FACILITIES	SUMMARY
<p>Food Shop Located in the settlement, open 7 days a week and possible to do the equivalent of a weekly shop.</p>	Tesco Park Road Tesco Rushes Tesco, Leicester Road Morrisons Sainsburys Aldi, Belton Road Aldi Grange Retail Park LIDL M&S Co-op, Knighthorpe Road Londis, Ashby Road Farmfoods Iceland	13
<p>Primary School Located in the settlement</p>	Cobden Primary School Rendell Primary School Saint Mary's Catholic Primary School Loughborough Church of England Primary School Mountfields Lodge School Hardwick House School Sacred Heart Catholic Voluntary Academy Beacon Academy Robert Bakewell Primary School Thorpe Acre Infant School & Junior School Booth Wood Primary School Outwoods Edge Primary School Holywell Primary School Stonebow Primary School Our Lady's Convent School Fairfield School (fee paying school excluded from the summary) Ashmount School (special educational needs school and excluded from the summary)	15
<p>Employment Access Access to a range of employment types using sustainable modes of travel. Excellent: a range of employment types are accessible within the settlement and/or in a main urban centre within 30 minutes travel time using a frequent bus or train service (every 15 minutes) during peak times. Very Good: a range of employment types are accessible in a main urban centre within 30 minutes travel time using a very regular (every 20 minutes) bus or train service during peak times. Good: a range of employment types are accessible in a main urban centre within 30 minutes travel time using a regular (every</p>	Range of employment types available within the settlement. The following bus and train services providing access from surrounding areas with varying frequencies: - 127 to Leicester & Shepshed - 126 to Leicester & Coalville - 2 & 154 to Leicester - Skylink to East Midlands Airport, Nottingham and Derby - X16 & X26 to Rothley - 1 & 9 to Nottingham - 8 to Grantham - 16, 16A, X16 to Coalville - 3 to Ratcliffe on Soar	Excellent

LOUGHBOROUGH

SERVICES & FACILITIES CRITERIA	KNOWN FACILITIES	SUMMARY
30 minutes) bus or train service during peak times.	<ul style="list-style-type: none"> - 27 to Sileby - 120X to Markfield - 129 to Ashby De La Zouch - Town Services 3, 5, 11, 12, 13 & SPRINT - East Midlands Train Service to Barrow, Sileby, Syston, Leicester, Nottingham, Sheffield, Lincoln, Derby, Leeds, London and a number of other locations. 	
<p>High Speed Broadband High speed broadband is available to the majority of properties in the settlement.</p>	Superfast broadband is now available in this area	Yes
<p>Higher order services access Access to a range of higher order services using sustainable modes of travel. Excellent: available in the settlement or in a main urban centre within 30 minutes travel time using a frequent (every 15 minutes) bus or train service during peak times and an evening service. Very Good: available in a main urban centre within 30 minutes travel time using a very regular (every 20 minutes) bus or train service during peak times. Good: available in a main urban centre within 30 minutes travel time using a regular (every 30 minutes) bus or train service during peak times.</p>	<p>Range of higher order services available within the settlement.</p> <p>The following bus and train services providing access from surrounding areas:</p> <ul style="list-style-type: none"> - 127 to Leicester & Shepshed - 126 to Leicester & Coalville - 2 & 154 to Leicester - Skylink to East Midlands Airport - X16 & X26 to Rothley - 1 & 9 to Nottingham - 8 to Grantham - 16, 16A, X16 to Coalville - 3 to Ratcliffe on Soar - 27 to Sileby - 120X to Markfield - 129 to Ashby De La Zouch - Town Services 3, 5, 11, 12, 13 & SPRINT - East Midlands Train Service to Barrow, Sileby, Syston, Leicester, Nottingham, Sheffield, Lincoln, Derby, Leeds, London and a number of other locations. 	Excellent
<p>Secondary School access Access will be graded on the following basis: Excellent: located in the settlement. Good: accessible via a bus or train service which enables pupils to attend school core times.</p>	<p>Limehurst Academy Woodbrook Vale Charnwood College</p> <p>Loughborough High School Our Lady's Convent School Loughborough Grammar (these are fee paying schools excluded from the summary)</p>	Excellent
<p>Range of recreation, leisure and community facilities Two or more of the following are available to general public in the settlement:</p>	<p>Community Hall</p> <ul style="list-style-type: none"> - Cobden Community Centre - Rosebery St. Peter's Community Centre - Loughborough Town Hall 	7

LOUGHBOROUGH

SERVICES & FACILITIES CRITERIA	KNOWN FACILITIES	SUMMARY
Community Hall, Public House, Formal sports provision (indoor or outdoor), Place of worship, Meeting places, Cultural buildings, Library	<ul style="list-style-type: none"> - Fearon Hall Community Centre - Gorse Covert Community Centre - John Storer Community Centre - St Peters Community Centre - Shelthorpe Community Centre - Moira Youth & Community Centre - Shree Ram Krishna Centre - Geeta Bhawan Community Centre - Bangladesh Social Association <p>Meeting Place</p> <ul style="list-style-type: none"> - John Storer House Café - Brush Social Club - The Catholic Club - Carillon Banqueting Rooms - 1st Nanpantan Scouts - Marios Tinenti Centre <p>Public House</p> <ul style="list-style-type: none"> - The Moon & Bell - The Orange tree - The Royal Oak - The Organ Grinder - The Griffin - The Unicorn - The Amber Rooms - The Swan In The Rushes - The Generous Briton - The Beacon Inn - The Paget Arms - Ring O Bells - The Priory - The Needle & Pin - The Blacksmiths - Phantom - The Maxwells - Garendon Pub - 12 Degrees - The Boat Inn - Tap & Mallet - Old English Gentleman - The Peacock Inn - Windmill <p>Place of Worship</p> <ul style="list-style-type: none"> - Loughborough Baptist Church - Loughborough Parish Church - The Church of Jesus Christ of Latter-day Saints - King's Church Loughborough - St Mary's Church - Knightthorpe Methodist Church - The Well Church - Grace Church - Kingdom Hall Of Jehovah's Witnesses - Church of Christ Loughborough - Good Shepherd - Emmanuel Church Hall - Sacred Heart Church 	

LOUGHBOROUGH

SERVICES & FACILITIES CRITERIA	KNOWN FACILITIES	SUMMARY
	<ul style="list-style-type: none"> - Holywell Church - All Saints Church - Saint Peter's Church - Shree Ram Krishna Centre - Shahjalal Mosque - Gurudwara Sahib Sikh Temple - Loughborough Mosque and Islamic Cultural Centre - Al Markaz as Salafi Islamic Centre <p>Cultural Buildings</p> <ul style="list-style-type: none"> - Charnwood Museum - Loughborough Bell Foundry - The Old Rectory Museum - Loughborough War Memorial and Carillon <p>Formal Sports Provision</p> <ul style="list-style-type: none"> - 3M Healthcare, Sports and Social Club - Charnwood College - Holywell Fitness Centre - Loughborough Leisure Centre - Loughborough University - The Radmoor Centre - Cotton Way Cricket Ground - Nanpantan Sports Ground - Forest Road Tennis Club - Shelthorpe Golf Course - Loughborough Carillon Cricket Club - Bowling Green Way - Charnwood Lawn Tennis Club - Cumberland Road Playing Field - De Lisle College - Derby Road Sports Ground - Greenfields Sports and Social Club - Greenway Bowling Club - Lodge Farm Sports Ground - Longcliffe Golf Club - Loughborough Bowls Club - Loughborough Charnwood Old Boys Cc - Loughborough Dynamo Football Club - Loughborough Greenfield Sports And Social Club - Loughborough Phoenix Bowls Club - Loughborough Queens Park Bowls Club - Loughborough Rugby Football Club - Loughborough University (Netball Centre) - Loughborough University (Sir David Wallace) - Loughborough University Stadium - Loughborough University Tennis Club - Nanpantan Sports Ground Brush Bowls Club - Park Road Sports Ground <p>Library</p>	
<p>Doctors Surgery Located in the settlement with appointments available to book five days a week.</p>	Bridge Street Medical Practice Pinfold Medical Practice Parkview Surgery Woodbrook Medical Centre Rosebery Medical Centre	11

LOUGHBOROUGH		
SERVICES & FACILITIES CRITERIA	KNOWN FACILITIES	SUMMARY
	University Medical Centre Outwoods Medical Centre Storer Road Surgery Dishley Grange Medical Practice Forest Edge Medical Centre Loughborough Urgent Care Centre	
Post Office Providing key services including mail and current account services six day a week	Loughborough High Street Loughborough Shelthorpe Loughborough Bedford Square Loughborough Gorse Covert Loughborough Park Road Loughborough Forest Road (Limited – no current account services) Loughborough Sharpley End (Limited – no current account services)	7
Pharmacy Located in the settlement and available to access six days a week.	Superdrug Pharmacy Boots Hms Pharmacy Church Pharmacy Lloyds Pharmacy Inside Sainsbury's Tesco Pharmacy Lloyds Pharmacy, Pinfold Gate Well Loughborough - Leicester Rd Lloyds Pharmacy, 19b Bridge Street Lloyds Pharmacy, 31 Bridge Street Rosebery Pharmacy Church Pharmacy Saraj Chemist The Medicine Box Loughborough Pharmacy Ltd Well Gorse Covert - Maxwell Drive The Medicine Box, University HMS Pharmacy Outwoods Pharmacy Tesco Pharmacy Curex Pharmacy The Co-operative Pharmacy	22
Pre-School Provision Located in the settlement and available to access five days a week 8am – 6pm.	Babblebrooke Day Nursery Busy Bee Child Care Fairfield School Nursery Kingscliffe Day Nursery Loughborough Campus Nursery Parkside Nursery School Radmoor Day Nursery Watermead Day Nursery Westwards Nursery School The Nursery at Endowed Schools Small World Nursery Lime Tree Day Nursery	12
SUMMARY		

LOUGHBOROUGH

SERVICES & FACILITIES CRITERIA

KNOWN FACILITIES

SUMMARY

Loughborough is located in the north of the Borough, and at the last census had a population of 60,122.

Loughborough is the largest settlement in the Borough and is a market and university town. Loughborough has a full range of services and facilities including employment, higher order services, secondary schools and a choice of services within the settlement.

Loughborough has excellent transport connections to the surrounding area providing access to employment and higher order services in the town. Loughborough, along with Leicester City to the south of the Borough, are the main travel to work destinations for the economically active, the focus for public transport in the Borough and the most popular locations for comparison shopping.

Loughborough is the main social and economic focus for the Borough. Loughborough is identified as an 'Urban Centre' at the top of hierarchy with a range of employment opportunities and higher order services that meet all of the day to day needs of residents and are accessible to the surrounding area.

MOUNTSORREL		
SERVICES & FACILITIES CRITERIA	KNOWN FACILITIES	SUMMARY
<p>Food Shop Located in the settlement, open 7 days a week and possible to do the equivalent of a weekly shop.</p>	Waitrose Co-op	2
<p>Primary School Located in the settlement</p>	Christ Church & Saint Peter's C of E Primary School Stonehurst Lodge Special Needs School (not included in the assessment summary)	1
<p>Employment Access Access to a range of employment types using sustainable modes of travel. Excellent: a range of employment types are accessible within the settlement and/or in a main urban centre within 30 minutes travel time using a frequent bus or train service (every 15 minutes) during peak times. Very Good: a range of employment types are accessible in a main urban centre within 30 minutes travel time using a very regular (every 20 minutes) bus or train service during peak times. Good: a range of employment types are accessible in a main urban centre within 30 minutes travel time using a regular (every 30 minutes) bus or train service during peak times.</p>	127 Bus Service to Leicester or Loughborough (15 mins daytime service - 25 min journey to Loughborough) X26 Bus Service to Loughborough (hourly daytime service)	Excellent
<p>High Speed Broadband High speed broadband is available to the majority of properties in the settlement.</p>	Superfast broadband is now available in this area	Yes
<p>Higher order services access Access to a range of higher order services using sustainable modes of travel. Excellent: available in the settlement or in a main urban centre within 30 minutes travel time using a frequent (every 15 minutes) bus or train service during peak times and an evening service. Very Good: available in a main urban centre within 30 minutes travel time using a very regular (every 20 minutes) bus or train service during peak times. Good: available in a main urban centre within 30 minutes travel time using a regular (every 30 minutes) bus or train service during peak times.</p>	127 Bus Service to Leicester or Loughborough (15 mins daytime - 25 min journey to Loughborough) 126 Bus Service to Leicester or Loughborough (hourly evening service to Loughborough) X26 Bus Service to Loughborough (hourly daytime service)	Excellent
<p>Secondary School access Access will be graded on the following basis: Excellent: located in the settlement. Good: accessible via a bus or train service which enables pupils to attend school core times.</p>	Leicestershire County Council provides free school transport to secondary age children who live more than 3 miles walking distance to their nearest school.	Good
<p>Range of recreation, leisure and community facilities Two or more of the following are available to general public in the settlement: Community Hall, Public House, Formal sports provision (indoor or outdoor), Place of worship, Meeting places, Cultural buildings, Library</p>	Community Hall - Mountsorrel Memorial Hall Centre Meeting Places - Mountsorrel Youth Café - Methodist Church Centre Public House - The Waterside Inn - The Swan Inn	6

MOUNTSORREL

SERVICES & FACILITIES CRITERIA	KNOWN FACILITIES	SUMMARY
	Place of Worship - Methodist Church - Saint Peters Church - Baptist Chapel - Christ Church Formal Sports Provision - Soar Valley Leisure Centre - Halstead Road Playing Fields - Memorial Recreation Ground Library	
Doctors Surgery Located in the settlement with appointments available to book five days a week.	Alpine House Surgery Charnwood Surgery	2
Post Office Providing key services including mail and current account services six day a week	Mountsorrel Post Office (open Mon to Sat (except Tues))	0
Pharmacy Located in the settlement and available to access six days a week.	Mountsorrel Pharmacy	1
Pre-School Provision Located in the settlement and available to access five days a week 8am – 6pm.	Castle View Day Nursery	1
SUMMARY Mountsorrel is located in the Soar Valley, south of Loughborough and north of Leicester and at the last census had a population of 8,223. Mountsorrel has all the essential services and facilities and the majority of the desirable services. Mountsorrel Post Office is only open 5 days a week; however this is accessible at both Rothley and Quorn which can be accessed using an excellent 15 min daytime bus service. Mountsorrel has excellent transport connections to Loughborough with a 15 mins daytime hourly evening service that gets residents into Loughborough within 30 minutes travel time. This ensures there is excellent access to both jobs and higher order services. Mountsorrel is identified as a 'Service Centre' in the third 'tier' of the hierarchy with a range of services and facilities to meet most of the day to day needs of the community and good accessibility to services not available within the settlement.		

NEWTOWN LINFORD		
SERVICES & FACILITIES CRITERIA	KNOWN FACILITIES	SUMMARY
Food Shop Located in the settlement, open 7 days a week and possible to do the equivalent of a weekly shop.		0
Primary School Located in the settlement	Newtown Linford Primary School	1
Employment Access Access to a range of employment types using sustainable modes of travel. Excellent: a range of employment types are accessible within the settlement and/or in a main urban centre within 30 minutes travel time using a frequent bus or train service (every 15 minutes) during peak times. Very Good: a range of employment types are accessible in a main urban centre within 30 minutes travel time using a very regular (every 20 minutes) bus or train service during peak times. Good: a range of employment types are accessible in a main urban centre within 30 minutes travel time using a regular (every 30 minutes) bus or train service during peak times.	120 Bus Service to Leicester and Coalville (2 hourly daytime service) (review due Sept/Oct 2019)	Doesn't meet the criteria
High Speed Broadband High speed broadband is available to the majority of properties in the settlement.	Superfast broadband is now available in this area	Yes
Higher order services access Access to a range of higher order services using sustainable modes of travel. Excellent: available in the settlement or in a main urban centre within 30 minutes travel time using a frequent (every 15 minutes) bus or train service during peak times and an evening service. Very Good: available in a main urban centre within 30 minutes travel time using a very regular (every 20 minutes) bus or train service during peak times. Good: available in a main urban centre within 30 minutes travel time using a regular (every 30 minutes) bus or train service during peak times.	120 Bus Service to Leicester and Coalville (2 hourly daytime service) (review due Sept/Oct 2019)	Doesn't meet the criteria
Secondary School access Access will be graded on the following basis: Excellent: located in the settlement. Good: accessible via a bus or train service which enables pupils to attend school core times.	Leicestershire County Council provides free school transport to secondary age children who live more than 3 miles walking distance to their nearest school.	Good
Range of recreation, leisure and community facilities Two or more of the following are available to general public in the settlement: Community Hall, Public House, Formal sports provision (indoor or outdoor), Place of worship, Meeting places, Cultural buildings, Library	Community Hall - Newtown Linford Village Hall Public House - The Bradgate - The Linford Pub Place of Worship - All Saints Church Formal Sports Provision - Newtown Linford Cricket Club - Newtown Linford Tennis Club	4
Doctors Surgery Located in the settlement with appointments		0

NEWTOWN LINFORD

SERVICES & FACILITIES CRITERIA	KNOWN FACILITIES	SUMMARY
available to book five days a week.		
Post Office Providing key services including mail and current account services six day a week		0
Pharmacy Located in the settlement and available to access six days a week.		0
Pre-School Provision Located in the settlement and available to access five days a week 8am – 6pm.		0
SUMMARY Newtown Linford is located in the southwest of the Borough, north of Leicester City close to Anstey and Markfield in Hinckley and Bosworth Borough. At the last census had a population of 1,103. Newtown Linford has three of the services and facilities audited. This includes a primary school and high speed broadband which are essential services and facilities located in the settlement. Newtown Linford has limited access to employment and higher order services with only a 2 hourly daytime service to Leicester. Newtown Linford is identified as an ‘Other Settlement’ in the fourth ‘tier’ of the hierarchy with some of the services and facilities to meet the day to day needs of the community.		

PRESTWOLD		
SERVICES & FACILITIES CRITERIA	KNOWN FACILITIES	SUMMARY
<p>Food Shop Located in the settlement, open 7 days a week and possible to do the equivalent of a weekly shop.</p>		0
<p>Primary School Located in the settlement</p>		0
<p>Employment Access Access to a range of employment types using sustainable modes of travel. Excellent: a range of employment types are accessible within the settlement and/or in a main urban centre within 30 minutes travel time using a frequent bus or train service (every 15 minutes) during peak times. Very Good: a range of employment types are accessible in a main urban centre within 30 minutes travel time using a very regular (every 20 minutes) bus or train service during peak times. Good: a range of employment types are accessible in a main urban centre within 30 minutes travel time using a regular (every 30 minutes) bus or train service during peak times.</p>	8 Bus Service to Loughborough (hourly daytime service)	Doesn't meet the criteria
<p>High Speed Broadband High speed broadband is available to the majority of properties in the settlement.</p>		Superfast broadband expected December 2018
<p>Higher order services access Access to a range of higher order services using sustainable modes of travel. Excellent: available in the settlement or in a main urban centre within 30 minutes travel time using a frequent (every 15 minutes) bus or train service during peak times and an evening service. Very Good: available in a main urban centre within 30 minutes travel time using a very regular (every 20 minutes) bus or train service during peak times. Good: available in a main urban centre within 30 minutes travel time using a regular (every 30 minutes) bus or train service during peak times.</p>	8 Bus Service to Loughborough (hourly daytime service)	Doesn't meet the criteria
<p>Secondary School access Access will be graded on the following basis: Excellent: located in the settlement. Good: accessible via a bus or train service which enables pupils to attend school core times.</p>	Leicestershire County Council provides free school transport to secondary age children who live more than 3 miles walking distance to their nearest school.	Good
<p>Range of recreation, leisure and community facilities Two or more of the following are available to general public in the settlement: Community Hall, Public House, Formal sports provision (indoor or outdoor), Place of worship, Meeting places, Cultural buildings, Library</p>	Place of Worship - St Andrew	1
<p>Doctors Surgery Located in the settlement with appointments available to book five days a week.</p>		0

PRESTWOLD

SERVICES & FACILITIES CRITERIA	KNOWN FACILITIES	SUMMARY
Post Office Providing key services including mail and current account services six day a week		0
Pharmacy Located in the settlement and available to access six days a week.		0
Pre-School Provision Located in the settlement and available to access five days a week 8am – 6pm.		0
SUMMARY Prestwold is located in the north of the Borough, west of Loughborough and at the last census had a population of 70. Prestwold is expected to have high speed broadband by the end of 2018 and a church, which did not alone meet the criteria for a range of recreation, leisure and community facilities. Prestwold has none of the other services and facilities audited and only an hourly daytime bus service to Loughborough to access employment and higher order services. Prestwold is identified as a 'Small Village or Hamlet' in the bottom 'tier' of the hierarchy with limited services and facilities to meet the day to day needs of the residents.		

QUENIBOROUGH

SERVICES & FACILITIES CRITERIA	KNOWN FACILITIES	SUMMARY
<p>Food Shop Located in the settlement, open 7 days a week and possible to do the equivalent of a weekly shop.</p>	Marks and Spencer Branston BP	1
<p>Primary School Located in the settlement</p>	Queniborough Church of England Primary School	1
<p>Employment Access Access to a range of employment types using sustainable modes of travel. Excellent: a range of employment types are accessible within the settlement and/or in a main urban centre within 30 minutes travel time using a frequent bus or train service (every 15 minutes) during peak times. Very Good: a range of employment types are accessible in a main urban centre within 30 minutes travel time using a very regular (every 20 minutes) bus or train service during peak times. Good: a range of employment types are accessible in a main urban centre within 30 minutes travel time using a regular (every 30 minutes) bus or train service during peak times.</p>	<p>5 Bus Services to Leicester (20 mins daytime service – however this is a 37 min journey to Leicester so doesn't meet the criteria. These services do however provide access to employment opportunities at Thurmaston and Syston within 30 mins journey time and therefore have been rated as having 'Good' access).</p> <p>5A Bus Services to Leicester (20 minute daytime service)</p> <p>X5 Bus Service to Leicester and Melton (infrequent daytime service)</p>	Good
<p>High Speed Broadband High speed broadband is available to the majority of properties in the settlement.</p>	Part Superfast broadband is now available in this area/ Part Planning & Survey work underway or happening soon	Superfast broadband expected December 2018
<p>Higher order services access Access to a range of higher order services using sustainable modes of travel. Excellent: available in the settlement or in a main urban centre within 30 minutes travel time using a frequent (every 15 minutes) bus or train service during peak times and an evening service. Very Good: available in a main urban centre within 30 minutes travel time using a very regular (every 20 minutes) bus or train service during peak times. Good: available in a main urban centre within 30 minutes travel time using a regular (every 30 minutes) bus or train service during peak times.</p>	<p>5 Bus Service to Leicester (20 mins daytime and 30 min evening service - 37 min journey to Leicester).</p> <p>5A Bus Service to Leicester (20 min daytime service)</p> <p>X5 Bus Service to Leicester and Melton (infrequent daytime service)</p> <p>BT2 to Beaumont Centre (infrequent daytime service)</p>	Doesn't meet the criteria
<p>Secondary School access Access will be graded on the following basis: Excellent: located in the settlement. Good: accessible via a bus or train service which enables pupils to attend school core times.</p>	Leicestershire County Council provides free school transport to secondary age children who live more than 3 miles walking distance to their nearest school.	Good
<p>Range of recreation, leisure and community facilities Two or more of the following are available to general public in the settlement: Community Hall, Public House, Formal sports provision (indoor or outdoor), Place of worship, Meeting places, Cultural buildings, Library</p>	<p>Community Hall</p> <ul style="list-style-type: none"> - Queniborough Village Hall Public House - The Horse & Groom - Britannia Place of Worship - St Mary Formal Sports Provision 	4

QUENIBOROUGH

SERVICES & FACILITIES CRITERIA	KNOWN FACILITIES	SUMMARY
	<ul style="list-style-type: none"> - Syston Rugby Football Club - Queniborough Cricket Club - Queniborough Football Club facilities - King George Playing Fields - Rearsby Road - Queniborough Tennis Club 	
<p>Doctors Surgery Located in the settlement with appointments available to book five days a week.</p>		0
<p>Post Office Providing key services including mail and current account services six day a week</p>	Queniborough Post Office	1
<p>Pharmacy Located in the settlement and available to access six days a week.</p>		0
<p>Pre-School Provision Located in the settlement and available to access five days a week 8am – 6pm.</p>	The Laurels Nursery School	1
<p>SUMMARY</p> <p>Queniborough is located in the Wreake Valley, north east of Syston and at the last census had a population of 2,326.</p> <p>Queniborough has seven of the services and facilities audited, including a food shop, primary school and the expectation that high speed broadband will be in place by the end of 2018. These are essential services within the village. Queniborough also has good access to employment with a 20 mins daytime bus service and within 30 mins journey time to Thurmaston and Syston. The same bus services provide more limited access to Leicester for jobs and higher order services with a journey time over 30 mins.</p> <p>Queniborough is identified as an ‘Other Settlement’ in the fourth ‘tier’ of the hierarchy with some of the services and facilities to meet the day to day needs of the community.</p>		

QUORN

SERVICES & FACILITIES CRITERIA	KNOWN FACILITIES	SUMMARY
<p>Food Shop Located in the settlement, open 7 days a week and possible to do the equivalent of a weekly shop.</p>	Co-op Bradleys	2
<p>Primary School Located in the settlement</p>	St Bartholomew's Church of England Primary School	1
<p>Employment Access Access to a range of employment types using sustainable modes of travel. Excellent: a range of employment types are accessible within the settlement and/or in a main urban centre within 30 minutes travel time using a frequent bus or train service (every 15 minutes) during peak times. Very Good: a range of employment types are accessible in a main urban centre within 30 minutes travel time using a very regular (every 20 minutes) bus or train service during peak times. Good: a range of employment types are accessible in a main urban centre within 30 minutes travel time using a regular (every 30 minutes) bus or train service during peak times.</p>	<p>127 Bus Service to Leicester or Loughborough (15 mins daytime service - 11 min journey to Loughborough)</p> <p>2 Bus Service to Loughborough and Leicester (30 mins daytime)</p> <p>154 Bus Service to Leicester and Loughborough (hourly daytime service)</p> <p>X26 Bus Service to Loughborough (hourly daytime service)</p>	Excellent
<p>High Speed Broadband High speed broadband is available to the majority of properties in the settlement.</p>	Superfast broadband is now available in this area	Yes
<p>Higher order services access Access to a range of higher order services using sustainable modes of travel. Excellent: available in the settlement or in a main urban centre within 30 minutes travel time using a frequent (every 15 minutes) bus or train service during peak times and an evening service. Very Good: available in a main urban centre within 30 minutes travel time using a very regular (every 20 minutes) bus or train service during peak times. Good: available in a main urban centre within 30 minutes travel time using a regular (every 30 minutes) bus or train service during peak times.</p>	<p>127 Bus Service to Leicester or Loughborough (15 mins daytime - 11 min journey to Loughborough)</p> <p>126 Bus Service to Leicester or Loughborough (hourly evening service)</p> <p>2 Bus Service to Loughborough and Leicester (30 mins daytime and hourly evening service - 20 min journey to Leicester)</p> <p>154 Bus Service to Leicester and Loughborough (hourly daytime service)</p> <p>X26 Bus Service to Loughborough (hourly daytime service)</p>	Excellent
<p>Secondary School access Access will be graded on the following basis: Excellent: located in the settlement. Good: accessible via a bus or train service which enables pupils to attend school core times.</p>	Rawlins Academy	Excellent
<p>Range of recreation, leisure and community facilities Two or more of the following are available to general public in the settlement: Community Hall, Public House, Formal sports provision (indoor or outdoor), Place of worship, Meeting</p>	<p>Community Hall</p> <ul style="list-style-type: none"> - Quorn Village Hall - Church Rooms <p>Public House</p> <ul style="list-style-type: none"> - The Manor House At Quorn - The White Horse - The Quorndon Fox 	5

QUORN		
SERVICES & FACILITIES CRITERIA	KNOWN FACILITIES	SUMMARY
places, Cultural buildings, Library	<ul style="list-style-type: none"> - Blacksmiths Arms - The Apple Tree - White Hart - Royal Oak Place of Worship <ul style="list-style-type: none"> - St Bartholomew's Church - Quorn Baptist Church Formal Sports Provision <ul style="list-style-type: none"> - Rawlins Academy Deep End Activity Centre - Quorn Mills Park Bowling Green - Quorn Football Ground - Quorn Cricket Ground - Riverside Football Ground - Quorn Grange Hotel Gym - - Caves Field - Quorn Lawn Tennis Club - Stafford Orchard Library	
Doctors Surgery Located in the settlement with appointments available to book five days a week.	Quorn Medical Centre	1
Post Office Providing key services including mail and current account services six day a week	Quorn Post Office	1
Pharmacy Located in the settlement and available to access six days a week.	Boots	1
Pre-School Provision Located in the settlement and available to access five days a week 8am – 6pm.	Lime Tree Day Nursery	1
SUMMARY Quorn is located in the north of the Borough, south of Loughborough in the Soar Valley and at the last census had a population of 5,177. Quorn has a full range of services and facilities including a secondary school. Quorn has excellent transport connections to Loughborough with a 15 minute daytime and hourly evening service that gets residents into the town centre within 30 minutes travel time. This ensures there is good access to both jobs and higher order services. Quorn is identified as a 'Service Centre' in the third 'tier' of the hierarchy with a range of services and facilities to meet most of the day to day needs of the community and good accessibility to services not available within the settlement.		

RATCLIFFE ON THE WREAKE		
SERVICES & FACILITIES CRITERIA	KNOWN FACILITIES	SUMMARY
<p>Food Shop Located in the settlement, open 7 days a week and possible to do the equivalent of a weekly shop.</p>		0
<p>Primary School Located in the settlement</p>		0
<p>Employment Access Access to a range of employment types using sustainable modes of travel. Excellent: a range of employment types are accessible within the settlement and/or in a main urban centre within 30 minutes travel time using a frequent bus or train service (every 15 minutes) during peak times. Very Good: a range of employment types are accessible in a main urban centre within 30 minutes travel time using a very regular (every 20 minutes) bus or train service during peak times. Good: a range of employment types are accessible in a main urban centre within 30 minutes travel time using a regular (every 30 minutes) bus or train service during peak times.</p>	<p>128 Bus Service to Leicester and Melton Mowbray (2 hourly daytime service)</p> <p>3 Bus Service to Loughborough (infrequent community service)</p>	Doesn't meet the criteria
<p>High Speed Broadband High speed broadband is available to the majority of properties in the settlement.</p>		Superfast broadband expected December 2018
<p>Higher order services access Access to a range of higher order services using sustainable modes of travel. Excellent: available in the settlement or in a main urban centre within 30 minutes travel time using a frequent (every 15 minutes) bus or train service during peak times and an evening service. Very Good: available in a main urban centre within 30 minutes travel time using a very regular (every 20 minutes) bus or train service during peak times. Good: available in a main urban centre within 30 minutes travel time using a regular (every 30 minutes) bus or train service during peak times.</p>	<p>128 Bus Service to Leicester and Melton Mowbray (2 hourly daytime service)</p> <p>3 Bus Service to Loughborough (infrequent community service)</p>	Doesn't meet the criteria
<p>Secondary School access Access will be graded on the following basis: Excellent: located in the settlement. Good: accessible via a bus or train service which enables pupils to attend school core times.</p>	Leicestershire County Council provides free school transport to secondary age children who live more than 3 miles walking distance to their nearest school.	Good
<p>Range of recreation, leisure and community facilities Two or more of the following are available to general public in the settlement: Community Hall, Public House, Formal sports provision (indoor or outdoor), Place of worship, Meeting places, Cultural buildings, Library</p>	<p>Community Hall - Village Hall Place of Worship - St Botolph's Church Formal Sports Provision - Ratcliffe College</p>	3
<p>Doctors Surgery Located in the settlement with appointments available to book five days a week.</p>		0

RATCLIFFE ON THE WREAKE

SERVICES & FACILITIES CRITERIA	KNOWN FACILITIES	SUMMARY
Post Office Providing key services including mail and current account services six day a week		0
Pharmacy Located in the settlement and available to access six days a week.		0
Pre-School Provision Located in the settlement and available to access five days a week 8am – 6pm.	Ratcliffe College Nursery	1
SUMMARY Ratcliffe on the Wreake is located in the Wreake Valley, north east of Syston and at the last census had a population of 179. Ratcliffe on the Wreake has pre-school provision, a range of recreation, leisure and community facilities and is expected to have high speed broadband by the end of 2018. It does not have any of the other services and facilities audited and only a 2 hourly daytime bus service to Leicester and Melton Mowbray to access employment and higher order services. Ratcliffe on the Wreake is identified as a 'Small Village or Hamlet' in the bottom 'tier' of the hierarchy with limited services and facilities to meet the day to day needs of the residents		

REARSBY

SERVICES & FACILITIES CRITERIA	KNOWN FACILITIES	SUMMARY
<p>Food Shop Located in the settlement, open 7 days a week and possible to do the equivalent of a weekly shop.</p>		0
<p>Primary School Located in the settlement</p>	St Michael & All Angels Church of England Primary School	1
<p>Employment Access Access to a range of employment types using sustainable modes of travel. Excellent: a range of employment types are accessible within the settlement and/or in a main urban centre within 30 minutes travel time using a frequent bus or train service (every 15 minutes) during peak times. Very Good: a range of employment types are accessible in a main urban centre within 30 minutes travel time using a very regular (every 20 minutes) bus or train service during peak times. Good: a range of employment types are accessible in a main urban centre within 30 minutes travel time using a regular (every 30 minutes) bus or train service during peak times.</p>	<p>5A Bus Services to Leicester (20 mins daytime service – however this is a 44 mins journey to Leicester so doesn't meet the criteria. This services does however provide access to employment opportunities at Thurmaston and Syston within 30 mins journey time and therefore have been rated as having 'Good' access).</p> <p>X5 Bus Service to Leicester and Melton (infrequent daytime service)</p>	Good
<p>High Speed Broadband High speed broadband is available to the majority of properties in the settlement.</p>	Superfast broadband is now available in this area	Yes
<p>Higher order services access Access to a range of higher order services using sustainable modes of travel. Excellent: available in the settlement or in a main urban centre within 30 minutes travel time using a frequent (every 15 minutes) bus or train service during peak times and an evening service. Very Good: available in a main urban centre within 30 minutes travel time using a very regular (every 20 minutes) bus or train service during peak times. Good: available in a main urban centre within 30 minutes travel time using a regular (every 30 minutes) bus or train service during peak times.</p>	<p>5A Bus Service to Leicester (20 mins daytime service to Leicester - 44 mins journey to Leicester).</p> <p>X5 Bus Service to Leicester and Melton (infrequent daytime service)</p>	Doesn't meet the criteria
<p>Secondary School access Access will be graded on the following basis: Excellent: located in the settlement. Good: accessible via a bus or train service which enables pupils to attend school core times.</p>	Leicestershire County Council provides free school transport to secondary age children who live more than 3 miles walking distance to their nearest school.	Good
<p>Range of recreation, leisure and community facilities Two or more of the following are available to general public in the settlement: Community Hall, Public House, Formal sports provision (indoor or outdoor), Place of worship, Meeting places, Cultural buildings, Library</p>	<p>Community Hall</p> <ul style="list-style-type: none"> - Rearsby Village Hall Public House - The Horse & Groom - The Wheel Inn Place of Worship - St Michael and All Angels Church Formal Open Space Provision - Rearsby Village Hall 	4
<p>Doctors Surgery Located in the settlement with appointments available to book five days a week.</p>		0

REARSBY

SERVICES & FACILITIES CRITERIA	KNOWN FACILITIES	SUMMARY
<p>Post Office Providing key services including mail and current account services six day a week</p>		0
<p>Pharmacy Located in the settlement and available to access six days a week.</p>		0
<p>Pre-School Provision Located in the settlement and available to access five days a week 8am – 6pm.</p>		0
<p>SUMMARY</p> <p>Rearsby is located in the Wreake Valley, north east of Syston and at the last census had a population of 1,097.</p> <p>Rearsby has five of the services and facilities audited, including a primary school and high speed broadband, which are essential services within the village. Rearsby also has good access to employment with a 20 mins daytime bus service to Thurmaston and Syston and within 30 mins journey time. The same bus service provides more limited access to Leicester for jobs and higher order services with a journey time over 30 mins.</p> <p>Rearsby is identified as an 'Other Settlement' in the fourth 'tier' of the hierarchy with some of the services and facilities to meet the day to day needs of the community.</p>		

ROTHLEY

SERVICES & FACILITIES CRITERIA	KNOWN FACILITIES	SUMMARY
<p>Food Shop Located in the settlement, open 7 days a week and possible to do the equivalent of a weekly shop.</p>	<p>Co-op Supermarket C E Bradley Convenience Store Select Convenience Store</p>	3
<p>Primary School Located in the settlement</p>	<p>Rothley Church of England Primary School</p>	1
<p>Employment Access Access to a range of employment types using sustainable modes of travel. Excellent: a range of employment types are accessible within the settlement and/or in a main urban centre within 30 minutes travel time using a frequent bus or train service (every 15 minutes) during peak times. Very Good: a range of employment types are accessible in a main urban centre within 30 minutes travel time using a very regular (every 20 minutes) bus or train service during peak times. Good: a range of employment types are accessible in a main urban centre within 30 minutes travel time using a regular (every 30 minutes) bus or train service during peak times.</p>	<p>127 Bus Service to Loughborough or Leicester (15 mins daytime service - 30 min journey to Loughborough or Leicester) 2 Bus Service to Leicester or Loughborough (30 min daytime) X26 Bus Service to Loughborough (hourly daytime service)</p>	Excellent
<p>High Speed Broadband High speed broadband is available to the majority of properties in the settlement.</p>	<p>Superfast broadband is now available in this area</p>	Yes
<p>Higher order services access Access to a range of higher order services using sustainable modes of travel. Excellent: available in the settlement or in a main urban centre within 30 minutes travel time using a frequent (every 15 minutes) bus or train service during peak times and an evening service. Very Good: available in a main urban centre within 30 minutes travel time using a very regular (every 20 minutes) bus or train service during peak times. Good: available in a main urban centre within 30 minutes travel time using a regular (every 30 minutes) bus or train service during peak times.</p>	<p>127 Bus Service to Loughborough or Leicester (15 mins daytime - 30 min journey to Loughborough or Leicester) 126 Bus Service to Leicester or Loughborough (hourly evening service) 2 Bus Service to Leicester or Loughborough (30 min daytime and hourly evening service) X26 Bus Service to Loughborough (hourly daytime service)</p>	Excellent
<p>Secondary School access Access will be graded on the following basis: Excellent: located in the settlement. Good: accessible via a bus or train service which enables pupils to attend school core times.</p>	<p>Leicestershire County Council provides free school transport to secondary age children who live more than 3 miles walking distance to their nearest school.</p>	Good
<p>Range of recreation, leisure and community facilities Two or more of the following are available to general public in the settlement: Community Hall, Public House, Formal sports provision (indoor or outdoor), Place of worship, Meeting places, Cultural buildings, Library</p>	<p>Community Hall - The Rothley Centre - Rothley Village Hall Meeting Place - The Old School Rooms Public House - The Blue Bell Inn - Royal Oak - The Woodman's Stroke - Miller & Carter Steak House</p>	6

ROTHLEY

SERVICES & FACILITIES CRITERIA	KNOWN FACILITIES	SUMMARY
	Place of Worship - Rothley Baptist Church - Rothley Parish Church (St Mary the Virgin & St John the Baptist) Formal Sports Provision - Rothley Park Cricket Ground - Rothley Park Golf Club - Fowkes St Park - Rothley Bowls Club - Rothley Ivanhoe Tennis Club - Rothley Tennis Club - Soar Valley Bowls Club Library	
Doctors Surgery Located in the settlement with appointments available to book five days a week.		0
Post Office Providing key services including mail and current account services six day a week	Rothley Post Office	1
Pharmacy Located in the settlement and available to access six days a week.	Rothley Pharmacy	1
Pre-School Provision Located in the settlement and available to access five days a week 8am – 6pm.	Rothley Park Kindergarten Ltd	1
SUMMARY Rothley is located in the Soar Valley, north of Leicester and at the last census had a population of 3,897. Rothley has all the essential services and facilities and the majority of the desirable services. Rothley does not have a doctors surgery, however this is accessible within Mountsorrel which can be accessed using an excellent 15 min daytime bus service. Rothley has excellent transport connections to both jobs and higher order services, with a 15 minute daytime service and hourly evening service that gets residents into either Loughborough or Leicester within 30 minutes travel time. Rothley is identified as a 'Service Centre' in the third 'tier' of the hierarchy with a range of services and facilities to meet most of the day to day needs of the community and good accessibility to services not available within the settlement.		

SEAGRAVE		
SERVICES & FACILITIES CRITERIA	KNOWN FACILITIES	SUMMARY
<p>Food Shop Located in the settlement, open 7 days a week and possible to do the equivalent of a weekly shop.</p>		0
<p>Primary School Located in the settlement</p>	Seagrave Village Primary School	1
<p>Employment Access Access to a range of employment types using sustainable modes of travel. Excellent: a range of employment types are accessible within the settlement and/or in a main urban centre within 30 minutes travel time using a frequent bus or train service (every 15 minutes) during peak times. Very Good: a range of employment types are accessible in a main urban centre within 30 minutes travel time using a very regular (every 20 minutes) bus or train service during peak times. Good: a range of employment types are accessible in a main urban centre within 30 minutes travel time using a regular (every 30 minutes) bus or train service during peak times.</p>	27 Bus Service to Loughborough and Sileby (1hr 15min daytime service)	Doesn't meet the criteria
<p>High Speed Broadband High speed broadband is available to the majority of properties in the settlement.</p>		Superfast broadband expected December 2018
<p>Higher order services access Access to a range of higher order services using sustainable modes of travel. Excellent: available in the settlement or in a main urban centre within 30 minutes travel time using a frequent (every 15 minutes) bus or train service during peak times and an evening service. Very Good: available in a main urban centre within 30 minutes travel time using a very regular (every 20 minutes) bus or train service during peak times. Good: available in a main urban centre within 30 minutes travel time using a regular (every 30 minutes) bus or train service during peak times.</p>	27 Bus Service to Loughborough and Sileby (1hr 15min daytime service)	Doesn't meet the criteria
<p>Secondary School access Access will be graded on the following basis: Excellent: located in the settlement. Good: accessible via a bus or train service which enables pupils to attend school core times.</p>	Leicestershire County Council provides free school transport to secondary age children who live more than 3 miles walking distance to their nearest school.	Good
<p>Range of recreation, leisure and community facilities Two or more of the following are available to general public in the settlement: Community Hall, Public House, Formal sports provision (indoor or outdoor), Place of worship, Meeting places, Cultural buildings, Library</p>	<p>Community Hall</p> <ul style="list-style-type: none"> - Seagrave War Memorial Hall Public House - White Horse Inn Place of Worship - All Saints Formal Sports Provision - Green Lane Recreation Ground - Park Hill Golf Club 	4
<p>Doctors Surgery</p>		0

SEAGRAVE

SERVICES & FACILITIES CRITERIA	KNOWN FACILITIES	SUMMARY
Located in the settlement with appointments available to book five days a week.		
Post Office Providing key services including mail and current account services six day a week		0
Pharmacy Located in the settlement and available to access six days a week.		0
Pre-School Provision Located in the settlement and available to access five days a week 8am – 6pm.		0
SUMMARY Seagrave is located in the east of the Borough, close to Sileby and at the last census had a population of 546. Seagrave has three of the services and facilities audited. This includes a primary school and the expectation that there will be high speed broadband by the end of 2018 which are essential services and facilities located in the settlement. Seagrave has limited access to employment and higher order services with an 75 min daytime service to Loughborough. Seagrave is identified as an 'Other Settlement' in the fourth 'tier' of the hierarchy with some of the services and facilities to meet the day to day needs of the community.		

SHEPSHED

SERVICES & FACILITIES CRITERIA	KNOWN FACILITIES	SUMMARY
<p>Food Shop Located in the settlement, open 7 days a week and possible to do the equivalent of a weekly shop.</p>	<p>Asda Tesco Express Co-op, Anson Road Co-op, Hall Croft</p>	4
<p>Primary School Located in the settlement</p>	<p>Saint Winefride's Catholic Primary School Oxley Primary School Newcroft Primary Academy St Botolph's C of E Primary</p>	4
<p>Employment Access Access to a range of employment types using sustainable modes of travel. Excellent: a range of employment types are accessible within the settlement and/or in a main urban centre within 30 minutes travel time using a frequent bus or train service (every 15 minutes) during peak times. Very Good: a range of employment types are accessible in a main urban centre within 30 minutes travel time using a very regular (every 20 minutes) bus or train service during peak times. Good: a range of employment types are accessible in a main urban centre within 30 minutes travel time using a regular (every 30 minutes) bus or train service during peak times.</p>	<p>Range of employment types available within the settlement.</p> <p>127 Bus Service to Loughborough or Leicester (15 mins daytime service - 25 min journey to Loughborough)</p> <p>16 Bus Service to Loughborough and Coalville (hourly daytime service)</p> <p>Skylink Service to Coalville, East Midlands Airport and Nottingham (hourly daytime service)</p> <p>129 Bus Service to Loughborough (infrequent daytime service) (review due Oct/Nov 2019)</p> <p>16A Bus Service to Loughborough and Coalville (infrequent daytime service)</p> <p>X16 Bus Service to Loughborough and Coalville (infrequent daytime service)</p>	Excellent
<p>High Speed Broadband High speed broadband is available to the majority of properties in the settlement.</p>	<p>Superfast broadband is now available in this area</p>	Yes
<p>Higher order services access Access to a range of higher order services using sustainable modes of travel. Excellent: available in the settlement or in a main urban centre within 30 minutes travel time using a frequent (every 15 minutes) bus or train service during peak times and an evening service. Very Good: available in a main urban centre within 30 minutes travel time using a very regular (every 20 minutes) bus or train service during peak times. Good: available in a main urban centre within 30 minutes travel time using a regular (every 30 minutes) bus or train service during peak times.</p>	<p>127 Bus Service (15 mins daytime service - 25 min journey to Loughborough)</p> <p>126 Bus Service to Loughborough or Leicester (hourly evening service)</p> <p>16 Bus Service to Loughborough and Coalville (hourly daytime service)</p> <p>Skylink Service to Coalville, East Midlands Airport and Nottingham (hourly daytime service)</p> <p>16A Bus Service to Loughborough and Coalville (infrequent daytime service)</p> <p>X16 Bus Service to Loughborough and Coalville (infrequent daytime service)</p>	Excellent
<p>Secondary School access Access will be graded on the following basis:</p>	<p>Iveshead School</p>	Excellent

SHEPshed		
SERVICES & FACILITIES CRITERIA	KNOWN FACILITIES	SUMMARY
<p>Excellent: located in the settlement. Good: accessible via a bus or train service which enables pupils to attend school core times.</p>		
<p>Range of recreation, leisure and community facilities Two or more of the following are available to general public in the settlement: Community Hall, Public House, Formal sports provision (indoor or outdoor), Place of worship, Meeting places, Cultural buildings, Library</p>	<p>Community Hall - Shepshed Community Centre - Glenmore Community Centre Public House - The Horse Shepshed - The Black Swan - The Crown - Jolly farmers - Pied Bull Inn - Richmond Arms - Bull & Bush - The Top Railway Place of Worship - St. Botolph's Church - Shepshed Word of Life Church - Christchurch Methodist - St Winefrides R C Church Formal Sports Provision - Shepshed Sport Hall - Iveshead School - Shepshed Bowls Club - Football Ground, The Dovecote - Little Haw Lane Playing Fields - Shepshed BMX Track - Shepshed High School - Shepshed Cricket Club Library</p>	5
<p>Doctors Surgery Located in the settlement with appointments available to book five days a week.</p>	<p>Shepshed Health Centre, Field Street Surgery Dr K N Badiani & Partners - Forest House Surgery</p>	2
<p>Post Office Providing key services including mail and current account services six day a week</p>	<p>Shepshed Market Place Shepshed Charnwood Road (General Stores)</p>	2
<p>Pharmacy Located in the settlement and available to access six days a week.</p>	<p>Charnwood Pharmacy (Mr Pickfords) Numark Pharmacy Rowlands Pharmacy</p>	3
<p>Pre-School Provision Located in the settlement and available to access five days a week 8am – 6pm.</p>	<p>Hind Leys Preschool The Oak Treehouse Children 1st Day Nurseries Charnwood Day Nursery</p>	4
<p>SUMMARY</p> <p>Shepshed is located in the north of the Borough, west of Loughborough on the opposite side of the M1. At the last census Shepshed had a population of 13,505, the second largest settlement in the Borough after Loughborough.</p> <p>Shepshed has a full range of services and facilities including a secondary school, a range of employment and a choice of services within the settlement.</p>		

SHEPSHED

SERVICES & FACILITIES CRITERIA

KNOWN FACILITIES

SUMMARY

47% of Shepshed residents work in either Shepshed or Loughborough. This reflects both a good range of employment opportunities in Shepshed and a strong relationship with Loughborough. There are excellent transport connections to Loughborough with a 15 minute daytime and hourly evening bus service that gets residents into the town centre within 30 minutes travel time. This ensures there is excellent access to both jobs and higher order services in Loughborough.

Shepshed is identified as an 'Urban Area' in the second 'tier' of the hierarchy with a range and choice of services and facilities that meet the day to day needs of residents and physically or functionally forms part of a wider urban area.

SILEBY

SERVICES & FACILITIES CRITERIA	KNOWN FACILITIES	SUMMARY
<p>Food Shop Located in the settlement, open 7 days a week and possible to do the equivalent of a weekly shop.</p>	<p>Tesco Express Costcutter</p>	2
<p>Primary School Located in the settlement</p>	<p>Sileby Redlands Community Primary School Highgate Community Primary School</p>	2
<p>Employment Access Access to a range of employment types using sustainable modes of travel. Excellent: a range of employment types are accessible within the settlement and/or in a main urban centre within 30 minutes travel time using a frequent bus or train service (every 15 minutes) during peak times. Very Good: a range of employment types are accessible in a main urban centre within 30 minutes travel time using a very regular (every 20 minutes) bus or train service during peak times. Good: a range of employment types are accessible in a main urban centre within 30 minutes travel time using a regular (every 30 minutes) bus or train service during peak times.</p>	<p>2 Bus Service to Leicester or Loughborough (30 min daytime - 25 min journey to Leicester)</p> <p>27 Bus Service to Loughborough (1hr 15min daytime service)</p> <p>East Midlands Train Service to Loughborough and Leicester (1 hr daytime service and evening service)</p>	Good
<p>High Speed Broadband High speed broadband is available to the majority of properties in the settlement.</p>	<p>Superfast broadband is now available in this area</p>	Yes
<p>Higher order services access Access to a range of higher order services using sustainable modes of travel. Excellent: available in the settlement or in a main urban centre within 30 minutes travel time using a frequent (every 15 minutes) bus or train service during peak times and an evening service. Very Good: available in a main urban centre within 30 minutes travel time using a very regular (every 20 minutes) bus or train service during peak times. Good: available in a main urban centre within 30 minutes travel time using a regular (every 30 minutes) bus or train service during peak times.</p>	<p>2 Bus Service to Leicester or Loughborough (30 min daytime and hourly evening service - 25 min journey to Leicester)</p> <p>27 Bus Service to Loughborough (1hr 15min daytime service)</p> <p>East Midlands Train Service to Loughborough and Leicester (1 hr daytime service and evening service, less than 20 minutes journey duration)</p>	Good
<p>Secondary School access Access will be graded on the following basis: Excellent: located in the settlement. Good: accessible via a bus or train service which enables pupils to attend school core times.</p>	<p>Leicestershire County Council provides free school transport to secondary age children who live more than 3 miles walking distance to their nearest school.</p>	Good
<p>Range of recreation, leisure and community facilities Two or more of the following are available to general public in the settlement: Community Hall, Public House, Formal sports provision (indoor or outdoor), Place of worship, Meeting places, Cultural buildings, Library</p>	<p>Community Hall - Sileby Community Centre Public House - The White Swan - Free Trade Inn - The Horse and Trumpet Place of Worship - Methodist Church Formal Sports Provision</p>	5

SILEBY		
SERVICES & FACILITIES CRITERIA	KNOWN FACILITIES	SUMMARY
	<ul style="list-style-type: none"> - Sileby Cricket Ground, Mountsorrel Lane - Sileby Bowls Club - Sileby Town Football Club, Memorial Park - Memorial Park - Sileby Tennis Club - Sileby Town Cricket Club Library 	
<p>Doctors Surgery Located in the settlement with appointments available to book five days a week.</p>	The Banks Surgery Highgate Medical	2
<p>Post Office Providing key services including mail and current account services six day a week</p>	Sileby Post Office	1
<p>Pharmacy Located in the settlement and available to access six days a week.</p>	Riverside Pharmacy Boots	2
<p>Pre-School Provision Located in the settlement and available to access five days a week 8am – 6pm.</p>	Lime Tree Day Nursery (King Street) Lime Tree Day Nursery (Cossington Road)	2
<p>SUMMARY</p> <p>Sileby is located in the Soar Valley, north of Leicester and south of Loughborough and at the last census had a population of 7,835.</p> <p>Sileby has a full range of services and facilities.</p> <p>Sileby has good transport connections to Leicester with a 30 minute daytime and hourly evening service that gets residents into the city within 30 minutes travel time as well as an hourly train service to Loughborough and Leicester with a journey time of less than 20 minutes. This ensures there is good access to both jobs and higher order services.</p> <p>Sileby is identified as a 'Service Centre' in the third 'tier' of the hierarchy with a range of services and facilities to meet most of the day to day needs of the community and good accessibility to services not available within the settlement.</p>		

SOUTH CROXTON		
SERVICES & FACILITIES CRITERIA	KNOWN FACILITIES	SUMMARY
Food Shop Located in the settlement, open 7 days a week and possible to do the equivalent of a weekly shop.		0
Primary School Located in the settlement		0
Employment Access Access to a range of employment types using sustainable modes of travel. Excellent: a range of employment types are accessible within the settlement and/or in a main urban centre within 30 minutes travel time using a frequent bus or train service (every 15 minutes) during peak times. Very Good: a range of employment types are accessible in a main urban centre within 30 minutes travel time using a very regular (every 20 minutes) bus or train service during peak times. Good: a range of employment types are accessible in a main urban centre within 30 minutes travel time using a regular (every 30 minutes) bus or train service during peak times.	100 Bus Service to Leicester and Melton Mowbray (2 hourly daytime service)	Doesn't meet the criteria
High Speed Broadband High speed broadband is available to the majority of properties in the settlement.		Superfast broadband expected December 2018
Higher order services access Access to a range of higher order services using sustainable modes of travel. Excellent: available in the settlement or in a main urban centre within 30 minutes travel time using a frequent (every 15 minutes) bus or train service during peak times and an evening service. Very Good: available in a main urban centre within 30 minutes travel time using a very regular (every 20 minutes) bus or train service during peak times. Good: available in a main urban centre within 30 minutes travel time using a regular (every 30 minutes) bus or train service during peak times.	100 Bus Service to Leicester and Melton Mowbray (2 hourly daytime service)	Doesn't meet the criteria
Secondary School access Access will be graded on the following basis: Excellent: located in the settlement. Good: accessible via a bus or train service which enables pupils to attend school core times.	Leicestershire County Council provides free school transport to secondary age children who live more than 3 miles walking distance to their nearest school.	Good
Range of recreation, leisure and community facilities Two or more of the following are available to general public in the settlement: Community Hall, Public House, Formal sports provision (indoor or outdoor), Place of worship, Meeting places, Cultural buildings, Library	Community Hall - South Croxton Village Hall Centre Place of Worship - St John The Baptist Church	2
Doctors Surgery Located in the settlement with appointments available to book five days a week.		0

SOUTH CROXTON

SERVICES & FACILITIES CRITERIA	KNOWN FACILITIES	SUMMARY
Post Office Providing key services including mail and current account services six day a week		0
Pharmacy Located in the settlement and available to access six days a week.		0
Pre-School Provision Located in the settlement and available to access five days a week 8am – 6pm.		0
SUMMARY South Croxton is located in the south of the Borough, northeast of Leicester City and at the last census had a population of 261. South Croxton is expected to have high speed broadband by the end of 2018 and has a community hall and church but none of the other services and facilities audited and only a 2 hourly daytime bus service to Leicester and Melton Mowbray to access employment and higher order services. South Croxton is identified as a ‘Small Village or Hamlet’ in the bottom ‘tier’ of the hierarchy with limited services and facilities to meet the day to day needs of the residents.		

SWITHLAND		
SERVICES & FACILITIES CRITERIA	KNOWN FACILITIES	SUMMARY
Food Shop Located in the settlement, open 7 days a week and possible to do the equivalent of a weekly shop.		0
Primary School Located in the settlement	Swithland St Leonard's Church of England Primary School	1
Employment Access Access to a range of employment types using sustainable modes of travel. Excellent: a range of employment types are accessible within the settlement and/or in a main urban centre within 30 minutes travel time using a frequent bus or train service (every 15 minutes) during peak times. Very Good: a range of employment types are accessible in a main urban centre within 30 minutes travel time using a very regular (every 20 minutes) bus or train service during peak times. Good: a range of employment types are accessible in a main urban centre within 30 minutes travel time using a regular (every 30 minutes) bus or train service during peak times.	154 Bus Service to Leicester and Loughborough (hourly daytime service)	Doesn't meet the criteria
High Speed Broadband High speed broadband is available to the majority of properties in the settlement.	Superfast broadband is now available in this area	Yes
Higher order services access Access to a range of higher order services using sustainable modes of travel. Excellent: available in the settlement or in a main urban centre within 30 minutes travel time using a frequent (every 15 minutes) bus or train service during peak times and an evening service. Very Good: available in a main urban centre within 30 minutes travel time using a very regular (every 20 minutes) bus or train service during peak times. Good: available in a main urban centre within 30 minutes travel time using a regular (every 30 minutes) bus or train service during peak times.	154 Bus Service to Leicester and Loughborough (hourly daytime service)	Doesn't meet the criteria
Secondary School access Access will be graded on the following basis: Excellent: located in the settlement. Good: accessible via a bus or train service which enables pupils to attend school core times.	Leicestershire County Council provides free school transport to secondary age children who live more than 3 miles walking distance to their nearest school.	Good
Range of recreation, leisure and community facilities Two or more of the following are available to general public in the settlement: Community Hall, Public House, Formal sports provision (indoor or outdoor), Place of worship, Meeting places, Cultural buildings, Library	Community Hall - Swithland Memorial Hall Public House - The Griffin Inn Place of Worship - St Leonard's Church	3
Doctors Surgery Located in the settlement with appointments available to book five days a week.		0
Post Office Providing key services including mail and current		0

SWITHLAND

SERVICES & FACILITIES CRITERIA	KNOWN FACILITIES	SUMMARY
account services six day a week		
Pharmacy Located in the settlement and available to access six days a week.		0
Pre-School Provision Located in the settlement and available to access five days a week 8am – 6pm.		0
SUMMARY Swithland is located in the west of the Borough close to Mountsorrel and at the last census had a population of 217. Swithland has three of the services and facilities audited, including a primary school and the expectation that high speed broadband will be in place by the end of 2018, which are essential services within the village. Swithland only has limited access to employment and higher order services with an hourly daytime bus service to Loughborough or Leicester. Swithland is identified as an 'Other Settlement' in the fourth 'tier' of the hierarchy with some of the services and facilities to meet the day to day needs of the community.		

SYSTON		
SERVICES & FACILITIES CRITERIA	KNOWN FACILITIES	SUMMARY
<p>Food Shop Located in the settlement, open 7 days a week and possible to do the equivalent of a weekly shop.</p>	<p>Tesco Metro Aldi</p>	2
<p>Primary School Located in the settlement</p>	<p>St Peter & St Paul C of E Academy The Merton Primary School</p>	2
<p>Employment Access Access to a range of employment types using sustainable modes of travel. Excellent: a range of employment types are accessible within the settlement and/or in a main urban centre within 30 minutes travel time using a frequent bus or train service (every 15 minutes) during peak times. Very Good: a range of employment types are accessible in a main urban centre within 30 minutes travel time using a very regular (every 20 minutes) bus or train service during peak times. Good: a range of employment types are accessible in a main urban centre within 30 minutes travel time using a regular (every 30 minutes) bus or train service during peak times.</p>	<p>Range of employment types available within the settlement.</p> <p>5 Bus Services to Leicester (20 mins daytime service - 16 min journey to Leicester)</p> <p>5A Bus Services to Leicester (20 mins daytime service)</p> <p>East Midlands Train Service to Loughborough and Leicester (1 hr daytime service and evening service)</p> <p>100 Bus Service to Leicester and Melton Mowbray (2 hourly daytime service)</p> <p>128 Bus Service to Leicester and Melton Mowbray (2 hourly daytime service)</p> <p>X5 Bus Service to Leicester and Melton (infrequent daytime service)</p>	Excellent
<p>High Speed Broadband High speed broadband is available to the majority of properties in the settlement.</p>	<p>Superfast broadband is now available in this area</p>	Yes
<p>Higher order services access Access to a range of higher order services using sustainable modes of travel. Excellent: available in the settlement or in a main urban centre within 30 minutes travel time using a frequent (every 15 minutes) bus or train service during peak times and an evening service. Very Good: available in a main urban centre within 30 minutes travel time using a very regular (every 20 minutes) bus or train service during peak times. Good: available in a main urban centre within 30 minutes travel time using a regular (every 30 minutes) bus or train service during peak times.</p>	<p>5 Bus Service to Leicester (20 mins daytime and 30 min evening service - 16 min journey)</p> <p>5A Bus Services to Leicester (20 mins daytime service)</p> <p>East Midlands Train Service to Loughborough and Leicester (1 hr daytime service and evening service)</p> <p>100 Bus Service to Leicester and Melton Mowbray (2 hourly daytime service)</p> <p>128 Bus Service to Leicester and Melton Mowbray (2 hourly daytime service)</p> <p>X5 Bus Service to Leicester and Melton (infrequent daytime service)</p> <p>BT2 to Beaumont Centre (infrequent daytime service)</p>	Very Good
<p>Secondary School access Access will be graded on the following basis: Excellent: located in the settlement. Good: accessible via a bus or train service</p>	<p>Wreake Valley Academy</p>	Excellent

SYSTON		
SERVICES & FACILITIES CRITERIA	KNOWN FACILITIES	SUMMARY
which enables pupils to attend school core times.		
<p>Range of recreation, leisure and community facilities</p> <p>Two or more of the following are available to general public in the settlement: Community Hall, Public House, Formal sports provision (indoor or outdoor), Place of worship, Meeting places, Cultural buildings, Library</p>	<p>Community Hall</p> <ul style="list-style-type: none"> - Syston Community Centre <p>Meeting Places</p> <ul style="list-style-type: none"> - Syston & District Social Club - Syston & District Conservative Club - The Brookside Working Mens <p>Public House</p> <ul style="list-style-type: none"> - The Queen Victoria - Fox & Hounds Public House - Gate Hangs Well - Hobby Horse - Hope & Anchor - The Dog & Gun <p>Place of Worship</p> <ul style="list-style-type: none"> - Syston Methodist Church - Catholic Church of the Divine Infant - St Peter & St Paul's Church, Syston - Syston Evangelical Baptist Church - Syston Parochial C C - Broadway Gospel Hall <p>Formal Sports Provision</p> <ul style="list-style-type: none"> - Wreake Valley Academy - South Charnwood Leisure Centre - Central Park - Syston Northfields Tennis Club - Fosse Way Bowling Green - Fitness Centre, Fosse Way - Deville Park - Syston Cricket Club - Memorial Ground <p>Library</p>	6
<p>Doctors Surgery</p> <p>Located in the settlement with appointments available to book five days a week.</p>	<p>The Jubilee Medical Practice</p> <p>The County Practice</p>	2
<p>Post Office</p> <p>Providing key services including mail and current account services six day a week</p>	<p>Syston Post Office</p>	1
<p>Pharmacy</p> <p>Located in the settlement and available to access six days a week.</p>	<p>Sunlit Chemist</p> <p>Well Syston - Melton Road</p> <p>Boots</p>	3
<p>Pre-School Provision</p> <p>Located in the settlement and available to access five days a week 8am – 6pm.</p>	<p>Gables Day Nursery</p>	1
<p>SUMMARY</p> <p>Syston is located in the south of the Borough, north of Leicester and at the last census had a population of 12,804, the third largest settlement in the Borough after Loughborough and Shepshed.</p> <p>Syston has a full range of services and facilities including a secondary school, a range of employment opportunities and a choice of services within the settlement.</p>		

SYSTON

SERVICES & FACILITIES CRITERIA

KNOWN FACILITIES

SUMMARY

Syston has a strong relationship with the city. 34% of the economically active residents in Syston work in Leicester and there are very good transport connections to the city with a 20 minute daytime and 30 min evening bus service that gets residents into the city centre within 30 minutes travel time, as well as rail connections to Leicester and Loughborough train stations. This ensures there is excellent access to both jobs and higher order services.

Syston is identified as an 'Urban Area' in the second 'tier' of the hierarchy with a range and choice of services and facilities that meet the day to day needs of residents and physically or functionally forms part of a wider urban area.

THRUSSINGTON		
SERVICES & FACILITIES CRITERIA	KNOWN FACILITIES	SUMMARY
Food Shop Located in the settlement, open 7 days a week and possible to do the equivalent of a weekly shop.		0
Primary School Located in the settlement	Thrussington C of E Primary School	1
Employment Access Access to a range of employment types using sustainable modes of travel. Excellent: a range of employment types are accessible within the settlement and/or in a main urban centre within 30 minutes travel time using a frequent bus or train service (every 15 minutes) during peak times. Very Good: a range of employment types are accessible in a main urban centre within 30 minutes travel time using a very regular (every 20 minutes) bus or train service during peak times. Good: a range of employment types are accessible in a main urban centre within 30 minutes travel time using a regular (every 30 minutes) bus or train service during peak times.	128 Bus Service to Leicester and Melton Mowbray (2 hourly daytime service)	Doesn't meet the criteria
High Speed Broadband High speed broadband is available to the majority of properties in the settlement.	Superfast broadband is now available in this area	Yes
Higher order services access Access to a range of higher order services using sustainable modes of travel. Excellent: available in the settlement or in a main urban centre within 30 minutes travel time using a frequent (every 15 minutes) bus or train service during peak times and an evening service. Very Good: available in a main urban centre within 30 minutes travel time using a very regular (every 20 minutes) bus or train service during peak times. Good: available in a main urban centre within 30 minutes travel time using a regular (every 30 minutes) bus or train service during peak times.	128 Bus Service to Leicester and Melton Mowbray (2 hourly daytime service)	Doesn't meet the criteria
Secondary School access Access will be graded on the following basis: Excellent: located in the settlement. Good: accessible via a bus or train service which enables pupils to attend school core times.	Leicestershire County Council provides free school transport to secondary age children who live more than 3 miles walking distance to their nearest school.	Good
Range of recreation, leisure and community facilities Two or more of the following are available to general public in the settlement: Community Hall, Public House, Formal sports provision (indoor or outdoor), Place of worship, Meeting places, Cultural buildings, Library	Community Hall - Thrussington Village Hall Public House - The Star Inn 1744 - The Blue Lion Place of Worship - Holy Trinity Church Thrussington	3
Doctors Surgery Located in the settlement with appointments available to book five days a week.		0
Post Office Providing key services including mail and current		0

THRUSSINGTON

SERVICES & FACILITIES CRITERIA	KNOWN FACILITIES	SUMMARY
account services six day a week		
Pharmacy Located in the settlement and available to access six days a week.		0
Pre-School Provision Located in the settlement and available to access five days a week 8am – 6pm.		0
SUMMARY Thrussington is located in the Wreake Valley in the east of the Borough, close to Rearsby and at the last census had a population of 581. Thrussington has three of the services and facilities audited. This includes a primary school and high speed broadband which are essential services and facilities located in the settlement. Thrussington has limited access to employment and higher order services with a 2 hourly daytime service to Leicester or Melton Mowbray. Thrussington is identified as an ‘Other Settlement’ in the fourth ‘tier’ of the hierarchy with some of the services and facilities to meet the day to day needs of the community.		

THURCASTON		
SERVICES & FACILITIES CRITERIA	KNOWN FACILITIES	SUMMARY
Food Shop Located in the settlement, open 7 days a week and possible to do the equivalent of a weekly shop.		0
Primary School Located in the settlement	Richard Hill Church of England Primary School	1
Employment Access Access to a range of employment types using sustainable modes of travel. Excellent: a range of employment types are accessible within the settlement and/or in a main urban centre within 30 minutes travel time using a frequent bus or train service (every 15 minutes) during peak times. Very Good: a range of employment types are accessible in a main urban centre within 30 minutes travel time using a very regular (every 20 minutes) bus or train service during peak times. Good: a range of employment types are accessible in a main urban centre within 30 minutes travel time using a regular (every 30 minutes) bus or train service during peak times.	154 Bus Service to Leicester and Loughborough (hourly daytime service)	Doesn't meet the criteria
Higher order services access Access to a range of higher order services using sustainable modes of travel. Excellent: available in the settlement or in a main urban centre within 30 minutes travel time using a frequent (every 15 minutes) bus or train service during peak times and an evening service. Very Good: available in a main urban centre within 30 minutes travel time using a very regular (every 20 minutes) bus or train service during peak times. Good: available in a main urban centre within 30 minutes travel time using a regular (every 30 minutes) bus or train service during peak times.	154 Bus Service to Leicester and Loughborough (hourly daytime service)	Doesn't meet the criteria
High Speed Broadband High speed broadband is available to the majority of properties in the settlement.	Superfast broadband is now available in this area	Yes
Secondary School access Access will be graded on the following basis: Excellent: located in the settlement. Good: accessible via a bus or train service which enables pupils to attend school core times.	Leicestershire County Council provides free school transport to secondary age children who live more than 3 miles walking distance to their nearest school.	Good
Range of recreation, leisure and community facilities Two or more of the following are available to general public in the settlement: Community Hall, Public House, Formal sports provision (indoor or outdoor), Place of worship, Meeting places, Cultural buildings, Library	Community Hall - Thurcaston Memorial Hall Public House - Wheatsheaf Inn Place of Worship - All Saints Church	3
Doctors Surgery Located in the settlement with appointments available to book five days a week.		0
Post Office Providing key services including mail and current		0

THURCASTON

SERVICES & FACILITIES CRITERIA	KNOWN FACILITIES	SUMMARY
account services six day a week		
Pharmacy Located in the settlement and available to access six days a week.		0
Pre-School Provision Located in the settlement and available to access five days a week 8am – 6pm.		0
SUMMARY Thurcaston is located in the south of the Borough close to Anstey and Cropston and at the last census had a combined population of 2,074 with Cropston. Thurcaston has three of the services and facilities audited. This includes a primary school and high speed broadband which are essential services and facilities located in the settlement. Thurcaston has limited access to employment and higher order services with an hourly daytime service to Leicester or Loughborough. Thurcaston is identified as an 'Other Settlement' in the fourth 'tier' of the hierarchy with some of the services and facilities to meet the day to day needs of the community.		

THURMASTON		
SERVICES & FACILITIES CRITERIA	KNOWN FACILITIES	SUMMARY
<p>Food Shop Located in the settlement, open 7 days a week and possible to do the equivalent of a weekly shop.</p>	<p>Asda M&S Food Londis</p>	<p>3</p>
<p>Primary School Located in the settlement</p>	<p>Bishop Ellis Catholic Primary School Church Hill C of E Junior/Infants School Eastfield Primary School</p>	<p>3</p>
<p>Employment Access Access to a range of employment types using sustainable modes of travel. Excellent: a range of employment types are accessible within the settlement and/or in a main urban centre within 30 minutes travel time using a frequent bus or train service (every 15 minutes) during peak times. Very Good: a range of employment types are accessible in a main urban centre within 30 minutes travel time using a very regular (every 20 minutes) bus or train service during peak times. Good: a range of employment types are accessible in a main urban centre within 30 minutes travel time using a regular (every 30 minutes) bus or train service during peak times.</p>	<p>Range of employment types available within the settlement.</p> <p>6 Bus Service to Leicester (10 min daytime service - 19 min journey to Leicester)</p> <p>5 Bus Service to Leicester (20 min daytime service)</p> <p>5A Bus Service to Leicester (20 min daytime service)</p> <p>6 Bus Service to Leicester from Asda, Thurmaston (10 min daytime service)</p> <p>128 Bus Service to Leicester and Melton Mowbray (2 hourly daytime service)</p> <p>X5 Bus Service to Leicester and Melton (infrequent daytime service)</p> <p>X45 Bus Service to Magna Park (Infrequent weekday daytime service)</p>	<p>Excellent</p>
<p>High Speed Broadband High speed broadband is available to the majority of properties in the settlement.</p>	<p>Superfast broadband is now available in this area</p>	<p>Yes</p>
<p>Higher order services access Access to a range of higher order services using sustainable modes of travel. Excellent: available in the settlement or in a main urban centre within 30 minutes travel time using a frequent (every 15 minutes) bus or train service during peak times and an evening service. Very Good: available in a main urban centre within 30 minutes travel time using a very regular (every 20 minutes) bus or train service during peak times. Good: available in a main urban centre within 30 minutes travel time using a regular (every 30 minutes) bus or train service during peak times.</p>	<p>6 Bus Service to Leicester (10 min daytime and hourly evening service - 19 min journey to Leicester)</p> <p>5 Bus Service to Leicester (20 min daytime service and 30 min evening service)</p> <p>5A Bus Service to Leicester (20 min daytime service)</p> <p>6 Bus Service to Leicester from Asda, Thurmaston (10 min daytime service and hourly evening service)</p> <p>128 Bus Service to Leicester and Melton Mowbray (2 hourly daytime service)</p> <p>X5 Bus Service to Leicester and Melton (infrequent daytime service)</p>	<p>Excellent</p>
<p>Secondary School access Access will be graded on the following basis: Excellent: located in the settlement.</p>	<p>The Roundhill Academy</p>	<p>Excellent</p>

THURMASTON		
SERVICES & FACILITIES CRITERIA	KNOWN FACILITIES	SUMMARY
Good: accessible via a bus or train service which enables pupils to attend school core times.		
<p>Range of recreation, leisure and community facilities</p> <p>Two or more of the following are available to general public in the settlement: Community Hall, Public House, Formal sports provision (indoor or outdoor), Place of worship, Meeting places, Cultural buildings, Library</p>	<p>Community Hall - Elizabeth Park Centre - Thurmaston Memorial Hall - Thurmaston Community Centre - St Michael's Old School</p> <p>Meeting Place - Thurmaston Progressive WMC</p> <p>Public House - The Harrow Inn - The Top House - The Willow</p> <p>Place of Worship - Thurmaston Old School Church - The Parish of Saint Michael and All Angels Thurmaston</p> <p>Formal Sports Provision - Elizabeth Park Sports & Community Centre - Elizabeth Park Sports Centre (Thurmaston Bowls Club) - Jubilee Park - Newark Road - The Roundhill Academy</p> <p>Library</p>	6
<p>Doctors Surgery</p> <p>Located in the settlement with appointments available to book five days a week.</p>	<p>Silverdale Medical Centre Thurmaston Health Centre Manor Park Medical Practise</p>	3
<p>Post Office</p> <p>Providing key services including mail and current account services six day a week</p>	<p>Thurmaston Roundway Thurmaston Checklands</p>	2
<p>Pharmacy</p> <p>Located in the settlement and available to access six days a week.</p>	<p>Sayfees Chemist Thurmaston Pharmacy Ltd Pattani P Boots Asda Pharmacy</p>	5
<p>Pre-School Provision</p> <p>Located in the settlement and available to access five days a week 8am – 6pm.</p>	<p>Tangent House Day Nursery Charnwood Nursery & Pre-School</p>	2
<p>SUMMARY</p> <p>Thurmaston is located in the south of the Borough, north of Leicester and at the last census had a population of 9,668.</p> <p>Thurmaston has a full range of services and facilities including a secondary school, a range of employment opportunities and a choice of services within the settlement.</p> <p>Thurmaston has a strong relationship with the city. 44% of the economically active residents in Thurmaston work in Leicester and there are very good transport connections to the city with a 10 minute daytime and hourly evening bus service that gets residents into the city centre within 30</p>		

THURMASTON

SERVICES & FACILITIES CRITERIA

KNOWN FACILITIES

SUMMARY

minutes travel time. This ensures there is excellent access to both jobs and higher order services.

Thurmaston is identified as an 'Urban Area' in the second 'tier' of the hierarchy with a range and choice of services and facilities that meet the day to day needs of residents and physically or functionally forms part of a wider urban area.

ULVERSCROFT		
SERVICES & FACILITIES CRITERIA	KNOWN FACILITIES	SUMMARY
<p>Food Shop Located in the settlement, open 7 days a week and possible to do the equivalent of a weekly shop.</p>		0
<p>Primary School Located in the settlement</p>		0
<p>Employment Access Access to a range of employment types using sustainable modes of travel. Excellent: a range of employment types are accessible within the settlement and/or in a main urban centre within 30 minutes travel time using a frequent bus or train service (every 15 minutes) during peak times. Very Good: a range of employment types are accessible in a main urban centre within 30 minutes travel time using a very regular (every 20 minutes) bus or train service during peak times. Good: a range of employment types are accessible in a main urban centre within 30 minutes travel time using a regular (every 30 minutes) bus or train service during peak times.</p>		Doesn't meet the criteria
<p>High Speed Broadband High speed broadband is available to the majority of properties in the settlement.</p>		Superfast broadband expected December 2018
<p>Higher order services access Access to a range of higher order services using sustainable modes of travel. Excellent: available in the settlement or in a main urban centre within 30 minutes travel time using a frequent (every 15 minutes) bus or train service during peak times and an evening service. Very Good: available in a main urban centre within 30 minutes travel time using a very regular (every 20 minutes) bus or train service during peak times. Good: available in a main urban centre within 30 minutes travel time using a regular (every 30 minutes) bus or train service during peak times.</p>		Doesn't meet the criteria
<p>Secondary School access Access will be graded on the following basis: Excellent: located in the settlement. Good: accessible via a bus or train service which enables pupils to attend school core times.</p>	Leicestershire County Council provides free school transport to secondary age children who live more than 3 miles walking distance to their nearest school.	Good
<p>Range of recreation, leisure and community facilities Two or more of the following are available to general public in the settlement: Community Hall, Public House, Formal sports provision (indoor or outdoor), Place of worship, Meeting places, Cultural buildings, Library</p>		0
<p>Doctors Surgery Located in the settlement with appointments available to book five days a week.</p>		0

ULVERSCROFT

SERVICES & FACILITIES CRITERIA	KNOWN FACILITIES	SUMMARY
Post Office Providing key services including mail and current account services six day a week		0
Pharmacy Located in the settlement and available to access six days a week.		0
Pre-School Provision Located in the settlement and available to access five days a week 8am – 6pm.		0
SUMMARY Ulverscroft is located in the west of the Borough close to Newtown Linford and at the last census had a population of 85. Ulverscroft is expected to have high speed broadband by the end of 2018 but none of the other services and facilities audited and no bus service to provide access employment and higher order services. Ulverscroft is identified as a ‘Small Village or Hamlet’ in the bottom ‘tier’ of the hierarchy with limited services and facilities to meet the day to day needs of the residents.		

WALTON ON THE WOLDS		
SERVICES & FACILITIES CRITERIA	KNOWN FACILITIES	SUMMARY
Food Shop Located in the settlement, open 7 days a week and possible to do the equivalent of a weekly shop.		0
Primary School Located in the settlement		0
Employment Access Access to a range of employment types using sustainable modes of travel. Excellent: a range of employment types are accessible within the settlement and/or in a main urban centre within 30 minutes travel time using a frequent bus or train service (every 15 minutes) during peak times. Very Good: a range of employment types are accessible in a main urban centre within 30 minutes travel time using a very regular (every 20 minutes) bus or train service during peak times. Good: a range of employment types are accessible in a main urban centre within 30 minutes travel time using a regular (every 30 minutes) bus or train service during peak times.	27 Bus Service to Loughborough and Sileby (1hr 15min daytime service)	Doesn't meet the criteria
High Speed Broadband High speed broadband is available to the majority of properties in the settlement.	Superfast broadband is now available in this area	Yes
Higher order services access Access to a range of higher order services using sustainable modes of travel. Excellent: available in the settlement or in a main urban centre within 30 minutes travel time using a frequent (every 15 minutes) bus or train service during peak times and an evening service. Very Good: available in a main urban centre within 30 minutes travel time using a very regular (every 20 minutes) bus or train service during peak times. Good: available in a main urban centre within 30 minutes travel time using a regular (every 30 minutes) bus or train service during peak times.	27 Bus Service to Loughborough and Sileby (1hr 15min daytime service)	Doesn't meet the criteria
Secondary School access Access will be graded on the following basis: Excellent: located in the settlement. Good: accessible via a bus or train service which enables pupils to attend school core times.	Leicestershire County Council provides free school transport to secondary age children who live more than 3 miles walking distance to their nearest school.	Good
Range of recreation, leisure and community facilities Two or more of the following are available to general public in the settlement: Community Hall, Public House, Formal sports provision (indoor or outdoor), Place of worship, Meeting places, Cultural buildings, Library	Community Hall - Walton on the Wolds Village Hall Public House - The Anchor Inn Formal Sports Provision - Walton on the Wolds Cricket Club	3
Doctors Surgery Located in the settlement with appointments available to book five days a week.		0
Post Office Providing key services including mail and current		0

WALTON ON THE WOLDS

SERVICES & FACILITIES CRITERIA	KNOWN FACILITIES	SUMMARY
account services six day a week		
Pharmacy Located in the settlement and available to access six days a week.		0
Pre-School Provision Located in the settlement and available to access five days a week 8am – 6pm.		0
SUMMARY Walton on the Wolds is located in the north of the Borough, east of Loughborough and at the last census had a population of 288. Walton on the Wolds has high speed broadband and a range of recreation, leisure and community facilities but none of the other services and facilities audited and only a 1 hour and 15 min daytime bus service to Loughborough to access employment and higher order services. Walton on the Wolds is identified as a ‘Small Village or Hamlet’ in the bottom ‘tier’ of the hierarchy with limited services and facilities to meet the day to day needs of the residents.		

WANLIP		
SERVICES & FACILITIES CRITERIA	KNOWN FACILITIES	SUMMARY
Food Shop Located in the settlement, open 7 days a week and possible to do the equivalent of a weekly shop.		0
Primary School Located in the settlement		0
Employment Access Access to a range of employment types using sustainable modes of travel. Excellent: a range of employment types are accessible within the settlement and/or in a main urban centre within 30 minutes travel time using a frequent bus or train service (every 15 minutes) during peak times. Very Good: a range of employment types are accessible in a main urban centre within 30 minutes travel time using a very regular (every 20 minutes) bus or train service during peak times. Good: a range of employment types are accessible in a main urban centre within 30 minutes travel time using a regular (every 30 minutes) bus or train service during peak times.		Doesn't meet the criteria
High Speed Broadband High speed broadband is available to the majority of properties in the settlement.	Superfast broadband is now available in this area	Yes
Higher order services access Access to a range of higher order services using sustainable modes of travel. Excellent: available in the settlement or in a main urban centre within 30 minutes travel time using a frequent (every 15 minutes) bus or train service during peak times and an evening service. Very Good: available in a main urban centre within 30 minutes travel time using a very regular (every 20 minutes) bus or train service during peak times. Good: available in a main urban centre within 30 minutes travel time using a regular (every 30 minutes) bus or train service during peak times.		Doesn't meet the criteria
Secondary School access Access will be graded on the following basis: Excellent: located in the settlement. Good: accessible via a bus or train service which enables pupils to attend school core times.	Leicestershire County Council provides free school transport to secondary age children who live more than 3 miles walking distance to their nearest school.	Good
Range of recreation, leisure and community facilities Two or more of the following are available to general public in the settlement: Community Hall, Public House, Formal sports provision (indoor or outdoor), Place of worship, Meeting places, Cultural buildings, Library	Community Hall - Wanlip Church and Community Centre - Wanlip Village Hall Place of Worship - Wanlip Parish Church	2
Doctors Surgery Located in the settlement with appointments available to book five days a week.		0
Post Office Providing key services including mail and current		0

WANLIP		
SERVICES & FACILITIES CRITERIA	KNOWN FACILITIES	SUMMARY
account services six day a week		
Pharmacy Located in the settlement and available to access six days a week.		0
Pre-School Provision Located in the settlement and available to access five days a week 8am – 6pm.		0
<p>SUMMARY</p> <p>Wanlip is located in the south of the Borough, north of Leicester City, close to Birstall and at the last census had a population of 305.</p> <p>Wanlip has high speed broadband and a range of recreation, leisure and community facilities but none of the other services and facilities audited and no public transport links to Leicester or surrounding settlements to access employment or higher order services.</p> <p>Wanlip is identified as a ‘Small Village or Hamlet’ in the bottom ‘tier’ of the hierarchy with limited services and facilities to meet the day to day needs of the residents.</p>		

WOODHOUSE		
SERVICES & FACILITIES CRITERIA	KNOWN FACILITIES	SUMMARY
Food Shop Located in the settlement, open 7 days a week and possible to do the equivalent of a weekly shop.		0
Primary School Located in the settlement		0
Employment Access Access to a range of employment types using sustainable modes of travel. Excellent: a range of employment types are accessible within the settlement and/or in a main urban centre within 30 minutes travel time using a frequent bus or train service (every 15 minutes) during peak times. Very Good: a range of employment types are accessible in a main urban centre within 30 minutes travel time using a very regular (every 20 minutes) bus or train service during peak times. Good: a range of employment types are accessible in a main urban centre within 30 minutes travel time using a regular (every 30 minutes) bus or train service during peak times.	154 Bus Service to Leicester and Loughborough (hourly daytime service)	Doesn't meet the criteria
High Speed Broadband High speed broadband is available to the majority of properties in the settlement.	Superfast broadband is now available in this area	Yes
Higher order services access Access to a range of higher order services using sustainable modes of travel. Excellent: available in the settlement or in a main urban centre within 30 minutes travel time using a frequent (every 15 minutes) bus or train service during peak times and an evening service. Very Good: available in a main urban centre within 30 minutes travel time using a very regular (every 20 minutes) bus or train service during peak times. Good: available in a main urban centre within 30 minutes travel time using a regular (every 30 minutes) bus or train service during peak times.	154 Bus Service to Leicester and Loughborough (hourly daytime service)	Doesn't meet the criteria
Secondary School access Access will be graded on the following basis: Excellent: located in the settlement. Good: accessible via a bus or train service which enables pupils to attend school core times.	Leicestershire County Council provides free school transport to secondary age children who live more than 3 miles walking distance to their nearest school.	Good
Range of recreation, leisure and community facilities Two or more of the following are available to general public in the settlement: Community Hall, Public House, Formal sports provision (indoor or outdoor), Place of worship, Meeting places, Cultural buildings, Library	Community Hall - Woodhouse Community Hall Place of Worship - St Mary-in-the-Elms	2
Doctors Surgery Located in the settlement with appointments available to book five days a week.		0
Post Office Providing key services including mail and current		0

WOODHOUSE

SERVICES & FACILITIES CRITERIA	KNOWN FACILITIES	SUMMARY
account services six day a week		
Pharmacy Located in the settlement and available to access six days a week.		0
Pre-School Provision Located in the settlement and available to access five days a week 8am – 6pm.		0
SUMMARY Woodhouse is located in the north of the Borough, south of Loughborough and at the last census had a combined population of 2,319 with Woodhouse Eaves. Woodhouse has high speed broadband and a range of recreation, leisure and community facilities but none of the other services and facilities audited and only an hourly daytime service to Loughborough to access employment or higher order services. Woodhouse is identified as a ‘Small Village or Hamlet’ in the bottom ‘tier’ of the hierarchy with limited services and facilities to meet the day to day needs of the residents.		

WOODHOUSE EAVES		
SERVICES & FACILITIES CRITERIA	KNOWN FACILITIES	SUMMARY
<p>Food Shop Located in the settlement, open 7 days a week and possible to do the equivalent of a weekly shop.</p>	Spar Shop – Le Fevres	1
<p>Primary School Located in the settlement</p>	Woodhouse Eaves St Paul's Church of England Primary School	1
<p>Employment Access Access to a range of employment types using sustainable modes of travel. Excellent: a range of employment types are accessible within the settlement and/or in a main urban centre within 30 minutes travel time using a frequent bus or train service (every 15 minutes) during peak times. Very Good: a range of employment types are accessible in a main urban centre within 30 minutes travel time using a very regular (every 20 minutes) bus or train service during peak times. Good: a range of employment types are accessible in a main urban centre within 30 minutes travel time using a regular (every 30 minutes) bus or train service during peak times.</p>	154 Bus Service to Leicester and Loughborough (hourly daytime service)	Doesn't meet the criteria
<p>High Speed Broadband High speed broadband is available to the majority of properties in the settlement.</p>	Superfast broadband is now available in this area	Yes
<p>Higher order services access Access to a range of higher order services using sustainable modes of travel. Excellent: available in the settlement or in a main urban centre within 30 minutes travel time using a frequent (every 15 minutes) bus or train service during peak times and an evening service. Very Good: available in a main urban centre within 30 minutes travel time using a very regular (every 20 minutes) bus or train service during peak times. Good: available in a main urban centre within 30 minutes travel time using a regular (every 30 minutes) bus or train service during peak times.</p>	154 Bus Service to Leicester and Loughborough (hourly daytime service)	Doesn't meet the criteria
<p>Secondary School access Access will be graded on the following basis: Excellent: located in the settlement. Good: accessible via a bus or train service which enables pupils to attend school core times.</p>	Leicestershire County Council provides free school transport to secondary age children who live more than 3 miles walking distance to their nearest school.	Good
<p>Range of recreation, leisure and community facilities Two or more of the following are available to general public in the settlement: Community Hall, Public House, Formal sports provision (indoor or outdoor), Place of worship, Meeting places, Cultural buildings, Library</p>	<p>Community Hall - Woodhouse Eaves Village Hall Places of Worship - Methodist Church - Saint Paul's Church - Baptist Church Public House - Curzon Arms - The Wheatsheaf Inn - The Old Bulls Head Formal Sports Provision - Charnwood Forest Golf Club - King Georges Field</p>	4

WOODHOUSE EAVES

SERVICES & FACILITIES CRITERIA	KNOWN FACILITIES	SUMMARY
	- Lingdale Golf Club - Maplewell Hall School	
Doctors Surgery Located in the settlement with appointments available to book five days a week.	The Cottage Surgery	1
Post Office Providing key services including mail and current account services six day a week	Woodhouse Eaves Post Office	1
Pharmacy Located in the settlement and available to access six days a week.	Oakwood Pharmacy	1
Pre-School Provision Located in the settlement and available to access five days a week 8am – 6pm.	Woodhouse Day Nursery	1
<p>SUMMARY</p> <p>Woodhouse Eaves is located in the north of the Borough, south of Loughborough and at the last census had a combined population of 2,319 with Woodhouse.</p> <p>Woodhouse Eaves has eight of the services and facilities audited, including a food shop, primary school and high speed broadband which are essential services located within the village. Woodhouse Eaves does not however have good access to employment and higher order services in Loughborough with only an hourly daytime bus service.</p> <p>Woodhouse Eaves is identified as an 'Other Settlement' in the fourth 'tier' of the hierarchy with some of the services and facilities to meet the day to day needs of the community.</p>		

WOODTHORPE		
SERVICES & FACILITIES CRITERIA	KNOWN FACILITIES	SUMMARY
<p>Food Shop Located in the settlement, open 7 days a week and possible to do the equivalent of a weekly shop.</p>		0
<p>Primary School Located in the settlement</p>		0
<p>Employment Access Access to a range of employment types using sustainable modes of travel. Excellent: a range of employment types are accessible within the settlement and/or in a main urban centre within 30 minutes travel time using a frequent bus or train service (every 15 minutes) during peak times. Very Good: a range of employment types are accessible in a main urban centre within 30 minutes travel time using a very regular (every 20 minutes) bus or train service during peak times. Good: a range of employment types are accessible in a main urban centre within 30 minutes travel time using a regular (every 30 minutes) bus or train service during peak times.</p>		Doesn't meet the criteria
<p>High Speed Broadband High speed broadband is available to the majority of properties in the settlement.</p>		Superfast broadband expected December 2018
<p>Higher order services access Access to a range of higher order services using sustainable modes of travel. Excellent: available in the settlement or in a main urban centre within 30 minutes travel time using a frequent (every 15 minutes) bus or train service during peak times and an evening service. Very Good: available in a main urban centre within 30 minutes travel time using a very regular (every 20 minutes) bus or train service during peak times. Good: available in a main urban centre within 30 minutes travel time using a regular (every 30 minutes) bus or train service during peak times.</p>		Doesn't meet the criteria
<p>Secondary School access Access will be graded on the following basis: Excellent: located in the settlement. Good: accessible via a bus or train service which enables pupils to attend school core times.</p>	Leicestershire County Council provides free school transport to secondary age children who live more than 3 miles walking distance to their nearest school.	Good
<p>Range of recreation, leisure and community facilities Two or more of the following are available to general public in the settlement: Community Hall, Public House, Formal sports provision (indoor or outdoor), Place of worship, Meeting places, Cultural buildings, Library</p>		0
<p>Doctors Surgery Located in the settlement with appointments available to book five days a week.</p>		0

WOODTHORPE

SERVICES & FACILITIES CRITERIA	KNOWN FACILITIES	SUMMARY
Post Office Providing key services including mail and current account services six day a week		0
Pharmacy Located in the settlement and available to access six days a week.		0
Pre-School Provision Located in the settlement and available to access five days a week 8am – 6pm.		0
SUMMARY Woodthorpe is located in the north of the Borough, just south of Loughborough. Woodthorpe is expected to have high speed broadband by the end of 2018 but has none of the other services and facilities audited and no public transport links to Loughborough or surrounding settlements to access employment or higher order services. Woodthorpe is identified as a 'Small Village or Hamlet' in the bottom 'tier' of the hierarchy with limited services and facilities to meet the day to day needs of the residents.		

WYMESWOLD		
SERVICES & FACILITIES CRITERIA	KNOWN FACILITIES	SUMMARY
<p>Food Shop Located in the settlement, open 7 days a week and possible to do the equivalent of a weekly shop.</p>		0
<p>Primary School Located in the settlement</p>	Wymeswold C of E Primary School	1
<p>Employment Access Access to a range of employment types using sustainable modes of travel. Excellent: a range of employment types are accessible within the settlement and/or in a main urban centre within 30 minutes travel time using a frequent bus or train service (every 15 minutes) during peak times. Very Good: a range of employment types are accessible in a main urban centre within 30 minutes travel time using a very regular (every 20 minutes) bus or train service during peak times. Good: a range of employment types are accessible in a main urban centre within 30 minutes travel time using a regular (every 30 minutes) bus or train service during peak times.</p>	8 Bus Service to Loughborough (hourly daytime service)	Doesn't meet the criteria
<p>High Speed Broadband High speed broadband is available to the majority of properties in the settlement.</p>	Superfast broadband is now available in this area	Yes
<p>Higher order services access Access to a range of higher order services using sustainable modes of travel. Excellent: available in the settlement or in a main urban centre within 30 minutes travel time using a frequent (every 15 minutes) bus or train service during peak times and an evening service. Very Good: available in a main urban centre within 30 minutes travel time using a very regular (every 20 minutes) bus or train service during peak times. Good: available in a main urban centre within 30 minutes travel time using a regular (every 30 minutes) bus or train service during peak times.</p>	8 Bus Service to Loughborough (hourly daytime service)	Doesn't meet the criteria
<p>Secondary School access Access will be graded on the following basis: Excellent: located in the settlement. Good: accessible via a bus or train service which enables pupils to attend school core times.</p>	Leicestershire County Council provides free school transport to secondary age children who live more than 3 miles walking distance to their nearest school.	Good
<p>Range of recreation, leisure and community facilities Two or more of the following are available to general public in the settlement: Community Hall, Public House, Formal sports provision (indoor or outdoor), Place of worship, Meeting places, Cultural buildings, Library</p>	<p>Community Hall</p> <ul style="list-style-type: none"> - Wymeswold Memorial Village Hall - Wymeswold Scout Hut <p>Formal Sports Provision</p> <ul style="list-style-type: none"> - Wymeswold Bowling Green - Burton Lane Recreation Ground - Hillside Farm <p>Public House</p> <ul style="list-style-type: none"> - The Three Crowns - Hammer and Pincers - The Windmill Inn <p>Place of Worship</p> <ul style="list-style-type: none"> - St Mary's Church 	4

WYMESWOLD

SERVICES & FACILITIES CRITERIA	KNOWN FACILITIES	SUMMARY
Doctors Surgery Located in the settlement with appointments available to book five days a week.		0
Post Office Providing key services including mail and current account services six day a week		0
Pharmacy Located in the settlement and available to access six days a week.	Wymeswold Pharmacy Ltd	1
Pre-School Provision Located in the settlement and available to access five days a week 8am – 6pm.		0
SUMMARY Wymeswold is located in the north of the Borough, east of Loughborough and last census had a population of 1,296. Wymeswold has four of the services and facilities audited. This includes a primary school and high speed broadband which are essential services and facilities located in the settlement. Wymeswold only has limited access to employment and higher order services with an hourly daytime service to Loughborough. Wymeswold is identified as an 'Other Settlement' in the fourth 'tier' of the hierarchy with some of the services and facilities to meet the day to day needs of the community.		



APRIL 2022,
UPDATED
JUNE 2022

Leicester & Leicestershire Housing & Economic Needs Assessment

Final Report

Iceni Projects Limited on behalf of Leicester &
Leicestershire Local Authorities

ICENI PROJECTS LIMITED
ON BEHALF OF LEICESTER
& LEICESTERSHIRE LOCAL
AUTHORITIES

April 2022, Updated June 2022

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**Leicester & Leicestershire Housing &
Economic Needs Assessment**
FINAL REPORT

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1. INTRODUCTION

- 1.1 The Leicester and Leicestershire Local Planning Authorities have a history of working together in partnership to address strategic planning matters. The authorities agreed a non-statutory Strategic Growth Plan in 2018 to coordinate future development and investment and the delivery of strategic infrastructure to 2050. This was informed by the 2017 Housing and Economic Development Needs Assessment (“2017 HEDNA”).
- 1.2 Updated evidence is however now needed to take account of changes in economic and housing market dynamics, national policy changes including the revised NPPF and introduction of the standard method for calculating housing need, and to provide an up-to-date evidence base which can inform the progression or review of local plans, consideration of whether a review of the Strategic Growth Plan is required, and development management decisions on individual planning applications.
- 1.3 Leicester City Council, Leicestershire County Council, the seven local Borough and District authorities in Leicestershire, along with the Leicester & Leicestershire Local Enterprise Partnership (LLEP) have therefore commissioned Icen Projects, together with Cambridge Econometrics (CE) and Justin Gardner Consulting (JGC) to prepare this Housing & Economic Needs Assessment (“HENA”).

Scope of the HENA

- 1.4 The Assessment is intended to provide updated evidence regarding the overall need for housing, and type and mix of housing needed; together with an assessment of the quantity and type of employment land needed to inform local and strategic plans in Leicester and Leicestershire. It is intended to support a coordinated approach across the Functional Economic Market Area (FEMA) to providing employment opportunities to help with economic recovery / growth following Brexit and the COVID19 pandemic.
- 1.5 Specific objectives of the Assessment are:
- To assess whether the Housing Market Area (HMA) and Functional Economic Market Area (FEMA) are still fit-for-purpose;
 - To provide an evidence-based, policy compliant assessment of the future economic needs of Leicester & Leicestershire and the requirement for employment land and premises to 2050;
 - To provide an up-to-date housing mix, type and affordability evidence that updates the 2017 Leicester & Leicestershire HEDNA that identifies the optimum mix of housing and affordable

housing requirements as well as the headline need for specialist accommodation set in the context of overall housing requirements;

- To assess the short, medium and long-term impacts of COVID19 and BREXIT on the Leicester & Leicestershire economy generally and specifically the need for employment land and premises, and to consider the implications of this for housing growth and distribution;
- To assess whether there are robust reasons to depart from the Standard Method for calculating future housing needs – including any economic and employment-led reasons;
- To inform understanding of the links and relationships between future housing need and future employment needs (including mix and type). This includes considering whether employment forecasts justify an uplift and/or redistribution of housing and/or whether the housing requirements would justify a redistribution of employment land;
- To take into account other evidence in arriving at conclusions including the Strategic Warehousing & Logistics Study 2021 and LLEP Economic Growth Strategy 2021-30 and what contribution these make to future employment requirements in the FEMA and individual local authorities and any effects for employment and housing distribution;
- To inform consideration of the potential distribution of homes to local authorities in the housing market area to meet unmet housing needs arising from Leicester City;
- To provide an overview of Leicester & Leicestershire's future employment role in different sectors in light of existing and predicted market strengths and changing economic landscape;
- To provide a basis for future evidence gathering including an assessment of transportation impacts and more detailed environmental impacts.

1.6 Alongside the preparation of this Assessment, the authorities have also commissioned preparation of Strategic Transport Evidence and a Strategic Growth Options & Sites Study. These various components of the evidence base will be brought together to inform the future strategy for the scale and distribution of housing and employment growth within the area, with reasonable alternatives tested through the plan-making and Sustainability Appraisal process.

Functional Housing and Economic Geographies

1.7 The 2017 HEDNA examined the extent of the housing and functional economic market areas in great detail, concluding that a 'best-fit' housing market area based on local authority boundaries included Leicester and all of the Leicestershire authorities. It however identified housing market inter-relationships with some surrounding areas including between parts of NW Leicestershire and South Derbyshire; between parts of Melton and Rushcliffe in Nottinghamshire; and with Nuneaton and Bedworth in Warwickshire.

-
- 1.8 The HEDNA similarly defined a Leicester and Leicestershire Functional Economic Market Area (FEMA) reflecting strong economic relationships between the City of Leicester and Leicestershire and high commuting self-containment within the area, the LEP geography (which was established in 2010 to reflect functional economic boundaries) and coordination of wider administrative functions at this level, the retail hierarchy and role of Leicester City Centre and Fosse Park as higher order centres which attract shoppers from across Leicestershire, as well as the concentration of leisure/cultural facilities in Leicester (and to a lesser extent Loughborough).
- 1.9 The HENA has reviewed the housing and economic geographies. The detailed analysis is set out in **Appendix A1**. It finds that the main towns across Leicestershire all fall within the boundaries of a Leicester-focused Travel to Work Area. Whilst house prices vary spatially within the Study Area¹, with higher prices in Harborough District and lower values in Leicester, the price geography or dynamics have not substantively changed since 2017. It concludes that the Leicester and Leicestershire authorities are an appropriate 'best fit' for the functional HMA using local authority boundaries.
- 1.10 The FEMA geography has been reviewed through the analysis of economic and commuting inter-relationships. It reinforces the 2017 HEDNA findings of a Leicestershire FEMA with a central City and wider hinterland; with market towns – Coalville, Loughborough, Melton Mowbray, Hinckley and Market Harborough – sitting within this. Leicester and Leicestershire remains a good approximation for the Greater Leicester FEMA. Leicester's influence appears to also extend across the A5 to Nuneaton. However, Lutterworth is shown as relating more strongly towards Rugby; and Castle Donington/Kegworth towards Derby. The north-eastern part of Leicestershire, beyond Melton Mowbray and including settlements such as Bottesford, are less well integrated into the Leicester economy, with relationships towards Grantham and Nottingham.
- 1.11 The evidence however points to a wider sub-regional market for logistics/distribution development which extends to include 21 local authorities extending along the M1 from Milton Keynes to Nottingham/Derby and across to Birmingham. The prime location within this area – the core Golden Triangle – stretches from Leicester to Rugby and Coventry. This geography reflects the area's central location within England and strategic road and rail connectivity (with most major population centres within a 4.5 hour drivetime).
- 1.12 The conclusions that Leicester and Leicestershire is an appropriate best fit housing market and functional economic market area support the basis of the authorities working together to prepare

¹ The 'Study area' in this report refers to Leicester and Leicestershire

evidence such as this. The localised cross-boundary interactions with other areas may however be relevant in considering the impacts of specific major development proposals.

Report Structure

1.13 The remainder of the report is structured in four parts:

- Part 1: Economic and Property Market Dynamics
- Part 2: Future Development Needs
- Part 3: Need for Different Types of Homes
- Part 4: Conclusions and Recommendations

1.14 The long-term distribution of development in the sub-region is to be informed by the review of the Strategic Growth Plan, which was first published in 2018. A separate **Housing Distribution Paper** has been prepared by Icenl which considers the potential distribution of housing to address unmet needs from Leicester in particular to 2036. An **Employment Distribution Paper** addresses issues of unmet employment land needs from Leicester.

1.15 Supplementary data is included in associated appendices which sit within a separate document. A separate **Executive Summary** has also been prepared.

PART 1: ECONOMIC & PROPERTY MARKET DYNAMICS

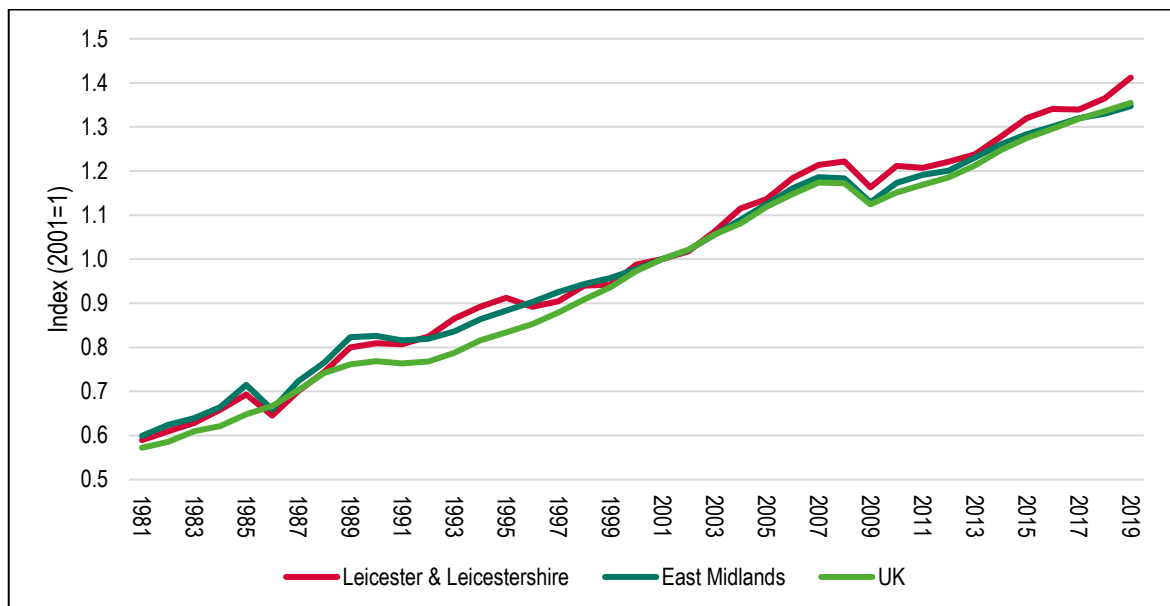
2. ECONOMIC BASELINE

2.1 This section of the report provides a profile of the sub-regional economy and its past performance and considers labour market dynamics.

Economic Size and Structure

2.2 Leicester and Leicestershire is a £27 billion economy, accounting for 24% of East Midlands GVA. As the analysis below shows, growth in GVA has slightly out-performed regional and national trends with growth of 41% achieved between 2001-19 compared to 35% at a regional and national level. This in particular reflects stronger performance over the period since 2013.

Figure 2.1: Historical GVA Growth



Source: Icen analysis of CE data

2.3 An analysis of the contribution to GVA of different sectors points to the important role of the manufacturing sector, which accounts for 16.5% of GVA; to wholesale, transport and warehousing and postal activities, which account for 9.8% of GVA; and to the education sector which accounts for 7.7% of GVA. Overall the service sector accounts for around 61% of total GVA.

2.4 Over the period since 2001, manufacturing GVA has however fallen (by 8%, an average of -0.5% pa) with service sector activities driving growth in the sub-regional economy. The sectors which have contributed most strongly to GVA growth are shown below. This includes sectors associated both with offices and warehousing, together with utilities, construction, health and education. A Compound Annual Growth Rate (CAGR) is shown which describes the average sectoral growth rate per year over the 2001-19 period.

Table 2.1 Sectors driving growth in GVA, 2001-19

	GVA 2001 £ million	GVA Growth 2001-19 £ million	% Growth	% CAGR
Electricity & gas	486.628	674.851	138.7%	5.0%
Business support services	688.306	622.678	90.5%	3.6%
IT services	390.863	559.694	143.2%	5.1%
Health	669.177	549.912	82.2%	3.4%
Retail trade	801.626	539.659	67.3%	2.9%
Wholesale trade	783.811	524.303	66.9%	2.9%
Warehousing & postal	410.094	459.953	112.2%	4.3%
Real estate	350.596	457.092	130.4%	4.7%
Construction	1552.684	419.482	27.0%	1.3%
Education	1664.01	398.782	24.0%	1.2%
Head offices & management consultancies	102.577	361.499	352.4%	8.7%
Motor vehicles trade	291.136	266.532	91.5%	3.7%
Other professional services	395.766	231.338	58.5%	2.6%

Source: Icen analysis of CE data

- 2.5 Leicester City has the largest economy within the sub-region, accounting for a third of its total GVA. Blaby, Charnwood and NW Leicestershire are similar sized (13-15% of total GVA) with Melton and Oadby and Wigston making a notably smaller contribution.
- 2.6 Blaby, NW Leicestershire and Leicester have seen the strongest comparative growth in GVA over the period since 2001, with growth rates in these authorities exceeding regional/ national averages and driving the sub-region's overall performance. In contrast, growth has been weaker and notably below average in Melton, Oadby and Wigston and Harborough. The strongest recent growth (post 2011) has been in NW Leicestershire and Blaby. This is a reflection of a combination of factors, including the sectoral structure and where development has taken place.

Table 2.2 GVA Growth by L&L Authority

	2019 Share of GVA	GVA Growth, 2001-19 CAGR	GVA Growth, 2011-19 CAGR	% L&L GVA Growth 2011-19
Leicester	33%	2.1%	2.2%	36%
Blaby	15%	3.2%	2.5%	18%
Charnwood	14%	1.1%	1.6%	11%
NW Leicestershire	14%	2.4%	3.1%	20%
Harborough	8%	1.2%	0.7%	3%
Hinckley & Bosworth	9%	1.6%	1.7%	8%
Melton	4%	1.1%	1.0%	2%
Oadby & Wigston	4%	1.1%	1.1%	2%
L&L		1.9%	2.0%	
East Midlands		1.7%	1.6%	
UK		1.7%	1.9%	

Source: Icen analysis of CE data

- 2.7 85% of growth in GVA over the 2011-19 period has been focused in Leicester, Blaby, NW Leicestershire and Charnwood; with Leicester alone accounting for 36%. Relative to the workforce distribution, growth has been stronger in Blaby and NW Leicestershire in particular (but weaker in Harborough and Oadby and Wigston in the south of the County).
- 2.8 Estimated GVA per job, as a measure of the relative productivity of the economy, sits between the regional and national averages as Table 2.3 shows. It is 9% below the UK average across Leicester and Leicestershire – although this is skewed by London’s role as a global City. It is however 7% above the East Midlands average.
- 2.9 Within the sub-region, the highest productivity performance appears to be in Blaby and North West Leicestershire (as Table 2.3 shows) – those areas which have seen the strongest recent relative growth. This is partly a reflection of the strength of the M1 Corridor as an economic driver. It is below the regional average in Harborough and Oadby and Wigston.

Table 2.3 Productivity - GVA per Job

	GVA, £m 2018	Total Employment ('000s), 2018	GVA per Job
Leicester	8,309	174.4	£47,644
Blaby	3,877	67.1	£57,758
Charnwood	3,581	73.3	£48,847
Harborough	2,138	47.8	£44,728
Hinckley and Bosworth	2,317	48.1	£48,171
Melton	1,209	23.9	£50,605
North West Leicestershire	3,636	66.2	£54,944
Oadby and Wigston	843	19.2	£43,982
L&L Total	25,910	520.0	£49,830
East Midlands	108,966	2347.3	£46,423
UK	1,908,608	34948.0	£54,613

Source: Icen analysis of CE data

- 2.10 Total employment in 2019 across Leicester and Leicestershire is estimated at 551,000 jobs. Manufacturing is the largest sector in employment terms, accommodating 67,700 jobs. The next largest sectors are health and education (which are typically large employers across a range of geographical areas).
- 2.11 A location quotient (LQ) analysis has been used to assess the relative representation of sectors relative to that seen across the East Midlands region and UK.
- 2.12 The sectoral structure across Leicester and Leicestershire is relatively similar to that seen more widely across the region, with a slightly greater proportion of employment in education and professional services being seen.
- 2.13 Relative to the structure of the economy nationally, a strong concentration of employment in manufacturing is evident (LQ 1.6) as well as activities associated with warehousing/logistics (such as wholesale trade, warehousing and postal). There is a slightly higher representation of education employment – which is likely to be influenced by the presence of the three universities. There is also a strength in utilities, albeit that actual job numbers are modest.

Table 2.4 Employment Structure and LQ Analysis – Leicester & Leicestershire, 2019

	L&L Total ('000s)	% Jobs	LQ vs East Midlands	LQ vs UK
Manufacturing	67.7	12.3%	1.0	1.6
Health & care	55.5	10.1%	0.8	0.8
Education	54.3	9.9%	1.1	1.2
Professional services	50.5	9.2%	1.2	1.0
Retail trade	46.6	8.5%	1.0	1.0
Business support services	42.9	7.8%	1.0	0.9
Construction	33.3	6.1%	1.0	0.9
Wholesale trade	29.5	5.3%	1.0	1.5
Accommodation & food	29.4	5.3%	0.9	0.8
Public Administration & Defence	22.2	4.0%	1.1	0.9
Warehousing & postal	19.6	3.6%	1.1	1.5
Other	15.2	2.8%	1.0	1.0
ICT	14.4	2.6%	1.0	0.6
Arts & rec.	13.6	2.5%	0.9	0.9
Transport	11.6	2.1%	0.8	0.8
Financial & insurance	10.8	2.0%	1.2	0.6
Motor vehicles trade	10.2	1.9%	1.0	1.0
Utilities	8.8	1.6%	1.2	1.6
Real estate	8.1	1.5%	1.0	0.9
Agriculture, mining	6.5	1.2%	0.9	0.9
Total	550.8	100.0%	1.0	1.0

Source: Icen analysis of CE data

- 2.14 The sectoral structure points to the influence of the history of manufacturing activity in the sub-region; together with a comparative advantage derived from its central location within the UK and accessibility across the country by road and rail. These factors underpin its strength as a manufacturing and distribution location.
- 2.15 The universities are also an important economic asset and potential hubs of innovation; with other major assets including the MIRA Technology Park as a focus for automotive R&D activity together with the concentration of pharmaceutical activities in Loughborough, influenced by the historical presence of Astra Zeneca (and legacy lab space).
- 2.16 We next consider further the structure of the manufacturing sector. Manufacturing activity is spread across a range of sectors and activities. The three largest manufacturing sub-sectors are food and drink manufacturing; textiles manufacturing; and metals, as Table 2.5 shows. In contrast to other parts of the Midlands, there isn't a significant concentration of employment in car/vehicle manufacturing; whilst pharmaceutical manufacturing is not strongly represented at a Leicestershire level.

2.17 The analysis points to some higher value manufacturing activities, such as machinery, in which there is a reasonable representation. However in contrast, employment and GVA in notably higher value activities such as electronics, pharmaceuticals or chemicals is less strong. A number of the key manufacturing sub-sectors such as food and drink and textiles are reasonably lower value; albeit within a context in which productivity per job across the range of manufacturing sub-sectors is generally higher than many service sector activities.

Table 2.5 GVA and Employment in Manufacturing Sub-Sectors

	GVA 2019 (£ million)	Employment 2019 (000s)	GVA per Job
Food, drink & tobacco	971.5	13.4	£72,408
Textiles etc	750.3	12.7	£59,105
Metals & metal products	454.2	8.2	£55,306
Machinery	443.0	4.6	£97,226
Non-metallic mineral products	317.3	6.3	£50,172
Other manufacturing & repair	293.4	5.5	£53,307
Wood & paper	278.3	5.7	£48,722
Electronics	270.8	2.5	£107,559
Other transport equipment	175.8	3.0	£58,024
Pharmaceuticals	133.0	0.8	£160,650
Electrical equipment	106.8	1.3	£85,124
Printing & recording	104.5	2.0	£52,387
Chemicals	92.3	0.9	£100,067
Motor vehicles	27.6	0.8	£36,138

Source: Icen analysis of CE data

2.18 The chart below (Table 2.6) shows the structure of employment by LA district. We have highlighted those sectors in which there is a particular specialism, showing in light orange those with a LQ of between 1.5 – 1.9, and in dark orange those with a LQ of over 2.0.

2.19 Manufacturing is strong across the sub-region but is particularly strongly represented in Melton and Hinckley and Bosworth. Wholesale trade and warehousing and postal activities are represented across a number of authorities (beyond Leicester), with particular concentrations in Harborough (influenced by Magna Park) and NW Leicestershire (influenced by Bardon, EM Distribution Park etc).

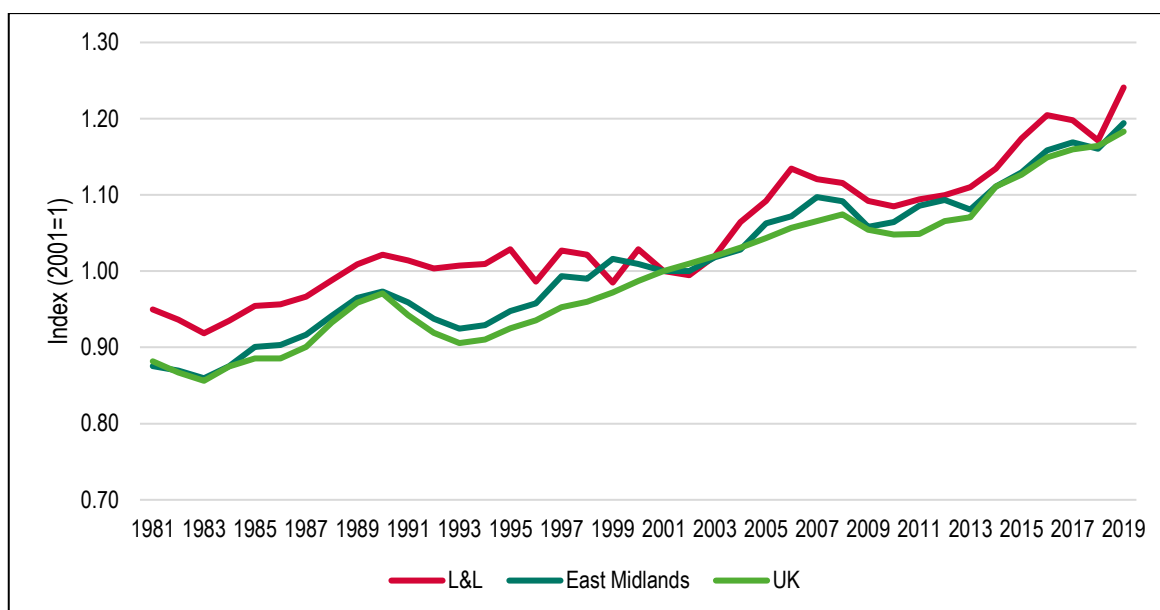
Table 2.6 Sectoral Structure by District/Borough, 2019

	Leicester	Blaby	Charnwood	Harborough	Hinckley & Bosworth	Melton	NW Leicestershire	Oadby & Wigston	L&L Total
Total Jobs, 2019	190.6	70.3	78.5	47.3	49.4	22.3	70.3	22.2	550.8
Manufacturing	13.4%	6.9%	12.3%	6.8%	15.6%	21.9%	12.8%	13.1%	12.3%
Health & care	16.3%	6.2%	8.3%	7.0%	7.0%	6.2%	4.5%	10.7%	10.1%
Education	12.5%	4.1%	14.2%	7.1%	8.5%	9.3%	6.0%	11.8%	9.9%
Professional services	5.5%	19.5%	8.8%	9.3%	8.9%	9.0%	10.6%	5.1%	9.2%
Retail trade	8.1%	10.5%	9.1%	7.5%	9.0%	8.7%	6.2%	10.6%	8.5%
Business support services	8.3%	5.7%	6.5%	7.8%	8.3%	6.8%	10.2%	6.9%	7.8%
Construction	4.5%	7.0%	7.1%	7.9%	6.1%	4.9%	6.9%	7.3%	6.1%
Wholesale trade	4.4%	3.4%	5.9%	7.9%	5.5%	4.8%	6.4%	8.6%	5.3%
Accommodation & food	4.5%	4.6%	5.6%	6.8%	6.3%	6.8%	5.5%	6.3%	5.3%
Public Administration & Defence	5.0%	10.2%	2.3%	2.1%	1.4%	2.2%	1.3%	3.1%	4.0%
Warehousing & postal	1.2%	2.4%	1.7%	10.7%	4.3%	1.4%	9.3%	1.0%	3.6%
Other Services	2.5%	2.1%	3.5%	3.1%	2.8%	4.3%	2.9%	2.0%	2.8%
ICT	3.0%	1.9%	2.8%	3.3%	2.1%	1.0%	2.9%	1.6%	2.6%
Arts & rec.	2.5%	1.6%	3.2%	2.3%	2.8%	2.8%	1.6%	4.3%	2.5%
Transport	1.7%	1.4%	2.4%	2.0%	1.8%	1.9%	3.6%	2.5%	2.1%
Financial & insurance	2.5%	3.6%	1.0%	1.4%	1.1%	1.0%	1.4%	1.6%	2.0%
Motor vehicles trade	1.6%	1.6%	2.3%	2.3%	2.6%	1.6%	1.9%	1.2%	1.9%
Utilities	0.7%	5.6%	0.5%	0.8%	3.3%	0.9%	1.2%	0.2%	1.6%
Real estate	1.4%	1.0%	1.4%	1.7%	1.3%	2.1%	2.0%	1.3%	1.5%
Agriculture, mining	0.4%	0.6%	1.1%	2.2%	1.4%	2.3%	2.8%	0.6%	1.2%

Source: Icen analysis of CE data

- 2.20 It is notable that the concentration of utilities employment is particular driven by employment in Hinckley and Bosworth but the concentration may be changing as Cadent Gas are moving out of the Borough. Total employment in this sector is modest.
- 2.21 Agricultural activities are relatively strongly represented in the more rural districts: NW Leicestershire, Melton and Harborough; albeit this overall is a relatively small sector.
- 2.22 Prior to 2001, employment growth was comparatively weaker in Leicester & Leicestershire than across the region or nationally; notably with employment levels which remained fairly stable between 1989-2001. The sub-region then experienced a period of rapid economic growth between 2001-2006, but then a more notable drop in employment from 2006-2010 (with total employment indeed falling prior to the recession). Over the more recent period since 2011, the sub-region has outperformed wider areas – seeing employment growth of 13.4% between 2011-19 compared to 12.8% across the UK and 10.0% across the East Midlands.

Figure 2.2: Employment Growth vs Wider Comparators



Source: Icen analysis of CE data

- 2.23 Overall between 2011-19 total employment increased by 65,200. The performance of individual districts within the sub-region has varied. NW Leicestershire and Blaby have seen the strongest

employment growth (consistent with the picture for GVA). In contrast total employment appears to have contracted in Melton and Harborough.²

Table 2.7 Employment Growth, 2011-19

000s	Employment, 2011	Employment, 2019	Change ('000s)	% Change
Leicester	168.0	190.6	22.6	13.5%
Blaby	55.8	70.3	14.5	25.9%
Charnwood	69.5	78.5	9.0	12.9%
Harborough	47.8	47.3	-0.5	-1.0%
Hinckley & Bosworth	44.2	49.4	5.2	11.7%
Melton	24.6	22.3	-2.3	-9.4%
NW Leicestershire	54.1	70.3	16.2	30.0%
Oadby & Wigston	21.7	22.2	0.6	2.7%
L&L	485.7	550.8	65.2	13.4%
East Midlands	2,196.3	2415.2	218.9	10.0%
UK	31,486.0	35517.0	4031.0	12.8%

Source: Icen analysis of CE data

- 2.24 We have sought to appraise net changes in employment by sector. Leicester's strong relative performance (in absolute terms) reflects growth in manufacturing employment, together with growth in education and health and professional services in particular. Financial and professional services has seen the largest employment growth in Blaby and in NW Leicestershire, with notable growth in retail jobs in Blaby (because of the significant expansion of Fosse Park) and business support in NW Leicestershire. Harborough has seen growth in financial and professional services, which may be in part home-based businesses, but has seen this offset by falls across a number of other sectors.
- 2.25 Employment growth in Hinckley and Bosworth has been driven by wholesale/warehousing activities; financial and professional services; and education. In Melton, the manufacturing sector has performed generally well, with some growth in more higher value services. Oadby and Wigston's performance has particularly been affected by the decline in manufacturing jobs, with wholesaling and a number of other service sector activities seeing modest growth.

² The latter marginally and specifically affected by the two dates selected and variability in total employment data year-on-year

Table 2.8 Employment Change by Sector, 2011-19

000s	Leicester	Blaby	Charnwood	Harborough	Hinckley & Bosworth	Melton	Leicestershire NW	Oadby & Wigston
Agriculture, Mining	-0.5	-0.4	-0.8	-1.0	-0.2	-0.4	1.0	-0.2
Manufacturing	5.3	0.5	0.0	-0.2	-0.3	0.1	0.8	-1.3
Utilities	-1.2	2.8	0.0	0.0	0.9	0.0	0.3	0.0
Construction	1.0	0.4	0.6	-0.1	-0.2	-0.6	1.3	0.2
Retail	1.2	1.4	0.1	-0.2	0.9	-0.9	0.5	-0.2
Wholesale, Transport, Warehousing	1.2	-1.3	1.8	-0.8	1.6	-0.2	0.9	0.7
Accommodation & Food	0.6	-0.1	0.8	0.5	0.4	0.1	0.9	0.3
Media, IT	1.8	0.3	0.6	0.2	-0.1	-0.4	0.9	0.1
Financial & Prof Services	4.5	8.1	1.4	1.5	1.5	0.7	5.2	0.3
Business Support Services	-0.2	0.6	1.3	-0.9	-0.5	0.2	2.7	0.3
Public Admin	-1.9	1.4	-0.2	0.0	-0.1	0.0	-0.1	-0.1
Education	5.6	0.6	1.9	0.4	1.0	0.1	0.7	0.4
Health	5.5	0.6	0.6	0.2	0.4	-0.2	0.2	0.0
Arts, Recreation & Other Services	-0.2	-0.4	0.8	-0.2	0.0	-0.7	0.9	-0.1
Total	22.6	14.5	9.0	-0.5	5.2	-2.3	16.2	0.6

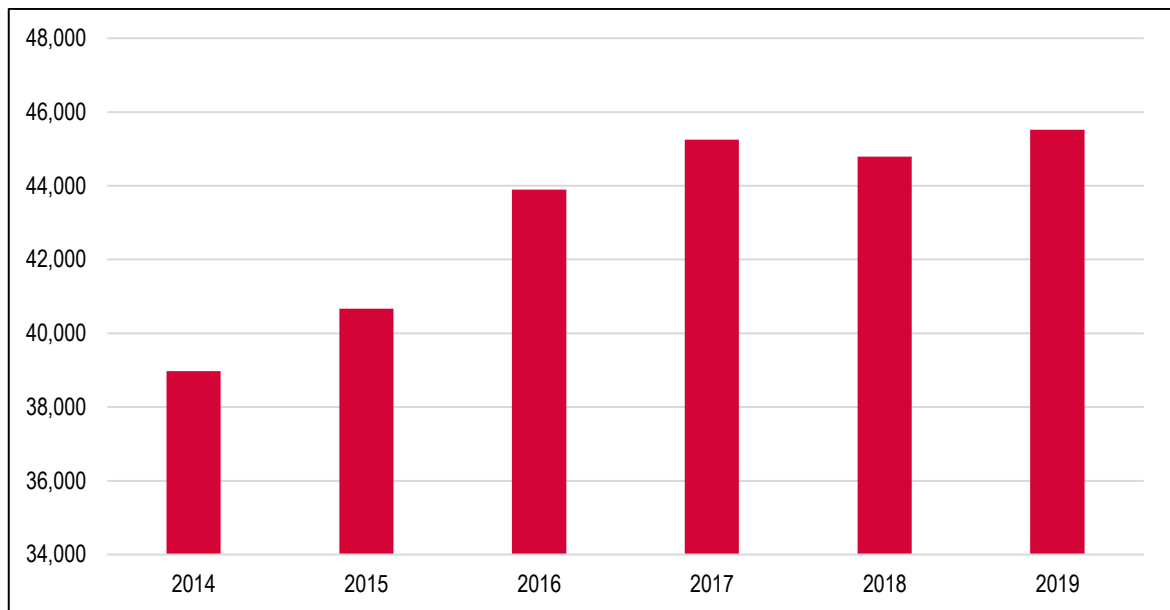
Source: Icen analysis of CE data

- 2.26 We understand from data provided by Leicester City's Economic Regeneration Team that across the sub-region, graduate retention stands at 26.9% which is well below the national average of 48.4%. This is based on the position in 2017 from the national Graduate Outcomes Survey. A new national Graduate Outcomes Survey should provide more up-to-date data later this year.
- 2.27 Relatively low graduate retention in the sub-region is influenced by the focus of the economy towards SMEs and a lack of larger employers who are key graduate employers. Changing working practices, with growth in home-based working particularly in office-based activities, could however improve graduate retention in the sub-region in the future.

Business Base

- 2.28 The number of active enterprises in Leicester and Leicestershire grew by 17% between 2014-19, which was in line with the national average and slightly out-performed growth at a regional level (16%). As Figure 2.3 below shows, much of this growth was between 2014-17.

Figure 2.3: Active Enterprises – Leicester and Leicestershire



Source: ONS Business Demography Statistics

2.29 An assessment of the density of businesses, relative to the working-age resident population, shows the highest business densities in Harborough and Melton; albeit that the business density is also above regional average in most authorities with the exception of Leicester and Charnwood.

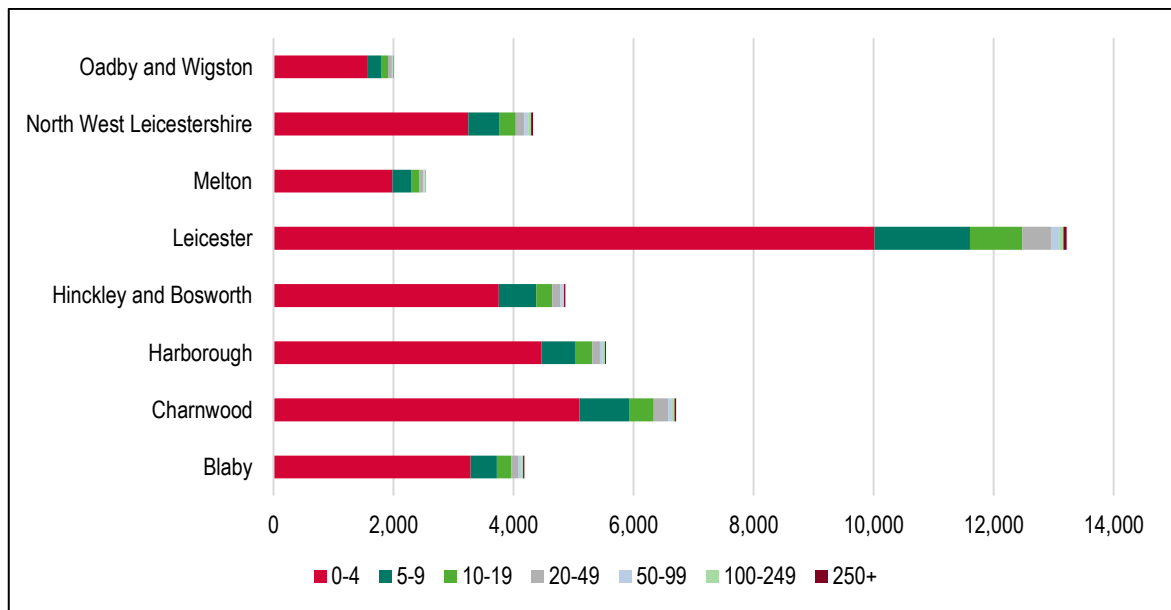
Table 2.9 Business Density, 2019

	Active Enterprises, 2019	Enterprises per 1000 Population 16-64
Blaby	4,290	70
Charnwood	7,320	61
Harborough	5,370	96
Hinckley and Bosworth	5,065	74
Leicester	14,175	60
Melton	2,380	78
North West Leicestershire	4,670	73
Oadby and Wigston	2,250	66
L&L	45,520	68
East Midlands	194,645	65
UK	2,990,320	85

Source: Icen analysis of ONS Business Demography Statistics

2.30 Across the sub-region, 89% of businesses have less than 10 employees, and 99.6% are Small and Medium-Sized Enterprises with less than 250 employees. There are a total of 170 larger enterprises with 250+ staff of which 50 are in Leicester. The structure of the business base by size is broadly consistent with that across the wider region.

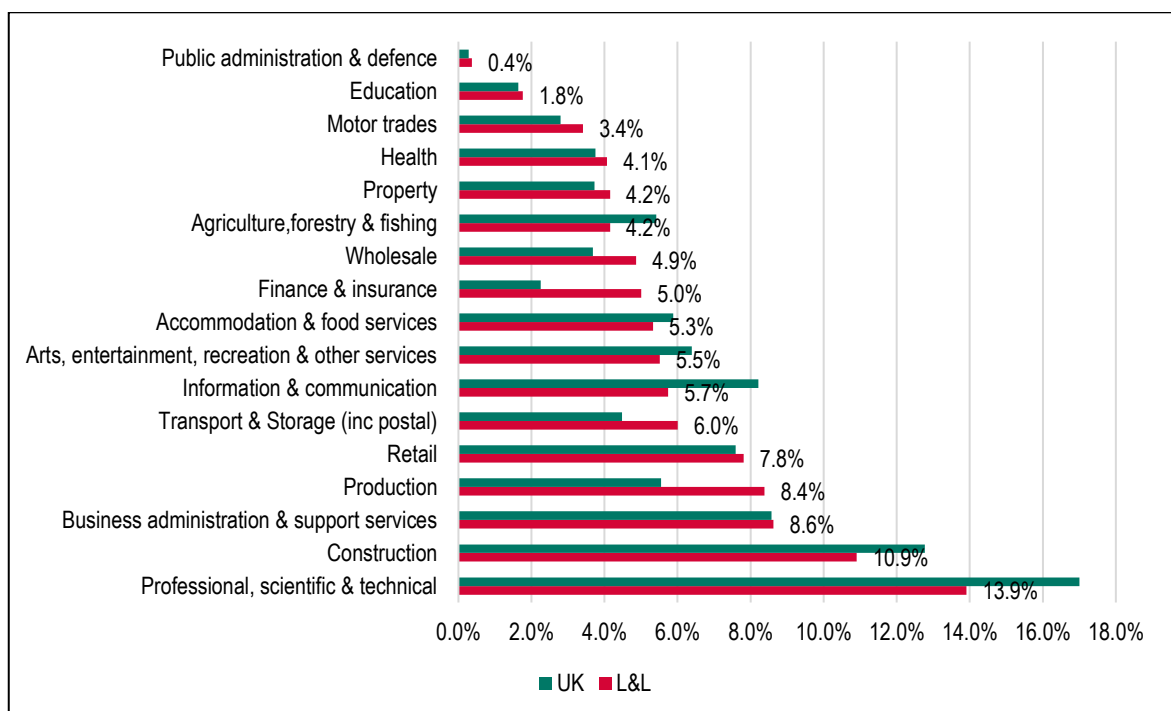
Figure 2.4: VAT or PAYE Enterprises by Size Band, 2020



Source: Icen analysis of ONS / IDBR data

2.31 The structure of VAT and/or PAYE businesses by sector shows a particular relative concentration in finance and insurance, and in manufacturing/production. ICT and professional, scientific and technical activities are under-represented compared to the profile nationally but the latter is one of the sectors with the largest number of businesses in absolute terms. Some of the sectors with large concentrations of businesses, including construction and professional services, have higher levels of self-employment.

Figure 2.5: Profile of VAT/PAYE Enterprises by Sector, Leicester & Leicestershire 2020



Source: Icen analysis of ONS / IDBR data

2.32 If we drill into the differences in structure between different local authorities, we find a particularly strong representation of businesses in agriculture in Melton and Harborough. Manufacturing/production businesses are strongly represented in Hinckley and Bosworth and Oadby and Wigston. Finance and insurance is strongly represented in Leicester and Blaby. There is a concentration of businesses in the health sector in Oadby & Wigston. There will be differences between the share of employment and businesses by sector, with some sectors seeing employment more focused in smaller businesses (such as construction or business administration) whilst other sectors (such as public sector or logistics) see greater employment in larger business / business units.

Table 2.10 LQ Analysis of VAT/PAYE Businesses by Location, 2020

	Blaby	Charnwood	Harborough	Hinckley and Bosworth	Leicester	Melton	North West Leicestershire	Oadby and Wigston	L&L	East Midlands
Agriculture, forestry & fishing	0.5	0.6	2.0	1.1	0.0	2.9	0.8	0.1	0.8	1.1
Production	1.3	1.4	1.0	1.6	1.8	1.2	1.4	1.8	1.5	1.3
Construction	1.3	1.0	0.8	1.0	0.5	1.0	1.0	1.0	0.9	1.0
Motor trades	1.1	1.3	0.9	1.4	1.3	1.1	1.4	1.2	1.2	1.3
Wholesale	1.0	1.4	1.2	1.2	1.4	1.2	1.4	1.6	1.3	1.1
Retail	0.8	1.1	0.8	0.8	1.4	0.8	0.8	1.0	1.0	1.0
Transport & Storage (inc postal)	1.4	1.1	0.7	1.7	1.7	0.7	1.4	1.2	1.3	1.6
Accommodation & food services	0.6	1.0	0.8	1.0	1.0	0.8	0.9	0.8	0.9	1.0
Information & communication	0.7	0.7	0.6	0.7	0.7	0.5	0.7	0.9	0.7	0.7
Finance & insurance	3.5	0.9	1.5	0.8	4.1	0.8	1.2	1.1	2.2	1.2
Property	1.0	0.9	1.2	0.9	1.3	1.0	1.1	1.2	1.1	0.9
Professional, scientific & technical	0.8	0.9	1.0	0.8	0.6	0.9	0.9	0.8	0.8	0.8

Business administration & support services	1.1	1.0	1.4	0.9	1.0	0.9	1.0	0.7	1.0	0.9
Public administration & defence	1.7	1.3	2.9	2.2	0.0	2.1	2.1	0.0	1.3	1.8
Education	1.0	1.2	1.2	1.2	0.9	1.0	1.3	1.4	1.1	1.1
Health	0.9	1.1	0.8	0.8	1.4	0.7	0.8	2.1	1.1	1.0
Arts, entertainment, recreation & other services	0.8	1.0	0.8	0.9	0.8	0.9	0.9	0.8	0.9	1.0

Labour Market

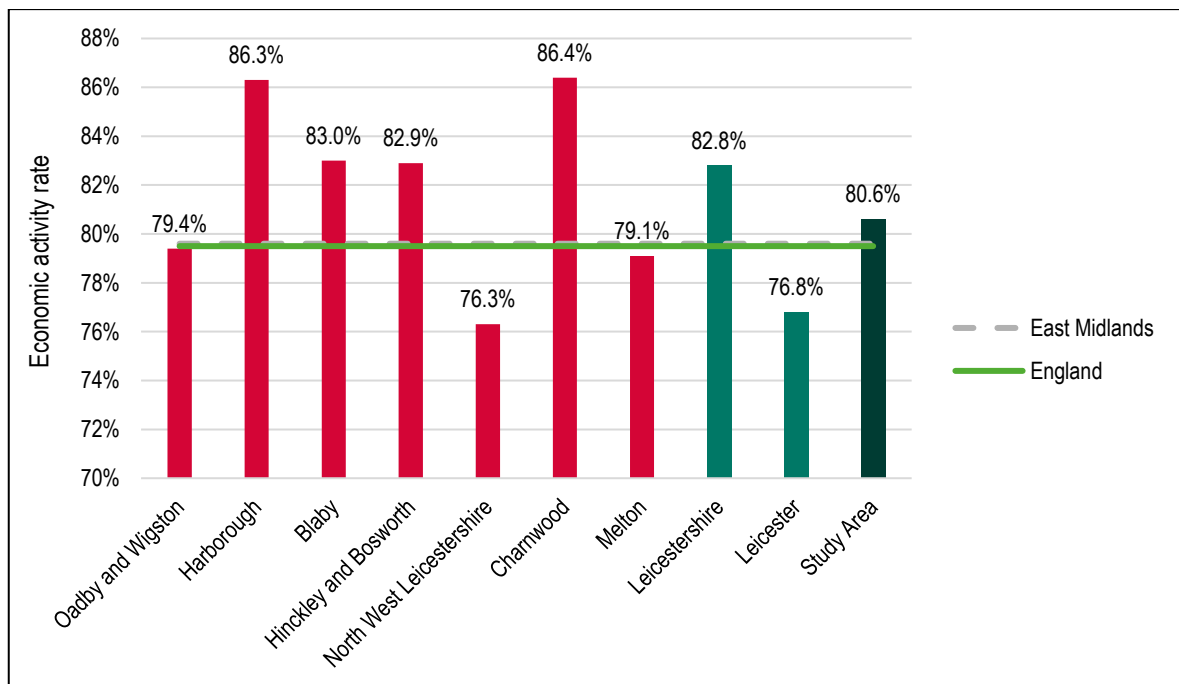
2.33 In this section we turn to assess labour market characteristics and performance, addressing issues associated with economic participation, skills and earnings.

Economic Participation

2.34 There are two key measures of economic participation: the economic activity rate which describes the percentage of the working-age population (aged 16-64) who are either working or looking for work; and the employment rate, which describes those within this age group who are in work.

2.35 The economic participation rate in the sub-region (80.6%) was marginally above regional/ national comparators (79.6% and 79.5% respectively). Within the sub-region it is lower in Leicester (influenced by its student population) and North West Leicestershire. In contrast stronger levels of economic participation are evident in Charnwood (despite the impact of the student population at Loughborough University) and Harborough.

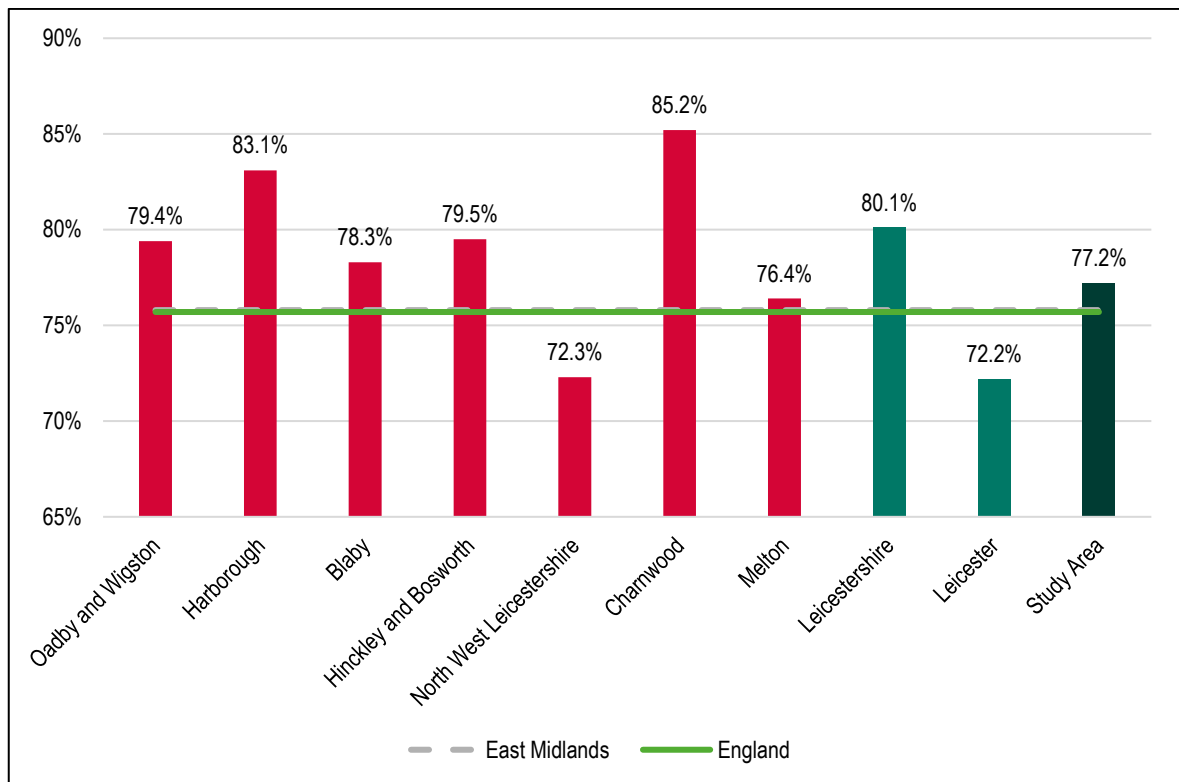
Figure 2.6: Economic Activity Rate (2020)



Source: Annual Population Survey

2.36 A similar picture is evident considering the employment rate, as shown in the Figure. The employment rate across Leicester & Leicestershire (77.2%) is slightly higher than that of the comparator areas (75.8% and 75.7% respectively).

Figure 2.7: Employment Rate (2020)



Source: Annual Population Survey

Unemployment

2.37 ONS model-based estimates of unemployment point to unemployment levels of almost 25,000 in 2020, with a particular concentration of unemployment in Leicester (44% of the L&L total). Leicester and NW Leicestershire are the only authorities where the unemployment rate is above the national average.

Table 2.11 ONS Modelled Unemployment, 2020

	Unemployment, 2020	% 16-64	% L&L Distribution
Blaby	1,700	3.4%	7%
Charnwood	3,600	3.4%	14%
Harborough	1,700	3.6%	7%
Hinckley & Bosworth	2,300	3.9%	9%
Leicester	11,000	5.9%	44%
Melton	1,100	4.3%	4%
NW Leicestershire	2,400	4.8%	10%
Oadby & Wigston	1,100	3.5%	4%
Leicester & Leicestershire	24,900	*	100%
East Midlands		4.7%	
Great Britain		4.6%	

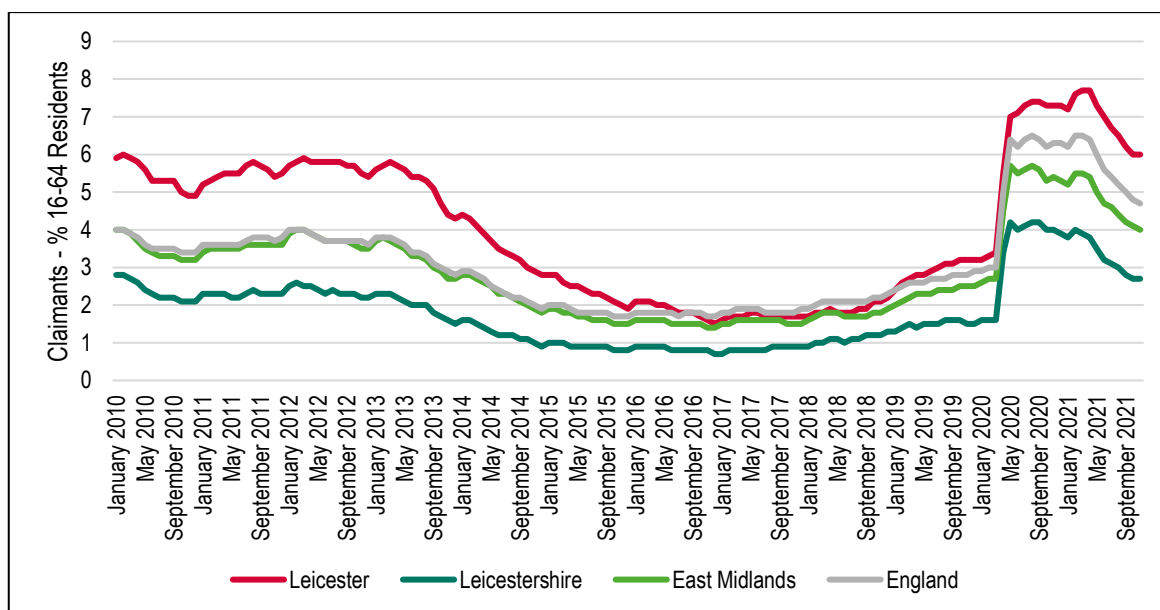
Source: NOMIS (*data not published at this geography)

2.38 The claimant rate is a key indicator of unemployment which is measured as the number of people who are receiving benefits principally for the reason of being unemployed (claimant count) divided by the number of workforce jobs plus the claimant count. The ONS estimates above are modelled using Annual Population Survey data and based on a person's self-classification as being 'out of work' and 'currently and actively seeking to work'. Whilst there is crossover between the claimant rate and the unemployment rate, they measure slightly different things, but both provide good indicators for actual levels of unemployment. Importantly the claimant count is published in a more timely manner and was available up to November 2021 at the time of writing.

2.39 The figure below shows changes in claimant unemployment over time. It can be seen that the claimant rate follows a similar pattern across all areas; influenced by the economic cycle.

2.40 In 2019, the claimant rate in the Study Area was 2.1% - slightly lower than across the East Midlands (2.4%) and England (2.7%). The claimant rate across Leicestershire was even lower at 1.6%. On the other hand, Leicester had a higher claimant rate of 3.1%.

Figure 2.8: Claimant Rate (August 2010 to August 2020)

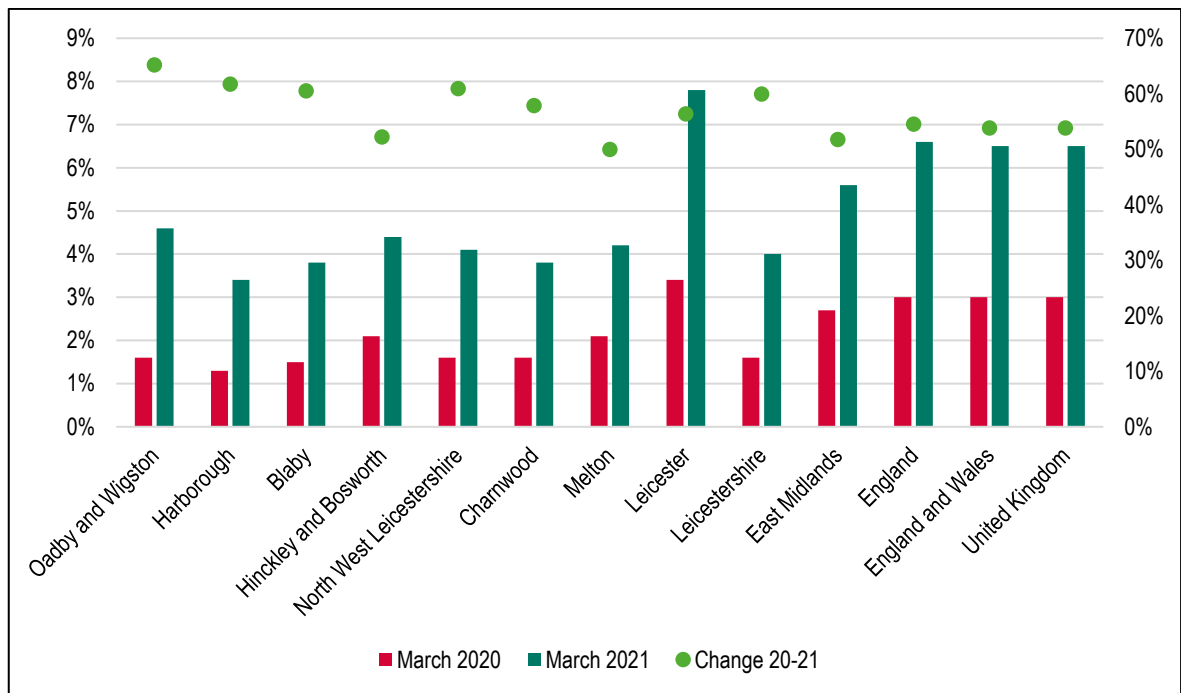


Source: ONS Claimant Count

2.41 The figure below shows how the claimant rate has changed since the onset of Covid-19. It can be seen that Leicester had the highest claimant rate before and at each time during the Covid-19 crisis. The Claimant Count has however been falling since April 2021. The latest data (November 2021) shows that the claimant count in Leicester was 6.0% - higher than the East Midlands 4.0%) and England as a whole (4.7%). The claimant count across Leicestershire was 2.7%.

2.42 Leicestershire, and to a lesser extent Leicester were more badly impacted by the onset of Covid-19 based on the percentage change in claimant counts between March 2019 and March 2020.

Figure 2.9: Claimant Rate (March 2019 to March 2021)

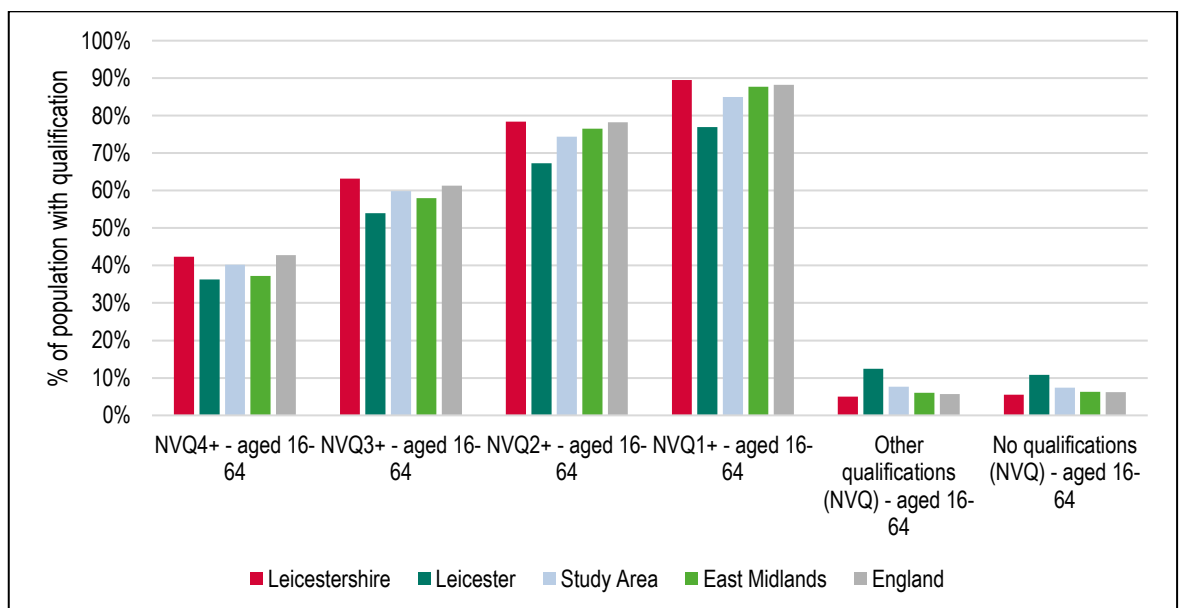


Source: ONS Claimant Count

Qualifications and Skills

2.43 The qualifications levels of the population indicate how employable the local workforce is. The percentage of the population with NVQ4+ (degree level) qualifications in the Study Area is slightly above the East Midlands average but slightly below the English average. The percentage of the Study Area’s population with no qualifications and other qualifications are both above that of the comparator areas.

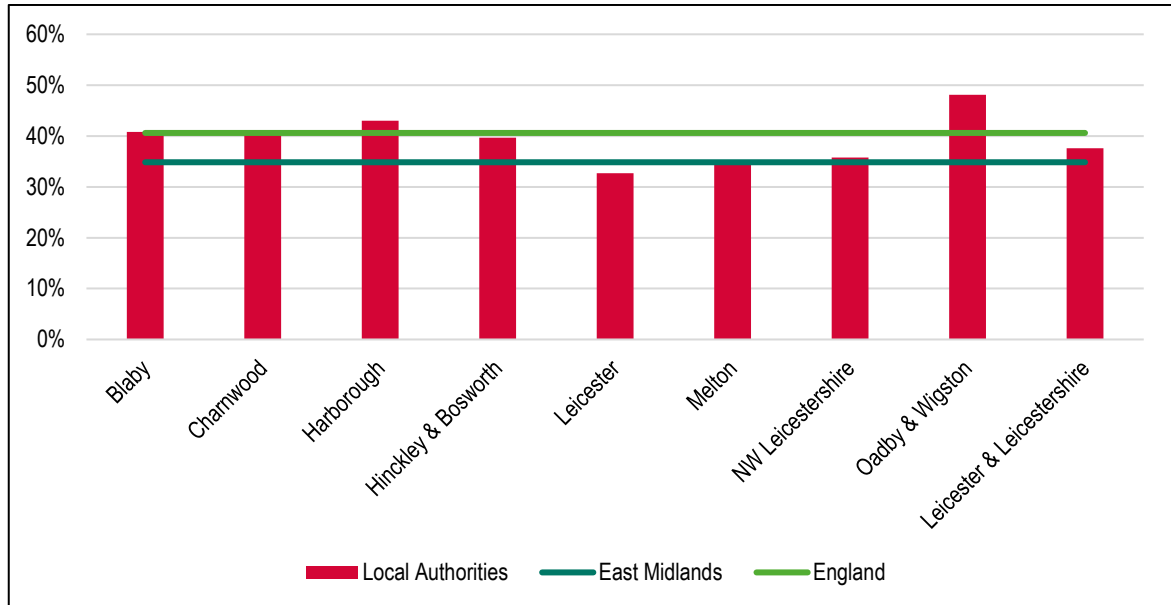
Figure 2.10: Qualifications (2020)



Source: Annual Population Survey

2.44 Drilling down to the position within individual local authorities, Oadby and Wigston and Harborough have a greater concentration of higher level skills (NVQ4+), which equates to degree-level skills or equivalent. At the other end of the spectrum, Leicester has just 33% qualified to this level. Our analysis is based on data over the 2018-20 period to address small sample sizes in some areas.

Figure 2.11: % 16-64 qualified to NVQ4+

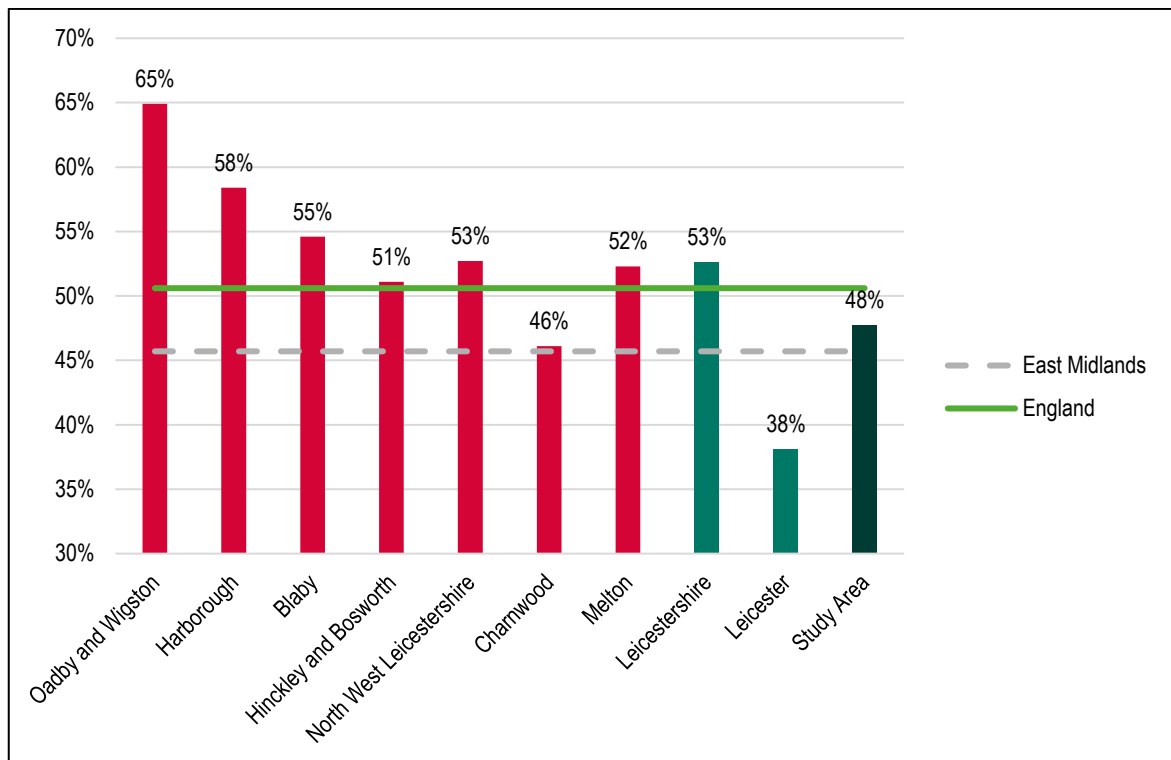


Source: Annual Population Survey

2.45 The occupational split of the population provides an indication of where those working in higher paid/skilled jobs are living. The figure below shows the percentage of each area's population in the top 3 occupational groups (Managers, directors and senior officials, Professional occupations, , Associate prof & tech occupations). The highest proportions of these workers are seen in Oadby and Wigston, Harborough and Blaby (over 55%) contrasting with prevalence of just 38% in Leicester.

2.46 Leicestershire has slightly greater levels of employment in the top 3 occupational groups than England whereas Leicester is significantly below the East Midlands average.

Figure 2.12: Employment in Top 3 Occupational Groups (2020)

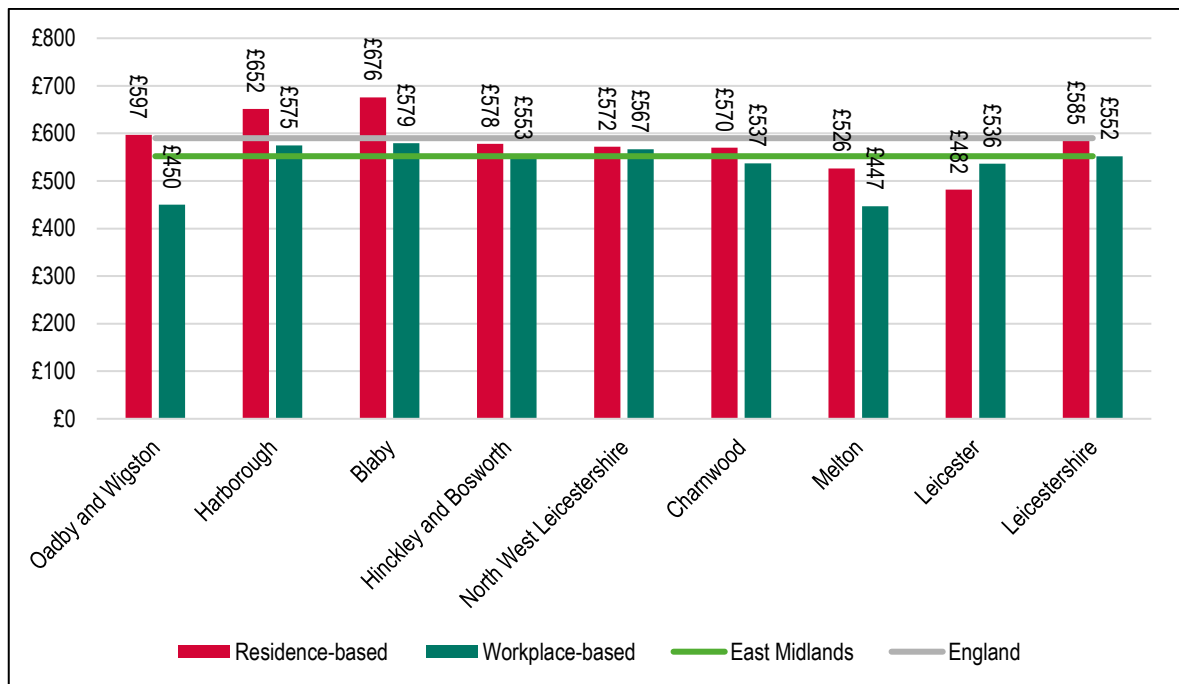


Source: Annual Population Survey

Earnings

- 2.47 Median workplace earnings provide an indication of the quality of the jobs available in an area. Median earnings for full-time jobs in Leicestershire (£552 per week) are the same as the East Midlands (£552) but lower than England as a whole (£590). Median workplace earnings in Leicester (£536) are 3% below the regional and 9% below the national average.
- 2.48 Leicester sees higher earnings for those working in the City than living in it, pointing to in-commuting of higher earners. The converse is true of all of the Leicestershire authorities, with particularly significant differentials in Oadby and Wigston, Blaby, Melton and Harborough. Earnings of those working in Melton and Oadby and Wigston are notably below wider benchmarks.

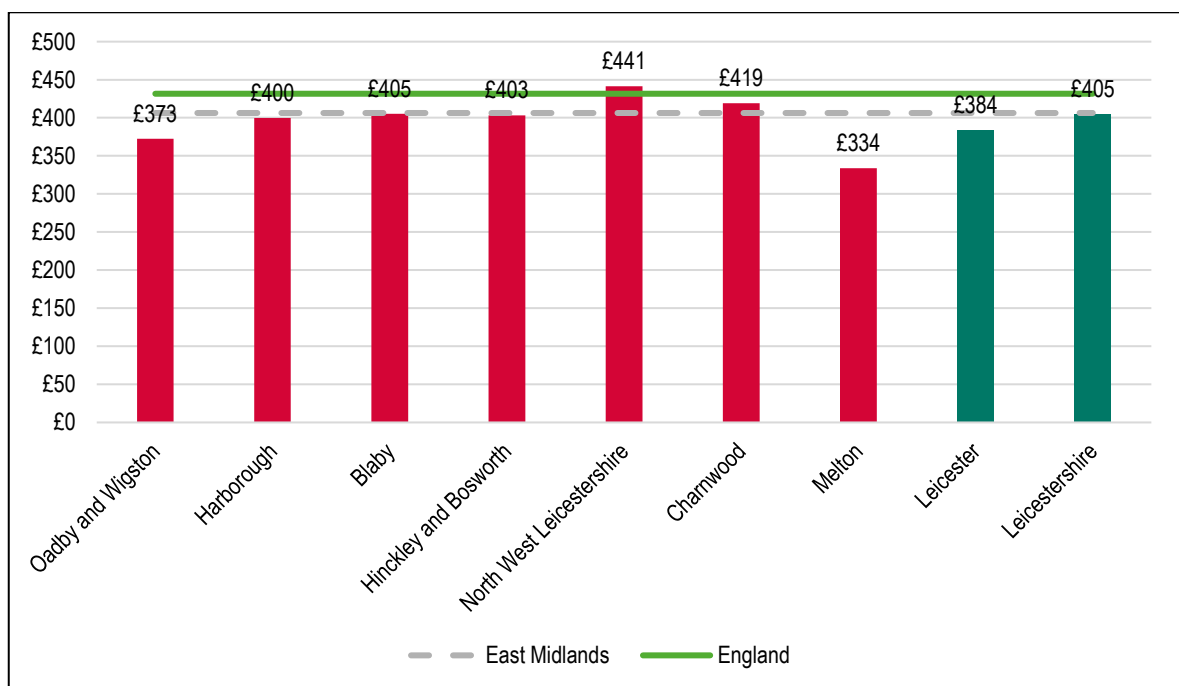
Figure 2.13: Comparison of Residence- and Workplace-based Weekly Earnings (2020)



Source: Annual Survey of Hours and Earnings

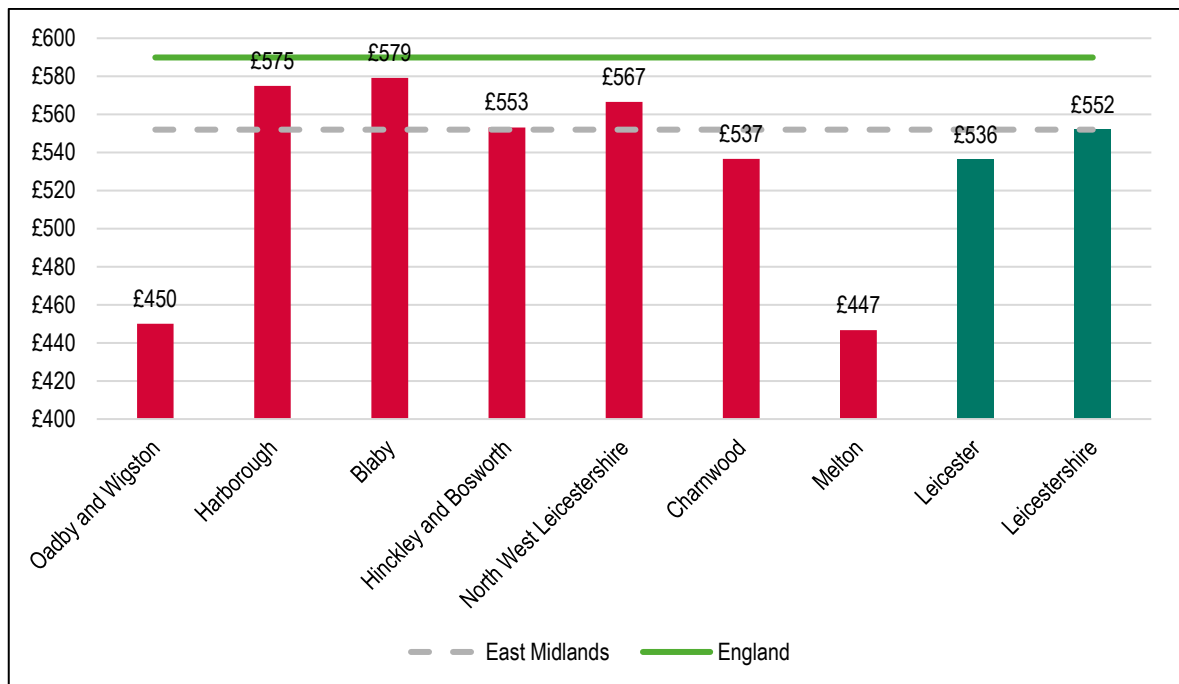
2.49 Lower quartile workplace earnings provide an indication of the quality of lower paid jobs and prevalence of lower paid jobs available in an area. Lower quartile workplace earnings in Leicestershire (£405) are similar to those across the East Midlands (£406) but lower than across England (£432). In Leicester lower quartile workplace earnings are £384 - below the East Midlands.

Figure 2.14: Lower Quartile Gross Weekly Workplace-based Weekly Earnings (2020)



Source: Annual Survey of Hours and Earnings

Figure 2.15: Median Gross Weekly Workplace Weekly Earnings (2020)

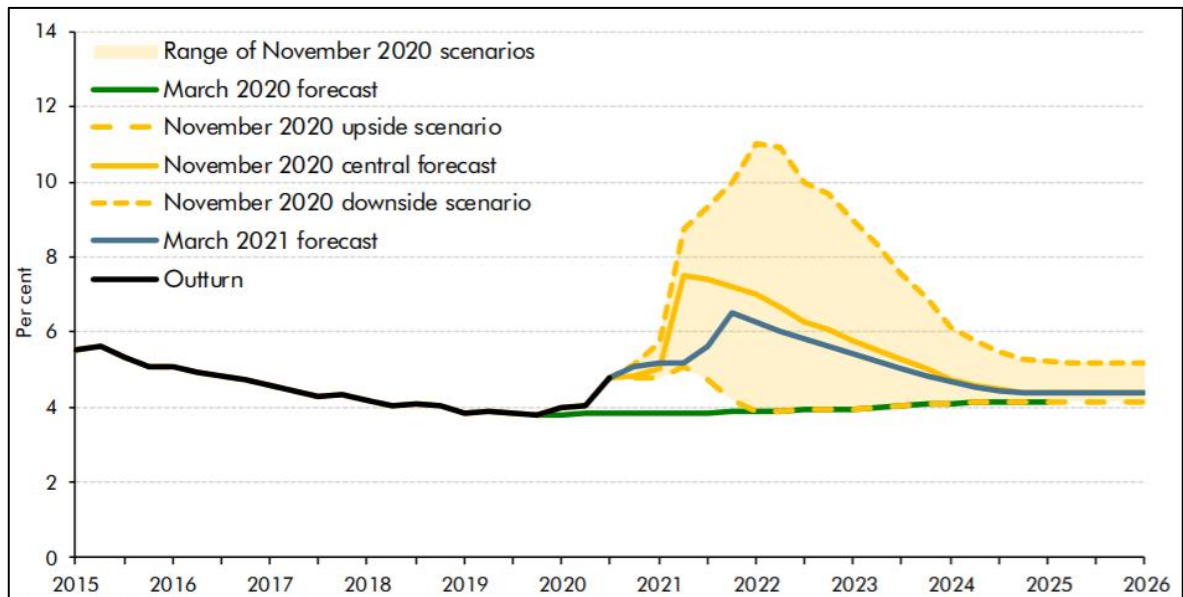


Source: Annual Survey of Hours and Earnings

Economic Impacts of Covid-19

- 2.50 The Office for Budget Responsibility (OBR) on 14th July 2020 released its economic scenario planning for COVID-19 which identified a downside, upside and central scenario. These scenarios were updated in November 2020. In March 2021 the central scenario was updated.
- 2.51 The chart below shows the OBR unemployment forecast up to 2026. It indicates that the unemployment rate will rise from 5.1 per cent in the fourth quarter of 2020 to a peak of just 6.5 per cent (2.2 million) at the end of 2021, highlighting the fact that interventions such as the Coronavirus Job Retention Scheme (CJRS) have to some extent just delayed higher levels of unemployment and business insolvencies. The ultimate rise in unemployment reflects residual impacts on sectors such as accommodation and transport, adoption of less labour-intensive operations in sectors such as retail and hospitality, and the scarring effect of long spells away from employment of some CJRS beneficiaries.
- 2.52 The central scenario forecast suggests that, in terms of unemployment, the country will take around 3 years to recover the majority of employment lost during the pandemic. It also suggests that there will be a longer term impact – slightly higher levels of unemployment when compared to the pre-pandemic forecast (March 2020) in 2025. GVA is forecast to return to the pre-pandemic level by around Autumn 2022.

Figure 2.16: OBR Unemployment Rate Forecast



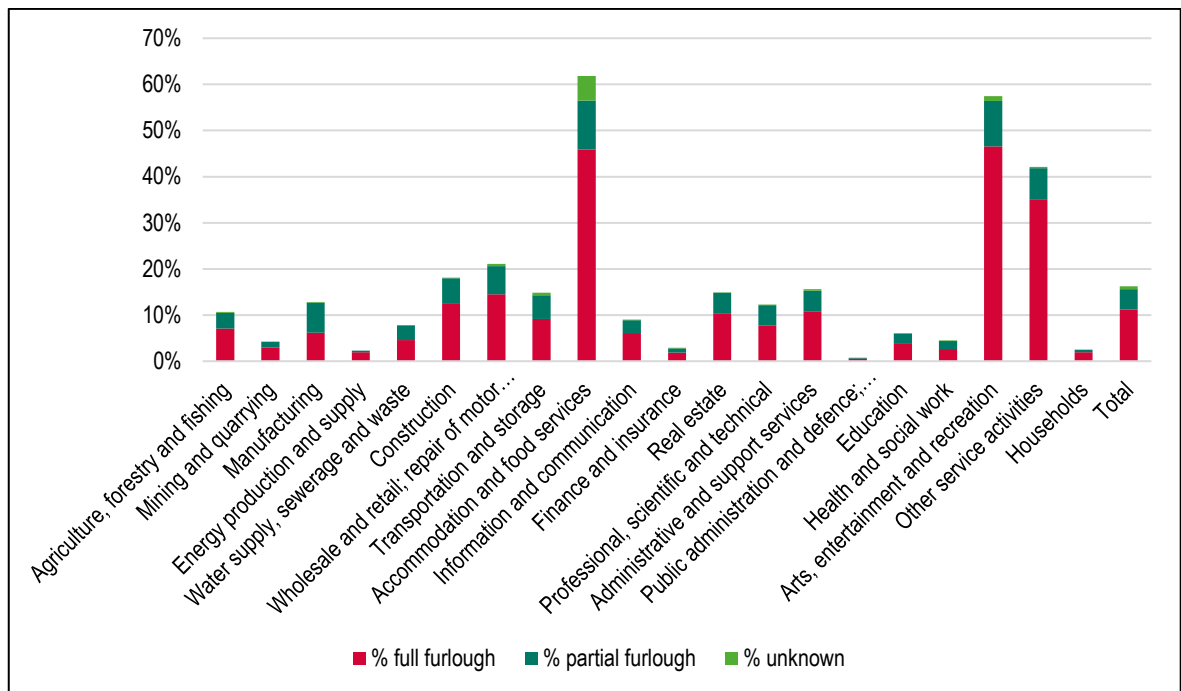
Source: OBR Economic and Fiscal Outlook March 2021

2.53 The figure below shows the furlough take-up rate by sector in February 2021. This is broken down to full furlough, partial furlough, and unknown by sector. It can be seen that the highest furlough rates were in Accommodation and food services (62%), Arts, entertainment and recreation (57%), and Other service activities (42%). The lowest furlough rates are in Mining and quarrying (4%), Energy production and supply (2%), Finance and insurance (3%), and Public administration and defence; social security (1%).

2.54 The average furlough rate across all sectors was 16%. Manufacturing (13%), Transportation and storage (15%) and a number of office-based sectors were all similar to the average rate. However, 51% of furloughs in manufacturing were partial furloughs³ compared to an average of 29% across all sectors. On the other hand, in the three sectors with the highest rates of furlough, the partial furlough rate was just 16-17%.

³ Where furloughed workers can work part-time (flexible furlough) for any amount of time and any shift pattern and employers are required to pay employees in full for the hours worked.

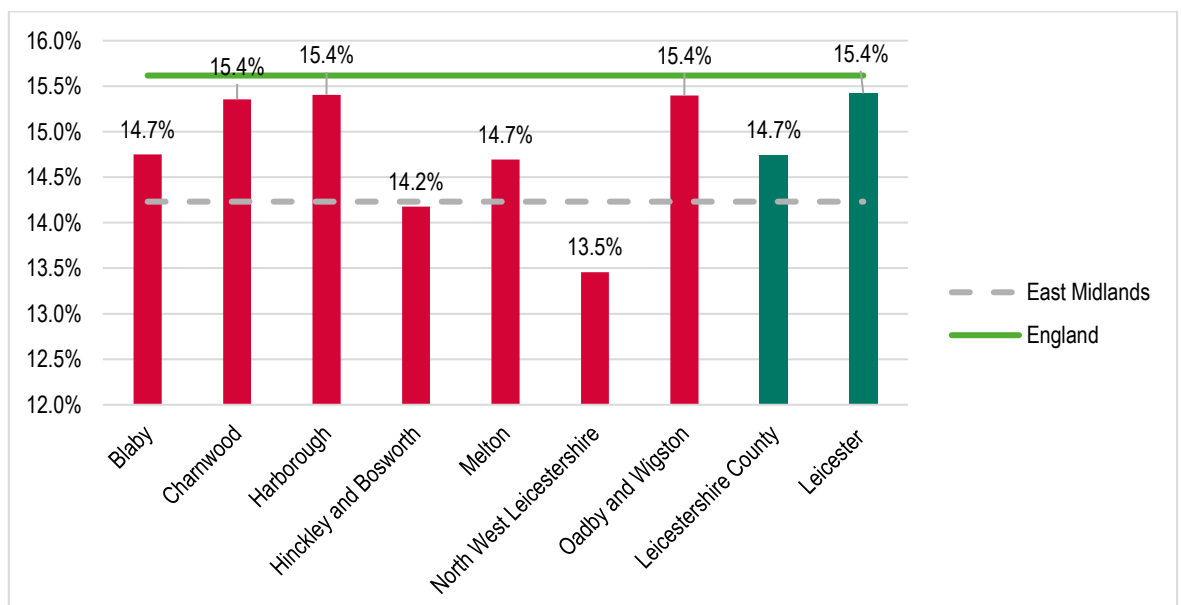
Figure 2.17: Furlough Take-up Rate by Sector



Source: HMRC CJRS Statistics: May 2021

2.55 The figure below shows the furlough take up-rate by local authority and for comparator areas in February 2021. It can be seen that the furlough take-up rate across Leicestershire (15.4%) was slightly lower than across England (15.6%) but above that of the East Midlands (14.2%). Leicester sat approximately in the middle of the rate for the comparator areas at (14.7%).

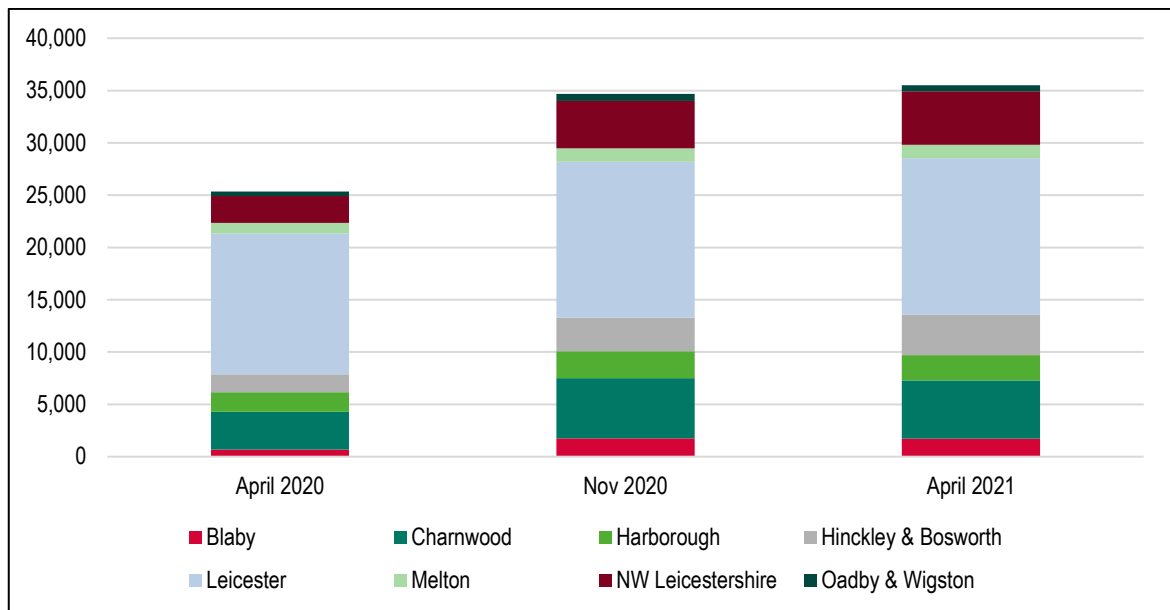
Figure 2.18: Furlough Take-up Rate by Local Authority



Source: HMRC CJRS Statistics: May 2021

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- 2.56 The LLEP Business and Economic Intelligence Update (Issue 20 – May 2021) highlights the concentration of unemployed claimants in Leicester – 51.8% of claimants across the Study Area or 18,150 persons. However it also shows that there has been a rise in Universal Credit Claimants who are not seeking work.
- 2.57 There is however evidence of growth in employment opportunities. Unique job postings in April 2021 stood at 35,500 – notably higher than that in April 2020 (25,300) with growth of 3.3% over the previous month. Those areas which have seen the largest growth in postings comprises:
- Science, research, engineering and technology professionals
 - Business and public service associate professionals
 - Administrative occupations
 - Skilled metal, electrical and electronic trades
 - Transport and mobile machine operatives and drivers
 - Elementary administrative and service occupations.
- 2.58 The stakeholder engagement which Iceni has done with economic intelligence/development staff has highlighted recruitment and retention challenges associated with strategic warehousing in both NW Leicestershire and Harborough.
- 2.59 The chart below shows job postings by area and how this has changed over the last year. In Leicestershire, there have been higher job postings since August 2020 than prior to the pandemic (March 2020); but this is not the case in Leicester where there has yet to be a recovery to pre-pandemic levels.

Figure 2.19: Job Postings by Area – Leicester & Leicestershire



Source: EMSI/ LLEP Business and Economic Intelligence Update, April 2021

2.60 Between March 2020 and April 2021, there have been 9,861 businesses that have ceased trading in Leicester and Leicestershire. This is 15% higher than over the same period in 2019/20. However over the same period, 13,948 businesses have been incorporated, 10% above the previous year. The LLEP Business and Economic Intelligence Update suggests growth in particular in real estate and retail businesses. It is clear however that Government support measures such as the furlough and grant schemes have supported some businesses, and closures could rise as support unwinds towards the end of 2021.

2.61 The LLEP Business Survey Tracker is a survey of businesses within the area and provides some information regarding business trends and thinking. The Feb 2021 results include information from a survey of 200 businesses undertaken in December 2020 and January 2021. Key findings include:

- 44% of businesses were looking to recruit staff in the next 6 months, with only 6% looking at making redundancies. This paints a fairly positive picture regarding the prospects of economic recovery in the short-term;
- 51% of businesses surveyed were not involved in any international trade. 29% of businesses were however exporters, most commonly to the EU, with 36% of businesses importing goods/services;
- 73% of businesses have used the furlough scheme, 40% the Bounce Back Loan Scheme, and a third have deferred VAT payments. The evidence suggests that small businesses have been most likely to use these;

-
- 68% of businesses surveyed did not employ any EU nationals. Whilst 6% employ less EU nationals than a year ago, 4% employ more.
 - Since April 2020, 64% of businesses have had staff working from home (rising to 74% of small businesses), but only 32% of businesses think that they can operate with a substantial proportion of their workforce working from home. As at late 2020, 36% have no staff working from home, 21% had very few, whilst 10% have all staff working at home. The remaining third had between 10-99% of staff at home.
 - Looking forwards, 41% of the businesses surveyed intended to support greater flexibility around working from home, whilst 54% don't expect to allow employees to work from home or are keen to get staff back in full-time as soon as possible.
 - Brexit issues, both demand and supply chain, are impacting around a third of businesses, but are only having a significant impact on 14%. Disruption in demand due to Covid-19 is in contrast having a significant impact on 37% of businesses with economic uncertainty impacting significantly on 35%.
 - However not withstanding these issues, 78% of businesses felt confident about the future of their businesses in the next 6 months, with 38% expecting to grow over the next 12 months and 47% expecting to stay the same. Half of businesses expect to recover to pre-Covid levels within 12 months and most (78%) within two years.

2.62 Overall the business survey points to a relatively positive outlook in the sub-region, with the expectation of a relatively rapid economic recovery. The commentary on changing working patterns, and growth in home working needs to be considered in context – just 63 of the 200 businesses surveyed (31%) were in professional service activities. Nonetheless it does point to the potential for some businesses to seek to get back to the office.

2.63 The LEP's Business Tracker Survey provides the ability to see how business sentiment is evolving over time. Results are published on the LEP's website.⁴ Iceni understands that more recent data points to growing recruitment challenges as the sub-regional economy has recovered. This mirrors the position nationally.

⁴ <https://lep.org.uk/our-economy/lep-business-tracker-survey/>

3. COMMERCIAL PROPERTY MARKET DYNAMICS

3.1 This section provides an assessment of the commercial property market in Leicester and Leicestershire focused on offices (including office and research & development) and industrial (including industrial and warehouse/ distribution space).

3.2 This assessment has been undertaken by Icen Projects working with Innes England, commercial property agents based in Leicester. It uses a variety of sources including take-up and availability data from the CoStar, a commercial property database, along with data from Innes England's own in-house records. Where relevant, Valuation Office Agency (VOA) data on trends in commercial stock is used.

Office Market Overview

3.3 We first consider national office market dynamics over the last few years. Office markets across the UK demonstrated a level of resilience in 2019 set against a context of wider economic uncertainty linked to Brexit. Knight Frank's UK Cities Overview 2019 reports that leasing volumes finished the year 8% above the long-term trend as business change strategies continued to motivate space moves. Notably, despite concern derived from Britain's impending exit from the EU, foreign investment increased by 10% year-on-year to £1 billion representing 37% of total investment turnover.

3.4 CBRE report that 2020 got off to a strong start, with Q1 regional office take-up 21% above both Q1 2019 and the 10-year quarterly average. However, during the second quarter, the UK-wide lockdown which saw most offices across the UK become temporarily closed, had a significant impact on take-up. Q2 2020 take-up, therefore, reflected a 73% decrease from the five-year quarterly average. Total take-up in the first half of the year (H1) reflected a 36% decrease from the previous year.

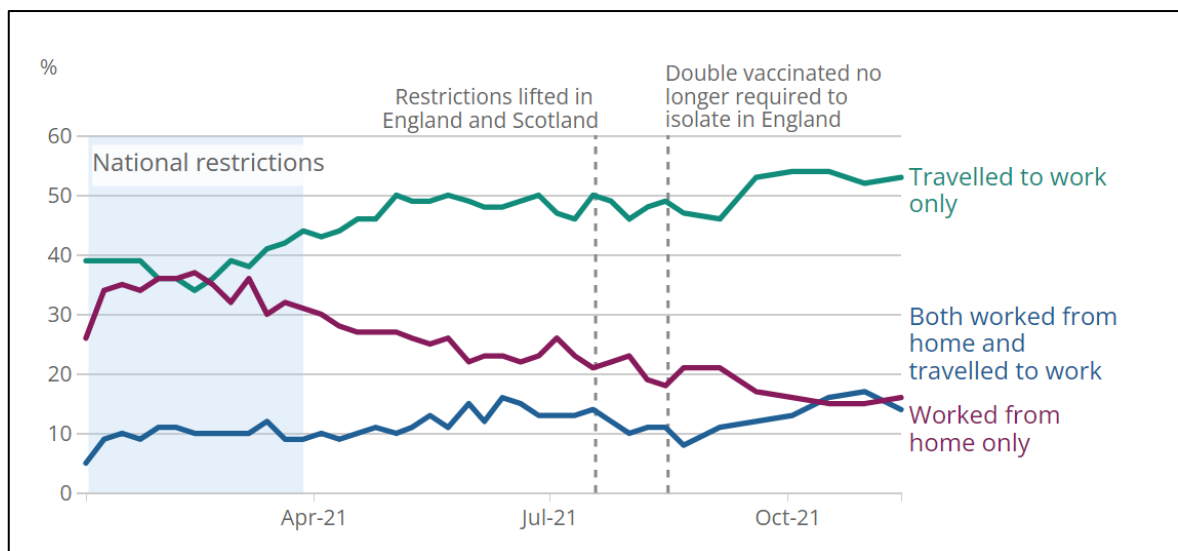
3.5 For the second half of 2020, Cushman and Wakefield reported that whilst take-up remained below the long-term average, it did grow in Q3 2020 – driven by growth in take-up outside of London. In Q4 demand for office space remained subdued (below the five-year average). Office take-up for the whole of 2020 was 7.7 million sqft – comparable to the year after the global financial crisis. However, in the final quarter of 2020, despite being 33% lower than Q4 2019, office investment turnover rose from the previous quarter signalling some renewed confidence in the sector with businesses sentiment indicating that the office remains important.

3.6 Expectations are that the pandemic will result in a continuing shift towards more flexible working patterns with increasing numbers of people working at least part of the time from home; but offices remain important in companies' culture, the work community, interaction between colleagues and

training. The longer-term more structural trend may be of reduced space requirements as more office workers spend at least part of the week at home. Currently the outlook is however highly uncertain. How these factors overlay at the local level will impact on demand for space and vacancy levels.

- 3.7 The graph below is drawn from the ONS Opinions and Life Survey. It shows that the proportion of people working only from home has been falling since February 2021 and stood at 15-16% in October/November 2021; with hybrid working accounting for around 14% of workers surveyed and around 54% travelling to a place of work and the remaining 17% considered not working or furloughed. Working from home is particularly associated with office-based activities.

Figure 3.1: Working Patterns (% Working Adults, Great Britain), 2021



Source: ONS Opinions and Lifestyle Survey

Leicestershire Office Market

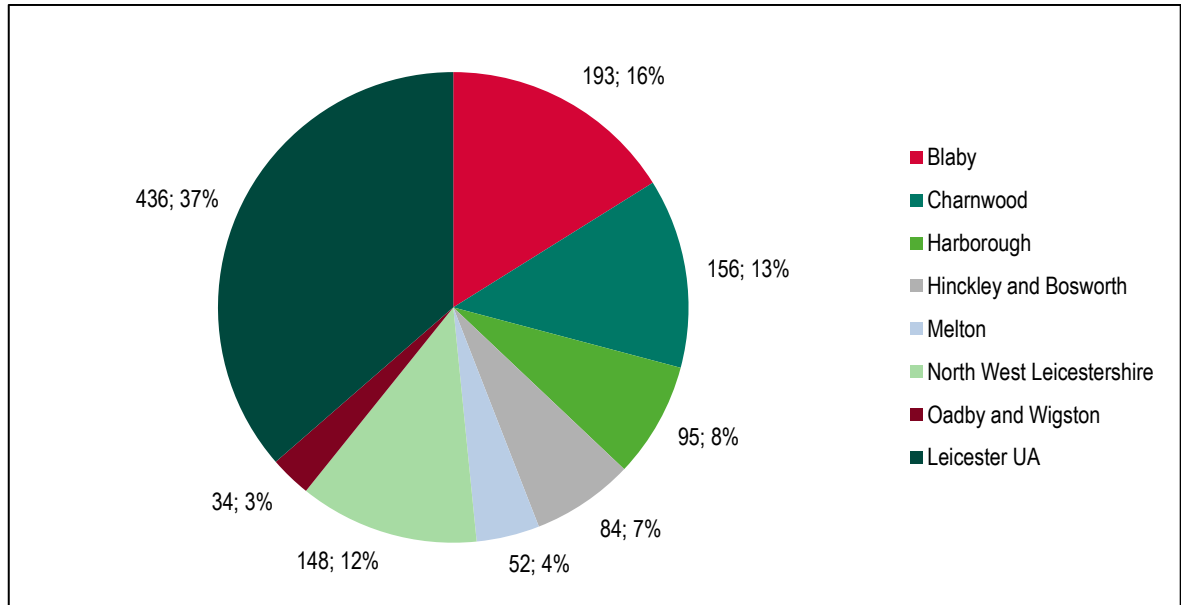
Office Stock

- 3.8 The VOA⁵ provides information on the number of rateable office properties by administrative area for period between 2001 and 2020. There were 5,630 office properties in 2020 providing 1,198,000 sqm of office floorspace in total across Leicester and Leicestershire. This represents 24.5% of the office floorspace across the East Midlands. This suggests that the Study Area has a relatively large office sector given its working age population only makes up 22.4% of that of the East Midlands.
- 3.9 Leicester supports the largest proportion of the Study Area’s office stock (37%) at 436,000 sq.m followed by Blaby (reflecting the presence of major business parks such as Grove Park and Meridian

⁵ VOA: Non-domestic rating: stock of properties including business floorspace, 2019/20

Business Park close to the M1). On the other hand, floorspace in Oadby and Wigston makes up just 3% of the Study Area's office floorspace.

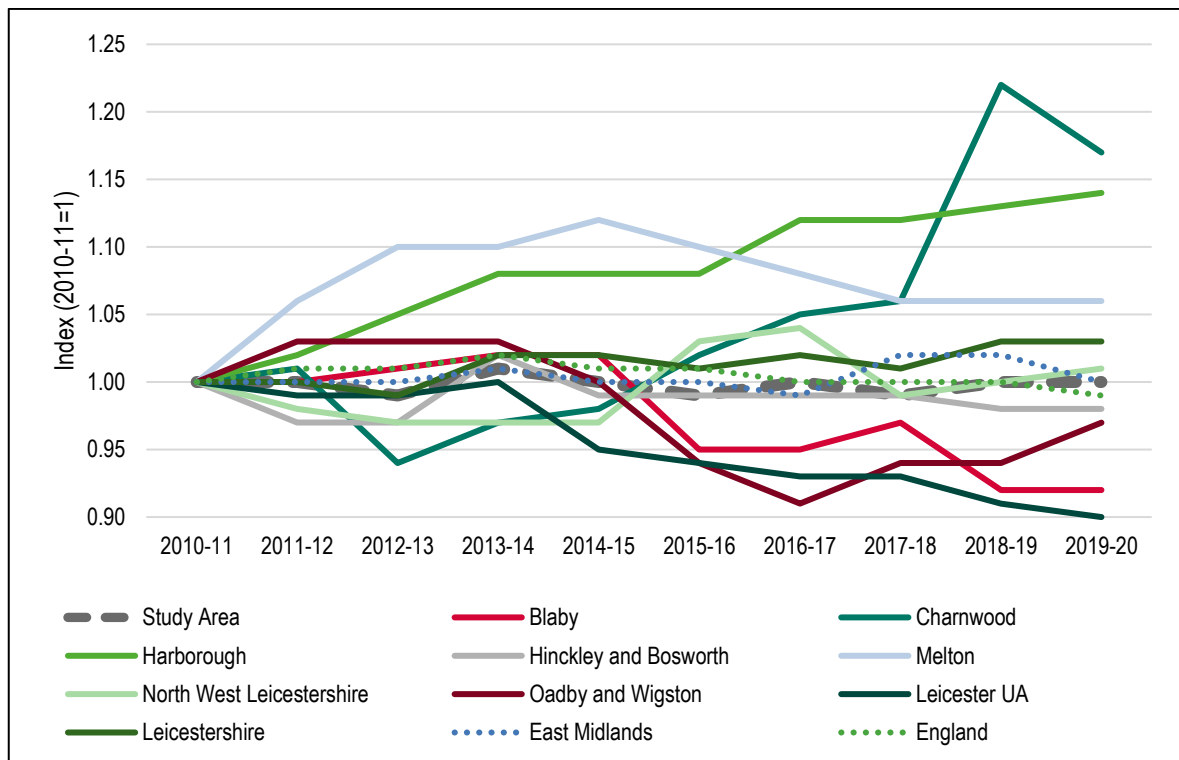
Figure 3.2: Office Floorspace by Local Authority 2019/20 (Thousands of sqm; %)



Source: VOA: Non-domestic rating: stock of properties including business floorspace, 2020

3.10 The figure below shows the change in total office floorspace by location over the 2011-20 period. It shows that the total office stock has remained relatively stable across Leicester and Leicestershire overall, consistent with the regional trend with overall a 2% fall in total floorspace across the Study Area. Charnwood and Harborough saw significant growth in office floorspace between 2010 and 2020 (17% and 15% respectively). On the other hand Leicester and Blaby saw shrinkage of 10% and 8% respectively.

Figure 3.3: Indexed Office Floorspace by Local Authority 2010/11 - 2019/20

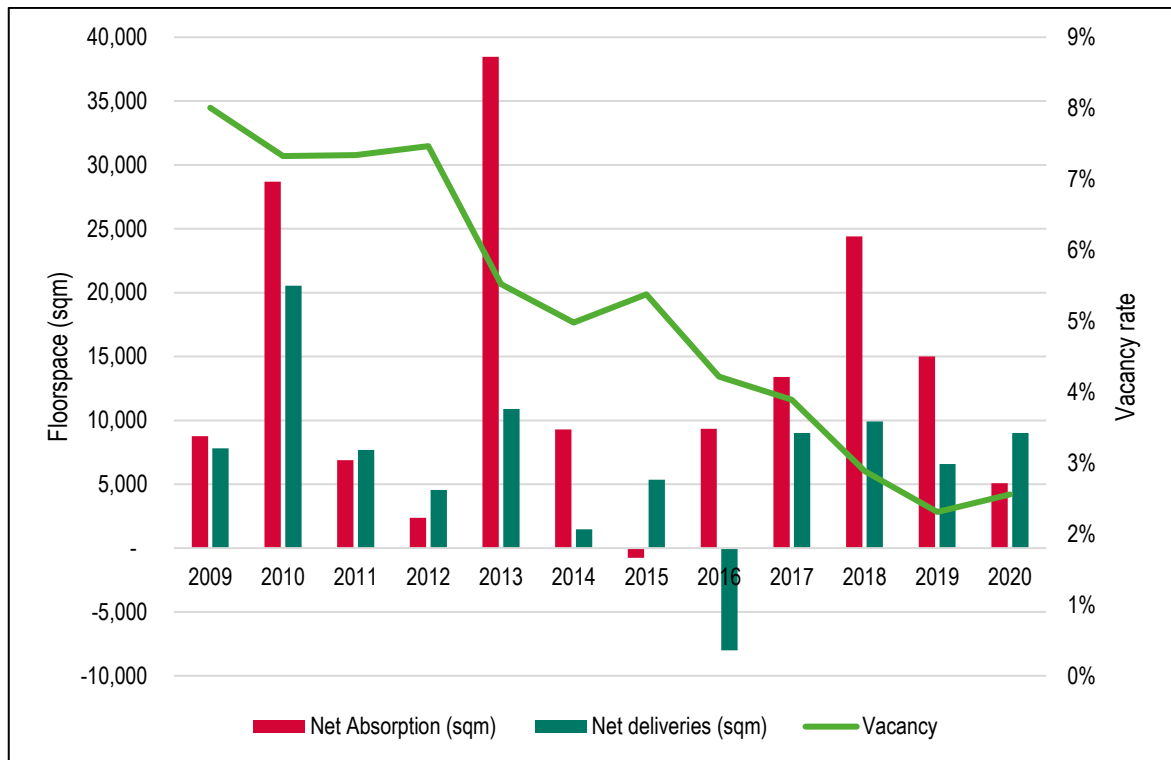


Source: VOA

Absorption, Delivery and Vacancy Trends

- 3.11 CoStar provides data on net absorption which describes the net change in available space which is calculated by deducting the space vacated by tenants and made available within the local market from the total space leased/occupied. A positive net absorption figure means that the proportion of vacant space is falling, whilst a negative level indicates that more space was coming onto the market than being taken-up.
- 3.12 The chart below indicates that net absorption has been positive in all but one of the last 11 years peaking in 2013 at over 38,000 sqm. Over the period between 2009 and 2020 there was a net absorption of around 161,000 sqm of floorspace (of which 123,500 sq.m was between 2011-20).
- 3.13 The chart also shows net new space being delivered in the local market. There was around 85,000 sqm of net new office floorspace delivered between 2009 and 2020. Net deliveries (the balance between new-build construction and losses) have been relatively even throughout this period with a peak in 2010 (influenced by pre-recession trends) and a net loss of floorspace in 2016. They have averaged 7,000 sq.m per annum between 2010-20.
- 3.14 Net absorption has outweighed net delivery by around 76,000 sqm over the 11-year period with more space being occupied than built in net terms. This has led to a decline in vacancy rates from 8% in 2009 to 2.5% in 2020.

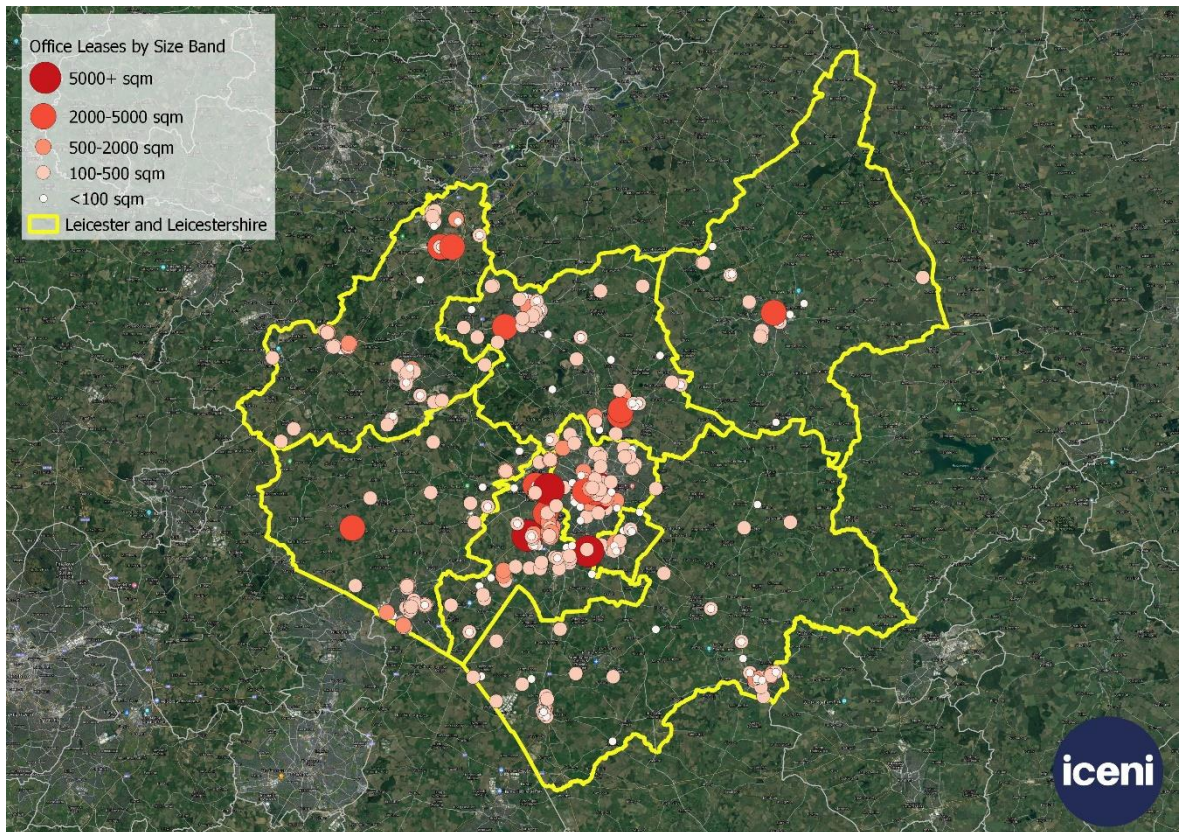
Figure 3.4: Net Absorption, Net Delivery and Vacancy of Office Floorspace in the Study Area, 2009-2020



Source: CoStar Commercial Property Data

3.15 Spatially, as the chart below shows, office take-up has been focused in and around Leicester, including within the City; in Blaby and Thurmaston with some smaller clusters of activity in the market towns, including at Loughborough, and around East Midlands Airport and Horiba MIRA Technology Park. The take-up analysis includes both new-build development and reoccupation of existing office floorspace.

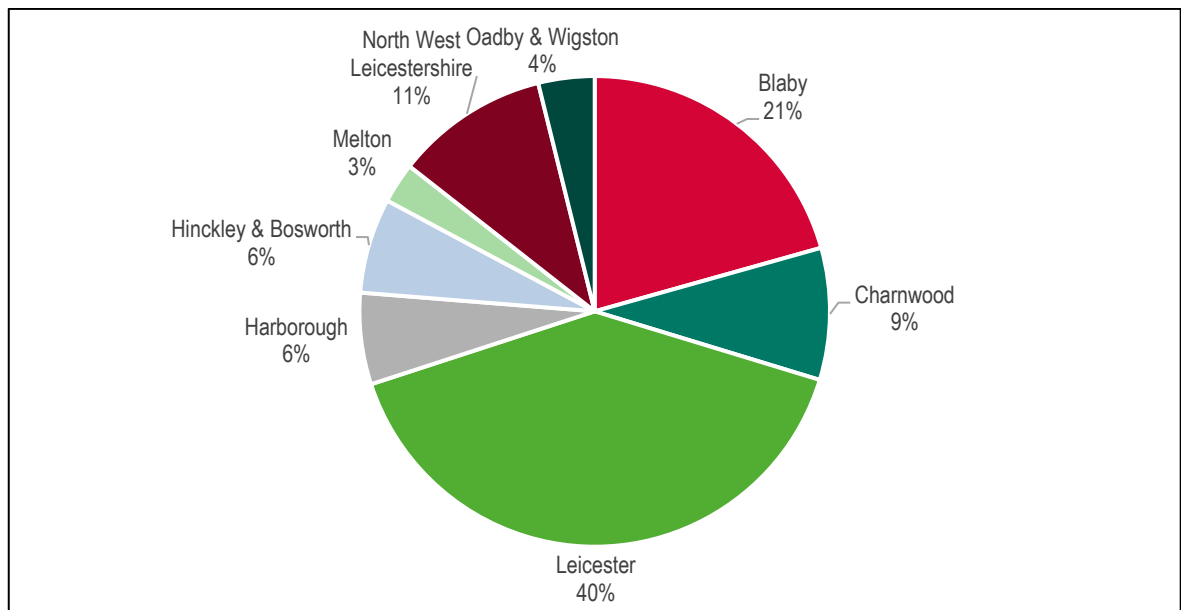
Figure 3.5: Office Floorspace Take-Up by Size (2012-21)



Source: IcenI Analysis of CoStar Commercial Property Data

- 3.16 Between 2012 and the start of 2021, office take-up (again including new-build and existing space) totalled 376,000 sqm of floorspace. The figure below shows the percentage of this floorspace in each local authority area. 40% of the take-up has been in Leicester, a smaller but still significant proportion (21%) is in Blaby and the smallest proportion (3%) in Melton. It is clear that the major office market in the sub-region is in/around Leicester.

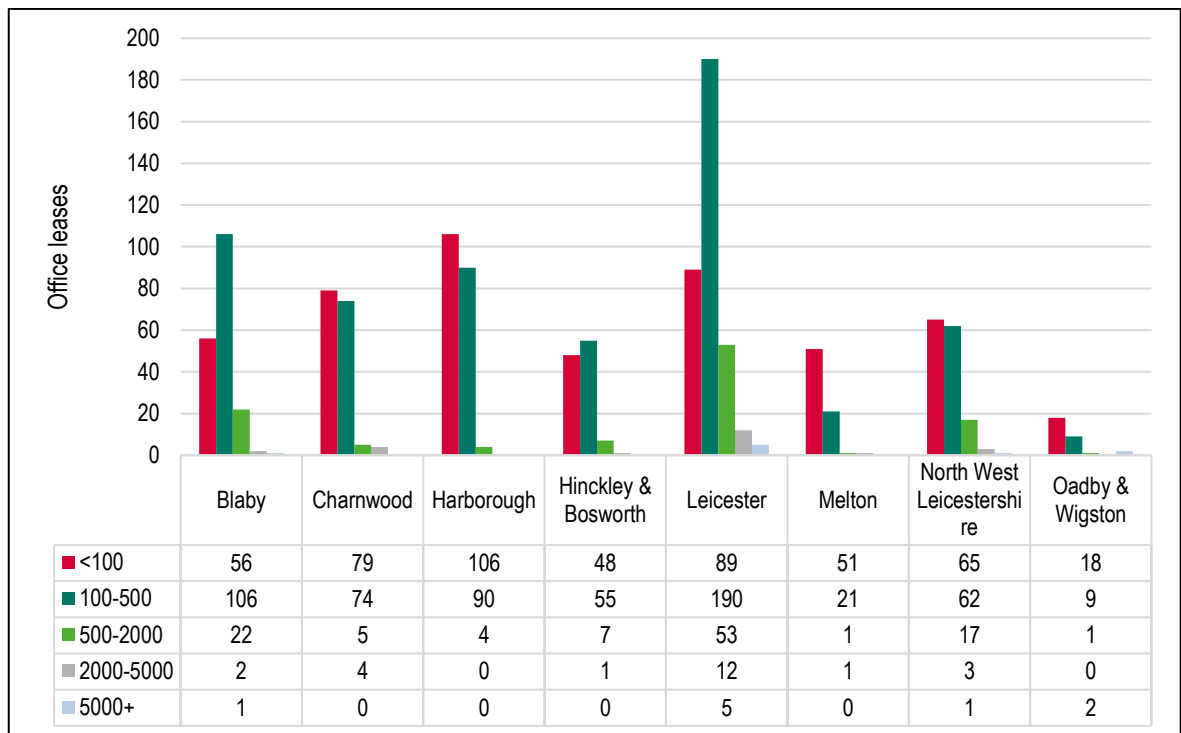
Figure 3.6: Office Floorspace Absorption by Local Authority 2012-2021



Source: IcenI Analysis of CoStar Commercial Property Data

- 3.17 The figure below shows the number of offices leased by size band. It can be seen that most office leases were of space below 500 sqm. In Leicester and Blaby most leases were for floorspace of between 100 and 500 sqm – around double the number of leases for office space below 100 sqm. All other local authority areas had more leases of under 100 sqm than any other category (aside from Hinckley and Bosworth). Leicester had by far the most leases over 500 sqm, followed by Blaby and then North West Leicestershire.
- 3.18 Deals of over 2,000 sq.m are limited, and focused particularly towards Leicester which clearly has the largest office market in the sub-region.

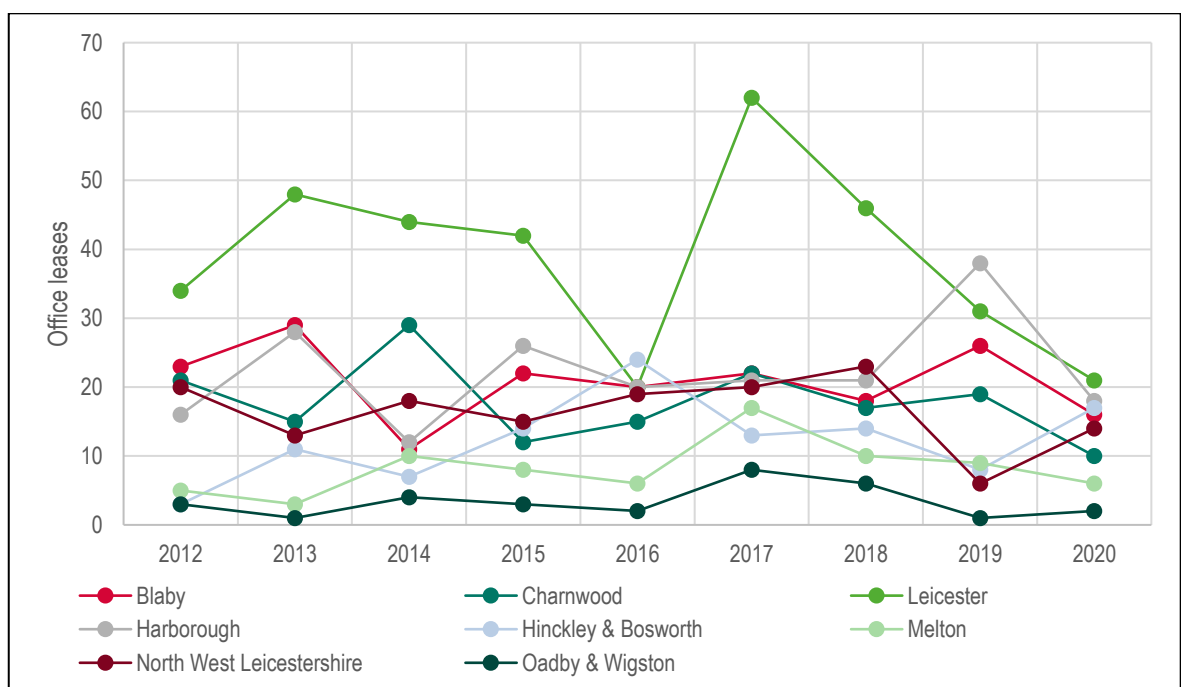
Figure 3.7: Offices Leased by Size Band (sqm) and Local Authority 2012-2021



Source: Icen Analysis of CoStar Commercial Property Data

3.19 The figure below shows the number of office lease completions by local authority over the last nine years. As can be seen in the map above, Leicester has had the most office leases, however, the number of lease transactions in Leicester have fallen significantly over the last three years. The lowest numbers of leases are in Oadby and Wigston and Melton.

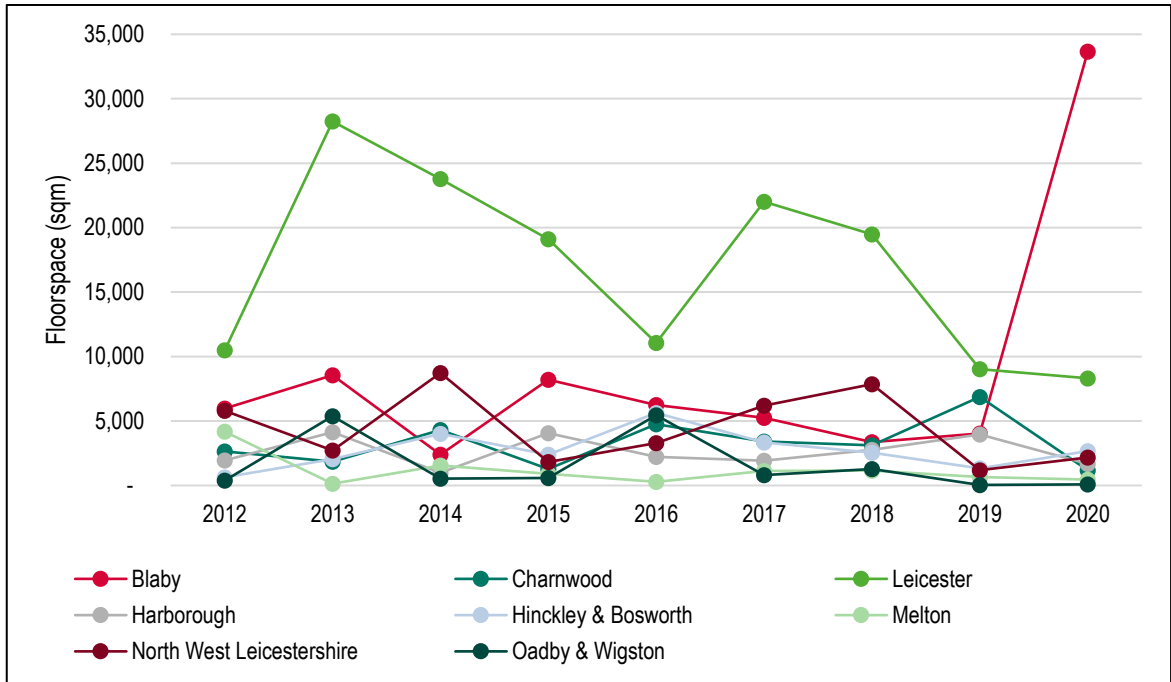
Figure 3.8: Office Lease Completions by Year and Local Authority, 2012-20



Source: Icen Analysis of CoStar Commercial Property Data

3.20 The figure below shows office floorspace take-up by year and local authority. The pattern of absorption for Leicester follows that of the number of units leased in the area, albeit with the peak in absorption coming in 2013 as opposed to 2017. Unlike for office lease completions, there was a large peak in absorption in Blaby in 2020 of nearly 34,000 sqm.

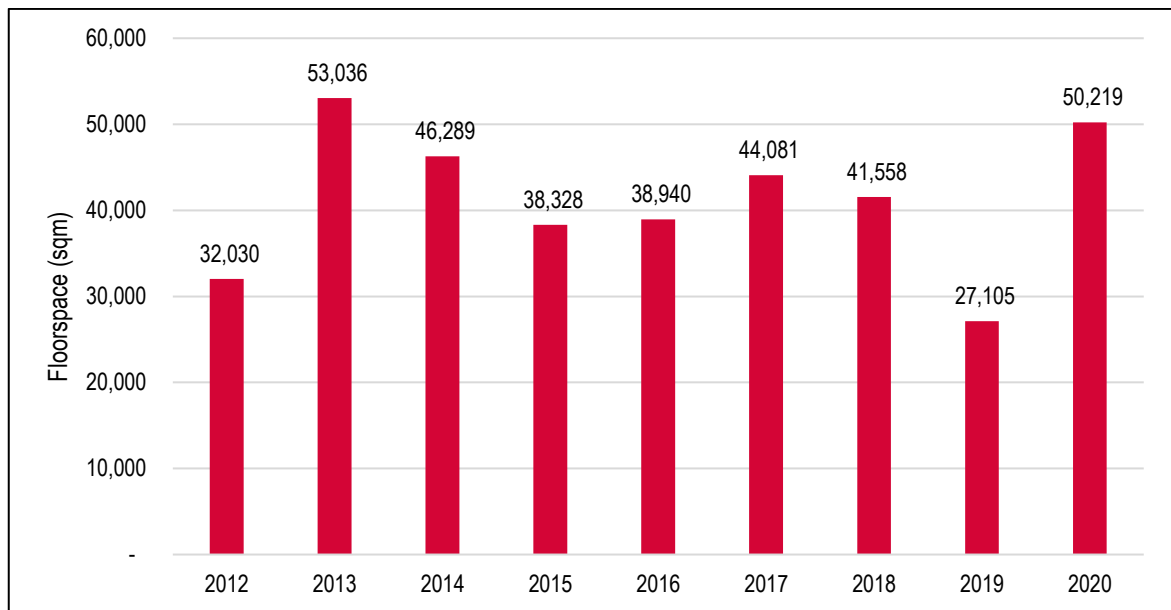
Figure 3.9: Office Absorption by Year and Local Authority, 2012-20



Source: Icen Analysis of CoStar Commercial Property Data

3.21 The figure below presents the same data as above but aggregated across the Study Area. As expected, overall take-up peaked at 53,000 sqm in 2013, before falling to 38,000 sqm in 2015, and rising to 44,000 sqm in 2017 (reflecting changes in Leicester). Take-up then fell before hitting a second peak of 50,000 sqm in 2020 (reflecting new development in Blaby).

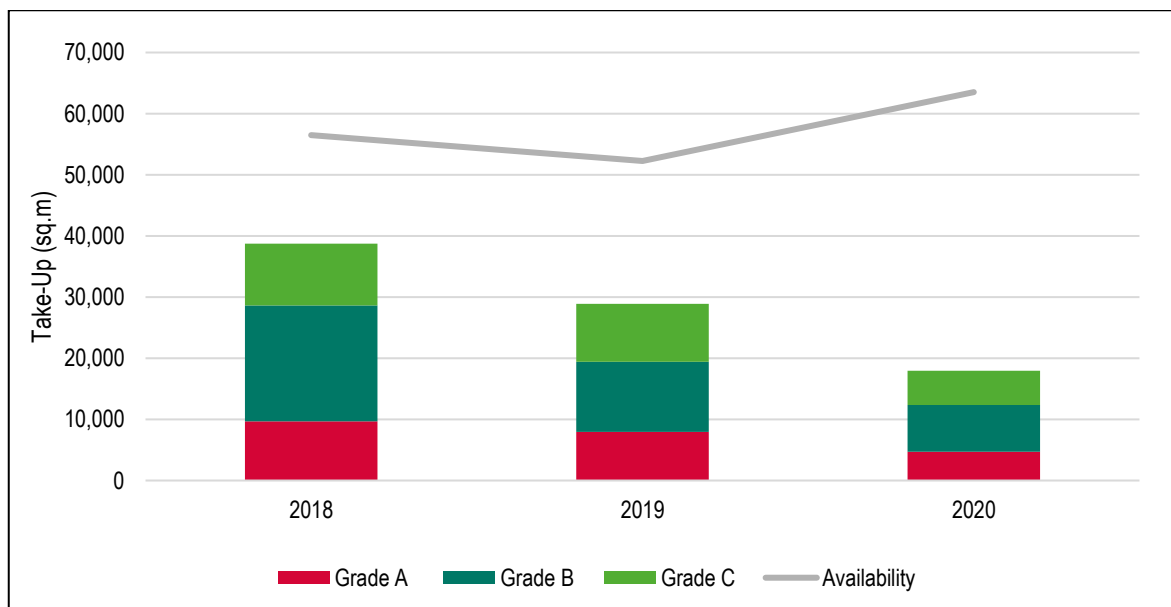
Figure 3.10: Office Take-Up by Year (2012-20) – Leicester and Leicestershire



Source: IcenI Analysis of CoStar Commercial Property Data

3.22 The chart below uses Innes England’s data to drill into the profile of take-up by grade. Their data differs from CoStar (which is based on the County boundary) as it excludes the area around Castle Donington/East Midlands Airport. It shows lower take-up in 2020. Around 25-30% of overall take-up has been of new-build stock.

Figure 3.11: Take-Up by Grade (2018-20) – Leicestershire (excl Castle Donington)



Source: IcenI analysis of Innes England data

3.23 The Innes England data also supports analysis of the proportion of take-up by size band and location. The profile of office take-up over the last three years (2018-20 inclusive) sees around 37% in town/city centre locations, which will principally be in Leicester City Centre, and 63% in out-of-town

locations. There is however a much higher proportion of take-up of units between 465 – 1,850 sq.m (5,000 – 20,000 sq.ft) which are focused in town / city centre locations.

Table 3.1 Profile of Take-Up by Size Band and Location, 2018-20

	Town Centre	Out-of-Town	Total	% Town Centre	% by Size Band
< 465 sq.m	8,942	23,840	32,782	27%	38%
465 – 930 sq.m	9,347	6,219	15,566	60%	18%
930 – 1850 sq.m	10,231	7,897	18,128	56%	21%
1,850 – 2,800 sq.m	2,791	8,994	11,785	24%	14%
2,800 – 4,650 sq.m	0	7,432	7,432	0%	9%
4,650 sq.m+	0	0	0	0%	0%
Total	31,311	54,382	85,693	37%	100%

Source: Icen analysis of Innes England data

- 3.24 Pre-Covid, office demand had been shifting towards Leicester City Centre, influenced by improvements to the city centre environment and infrastructure including investment in public realm, the e-bike hire scheme and investment in cycle lanes. Covid resulted in reduced activity in 2020, but the early evidence is that the market has started to pick-up (albeit slowly) in early 2021 but continues to be focused on businesses moving due to lease breaks or lease expiry. Occupiers tend to be downsizing, with their office space requirements reducing by around 30%. There remains significant market uncertainty influenced by how changing working patterns may influence office requirements. Parking provision remains a concern, with typical provision of 1 space per 1000 sqft in the City Centre compared to typically 1 per 250 sq.ft out-of-town.
- 3.25 There remains a good appetite for out-of-town office space, with the early indications that this market is performing better than Leicester City Centre, but there is currently limited stock.

Office Availability

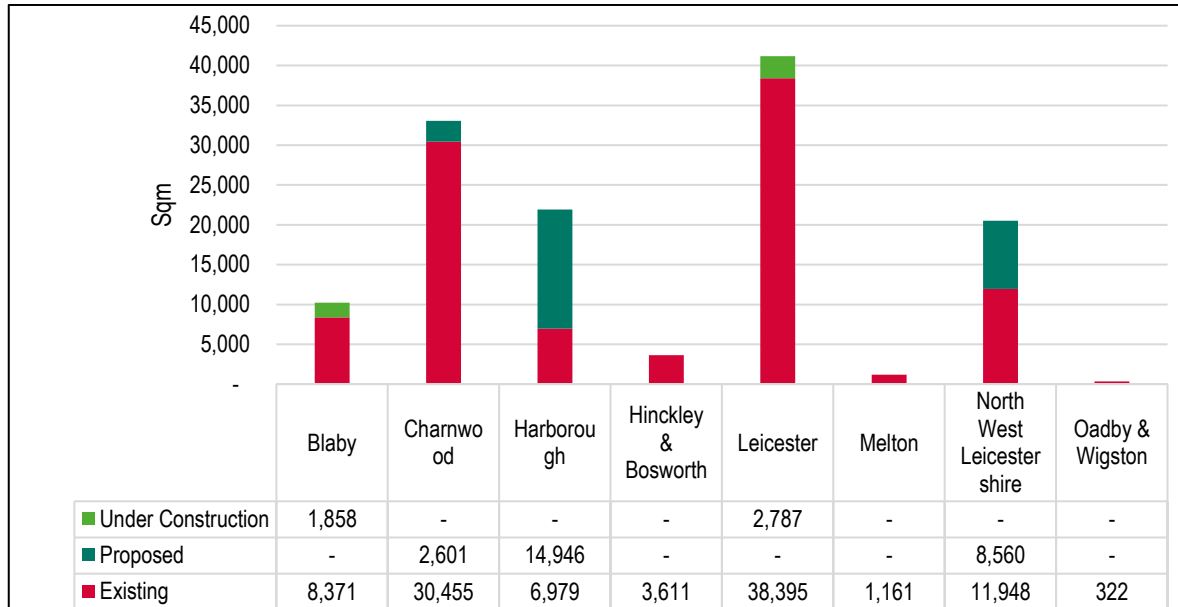
- 3.26 The figure below shows the current available and pipeline office space⁶ in each local authority, broken down by status (existing, proposed⁷ and under construction). It can be seen that Leicester has the most available office floorspace, the majority of which is existing, with a small fraction under construction. There are very low levels of available floorspace in Hinckley and Bosworth, Melton and Oadby and Wigston. Whilst there is over 20,000 sqm of office space being marketed in Harborough, around 15,000 sqm of this is proposed floorspace and hence actual current availability is likely to be

⁶ Co-star data on the 27/05/21

⁷ Land considered for a particular future use or a building that has been announced for future development. The project is not expected to start construction in the next 12 months. This can include properties both with and without planning permission.

much lower. Similarly, in North West Leicestershire around 9,000 sq.m of the 21,000 sqm of marketed space is proposed/ pipeline space.

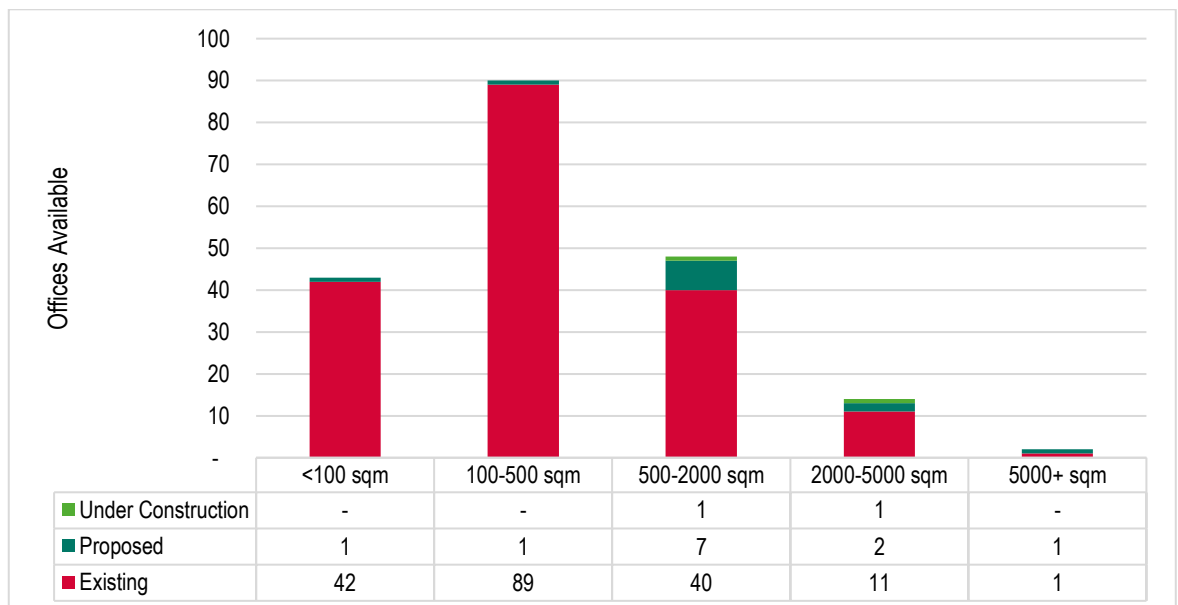
Figure 3.12: Office Floorspace Availability (sqm) by Local Authority and Status



Source: IcenI Analysis of CoStar Commercial Property Data

3.27 The figure below shows the number of offices available/ being marketed by size band and broken down by status. It can be seen that office space between 100 and 500 sqm has the largest availability. Availability then decreases with size.

Figure 3.13: Office Availability by Size and Status



Source: IcenI Analysis of CoStar Commercial Property Data

- 3.28 An analysis of availability using the Innes England data points to around 2.2 years' available supply based on the (somewhat subdued) take-up figures seen over the last three years. The supply position is stronger in the City Centre and for older stock, with a tighter position (1.8 years) for Grade A supply, particularly in the out-of-town market.

Table 3.2 Availability in City Centre and Out-of-Town Markets, Dec 2020

Sq.ft	Town Centre	Out of town	Total	Notional Years' Supply
Grade A	3,618	9,681	13,299	1.8
Grade B	15,186	17,921	33,107	2.6
Grade C	11,590	5,523	17,113	2.0
Total availability	30,394	33,126	63,519	2.2
Notional Years' Supply	2.9	1.8	2.2	

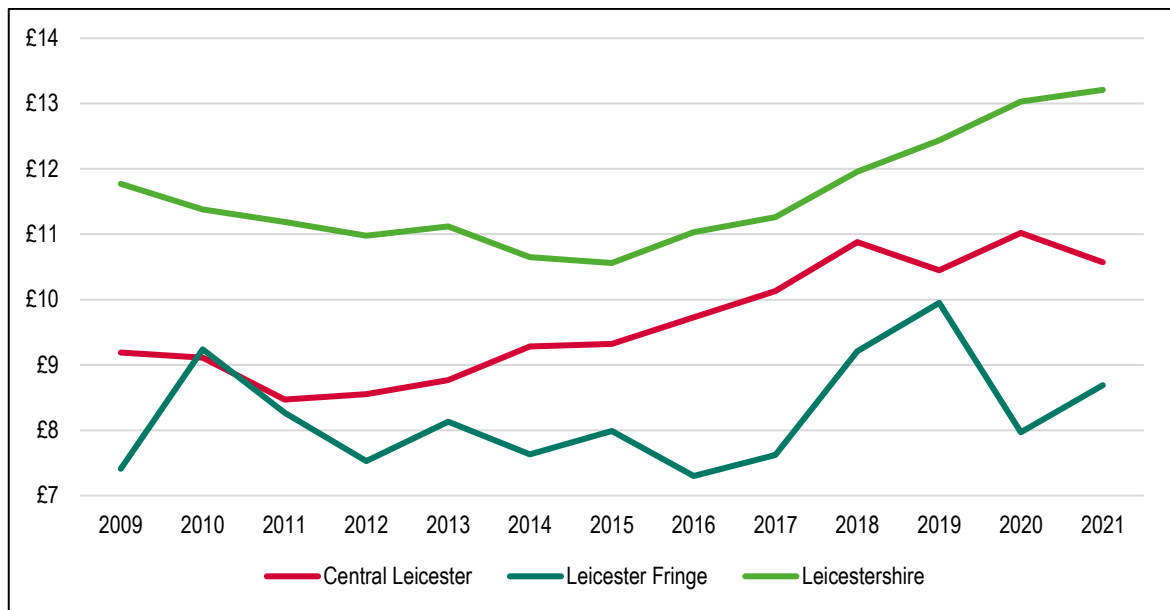
Source: IcenI analysis of Innes England data

- 3.29 The short-term prospect of businesses reducing their footprint/ floorspace could see availability rise, which could have some impact (alongside market uncertainty) in limiting levels of new development in the immediate term. The market is however reasonably well placed, given current relatively low levels of available supply.

Office Rental Price Trends

- 3.30 The figure below shows average rental values in Leicester City Centre, Leicester Fringe (the rest of Leicester including business parks/ out-of-town supply around the Leicester Urban Area) and Leicestershire between 2009 and 2021.
- 3.31 It can be seen that average rents in Leicestershire are consistently higher than in Central Leicester which in turn are consistently higher than in Leicester Fringe. Across Leicestershire, rents fell between 2009 and 2015 before increasing to over £13.00 per sqft in 2021. Rents in Central Leicester steadily increased between 2011 and 2018 before levelling off and coming to £10.57 per sqft in 2021. Rents across Leicester Fringe have seen more variation – falling between 2010 and 2012 before levelling off, increasing between 2016 and 2019 and then falling to £8.69 per sqft in 2021.

Figure 3.14: Average Office Rents per sqft (2009-2020)



Source: CoStar Commercial Property Data

3.32 Average office rents are however influenced by the quality of available space. Price rents in Leicester for office space are around £19.50 - 20 per square foot (psf), the rental tone established by the recent deal for 14,000 sq.ft by Europcar at No1 Great Central Square. Rental levels are being maintained for the time being, influenced in part by low availability. Headline rents in the market towns are around £12 psf.

3.33 Rental levels achievable for new-build space are generally insufficient to support speculative office development for lease; which would typically require rents of around £25 psf to be supported. There is therefore an important role for public sector partners in facilitating the delivery of new office floorspace in the medium/longer-term.

Agent View

3.34 IcenI has worked with Leicestershire-based agents, Innes England, in preparing the HENA and understanding local market dynamics. The analysis below is informed by our discussions with them. The main office market within the sub-region is the Leicester Urban Area, reflecting its role as the largest settlement with a larger catchment population and better transport links (including public transport infrastructure) than other areas within Leicestershire. The Leicester market captures the City Centre and out-of-town business parks close to the M1 including Meridian Business Park and Grove Park, which sit close to M1 Junction 21.

3.35 In the recent past, pre Covid, there has been insufficient Grade A office space coming to the market.

3.36 The market in Leicester was witnessing a migration towards the City Centre (rather than out of town) due to improvements in City Centre – including investment in the public realm and cycling

infrastructure. However car parking remains an issue for the City Centre, with 1 space per 1,000 sqft rather than 250 sqft out of town. Car parking is an issue as most workers are local and expect to commute by car. There are examples of specific deals in the City Centre failing to complete due to parking. Icenii note that a consultation has begun to introduce a city-wide Workplace Parking Levy in Leicester to encourage car commuters to consider other modes of transport. If implemented, this is expected to make it tougher to entice occupiers to the City Centre relative to out-of-town business park locations.

- 3.37 The market is starting to pick up slowly in 2021 but largely driven by downsizing at lease breaks or lease expiry, with occupiers typically looking to downsize by around 30%. Availability (levels of vacant floorspace) has therefore increased. At the time of writing there are no new occupiers currently looking to come into Leicester City post Covid. Typical downsizing of businesses, particularly driven by lease events, has been around 30%. The result of occupiers reducing their floorplates, combined with very limited movement of new tenants into the area (with few live requirements from outside the area), has created current conditions of oversupply in the Leicester office market.
- 3.38 The office market generally is currently in a state of upheaval, in particular influenced by periods where Government advice has been to work from home where possible. Office workers have adapted to working from home; and the outlook is likely to see more agile working practices being adopted within many formerly office bound businesses, to the point where it is likely that there will not be the same levels of demand seen for this office accommodation as before. It is of course too soon to tell precisely what the long term implications will be on the market from growth in home working, but at the present there is still a good deal of office accommodation on the market in Leicester City Centre and Innes England would not advise that larger floor plates are required currently. The evidence points to the growth of remote and agile working being a structural change which will result in weaker office floorspace demand moving forwards.
- 3.39 In terms of smaller offices, again Innes England's view is that in Leicester City Centre there is plenty of space still available, but going forward with occupier size requirements decreases there could be the potential for additional office development. That said Brackley Developments are currently marketing design and build offices from 2000 sq ft at Waterside Office Park and so far there has been very few transactions undertaken here. This however is perhaps because they are on a Design and Build basis as opposed to being speculatively built. If the latter happened, this could support greater uptake.
- 3.40 In the City Centre there was 32,000 sqft of office space completed in 2020 which is still empty – previously rumoured to be under offer but now understood that the party has taken a smaller 20,000 sqft unit at Watermead Business Park. The City Centre seems to be performing poorly however this may just be coincidental depending on lease events.

-
- 3.41 Bigger corporates are making indications of restructuring nationwide. However, the smaller end of the market not seeing a shift. There remains significant uncertainty in the office market, and with a return to work from home guidance from Government in December 2021, it may be some time before the outlook is clearer.
- 3.42 Rental levels in and around the City seem to be being maintained for the time being, however Innes England have seen incentives marginally increase.
- 3.43 Outside of the City there seems to be a steadier appetite for office space and limited stock. The scale of the market for office space is smaller, and focused on local SME businesses. It is focused on the main market towns – Loughborough, Market Harborough, Lutterworth and Hinckley. There has been limited development in recent years, except at Loughborough University Science Park where 60,000 sq.ft of space has been delivered, the offer here focused on science/R&D-based activities. The majority of transactions have been at the smaller end of the market.
- 3.44 The pandemic has generated some interest in provision of managed workspace schemes, focused at small businesses. A new building is being delivered for Regus at Meridian Business Park (12,000 sq.ft) which is due to open in early 2022. Leicester City Council is also bringing forward 12,000 sq.ft of co-working space in The Gresham, the former Fenwick building in the City Centre. It is anticipated that there would be some demand for coworking spaces in the market towns in schemes of up to 10,000 sq.ft. Options to support viability include public sector support or the potential for reworking of former retail space in Town Centre locations.

Office Market – Key Findings

- UK office take-up for the whole of 2020 was similar to the year after the global financial crisis. The future of the office is uncertain but offices are likely to remain important spaces for companies.
- Net absorption of office floorspace across the Study Area has outweighed net delivery by around 76,000 sqm over the last 11-year period leading to a decline in vacancy rates from 8% in 2009 to 2.5% in 2020. There is a relatively limited supply of Grade A space.
- Leicester has by far the most office floorspace in the Study Area (37% of total compared to 16% in Blaby which has the second most). Accordingly, office floorspace absorption has been highest in Leicester over the last nine years.
- The amount of office floorspace in the Study Area has shrunk by 2% over the last 10 years. However, in the same period the amount of office floorspace in Leicester shrank by 9.7%. The Leicester urban area is however the main market in the sub-region; and pre-Covid there had been a growing shift in occupier demand towards City Centre space. However the growth in agile and home-based working appears to be a structural shift which is anticipated to reduce office floorspace demand in the future.
- Leicester has the most available office floorspace with stronger availability in the City Centre than the out-of-town market. There are very low levels of available floorspace in Hinckley and Bosworth, Melton and Oadby and Wigston but market demand is equally

modest. Availability could however increase in the short-term as companies reduce their office footprints. This could serve to limit new-build development activity.

- Prime rents have remained relatively stable at around £19.50-20 psf in Leicester and £12 psf in the market towns in the County, with occupiers tending to target second hand space.

Industrial Market Overview

- 3.45 Industrial and logistics take-up nationally was a very strong 15 million sq.ft in Q1 2021, the strongest on record first quarter; continuing the trend seen in much of 2020 of take-up which was well above the long-term average. 2020 take-up for the year as a whole reached 59.7 million sq.ft, the highest on record. Strong demand was evident across UK regions. As a key location for big box logistics, the East Midlands continued to attract the largest share of demand, according to Lambert Smith Hampton, with 3.5 million sq.ft of take-up recorded in Q1 2021. A combination of strong occupier demand and investment in the sector have seen development continue apace with speculative development under construction hitting record 14m at the end of Q1 2021. Across the main industrial market segments, current supply nationally is equivalent to less than 1.5 years' take-up. The lack of supply supporting continued rental growth.
- 3.46 The pandemic and the UK's exit from the EU have evidenced the important role of the logistics sector to keep food and goods moving. 2021 is expected to bring further focus on building more resilient supply chains, increasing stocks and diversifying suppliers to prevent future disruptions. This restructure of logistics networks will require additional warehousing space in the UK. The market for logistics space is being buoyed by expanding demand from online retailers who are benefiting from the lasting effects of COVID-19 in consumer behaviour. Retailers wanting to preserve market share will need to continue to secure warehouse space to expand their online channels.
- 3.47 CBRE report that the second half of 2020 has seen occupiers opting for longer leases compared to the reactive short-term contracts seen in the second quarter. In 2021 they expect longer commitments for the renewals of those short-term leases in most cases, and occupiers reverting to their planned expansions.
- 3.48 Savills Big Sheds Briefing (Jan 2021) reports that 2020 breaks all previous records with new leases signed for 50.1 m sq ft of warehouse space nationally, 12.7m sq ft ahead of the previous record set in 2016 and comprising 165 separate transactions, breaking the previous record of 163 set in 2014. Whilst it is important to say that a large proportion of this space was leased to Amazon (25%) and a number of leases on terms less than five years (12%), take-up would still break new records even if Amazon and short-term deals were removed from our time series. Another key factor of 2020 has been the surge in take-up for units over 500,000 sq ft with 25 deals recorded, making it the highest

year since Savills records began and also more than the previous two years combined. Given the number of requirements currently in the market for units over 500,000 sq ft, this is a trend they expect to continue into 2021.

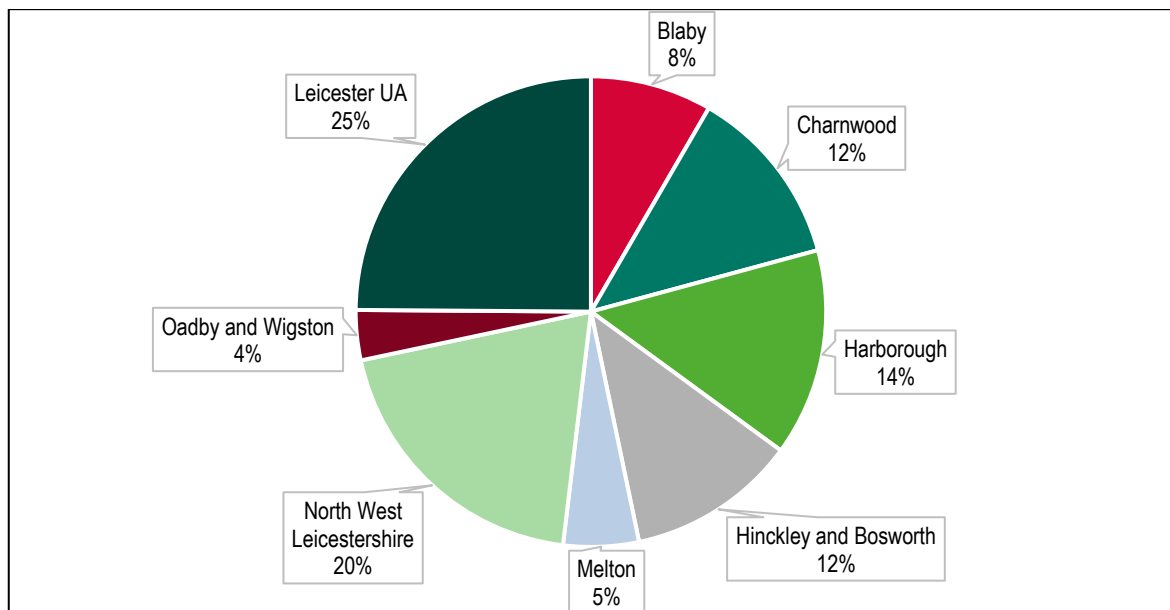
Leicester and Leicestershire Industrial Market

Industrial Stock

3.49 VOA data shows that in the year 2019/20 the Study Area had 11,000 industrial properties providing 9,821,000 sqm of industrial floorspace in total (across all size bands). This represents 24.4% of the industrial floorspace across the East Midlands. This suggests that the Study Area has a relatively large industrial sector given its working age population only makes up 22.4% of that of the East Midlands.

3.50 The figure below shows the amount and proportion of industrial floorspace by local authority. As expected, Leicester supports a large proportion of the Study Area's industrial market (25%). North West Leicestershire also supports a significant proportion (20%). On the other hand, floorspace in Oadby and Wigston makes up just 4% of the Study Area's industrial floorspace.

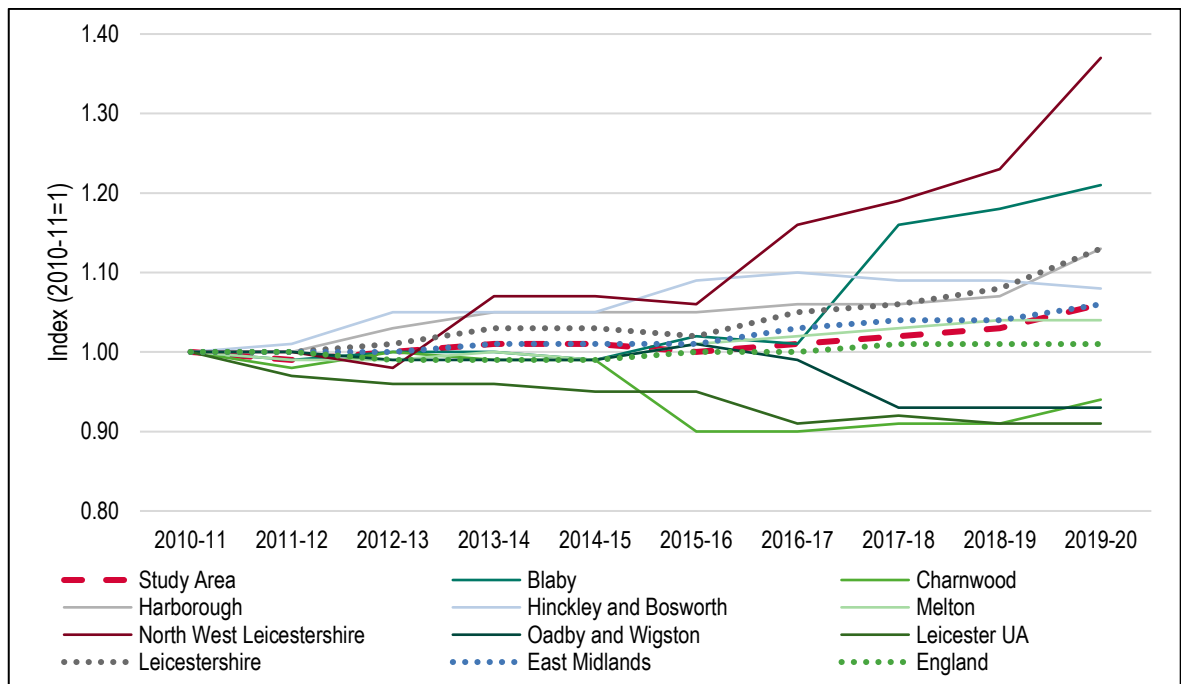
Figure 3.15: Industrial Floorspace by Local Authority 2019/20 (Thousands of sqm; %)



Source: VOA: Non-domestic rating: stock of properties including business floorspace, 2020

3.51 The figure below shows the change in the amount of industrial floorspace. The amount of industrial floorspace in the Study Area grew (by 6.4%) between 2010 and 2020 – driven by growth of 12.7% across Leicestershire and in particular Blaby and North West Leicestershire (20.6% and 37.1% respectively). This rate of growth is similar to that across both the East Midlands (6.0%) but greater than that across England as a whole (1.3%). On the other hand, Leicester, Oadby and Wigston, and Charnwood saw shrinkage of 9.1%, 7.1% and 6.2% respectively.

Figure 3.16: Indexed Industrial Floorspace by Local Authority 2010/11 – 2019/20

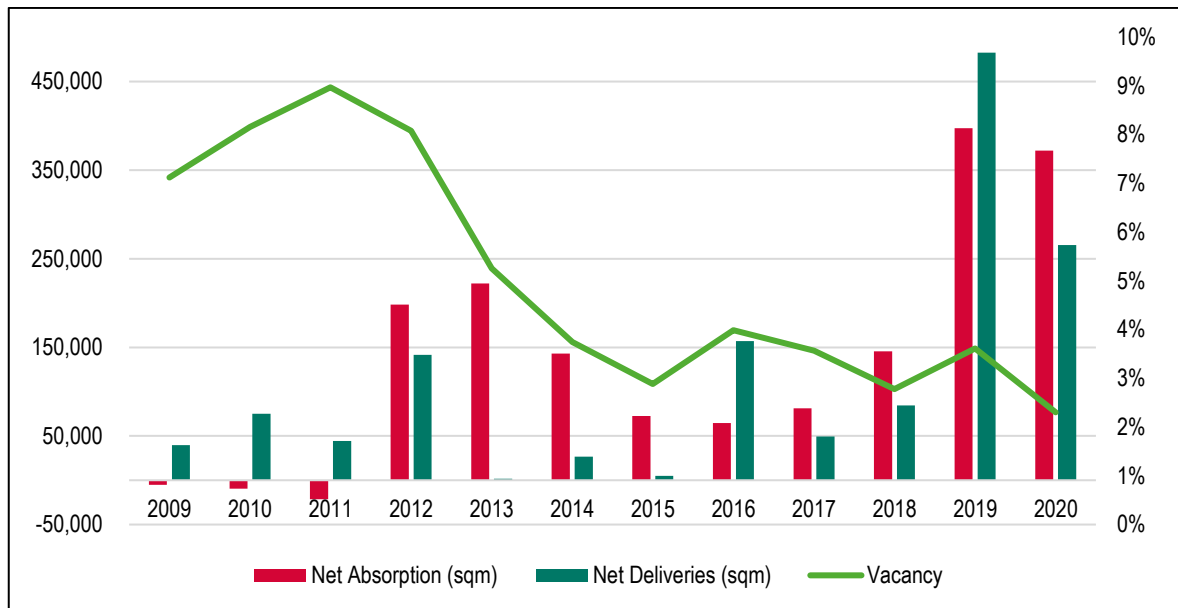


Source: VOA: Non-domestic rating: stock of properties including business floorspace, 2020

Absorption, Delivery and Vacancy Trends

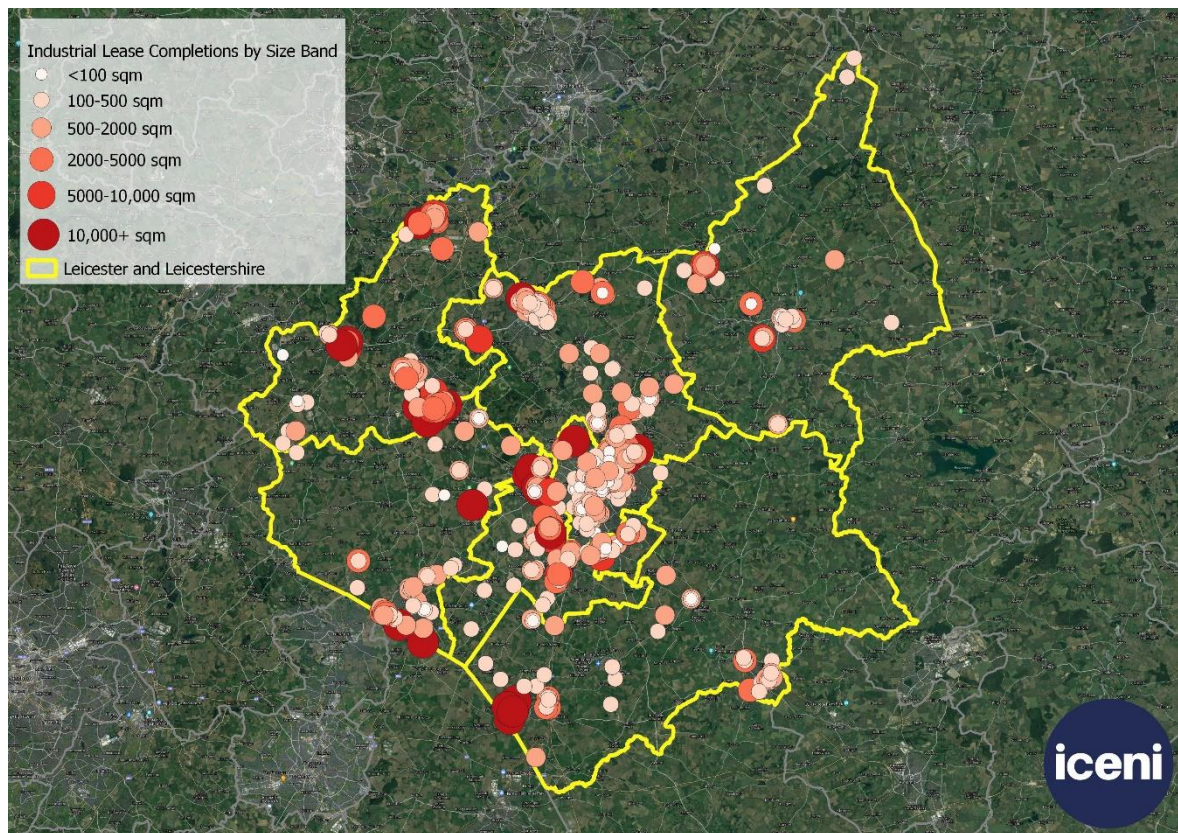
- 3.52 The chart below indicates that net absorption of industrial floorspace across the Study Area was positive for the last 9 years, peaking at 397,000 sqm in 2019. Over the period between 2009 and 2020 there was a net absorption of around 1,660,000 sqm of floorspace.
- 3.53 The chart also shows net new space being delivered in the Study Area. There was 1,372,000 sqm net of new industrial floorspace delivered between 2009 and 2020. Net delivery averaged 100,645 sq.m (1.1 million sq.ft) in each year between 2009 and 2019 before rising to a peak of 483,000 sqm in 2019 and then dropping to 265,000 sqm in 2020. Indeed the last 5 years have seen 208,000 sq.m of new floorspace delivered per year. This represents a very strong level of new-build development and market activity.
- 3.54 Net absorption has outweighed net delivery by around 288,000 sqm over the last 11-year period. This has led to a decline in vacancy rates from 9% in 2011 to just 2.3% in 2020. The low vacancy rate and strong recent take-up points to the continuing need to bring forward additional industrial space in the short-term.

Figure 3.17: Net Absorption, Net Delivery and Vacancy of Industrial Floorspace in the Study Area, 2009-2020



Source: CoStar Commercial Property Data

Figure 3.18: Absorption of Industrial Floorspace by Size, Leicestershire 2012-21



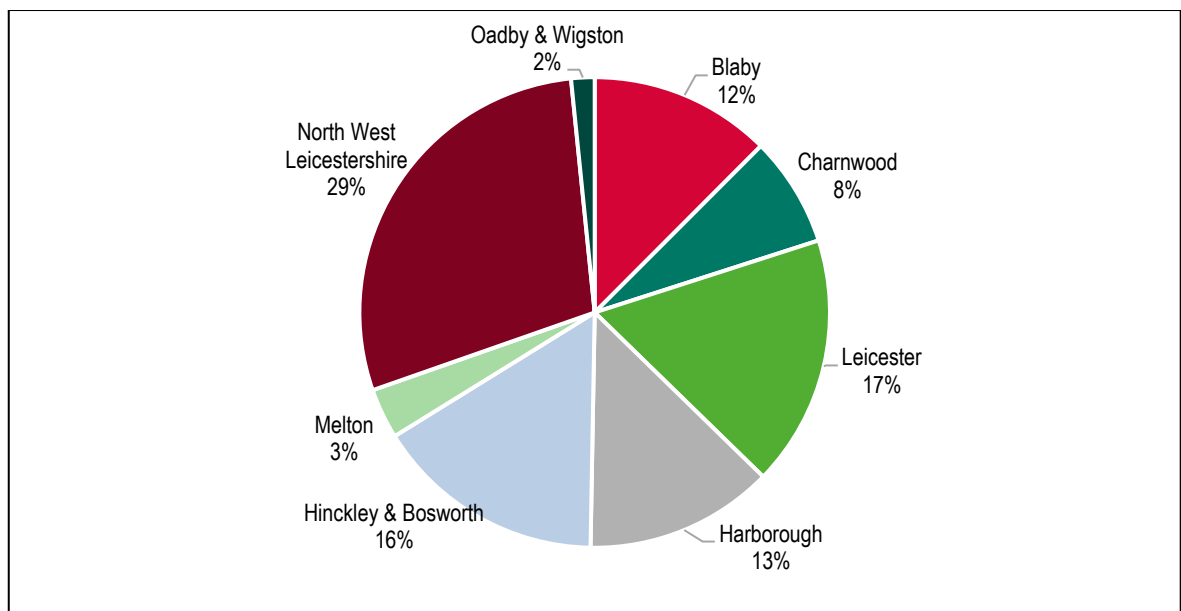
Source: IcenI Analysis of CoStar Commercial Property Data

3.55 The figure above maps the industrial take-up across the Study Area. It can be seen that there is a concentration of take-up (which includes new-build and occupation of existing premises) in and

around the Leicester Urban Area, together with locations in NW Leicestershire and along the A5. It can also be seen that the largest leases in terms of space (over 5000 sqm) also tend to take place in Leicester and Blaby.

3.56 Between 2012 and the start of 2021, industrial absorption totalled 2.5 million sqm of floorspace. The figure below shows the percentage of this floorspace in each local authority area. It can be seen that the largest percentage (29%) is in North West Leicestershire with the smallest percentage (2%) in Oadby & Wigston.

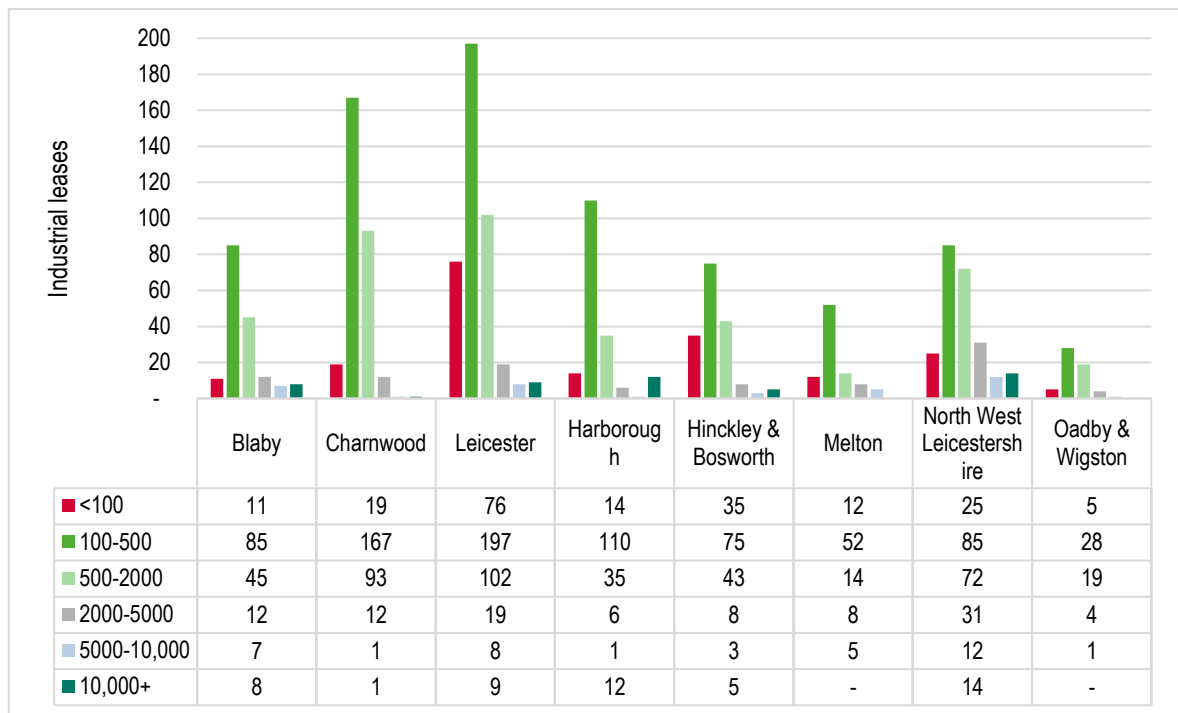
Figure 3.19: Industrial Absorption by Local Authority 2012-2021



Source: Icen Analysis of CoStar Commercial Property Data

3.57 The figure below shows industrial absorption by size band between 2012 and 2021. It can be seen that most industrial leases were of space between 100 and 500 sqm – around half of all leases were in this size band. Leicester and Charnwood had by far the most leases in this size band. Leicester and Charnwood also had the most leases in the 500-2000 sqm size band. North West Leicestershire had by far the most leases in the three largest size bands explaining its position as having the most industrial floorspace leased influenced by the strength of the logistics sector in the District.

Figure 3.20: Number of Industrial Leases by Size (sqm) and Local Authority 2012-2021

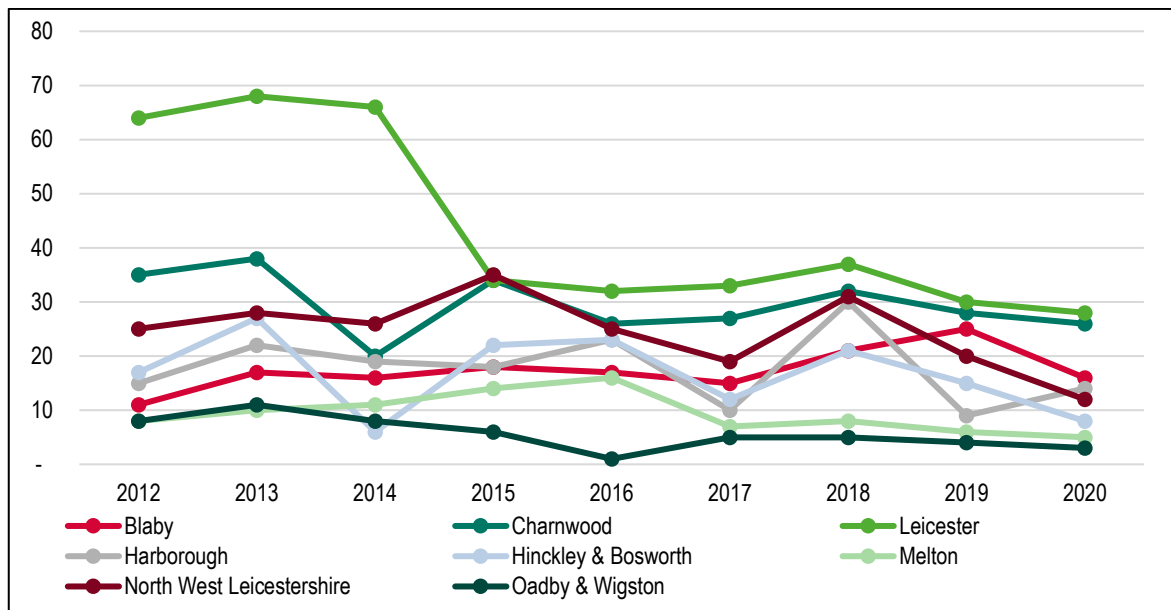


Source: Icen Analysis of CoStar Commercial Property Data

3.58 The figure below shows the number of industrial leases by local authority over the last nine years. Leicester had by far the most industrial leases between 2012 and 2015, however, the number of leases in Leicester fell significantly in 2015 and since has been similar to/slightly above the number of leases in Charnwood – in Leicester there were 28 leases in 2020 compared to a peak of 68 in 2013. The lowest numbers of leases are consistently in Oadby and Wigston (as expected given it has smallest area) – there were 3 leases in 2020. Melton consistently has the second lowest number of leases with just 6 in 2020.

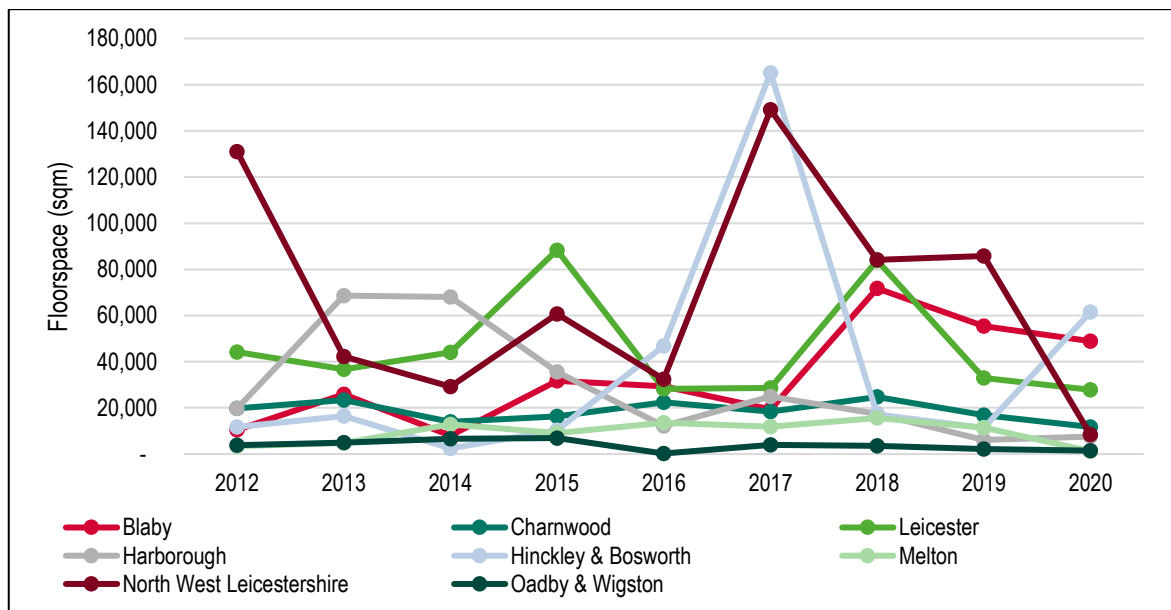
3.59 The distribution of industrial market activity by local authority is influenced by their location and accessibility. Stronger locations are those which relate well to key transport corridors including the M1, M69, M42/A42, and to a lesser extent the A46 and A50.

Figure 3.21: Industrial Lease Completions by Year and Local Authority



Source: Icen Analysis of CoStar Commercial Property Data

Figure 3.22: Industrial Floorspace Leased by Year and Local Authority

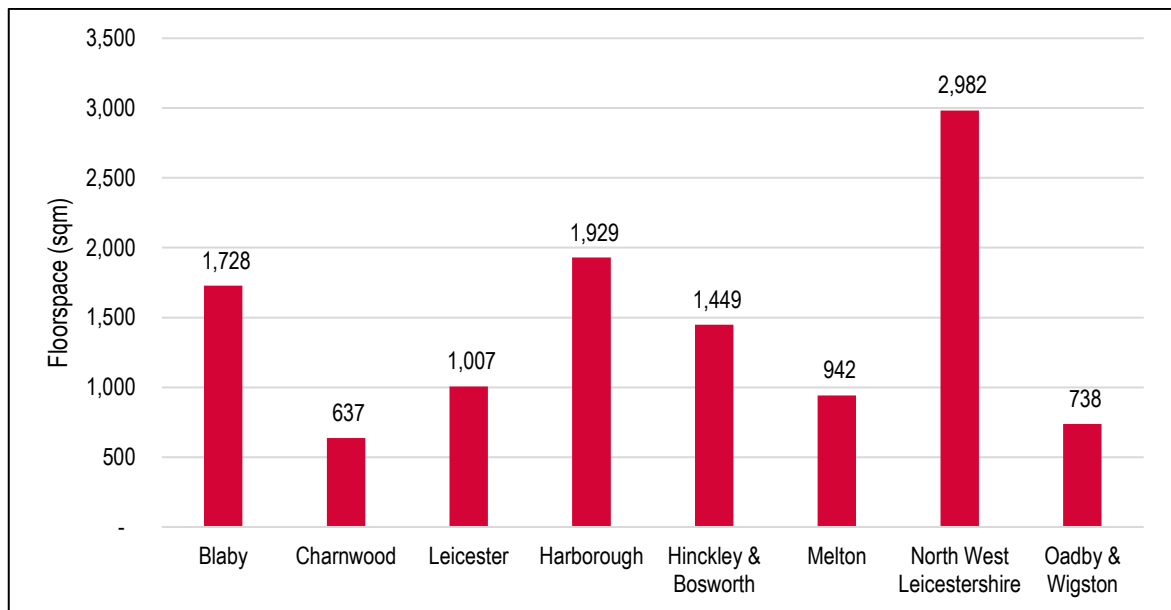


Source: Icen Analysis of CoStar Commercial Property Data

3.60 Take-up has been consistently strong in overall terms in North West Leicestershire, influenced by a continuing supply of land which can accommodate big box logistics; with recent take-up also relatively strong in Blaby. Leicester’s take-up is also significant influenced by the size of its existing industrial stock.

3.61 It can be seen that the largest average size of floorspace leased was in North West Leicestershire. On the other hand, the lowest was in Charnwood explaining the fact that whilst Charnwood has had a large number of leases, it has had relatively small amounts of floorspace leased.

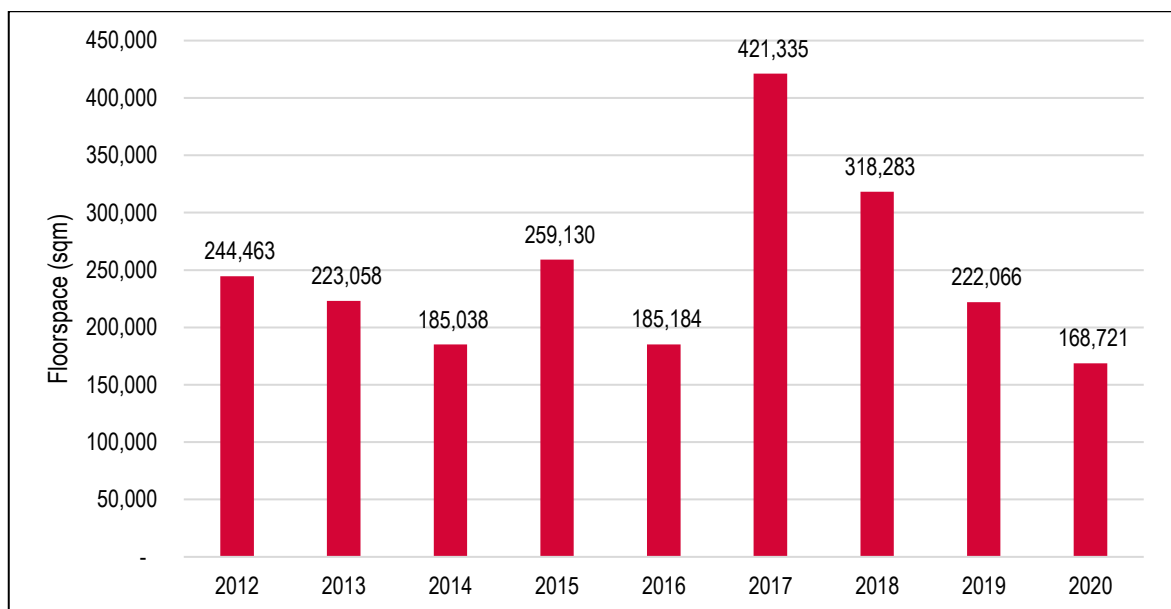
Figure 3.23: Average Floorspace Leased



Source: Icen Analysis of CoStar Commercial Property Data

3.62 The figure below presents the same data but aggregated across the Study Area. Overall take-up peaked in 2017 but has been falling over the subsequent years. This is influenced by a declining level of available space/ supply.

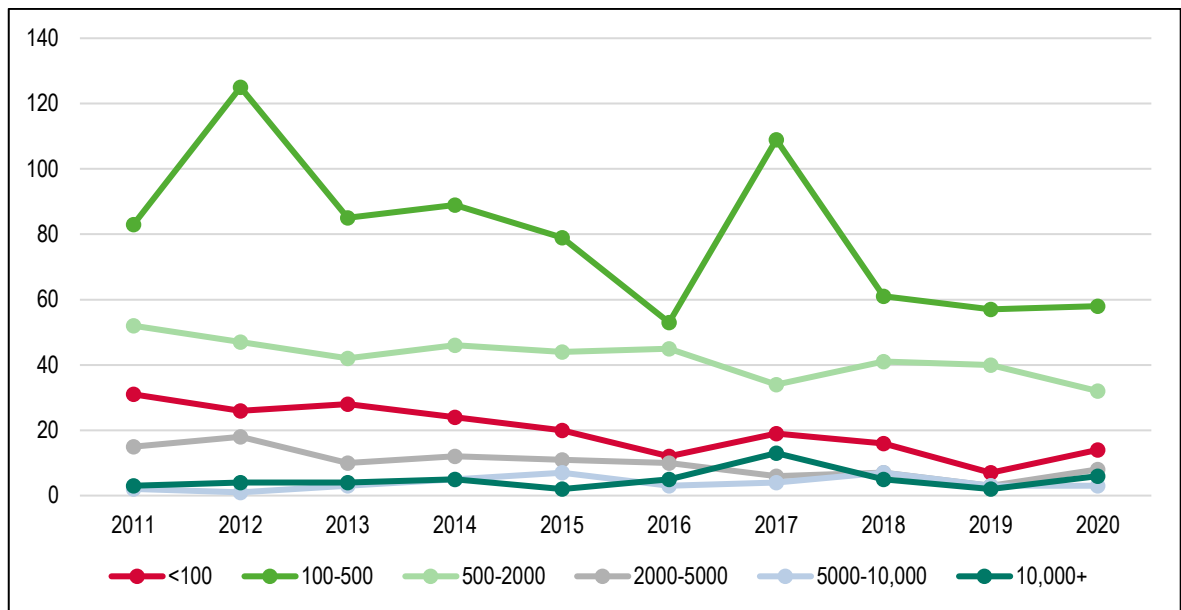
Figure 3.24: Industrial Floorspace Leased by Year, Leicestershire 2012-20



Source: Icen Analysis of CoStar Commercial Property Data

3.63 The figure below shows the number of industrial leases by size band over time. It can be seen that there has been a general decline in leasing at all size bands (of 30% to 55% between 2011 and 2020), aside from the largest size band of 10,000+ sqm which saw an increase (although numbers of leases are low).

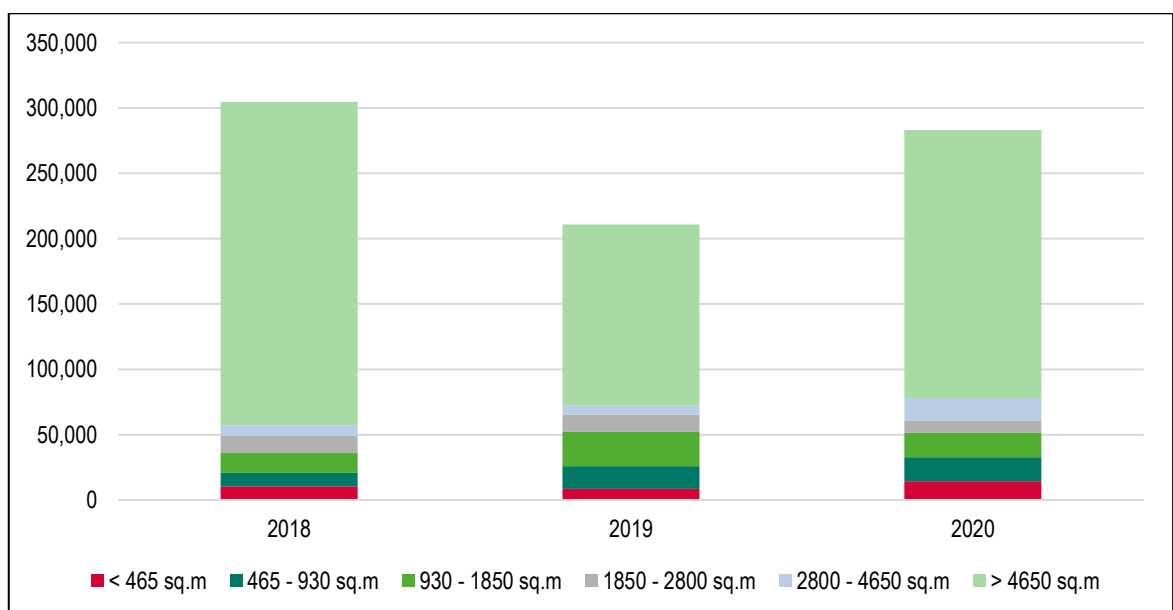
Figure 3.25: Industrial Floorspace Leased by Size (sqm) by Year – Leicester & Leicestershire



Source: IcenI Analysis of CoStar Commercial Property Data

- 3.64 The recent demand picture has been of very strong demand for industrial premises, with a record level of activity in 2020. Set against strong demand, particularly for warehouse space from 3rd Party Logistics Providers (3PLs) and retailers as well as from manufacturing firms, there is a lack of stock.
- 3.65 Innes England report that demand is pretty strong across size bands. Their data shows overall take-up of 3 million sq.ft of industrial space across Leicestershire (excluding East Midlands Gateway) in 2020 with 70% of floorspace in units of over 100,000 sq.ft.

Figure 3.26: Take-Up by Size Band – Leicestershire (excl Castle Donington/EMG)



Source: IcenI analysis of Innes England data

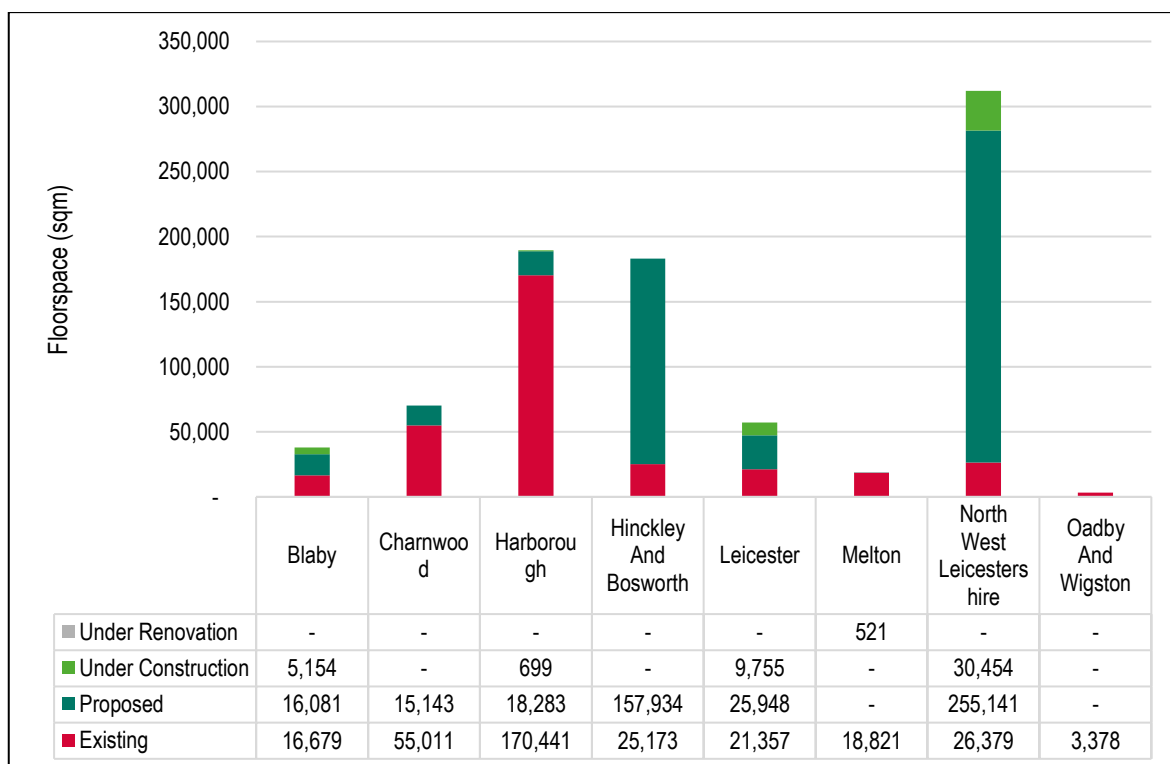
3.66 There is a more local market for units of under 50,000 sq.ft (4,650 sq.m), with limited current stock. 41% of transactions are for units of under 10,000 sq.m focused towards the City and locations such as Thurmaston and Braunstone.

Industrial Availability

3.67 The figure below shows the current availability of industrial space in 2021 (including industrial, logistics and light industrial) broken down by status (existing, proposed, under construction and under renovation). North West Leicestershire has the most available or pipeline industrial floorspace. However, the majority of this is in the pipeline, with just small fractions which are existing and under construction. Excluding proposed floorspace, Harborough has by far the most available industrial floorspace however IcenI understands that the space at the extensions to Magna Park have largely now been pre-let or be delivered speculatively.

3.68 The lowest levels of available industrial floorspace are in Melton and Oadby and Wigston. Excluding proposed floorspace there are similarly low levels in Leicester, Hinckley and Bosworth, and Blaby.

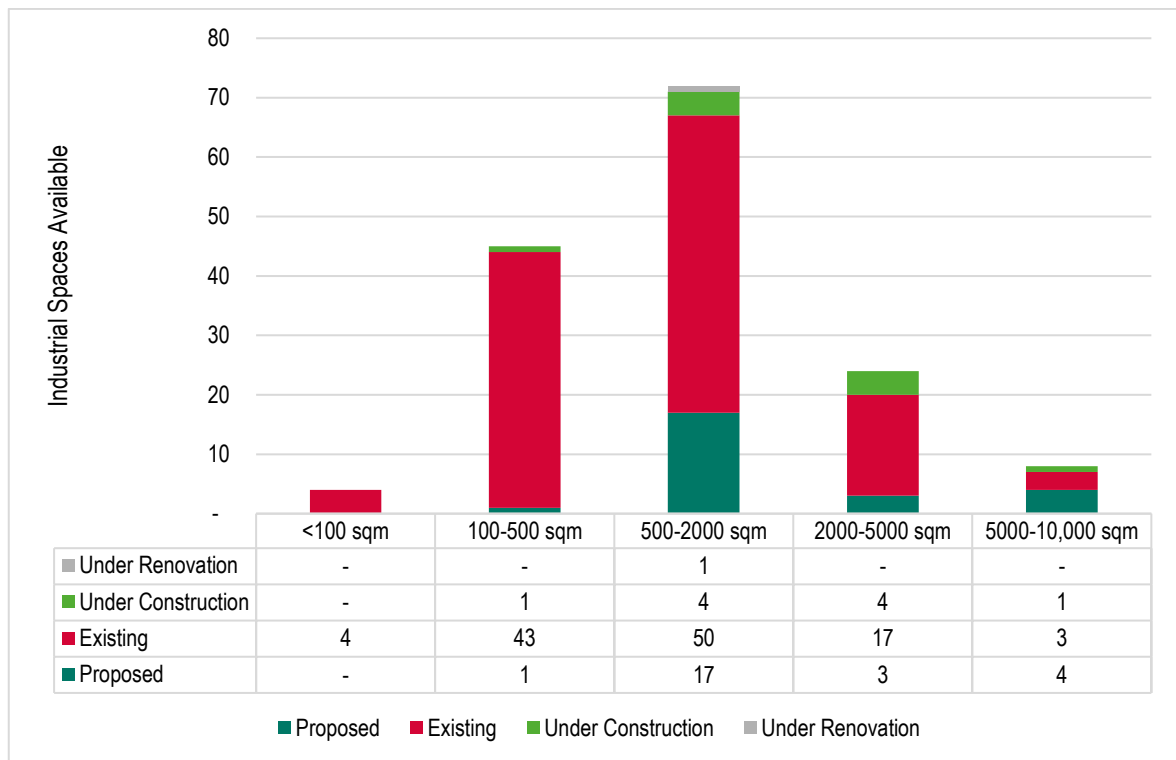
Figure 3.27: Industrial Floorspace Availability (sqm) by Local Authority and Status



Source: IcenI Analysis of CoStar Commercial Property Data

3.69 The figure below shows the number of industrial spaces available by size band and broken down by status. It can be seen that industrial space between 500 and 2,000 sqm has the largest availability. A significant proportion of available space above 500 sqm is proposed – 24% between 500 and 2,000 sqm, 13% between 2,000 and 5,000 sqm and 50% between 5,000 and 10,000 sqm.

Figure 3.28: Industrial Availability by Size and Status



Source: Icen Analysis of CoStar Commercial Property Data

- 3.70 Using Innes England’s data on availability and take-up, the supply position is relatively tight at around 1.3 years highlighting the need to bring forward additional industrial space in the short-term.

Table 3.3 Notional Years Supply – Leicestershire (excl Castle Donington/EMG)

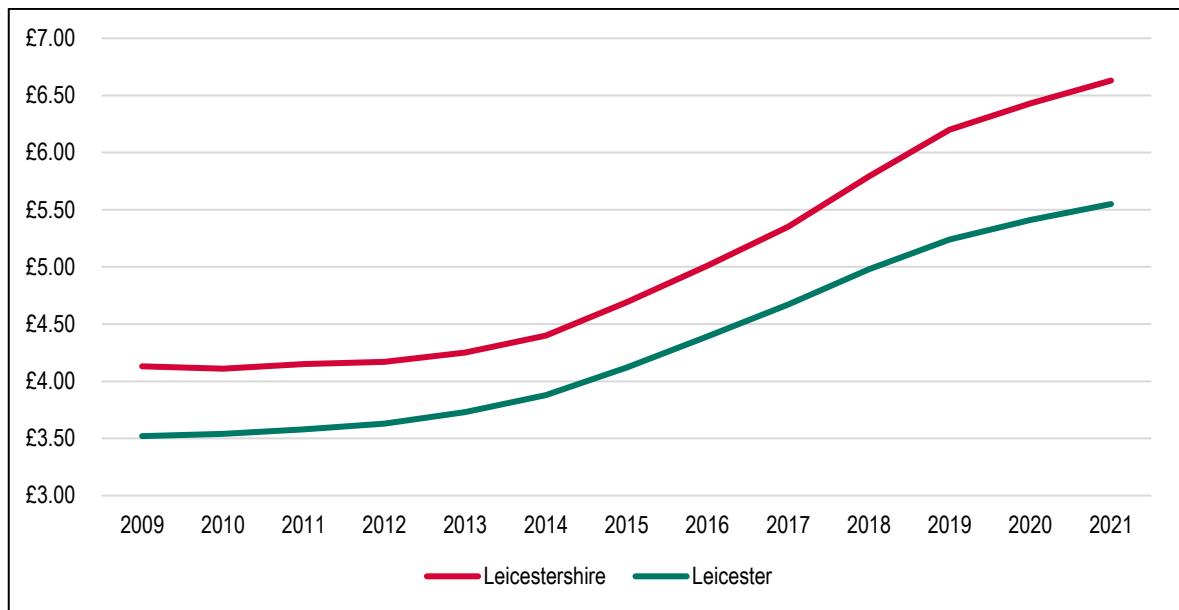
	Availability, Dec 2020	3 Year Average Take-Up	Notional Years' Supply
Grade A	221,538	141,527	1.6
Grade B	35,757	64,473	0.6
Grade C	41,497	26,953	1.5
Total availability	298,792	232,953	1.3

Source: Icen Analysis of Innes England data

Industrial Rental Price Trends

- 3.71 The figure below shows average rental values in Leicester and Leicestershire between 2009 and 2021. Across Leicester and Leicestershire, rents have gradually risen with a sharper rate of increase between 2013 and 2018. In 2021, average rental values for industrial floorspace are £6.63 per sqft in Leicestershire and £5.55 per sqft in Leicester.

Figure 3.29: Industrial Rents per sqft (2009-2020)



Source: CoStar Commercial Property Data

- 3.72 Prime rents are currently around £8.25 psf for smaller units, and £7.75 for big box units in the sub-region, with recent evidence of growth in industrial rents. The rent for a 60,000 sq.ft unit at Leicester Distribution Park has risen from £6.75 to £7.50 over the last 18 months.

Agent Feedback – Industrial

- 3.73 The industrial market is as strong as its ever been. 2020 was a record year. There is generally a lack of stock and high levels of demand. Third Party Logistics providers (3PLs) and retailers in particular need more warehouses. Manufacturing, Brexit and Covid are also all driving requirement levels. Anecdotally there is more demand for local manufacturing.
- 3.74 Demand for all sizes is high with a lack of stock across the board. Overall take up 3 million sqft (exc EMG) and 70% of floorspace is from over 100,000 sqft units. Demand for larger units is predominantly focused on M1 and motorway network. Magna Park (South) extension is pretty much all pre-let – over 1,000,000 sq.ft. The strength of the market for larger units is illustrated through the delivery of speculative development at Magna Park North. Units of less than 30,000 sq.ft are likely to be attractive the local market; with occupiers seeking over 50,000 sq.ft of space typically looking both in the County and beyond.
- 3.75 Development close to the trunk road network in the sub-region is likely to be in demand, particularly where freehold space is available. There is almost no availability of freehold space within the sub-regional market. Manufacturers are likely to particularly seek suburban locations in and around Leicester; with larger logistics occupiers more focused on those close and immediately accessible from the motorway network.

- 3.76 In terms of the local market below 50,000 sqft there is limited available stock. 41% of transactions under 10,000 sqft. There is considered to be a need to bring forward units at this end of the market, to meet demand.
- 3.77 Innes England suggest that there will be demand for industrial units across the Leicester urban area in locations with good access to arterial routes and labour and more space is required for development in these areas.
- 3.78 Leicester Distribution Park at J21/21a is now fully let. There will be further units coming to the market in a range of sizes at 30,000, 45,000 , 75,000, 150,000 sqft.
- 3.79 A series of large-scale lettings have occurred in 2020/21 including the following:

Table 3.4 Recent Large Lettings – Leicester & Leicestershire

Hinckley 532, Hinckley Park, J1 M69, Leicestershire	532,500 sq ft
Xdock 377, Magna Park, Lutterworth LE17 4XH	377,070 sq ft
Unit 2, Phase II, West Lane, Coalville LE67 1FA	359,000 sq ft
Zorro Coalfield Way, Ashby De La Zouch, LE65 1JR	237,565 sq ft
225 at Interlink, Beveridge Lane, Coalville LE67 1TB	225,690 sq ft
Tornado 186, Magna Park, Lutterworth LE17 4XN	186,695 sq ft

Source: Innes England

- 3.80 2022/3 will see a scheme being brought forward in Wigston at Genesis Park on Magna Road in South Wigston. This will be smaller mostly under 10,000 sqft freehold units. Market Harborough and Lutterworth will also see a smaller development schemes being brought forward. Smaller estates in Blaby and Whetstone continue to perform well.
- 3.81 Loughborough, Shepshed and Coalville have generally limited stock; with schemes around Coalville/Bardon and Loughborough having historically performed strongly.

Industrial Market – Key Findings

- Leicestershire benefits from a strong market for industrial space reflecting the strength of its manufacturing sector together with its locational advantages, which support its attractiveness for both manufacturing and warehousing/logistics.
- Net absorption of industrial floorspace across the Study Area has outweighed net delivery by around 288,000 sqm over the last 11-year period leading to a decline in vacancy rates from 9% in 2011 to just 2.3% in 2020. Very substantial levels of new development had been achieved, with the last 4 years seeing delivery of over 200,000 sq.m per annum absorbed within the sub-regional market.
- Leicester supports a large proportion of the Study Area's industrial market (25% of floorspace). North West Leicestershire also supports a significant proportion (20% of floorspace) influenced in particular by strategic warehousing. However, absorption has been highest in North West Leicestershire over the last nine years making up 29% of absorption across the Study Area.
- The amount of industrial floorspace in the Study Area grew (by 6.4%) between 2010 and 2020 - driven by growth of 12.7% across Leicestershire and in particular Blaby and North West Leicestershire.
- Industrial floorspace absorption across the Study Area peaked in 2017 before gradually falling to a low in 2020. This roughly follows trends across North West Leicestershire and Hinckley and Bosworth.
- Most industrial leases in the Study Area were of space between 100 and 500 sqm. Leicester and Charnwood had by far the most leases in this size band. North West Leicestershire had by far the most leases in the three largest size bands. Along with North West Leicestershire, the average size of space rented was highest in Harborough.
- Levels of availability at the current time are relatively low, with the evidence pointing to just 1.3 years of available supply. New space/ sites which have been brought to the market, including at Magna Park, have performed strongly with significant levels of market interest. There is therefore a need to bring forward additional space short-term to cater for strong demand.

4. HOUSING MARKET DYNAMICS

4.1 In this section we move on to consider housing market dynamics, addressing both the sales and rental markets.

Sales Market

4.2 The median house price across the L&L Housing Market Area was £222,300 considering sales over the year to Sept 2020. This was 11% below the national average. Values however vary within the HMA, with the highest prices in Harborough at £290,000; and the lowest in Leicester at £182,000.

Table 4.1 Median House Price, Year to Sept 2020

	Median House Price, Year to Sept 2020	Difference to HMA Average
Leicester	£182,000	-18%
Blaby	£225,000	1%
Charnwood	£225,000	1%
Harborough	£289,998	30%
Hinckley and Bosworth	£205,000	-8%
Melton	£214,000	-4%
North West Leicestershire	£222,500	0%
Oadby and Wigston	£231,500	4%
L&L HMA	£222,345	0%
East Midlands	£196,950	13%
England	£249,000	-11%

Source: ONS Small Area House Price Statistics Dataset 9

4.3 House prices have grown over the last 20 years (2000-2020) by an average of 6.4% per annum. This is modestly above average for both the region and nationally and in particular reflects stronger recent house price growth.

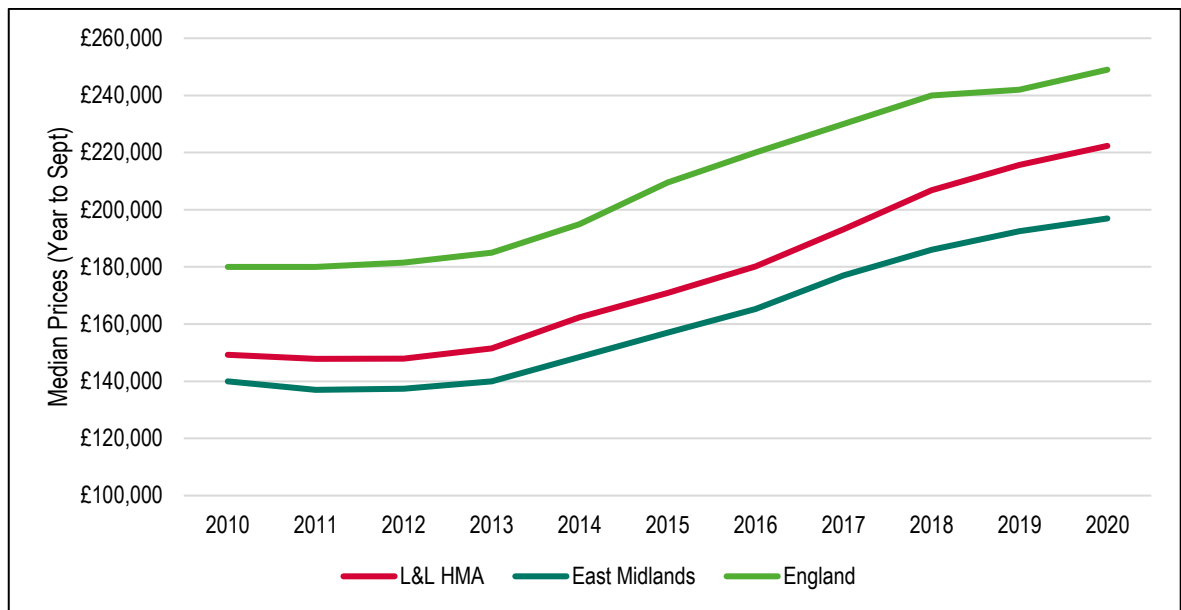
Table 4.2 Annual House Price Growth over different Periods (% CAGR)

CAGR	2000-2005	2005-10	2010-15	2015-20	20 Year
L&L HMA	17.0%	0.6%	2.7%	5.4%	6.4%
East Midlands	16.8%	0.7%	2.3%	4.6%	6.1%
England	14.6%	1.3%	3.1%	3.5%	5.8%

Source: Derived from ONS Small Area House Price Statistics Dataset 9

4.4 As the chart below shows, we have seen stronger house price growth in the HMA relative to the regional and national average since 2013 – and in particular since 2017. The median house price in 2020 was £25,000 above the East Midlands average across the HMA.

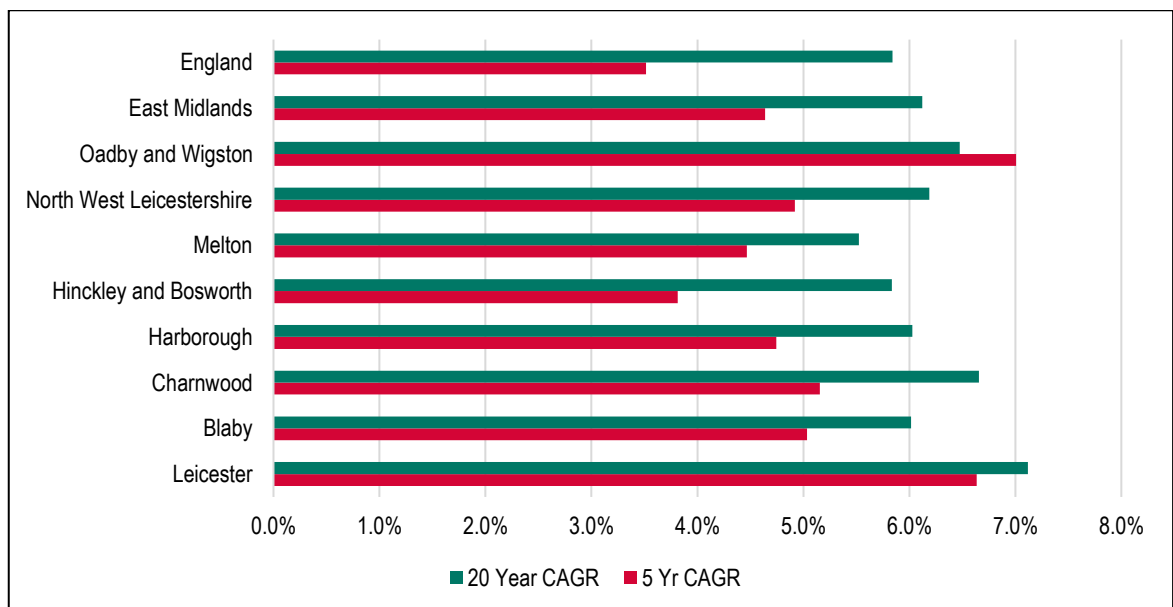
Figure 4.1: House Price Trends in HMA, 2010-2020



Source: Derived from ONS Small Area House Price Statistics Dataset 9

- 4.5 Within the HMA, long-term house price growth, looking over the last 20 years, has been strongest in Leicester, Charnwood and Oadby and Wigston (at 6.5%+ pa) and weakest in Melton (5.5% pa). Leicester and Oadby and Wigston saw particularly strong growth in values over the 2015-20 period (6.5%+ pa).

Figure 4.2: Growth Rates in Median House Prices, to Sept 2020



Source: Derived from ONS Small Area House Price Statistics Dataset 9

- 4.6 Analysis of actual changes in values also produces interesting results. Over the last 5 years, Oadby and Wigston stands out at having some of the strongest value growth with the median house price growing by £66,500. Harborough has also seen stronger relative value growth. In contrast, Melton

and Hinckley and Bosworth have seen the weakest value growth over the last 5 years; with the latter being the only authority in the HMA where value growth has been weaker than across the East Midlands region.

Table 4.3 House Price Growth in L&L Local Authorities

	1 Year	5 Year	10 Year
Leicester	£5,000	£50,000	£60,000
Blaby	£5,000	£49,000	£76,000
Charnwood	£2,500	£50,000	£73,750
Harborough	-£378	£59,998	£89,998
Hinckley and Bosworth	£0	£35,000	£50,003
Melton	-£8,000	£42,000	£59,000
North West Leicestershire	£14,500	£47,500	£77,500
Oadby and Wigston	£18,500	£66,500	£83,525
L&L HMA	£6,668	£51,499	£73,101
East Midlands	£4,450	£39,950	£56,950

Source: Derived from ONS Small Area House Price Statistics Dataset 9

- 4.7 Analysis of house prices by type provides a clearer picture of the value geography across the HMA. Harborough District has the highest house prices, with semi-detached properties selling for over £235,000. There are similar values in Oadby and Wigston, Charnwood, Blaby and Leicester with median values for semi-detached properties at around £200,000 - £220,000 and median values for terraced houses of between £165,000 - £175,000. Values in Hinckley and Bosworth, Melton and NW Leicestershire are then lower with semi-detached values of around £185,000 - £195,000.

Table 4.4 Median House Prices by Type, Year to Sept 2020

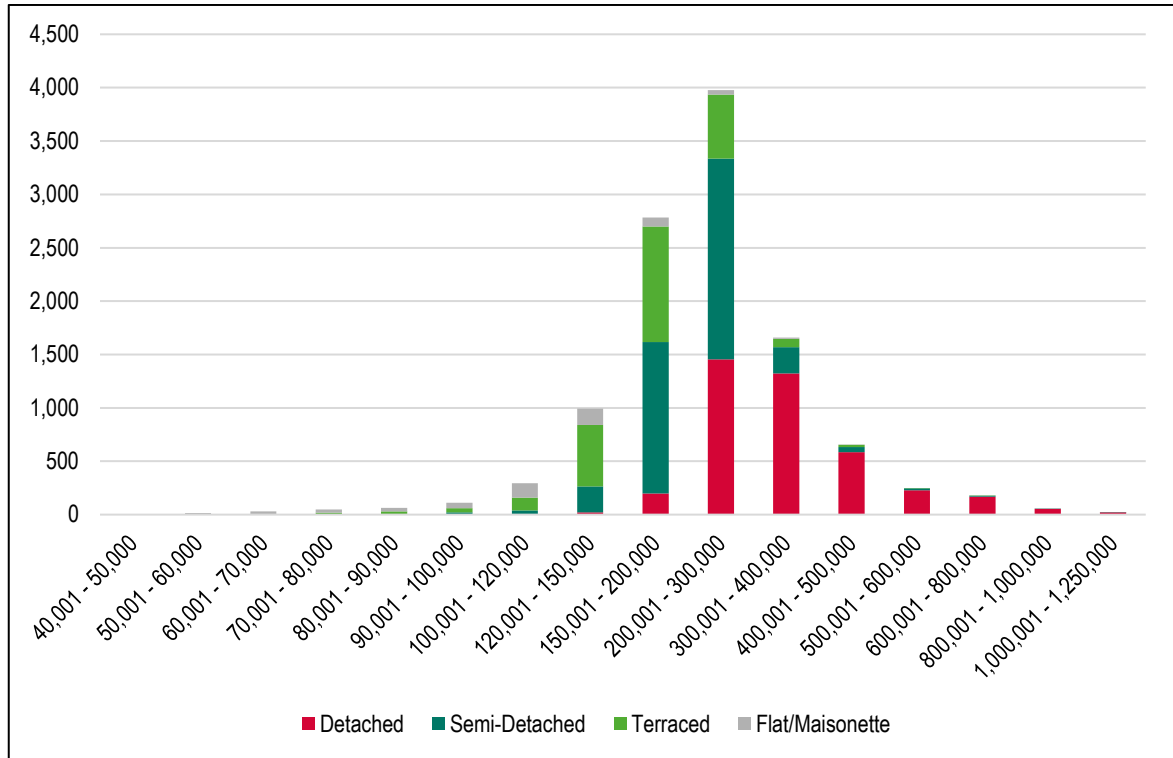
	Detached	Semi-Detached	Terraced	Flat/Maisonette
Harborough	£369,950	£237,000	£209,750	£153,000
Oadby and Wigston	£346,250	£220,000	£165,000	£108,500
Charnwood	£323,750	£211,000	£170,000	£126,000
Blaby	£297,000	£210,000	£175,000	£135,000
Leicester	£306,250	£200,000	£168,000	£115,000
Hinckley and Bosworth	£310,000	£192,425	£155,000	£107,500
Melton	£310,000	£185,000	£152,250	£139,000
North West Leicestershire	£294,995	£186,500	£146,000	£131,000
East Midlands	£282,000	£180,000	£150,000	£117,000
England	£350,000	£223,000	£195,000	£216,000

Source: Derived from ONS Small Area House Price Statistics Dataset 9

- 4.8 The graph below analyses the distribution of property sales by type across the HMA. It shows that most property sales (for the 2020 calendar year) were for properties valued at between £150,000 -

£300,000. There is however a level of sales of larger properties – particularly detached – which command higher values still.

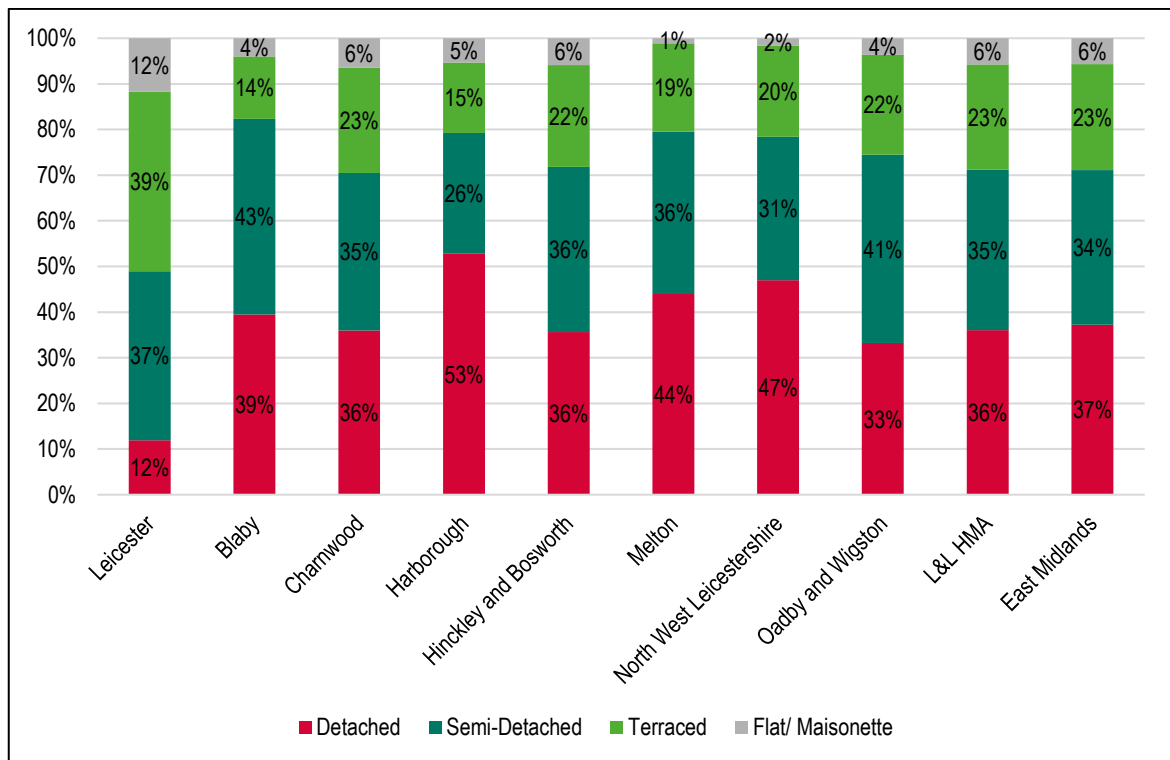
Figure 4.3: Distribution of Sales – Leicester and Leicestershire HMA (2020)



Source: HM Land Registry House Price Index

4.9 The profile of sales by type across the HMA is generally focused towards larger detached and semi-detached homes, which made up over 70% of sales over the year to Sept 2020. The sales profile in the City is however notably different to the County, focused much more towards terraced homes and semi-detached properties, with twice the proportion of flatted sales of other authorities within the HMA.

Figure 4.4: Distribution of Sales by Type, Year to Sept 2020

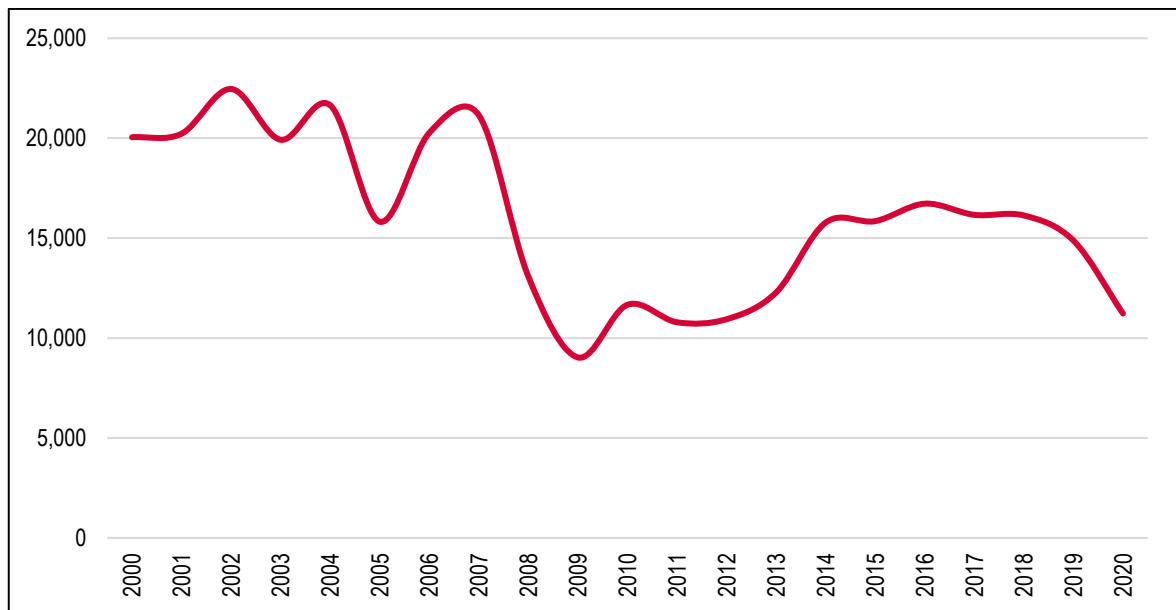


Source: Derived from ONS Small Area House Price Statistics Dataset 6

4.10 The trend in market housing sales over time highlights the influence of macro-economic factors. A rise in interest rates saw a notable drop in sales in 2005; whilst the onset of the ‘credit crunch’ in 2007 saw a dramatic fall in the ability to access mortgage finance and combined with reduced market confidence and falling values saw a notable drop in sales volumes and market activities between 2007-9. A substantive recovery in market conditions was not seen before 2013, from which point the Bank of England’s Funding for Lending Scheme saw improved mortgage availability; which together with improved economic confidence and the Government’s Help-to-Buy Scheme supported a recovery in the market.

4.11 Sales volumes between 2014-2018 averaged 16,000 a year across Leicester & Leicestershire; which was 20% down on the pre-recession average. Indeed we have seen a decade of lower sales volumes. There are a complex set of factors which appear to have contributed to this, including: a low inflation environment such that inflation is not reducing the value of debt in real terms as it did in previous decades (pre-2000); longer mortgage terms; an ageing population who typically move infrequently; and a policy focus on caring for older persons in their home (resulting in fewer moves). Added to this have been increasing transactional costs of moving, particularly associated with the costs of Stamp Duty, which have affected both home owners and investors (with 3% additional Stamp Duty applicable to investment purchases from April 2016).

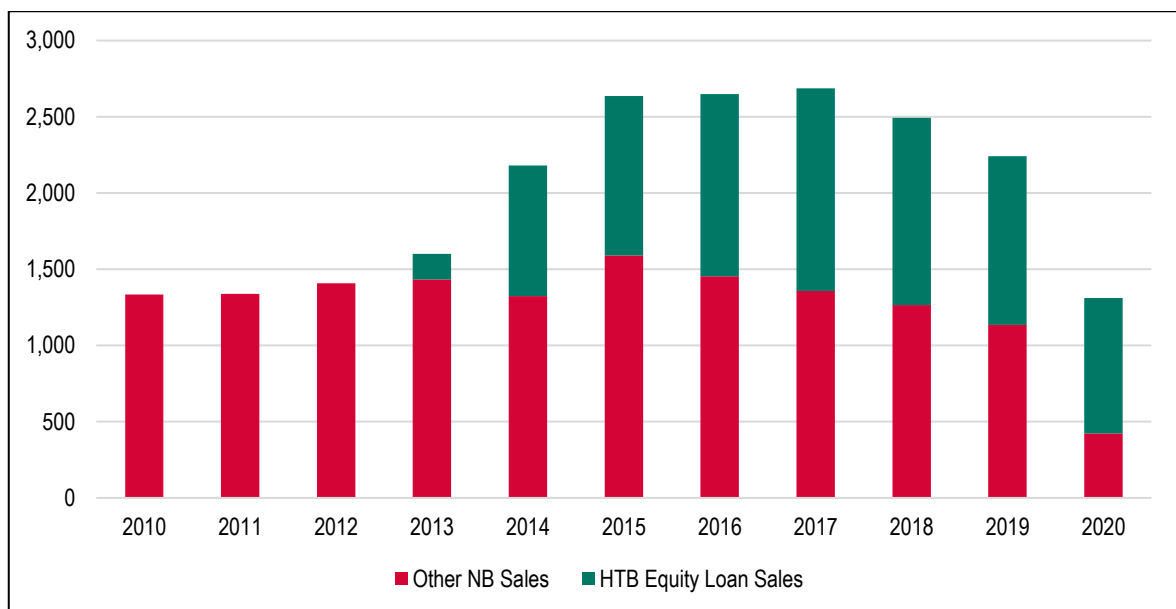
Figure 4.5: Sales Volumes – Leicester & Leicestershire HMA



Source: Derived from ONS Small Area House Price Statistics Dataset 6

4.12 The Government’s Help-to-Buy Equity Loan scheme has played an important role in supporting the housing market. Across the HMA it has supported 50% of new-build sales over the last 5 years (to Sept 2020).

Figure 4.6: New-Build Sales in HMA supported by Help-to-Buy Equity Loan Scheme



Source: Icen Analysis of ONS Small Area House Price Statistics Dataset 6 & MHCLG Help-to-Buy Equity Loan Scheme Statistics

4.13 This evidence for individual authorities shows some variance within the HMA, with the lowest proportion of new-build sales supported by Help-to-Buy in Melton, Hinckley and Bosworth and

Harborough (40-45%) with over 50% supported in the other authorities, the highest numbers in Leicester (56%), Blaby (57%) and Oadby and Wigston (58%).

Table 4.5 Sales supported by Help-to-Buy Equity Loan in HMA – 5 Years to Sept 2020

5 years to Sept 2020	Overall New-Build Sales	HTB Equity Loan Sales	% Sales Supported
Leicester UA	1,102	613	56%
Blaby	1,567	894	57%
Charnwood	2,734	1,372	50%
Harborough	1,938	834	43%
Hinckley and Bosworth	994	452	45%
Melton	360	143	40%
North West Leicestershire	2,403	1,271	53%
Oadby and Wigston	284	165	58%
L&L HMA	11,382	5,744	50%

Source: IcenI Analysis of ONS Small Area House Price Statistics Dataset 6 & MHCLG Help-to-Buy Equity Loan Scheme Statistics

- 4.14 IcenI’s analysis indicates that 70% of those supported by the Help-to-Buy Scheme in the HMA have been First-time Buyers. This rises to 75% in Melton, 78% in Oadby and Wigston and 88% in Leicester.

Table 4.6 First Time Buyers Supported by Help-to-Buy Equity Loan, to Sept 2020

	HTB Equity Loan Sales	Sales to First-time Buyers	% First-time Buyers
Leicester UA	891	780	88%
Blaby	1,143	759	66%
Charnwood	1,836	1,262	69%
Harborough	1,084	747	69%
Hinckley and Bosworth	861	583	68%
Melton	166	124	75%
North West Leicestershire	1,629	1,056	65%
Oadby and Wigston	204	159	78%
L&L HMA	7,814	5,470	70%

Source: MHCLG Help-to-Buy Equity Loan Scheme Statistics

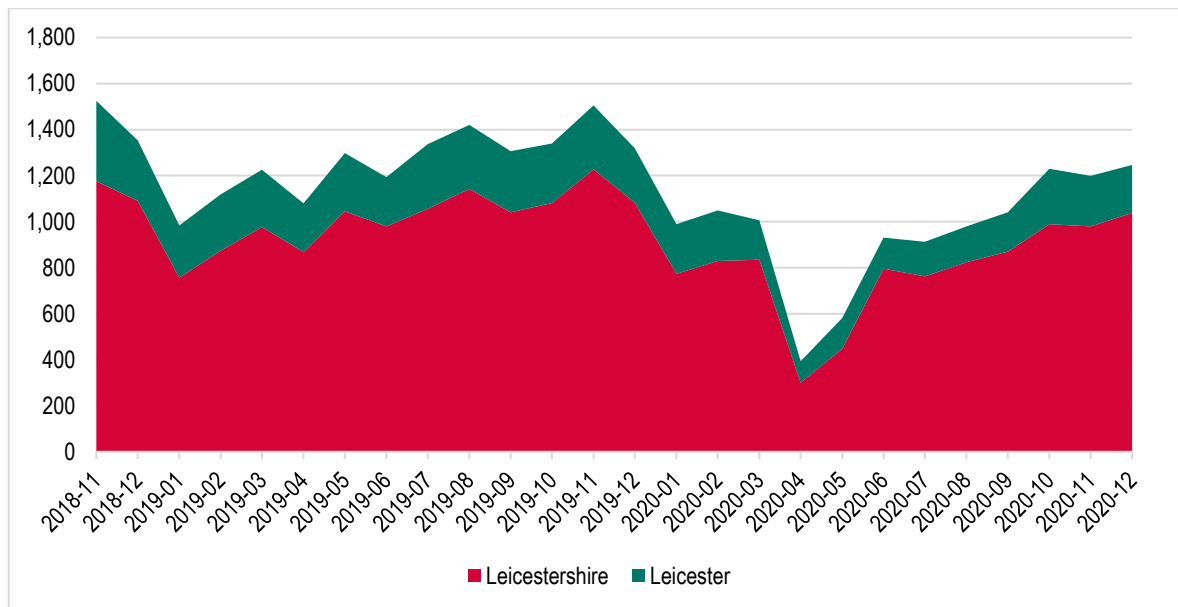
- 4.15 The Help-to-Buy Equity Loan Scheme has been refocused such that from 1st April 2021 it has been limited to first-time buyers and includes regional price caps. The scheme itself will run until March 2023. As the figures above show, the limitation to first-time buyers may have some impact on moderating new-build sales; but schemes such as First Homes and Shared Ownership are intended

to replace it in part; whilst there remain some mortgage indemnity schemes such as ‘Deposit Unlock’⁸ which offers mortgages on higher loan-to-value ratios and there may be further evolution of mortgage products.

4.16 A more detailed recent picture of market activity can be gleaned by analysing HM Land Registry monthly data. This shows a particular dip in sales in April and May 2020 influenced by the 1st Covid-19 lockdown. Sales volumes however grew through the second half of 2020 recovering to around 1,250 per month by December 2020 (which in the context of the long-term trends shown above would be equivalent to c. 15,000 pa). Market conditions have thus been returning to relatively buoyant levels.

4.17 The relatively high current sales volumes is being driven by mortgaged home owners (particularly those looking to trade up who are looking for homes with more internal space, such as to work, and outside space). A combination of rising house prices and limited availability of mortgages with higher loan-to-value ratios has been restricting first-time buyer numbers; with first-time buyers also more likely to be younger and affected by the furlough scheme or issues around unemployment. There are however emerging signs of the availability of mortgages with a 5% or 10% deposit improving and the Government has provided support through the Mortgage Guarantee Scheme.

Figure 4.7: Short-term Sales Volumes – Leicester & Leicestershire HMA



Source: Derived from HM Land Registry House Price Index

4.18 Monthly house price data from the HM Land Registry index shows a month-on-month growth in house prices over the last year, with a growth in average values of around £19,800 in Leicester and £23,100

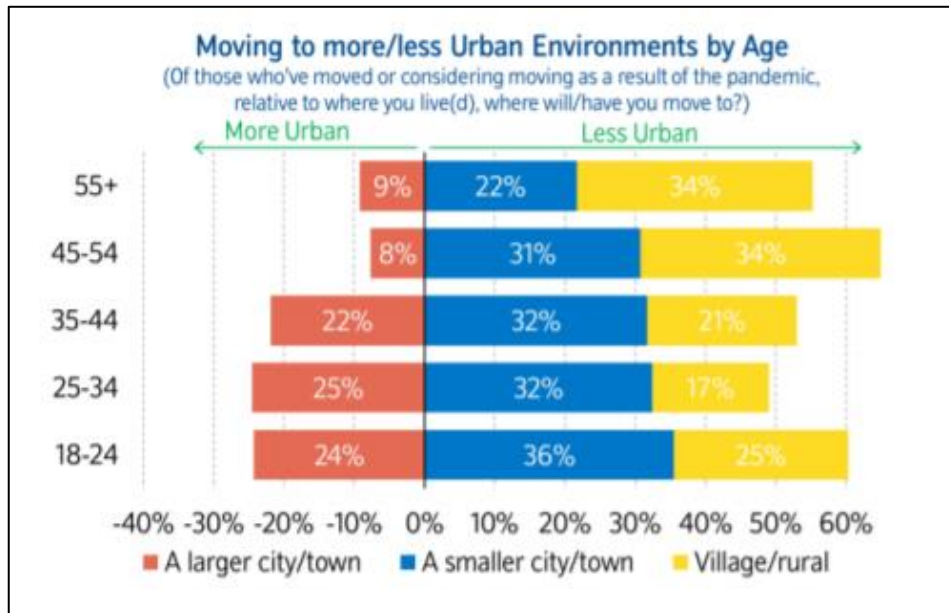
⁸ <https://www.hbf.co.uk/deposit-unlock/>

in Leicestershire over the period from May 2020 (when the market reopened) to March 2021. Strong market conditions appear to have been influenced by a variety of factors including:

- Government support to the market through the Help-to-Buy scheme and the Stamp Duty Holiday, which ended in June 2021;
- The influence of the pandemic on people’s housing need and choices, from both a growth in home working which is reducing the requirement for being close to a workplace (with some evidence that households are looking further from the workplace as a result) to changing space requirements including space to work and a requirement for outdoor space.

4.19 Nationwide reported in May 2021 house price growth of 10.9% over the last year nationally (which accords with our analysis), with values growing at the fastest rate since 2014. Whilst their research suggested that the Stamp Duty Holiday was a factor, three quarters of homeowners surveyed indicated that they would have been moving even if the Stamp Duty Holiday had not been extended. Of those moving or considering a move they found 33% were moving to a different area, whilst nearly 30% were doing so to access a garden or outdoor space more easily. The majority were looking to move to less urban areas, as the chart below shows.

Figure 4.8: Preferences of those looking to move, Spring 2021



Source: Nationwide House Price Index Press Release, May 2021

4.20 However over a third (36%) of those surveyed also indicated that they were more likely to consider enhancing their home as a result of Covid, with nearly half (46%) of these looking to add or maximise space; and 35% looking to improve energy efficiency or reduce their home’s carbon footprint.

- 4.21 The current evidence (as at Summer 2020) indicates more buyers looking for property than stock on the market, with the RICS UK Residential Market Survey pointing to more buyers than properties on estate agents books; with market conditions buoyant reflecting the economic recovery, low interest rates and lifestyle changes acting as catalysts for current moves; together with the extended Stamp Duty holiday.
- 4.22 Savills forecast in Spring 2021 was of further house price growth in the short-term (outside of London), but weakening beyond 2023.

Table 4.7 Savills House Price Forecasts, March 2021

	2021	2022	2023	2024	2025
East Midlands	4.5%	5.5%	5.0%	4.0%	3.0%
UK	4.0%	5.0%	4.0%	3.5%	3.0%

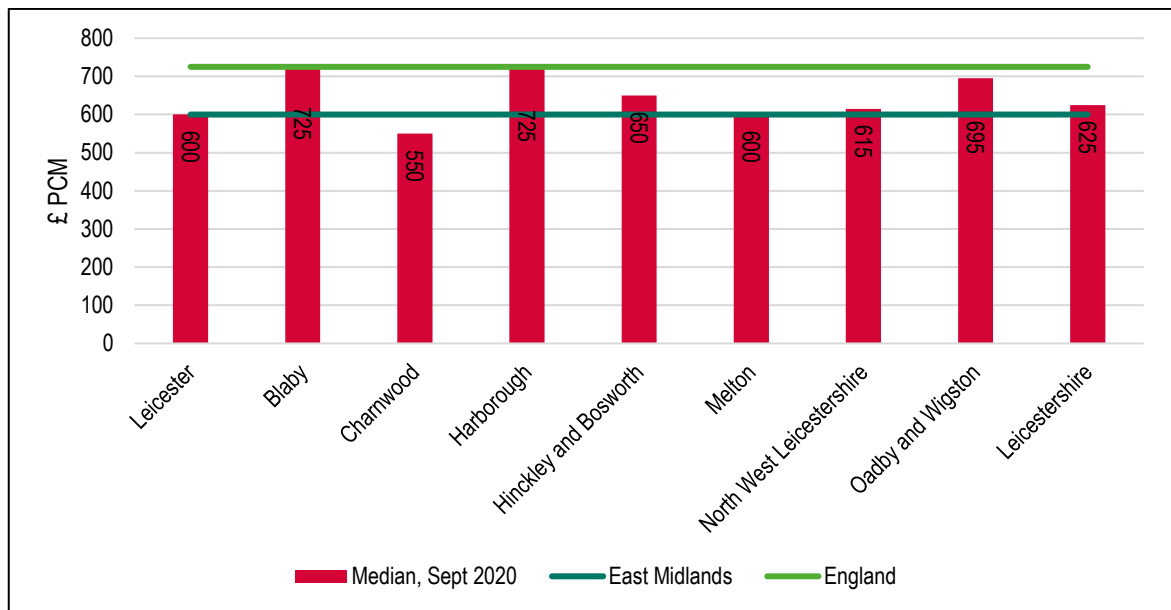
Source: Savills UK Housing Market Update, April 2021

- 4.23 Savills December 2021 Market Update shows that the end of the stamp duty holiday has resulted in some dip in activity, but new sales agreed are still running at elevated levels; with Nationwide pointing to annual house price growth still at 10.0% through 2021.
- 4.24 The medium-term outlook is however somewhat uncertain; and if unemployment rises sharply towards the end of 2021 (as the OBR and a range of other analysts expect) there is scope for activity and sales to slow, perhaps sharply, albeit that the effects of this could be offset in part by changing buyer preferences as discussed. The latest evidence however suggests a trend in unemployment which is downwards; and continuing relative buoyant housing market conditions.

Lettings Market

- 4.25 Across the Study Area, median rents are relatively similar to regional average (£625 per calendar month), with median rents in Leicester and Charnwood slightly lower than in other areas; and rents the highest in Blaby, Harborough and Oadby and Wigston at £725 per calendar month (equal to the national average).

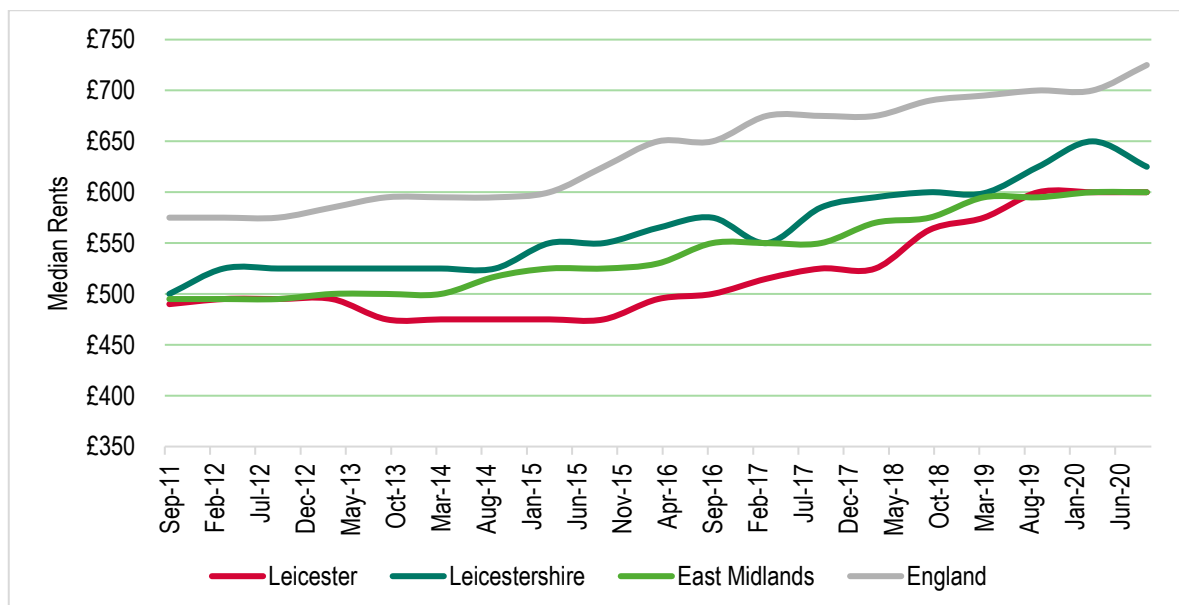
Figure 4.9: Median Rents, Year to Sept 2020



Source: ONS/VOA Private Rental Market Statistics

4.26 The chart below tracks changes in rental costs over time. Over the period since 2011 the medium-term trend has been of rental growth in line with the regional trend. It is notable however that Leicester has seen stronger relative growth in rents since 2016; albeit that over the period since 2018 rentals have been flat (and on average across the County have fallen slightly).

Figure 4.10: Median Rents, 2011-20



Source: ONS/VOA Private Rental Market Statistics

4.27 The table below considers growth in median and lower quartile (entry level) rents over the last 5 years. The strongest rental growth has been in Leicester, Blaby and Hinckley and Bosworth over the last 5 years (2014/15 – 2019/20), with notably weaker growth in median rents in Melton. Lower

quartile rents are highest in Harborough, Blaby and Oadby and Wigston; but the City has seen the strongest rental growth over the last 5 years. Charnwood has the lowest median and LQ rents, and has seen relatively static rents over the last 5 years.

Table 4.8 Trends in Median and Lower Quartile Rents

	Median Rent	5 Year Growth		LQ Rent	5 Year Growth
Leicester	£600	£125		£475	£130
Blaby	£725	£125		£625	£75
Charnwood	£550	£50		£395	-£5
Harborough	£725	£100		£650	£110
Hinckley and Bosworth	£650	£125		£550	£100
Melton	£600	£50		£530	£70
North West Leicestershire	£615	£65		£550	£75
Oadby and Wigston	£695	£120		£600	£75
Leicestershire	£625	£75		£500	£40
East Midlands	£600	£75		£495	£65
England	£725	£100		£550	£56

Source: ONS/VOA Private Rental Market Statistics

5. DEMOGRAPHIC DYNAMICS

- 5.1 We move on next to interrogate key statistics about demographic trends in Leicester & Leicestershire; particularly focussing on past population growth and the reasons for changes (components of change). The data presented is mainly for Leicester & Leicestershire, although key demographic data for local authorities is also provided.

Population

- 5.2 The table below shows the estimated population in each authority in 2019 and the proportion of the Leicester & Leicestershire total this amounts to. As of 2019, the population of Leicester & Leicestershire was estimated to be around 1,060,400 with over a third of people living in Leicester. Charnwood is the next most populous area.

Table 5.1 Population by Local Authority, 2019

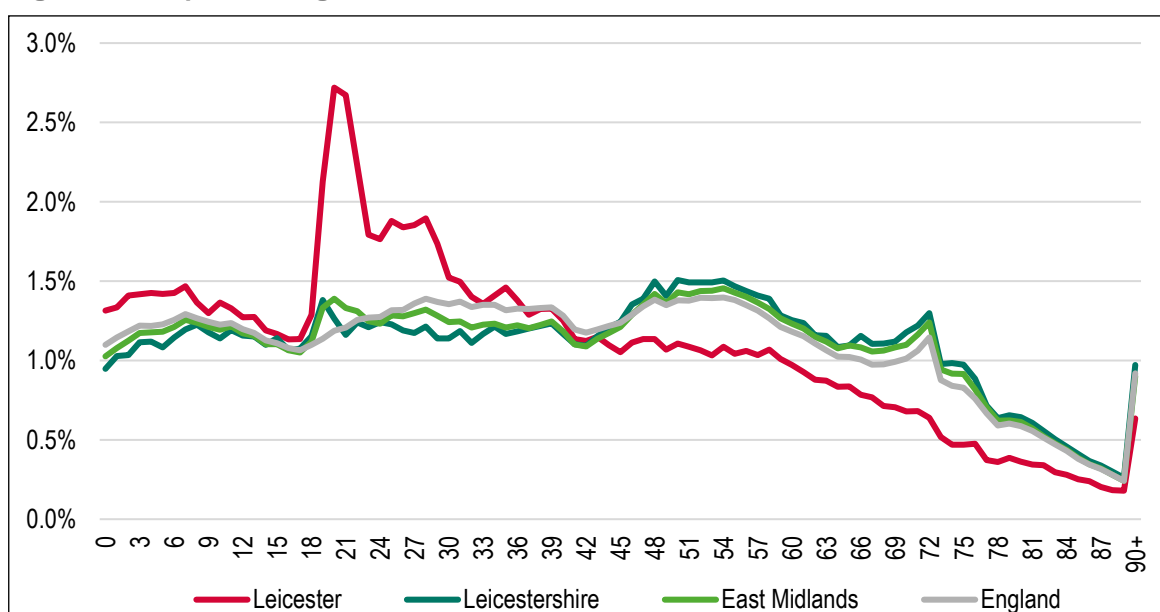
	Estimated population	% of population
Leicester	354,224	33.4%
Blaby	101,526	9.6%
Charnwood	185,851	17.5%
Harborough	93,807	8.8%
Hinckley & Bosworth	113,136	10.7%
Melton	51,209	4.8%
North West Leicestershire	103,611	9.8%
Oadby & Wigston	57,015	5.4%
Leicester & Leicestershire	1,060,379	100.0%

Source: ONS Mid-Year Population Estimates

Age Structure

- 5.3 Leicester has a relatively young age structure in comparison with the regional and national position with Leicestershire having a profile more in line with that seen across other areas. Notably, the proportion of the population in Leicester is lower than seen regionally or nationally for all age groups from about 45 onwards. The City also sees a particular spike of people in their late teens and early twenties which will be related to the student population.

Figure 5.2: Population Age Profile, 2019



Source: ONS Mid-Year Population Estimates

5.4 The analysis below summarises the above information by assigning population to three broad age groups (which can generally be described as a) children, b) working-age and c) pensionable age). This analysis shows that, compared with the regional and national position, Leicester has a low proportion of people aged 65 and over (12%) and a higher proportion of children; people aged 16-64 also makes up a higher proportion of the population than seen in other locations. For Leicestershire, the proportion of people aged 65 and over is slightly higher than seen regionally and nationally, with the proportion of children being slightly lower. Overall, however, the data does point to the County having a broadly similar age profile to the region and country.

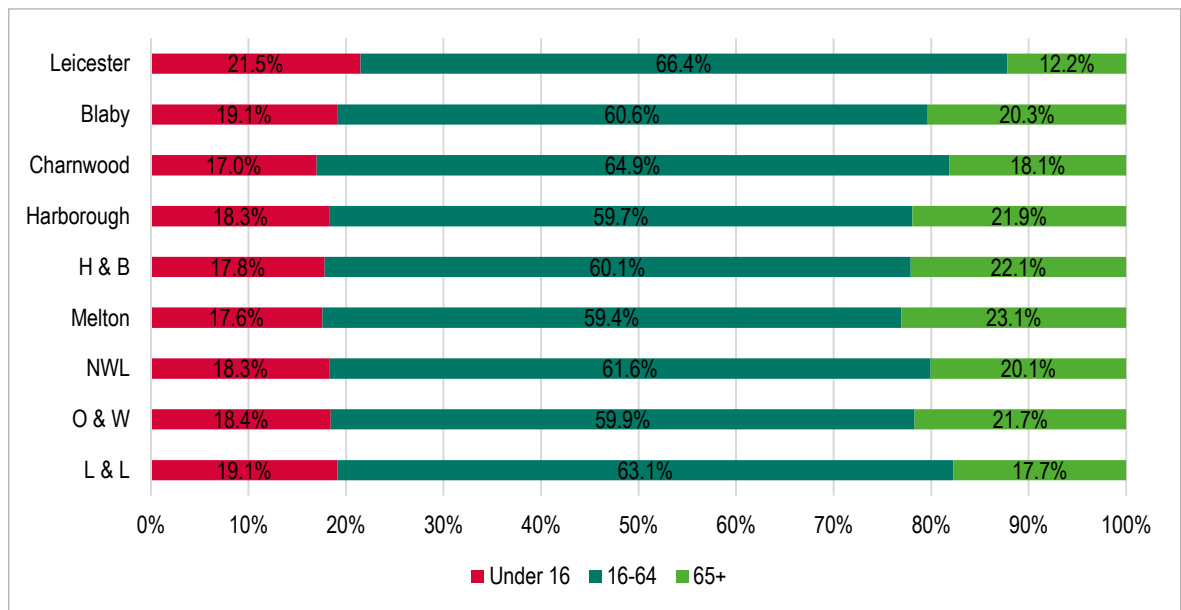
Table 5.2 Population Profile (2019) – Summary Age Bands

	Leicester		Leicestershire		East Midlands	England
	Population	% of population	Population	% of population	% of population	% of population
Under 16	76,053	21.5%	126,750	17.9%	18.6%	19.2%
16-64	235,050	66.4%	434,513	61.5%	61.9%	62.4%
65+	43,121	12.2%	144,892	20.5%	19.5%	18.4%
All Ages	354,224	100.0%	706,155	100.0%	100.0%	100.0%

Source: ONS Mid-Year Population Estimates

5.5 The figure below takes this data forward to look at differences by local authority. The analysis shows slightly different age profiles in local authorities in the County, with Melton having the highest proportion of people aged 65 and over and Charnwood seeing the highest proportion aged 16-64 (outside of the City). This latter finding is likely to be linked to the student population of Loughborough. An older age profile is generally seen in those authorities which have seen less population and housing growth (as the report comes onto).

Figure 5.3: Age Profile by Local Authority, 2019



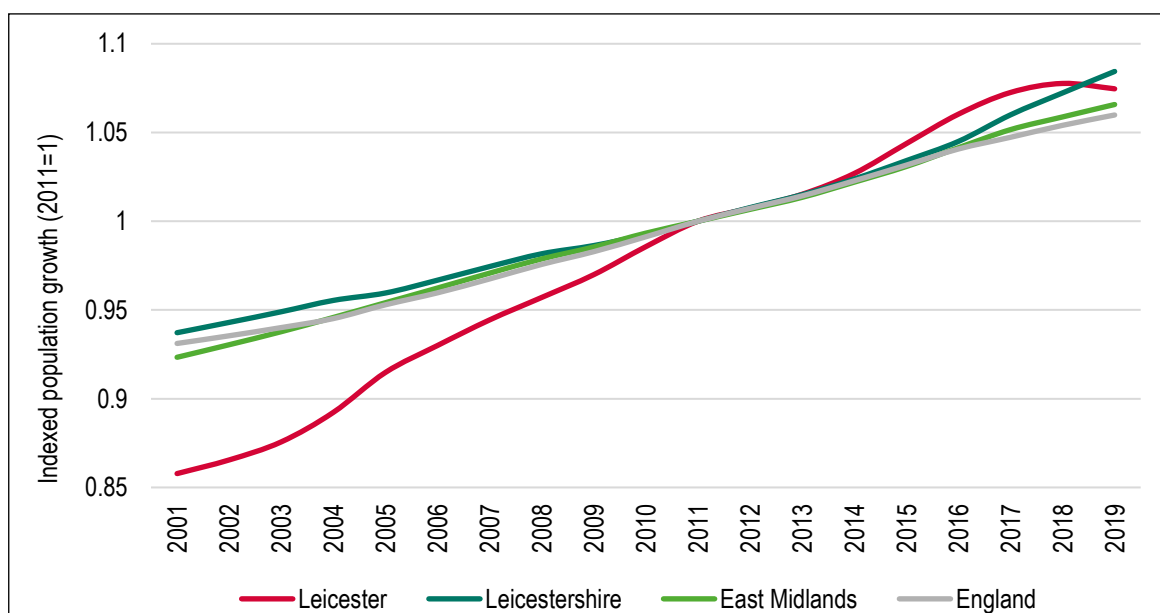
Source: ONS Mid-Year Population Estimates

Past Population Change

5.6 The figure below considers population growth in the period from 2001 to 2019 (indexed to 2011). The analysis shows over this period that the population of both Leicester and Leicestershire has increased, and at a rate above that seen regionally or nationally. Leicester’s strong growth over this period could be influenced, in part, by an undercount of the City’s population in 2001. In 2019, it is estimated that the population of Leicester had risen by 25% from 2001 levels, with a 16% increase seen in Leicestershire. These figures are in contrast with a 15% rise across the region and 14% nationally.

5.7 When looking at more recent data (from 2011), the analysis shows very slightly stronger growth in Leicestershire than Leicester and focussing on the past three years or so there is a clear move for stronger growth in the County and evidence of a falling population in Leicester.

Figure 5.4: Indexed Population Growth, 2011-19



Source: ONS Mid-Year Population Estimates

5.8 The table below considers population change over the 8-year period to 2019 (an 8-year period being chosen as the start point of 2011 has data at a smaller area level and is likely to be fairly accurate as it draws on information in the Census). The analysis shows over the period that the population of Leicester increased by 7.5% with an 8.4% increase for Leicestershire. This is a relatively high level of population change and compares with increases of 6.6% in the East Midlands and 6% in England.

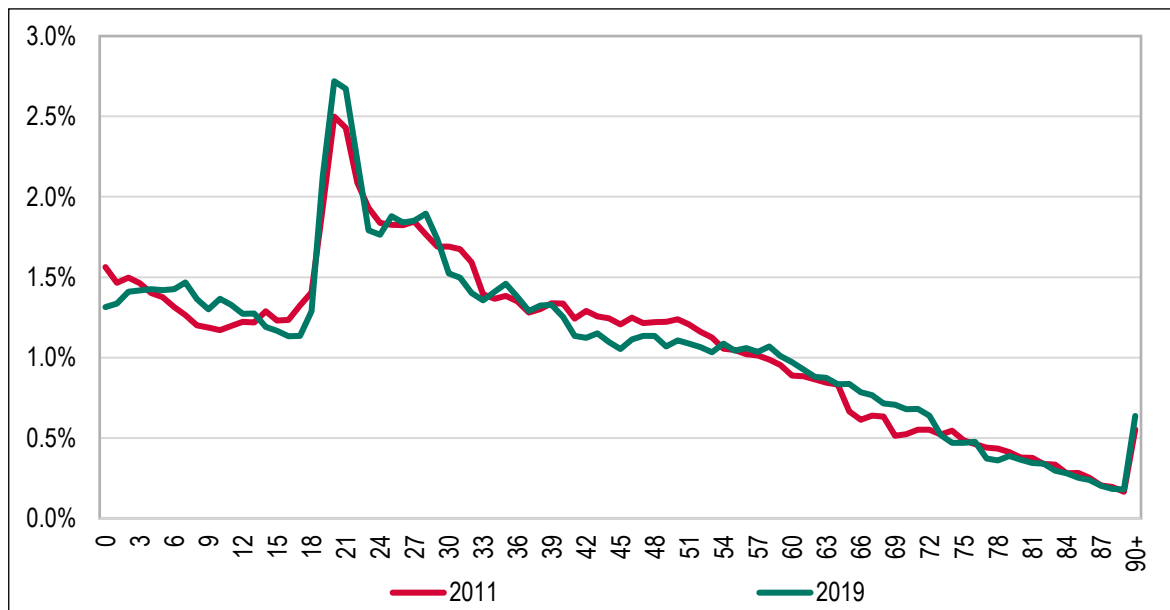
Table 5.3 Population Change, 2011-19

	Population (2011)	Population (2019)	Change	% change
Leicester	329,627	354,224	24,597	7.5%
Leicestershire	651,179	706,155	54,976	8.4%
East Midlands	4,537,448	4,835,928	298,480	6.6%
England	53,107,169	56,286,961	3,179,792	6.0%

Source: ONS Mid-Year Population Estimates

5.9 The figures and tables below show population change by age (again for the 2011-19 period) for each of Leicester and Leicestershire. In Leicester, the analysis suggests there has not been any notable change to the age structure although differences can be observed for many individual age groups. The analysis shows that all of the three broad age bands have seen an increase in population – the 65 and over band has seen the highest proportionate increase in population, but this band actually sees the lowest growth in population terms.

Figure 5.5: Population Age Structure in 2011 and 2019 – Leicester



Source: ONS Mid-Year Population Estimates

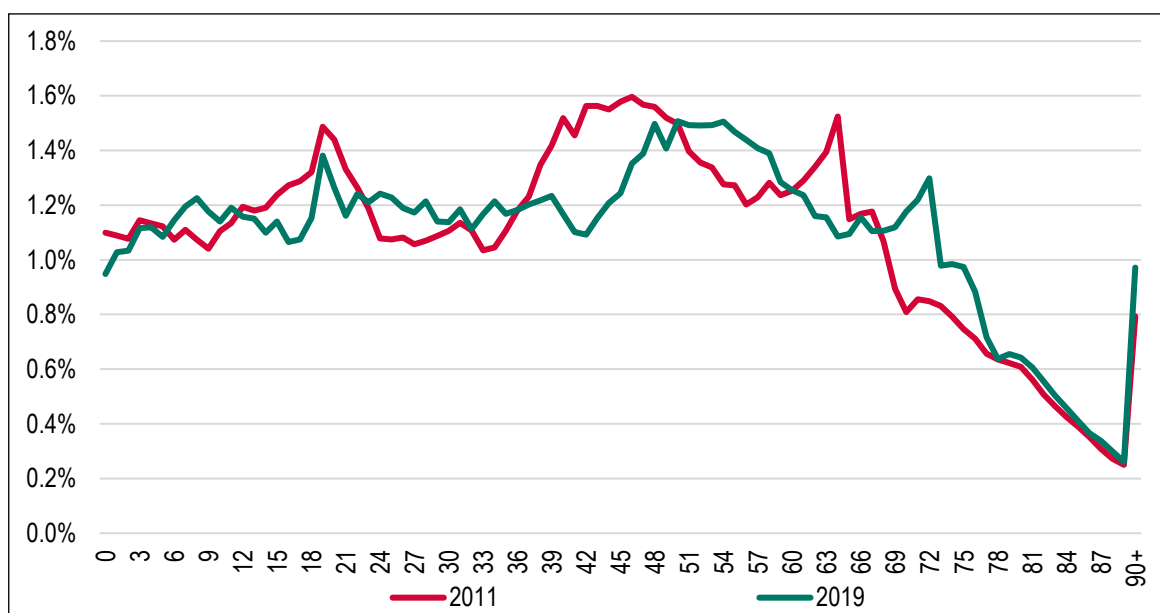
Table 5.4 Change in Population by Broad Age Group 2011-19 – Leicester

	2011	2019	Change	% change
Under 16	69,411	76,053	6,642	9.6%
16-64	222,820	235,050	12,230	5.5%
65+	37,396	43,121	5,725	15.3%
TOTAL	329,627	354,224	24,597	7.5%

Source: ONS Mid-Year Population Estimates

5.10 In Leicestershire, there are arguably greater differences between 2011 and 2019 although when looking at the single year of age data it is clear that some of this will be due to cohort effects (such as the high population aged 64 in 2011 developing into a high population aged 72 eight years later). When looking at broad age bands, it can again be observed that all age groups have seen an increase in population. However, in the case of the county the ageing of the population is more notable; the population aged 65 and over increased by 24% over the 8-year period and accounted for over half of all population growth.

Figure 5.6: Population Age Structure in 2011 and 2019 – Leicestershire



Source: ONS Mid-Year Population Estimates

Table 5.5 Change in Population by Broad Age Group 2011-19 – Leicester

	2011	2019	Change	% change
Under 16	117,232	126,750	9,518	8.1%
16-64	417,422	434,513	17,091	4.1%
65+	116,525	144,892	28,367	24.3%
TOTAL	651,179	706,155	54,976	8.4%

Source: ONS Mid-Year Population Estimates

5.11 Considering individual local authorities, data shows for the 2011-19 period the highest increase in population was in Charnwood (12%) followed by NW Leicestershire (11%). At the other end of the scale, both Melton (1%) and Oadby & Wigston (2%) have seen fairly modest changes to population. These differences in growth relate in part to differences in the rate of household growth alongside wider demographic characteristics including the population age structure.

Table 5.6 Change in Population 2011-19 by Local Authority

	2011	2019	Change	% change
Leicester	329,627	354,224	24,597	7.5%
Blaby	94,132	101,526	7,394	7.9%
Charnwood	165,876	185,851	19,975	12.0%
Harborough	85,699	93,807	8,108	9.5%
Hinckley & Bosworth	105,328	113,136	7,808	7.4%
Melton	50,495	51,209	714	1.4%
North West Leicestershire	93,670	103,611	9,941	10.6%
Oadby & Wigston	55,979	57,015	1,036	1.9%
Leicester & Leicestershire	980,806	1,060,379	79,573	8.1%

Source: ONS Mid-Year Population Estimates

Components of Population Change

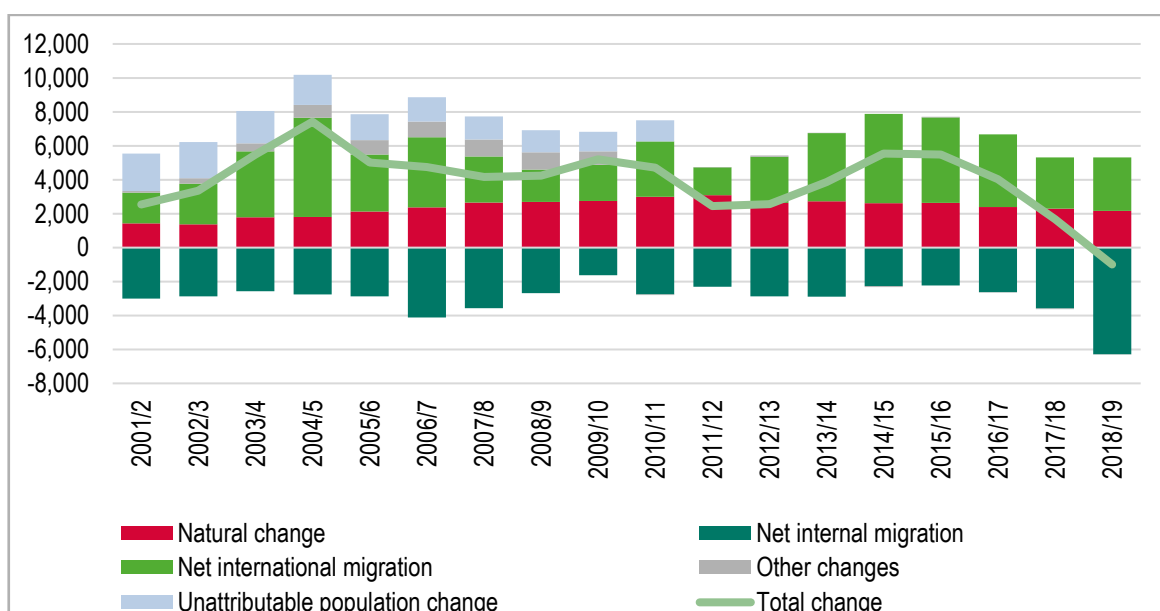
- 5.12 The main components of change are natural change (births minus deaths), net migration (internal/domestic and international) and other changes. There is also an Unattributable Population Change (UPC) which is a correction made by ONS upon publication of Census data if population has been under- or over-estimated.
- 5.13 For Leicester, the data shows a high positive level of natural change throughout the period (i.e. more births than deaths). Internal migration has been quite variable – negative in all years with the data for 2018/19 showing a particularly high number of people (net) moving from the City to other locations; the last five years for which data is available shows an average of about 3,400 people (net) moving from the area to other parts of the United Kingdom. International migration is also variable, although the data does suggest a positive net level for each year back to 2001/2. Over the past five years international migration has averaged about 4,100 people per annum (net).
- 5.14 For Leicestershire, the data also shows a positive level of natural change throughout the period, but at a lower level than seen in the City. Internal migration has been positive in all years and generally has been on an upward trend over the past decade or so. The last five years for which data is available shows an average of about 5,800 people (net) moving to the area from other parts of the United Kingdom. International migration has also been positive throughout the period studied (all years apart from 2001/2). Over the past five years international migration has averaged about 1,400 people per annum (net).
- 5.15 The data also shows a positive level of UPC in Leicester, suggesting that between 2001 and 2011, ONS may have initially underestimated population growth within population estimates (and this was corrected once Census data had been published) and/or the 2001 Census undercounted the population. For Leicestershire, there is a negative UPC, suggesting a potential over-estimate of population growth in the 2001-11 period. The UPC is particularly high in Leicester, where in total over the 10-years to 2011, it appears as if ONS mid-year estimates were a total of 16,100 people different from the actual count in the 2011 Census. For Leicestershire, the discrepancy is a not insignificant 8,600 people in total (in the opposite direction).

Table 5.7 Components of Population Change, mid 2001-2019 – Leicester

	Natural change	Net internal migration	Net international migration	Other changes	Other (unattributable)	Total change
2001/2	1,424	-2,996	1,819	84	2,207	2,538
2002/3	1,368	-2,876	2,399	322	2,140	3,353
2003/4	1,791	-2,579	3,888	471	1,908	5,479
2004/5	1,808	-2,768	5,848	752	1,776	7,416
2005/6	2,122	-2,863	3,353	864	1,529	5,005
2006/7	2,370	-4,112	4,133	918	1,446	4,755
2007/8	2,662	-3,565	2,712	997	1,364	4,170
2008/9	2,699	-2,691	1,891	1,034	1,302	4,235
2009/10	2,750	-1,623	2,123	805	1,149	5,204
2010/11	2,991	-2,758	3,275	-29	1,236	4,715
2011/12	3,089	-2,311	1,650	12	0	2,440
2012/13	2,644	-2,872	2,717	75	0	2,564
2013/14	2,731	-2,900	4,020	9	0	3,860
2014/15	2,626	-2,266	5,247	-62	0	5,545
2015/16	2,627	-2,235	5,051	34	0	5,477
2016/17	2,396	-2,625	4,273	-17	0	4,027
2017/18	2,291	-3,585	3,022	-50	0	1,678
2018/19	2,165	-6,287	3,145	-17	0	-994

Source: ONS Mid-Year Population Estimates

Figure 5.7: Components of Population Change, mid 2001-2019 – Leicester



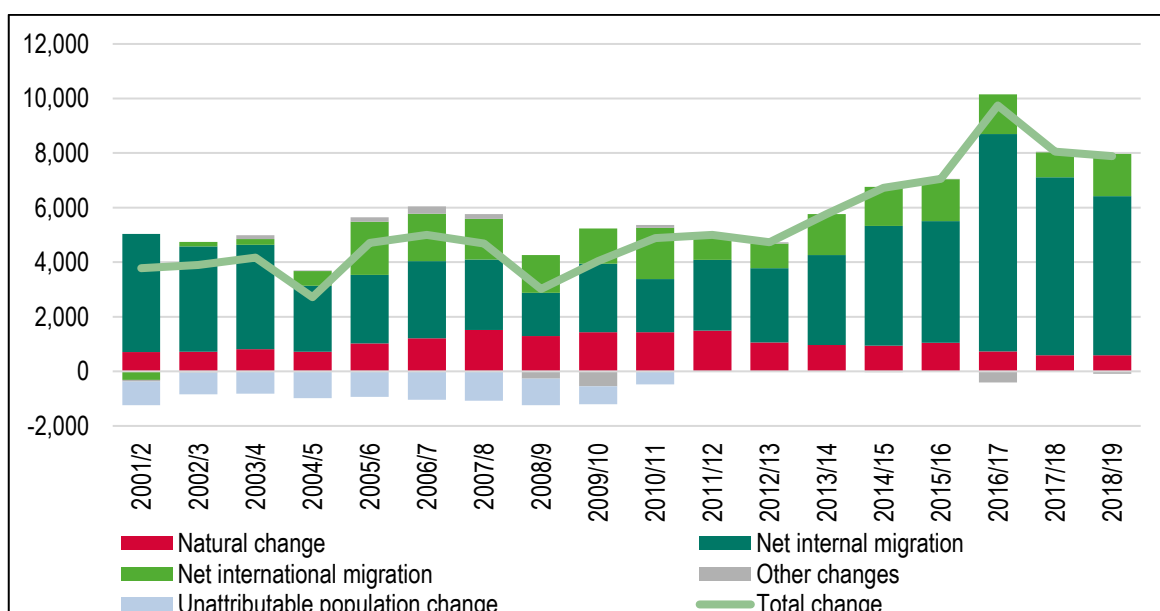
Source: ONS Mid-Year Population Estimates

Table 5.8 Components of Population Change, mid 2001-2019 – Leicestershire

	Natural change	Net internal migration	Net international migration	Other changes	Other (unattributable)	Total change
2001/2	704	4,328	-319	-59	-868	3,786
2002/3	723	3,860	159	-47	-792	3,903
2003/4	815	3,825	209	137	-820	4,166
2004/5	724	2,412	541	27	-986	2,718
2005/6	1,026	2,514	1,940	163	-939	4,704
2006/7	1,206	2,835	1,732	268	-1,042	4,999
2007/8	1,516	2,579	1,497	171	-1,082	4,681
2008/9	1,294	1,582	1,385	-263	-979	3,019
2009/10	1,438	2,507	1,292	-547	-653	4,037
2010/11	1,439	1,943	1,882	99	-476	4,887
2011/12	1,496	2,591	871	45	0	5,003
2012/13	1,063	2,717	900	55	0	4,735
2013/14	961	3,296	1,511	-3	0	5,765
2014/15	947	4,378	1,438	-35	0	6,728
2015/16	1,051	4,455	1,536	14	0	7,056
2016/17	735	7,960	1,453	-402	0	9,746
2017/18	594	6,518	920	24	0	8,056
2018/19	595	5,827	1,551	-86	0	7,887

Source: ONS Mid-Year Population Estimates

Figure 5.8: Components of Population Change, mid 2001-2019 – Leicestershire



Source: ONS Mid-Year Population Estimates

Other Measures of Past Population Growth

- 5.16 The analysis above has focussed on data from the ONS mid-year population estimates (MYE). It is possible to contrast estimates of population growth in this source with other measures – the main one being the NHS Patient Register (PR)⁹. The table below shows estimated population growth in both the MYE and the PR – data is shown for Leicester, Leicestershire, the East Midlands region and England.
- 5.17 In Leicester, the analysis suggests a much higher population growth in the Patient Register than the MYE since 2011 (15.4% population increase compared with 7.5%) whereas the MYE shows a slightly higher population increase in Leicestershire. Across the East Midlands and nationally, the Patient Register shows higher estimates of population growth, the PR growth being some 29% higher regionally and 50% higher nationally (as not all people reregister with doctors when they move).
- 5.18 It is difficult to draw many conclusions from this data, although if the general trends of the PR showing higher growth were to apply more generally to smaller areas then it is arguable that the MYE is showing population growth in Leicester that is too low, with the opposite being the case in Leicestershire. It is however difficult to be certain; and not all people who move away from an area will reregister doctors, particularly when emigrating.
- 5.19 On balance, it is not considered that the analysis of PR data shows anything sufficiently compelling to suggest setting aside the MYE, either in terms of current population estimates, or trend levels of growth. This analysis can therefore be seen as mainly included for reference purposes although it will be interesting for this data to be checked when new information starts to filter through from the 2021 Census.

⁹ NHS Patient Register is a record of all persons registered with a General Practitioner (GP) in England and Wales

Table 5.9 Comparing ONS mid-year population estimates with estimates of population from the Patient Register

		2011	2019	Change	% change
Leicester	MYE	329,660	354,220	24,560	7.5%
	Patient Register	352,620	406,770	54,150	15.4%
Leicester-shire	MYE	651,200	706,160	54,960	8.4%
	Patient Register	671,540	723,560	52,020	7.7%
East Midlands	MYE	4,537,450	4,835,920	298,470	6.6%
	Patient Register	4,690,790	5,091,710	400,920	8.5%
England	MYE	53,107,200	56,286,990	3,179,790	6.0%
	Patient Register	55,312,750	60,288,290	4,975,540	9.0%

Source: ONS/JGC

- 5.20 The table below shows the same data for individual authorities (excluding Leicester). This shows most areas having higher growth in the MYE, the exceptions are Melton and Oadby & Wigston, which is interesting as these are the two areas with the lowest level of population growth (under any measure). There is greater potential that the MYEs for these areas have under-estimated population, but it is difficult to be certain. Again the 2021 Census data should in due course provide better data. There is however a correlation between weaker population growth in these areas and weaker housing delivery (as the later analysis in this section explores).

Table 5.10 Comparing ONS mid-year population estimates with estimates of population from the Patient Register – Other Local Authorities

		2011	2019	Change	% change
Blaby	MYE	94,120	101,570	7,450	7.9%
	Patient Register	96,550	104,200	7,650	7.9%
Charn-wood	MYE	165,900	185,870	19,970	12.0%
	Patient Register	173,980	190,580	16,600	9.5%
Har-borough	MYE	85,710	93,830	8,120	9.5%
	Patient Register	86,950	94,630	7,680	8.8%
H & B	MYE	105,350	113,130	7,780	7.4%
	Patient Register	108,480	115,960	7,480	6.9%
Melton	MYE	50,520	51,250	730	1.4%
	Patient Register	51,420	52,800	1,380	2.7%
NWL	MYE	93,680	103,630	9,950	10.6%
	Patient Register	94,740	104,360	9,620	10.2%
O & W	MYE	56,000	57,040	1,040	1.9%
	Patient Register	59,570	61,120	1,550	2.6%

Source: ONS/JGC

2018-based Sub-National Population Projections

- 5.21 The latest (2018-based) set of subnational population projections (SNPP) were published by ONS in March 2020 (replacing a 2016-based release). The projections provide estimates of the future

population of local authorities, assuming a continuation of recent local trends in fertility, mortality and migration which are constrained to the assumptions made for the 2018-based national population projections.

5.22 The 2018-based SNPP contain a number of assumptions that have been changed from the 2016-based version, these assumptions essentially filtering down from changes made at a national level. The key differences are:

- ONS' long-term international migration assumptions have been revised upwards to 190,000 per annum compared to 165,000 in the 2016-based projections. This is based on a 25-year average;
- The latest projections assume that women will have fewer children, with the average number of children per woman expected to be 1.78 compared to 1.84 in the 2016-based projections; and
- Life expectancy increases are less than in the 2016-based projections as a consequence of the continued limited growth in life expectancy over the last two years.

5.23 As well as providing a principal projection, ONS has developed a number of variants. In all cases the projections use the same fertility and mortality rates with differences being applied in relation to migration.

5.24 In the **principal projection**, data about internal (domestic) migration uses data for the past 2-years and data about international migration from the past 5-years. The use of 2-years data for internal migration has been driven by ONS changing their methodology for recording internal moves, with this data being available from 2016 only.

5.25 The alternative internal migration variant uses data about migration from the last 5-years (2013-18), as well as also using 5-years of data for international migration. This variant is closest to replicating the methodology used in the 2016-based SNPP although it does mean for internal migration that data used is collected on a slightly different basis.

5.26 The **10-year migration variant** (as the name implies) uses data about trends in migration over the past decade (2008-18). This time period is used for both internal and international migration.

5.27 The tables below show the outputs from each of these three variant scenarios along with comparisons from the 2016- and 2014-based SNPP. The comparison with the 2014-based SNPP is particularly important as it underpins the 2014-based SNHP which is used in the Standard Method. Due to the tables looking to 2041 (and the 2014-based SNPP only being published to 2039) an estimate has been made for the last two years by simply adding on two further years of the incremental change from 2038 to 2039.

5.28 In Leicester the principal projection shows a population increase of 8%, with the alternative internal migration scenario being higher than this (11%). The 10-year trend variant sits somewhere in the middle of this range. Population growth in the 2016-based projections is similar to the 2018-based alternative internal migration variant whilst the 2014-based projection shows the highest population increase of any of the scenarios studied.

Table 5.11 Projected Population Growth (2020-2041) – Leicester

	2020	2041	Change in population	% change
2018 (principal)	360,557	389,622	29,065	8.1%
2018 (alternative internal)	361,500	401,536	40,036	11.1%
2018 (10-year trend)	359,865	394,528	34,663	9.6%
2016-based	362,162	404,523	42,361	11.7%
2014-based	358,218	410,695	52,477	14.6%

Source: ONS

5.29 In Leicestershire almost the opposite pattern emerges, with the principal projection showing the highest level of population growth – in this case the alternative internal migration variant sits in the middle of the range from the 2018-SNPP. Both the 2016- and 2014-based SNPP show projected increases below the principal and alternative internal variants.

5.30 The more recent trends are thus of stronger growth in the County, and less growth in the City. This is characteristic of a number of other areas in which we have worked, and is likely in part to be reflected by weak housing market conditions between 2009-13 which resulted in less movement from urban areas to their associated hinterlands, but with greater out-migration from 2013 onwards as wider housing market conditions have improved. The evidence points to some recessionary influence on the distribution of demographic growth informing the 2014-based Projections.

Table 5.12 Projected Population Growth (2019-2041) – Leicestershire

	2020	2041	Change in population	% change
2018 (principal)	715,117	850,255	135,138	18.9%
2018 (alternative internal)	711,526	820,237	108,711	15.3%
2018 (10-year trend)	708,254	784,515	76,261	10.8%
2016-based	700,527	787,455	86,928	12.4%
2014-based	697,889	791,808	93,919	13.5%

Source: ONS

5.31 As noted, the 2018-based SNPP has three main scenarios and rather than provide data from all three, the analysis below looks at a preferred scenario. In this case it is considered that the alternative internal migration variant is likely to be the most robust of the three as a trend-based projection of growth in a local context based on recent trends. The principal SNPP has too short a data period

when looking at internal migration whilst the 10-year alternative is not thought likely to reflect recent changes and may include some influence from the economic downturn/credit crunch of 2008 (given that the 10-year period will be 2008-18). The alternative internal migration variant is also based on a broadly similar methodology to previous SNPP releases.

- 5.32 The table below shows projected population growth from 2020-41 (using alternative internal migration assumptions) in Leicester & Leicestershire and a range of comparator areas. The data shows that the population increase in both areas is above the regional and national average, in particular for Leicestershire the projected population increase is approaching double that projected for England. The difference between areas will largely reflect the different levels of population growth seen in the five-year period to 2018.

Table 5.13 Projected population growth (2020-2041) – 2018-based SNPP (alternative internal migration assumptions)

	2020	2041	Change in population	% change
Leicester	361,500	401,536	40,036	11.1%
Leicestershire	711,526	820,237	108,711	15.3%
East Midlands	4,871,321	5,350,390	479,069	9.8%
England	56,678,470	61,353,965	4,675,495	8.2%

Source: ONS 2018-based SNPP

- 5.33 With the overall change in the population will also come changes to the age profile. The tables below summarise findings for key age groups. In Leicester it can be seen that the main increase in number terms is projected to be in the 16-64 age group – increasing by 8.6% and making up over half of all the projected increase. However, the population aged 65 and over is projected to see the proportional highest increase, growing in size by 40% in the 22-year period. For Leicestershire, the increase in the 65+ population is more notable, with a 42% increase accounting for more than half of all population change. In the County there are still projected to be increases in the other two age groups studied.

Table 5.14 Population change 2020 to 2041 by broad age bands – Leicester (2018-based SNPP – alternative internal migration assumptions)

	2020	2041	Change in population	% change
Under 16	77,215	78,782	1,567	2.0%
16-64	240,247	261,005	20,758	8.6%
65 and over	44,038	61,749	17,711	40.2%
Total	361,500	401,536	40,036	11.1%

Source: ONS 2018-based SNPP

Table 5.15 Population change 2020 to 2041 by broad age bands – Leicestershire (2018-based SNPP – alternative internal migration assumptions)

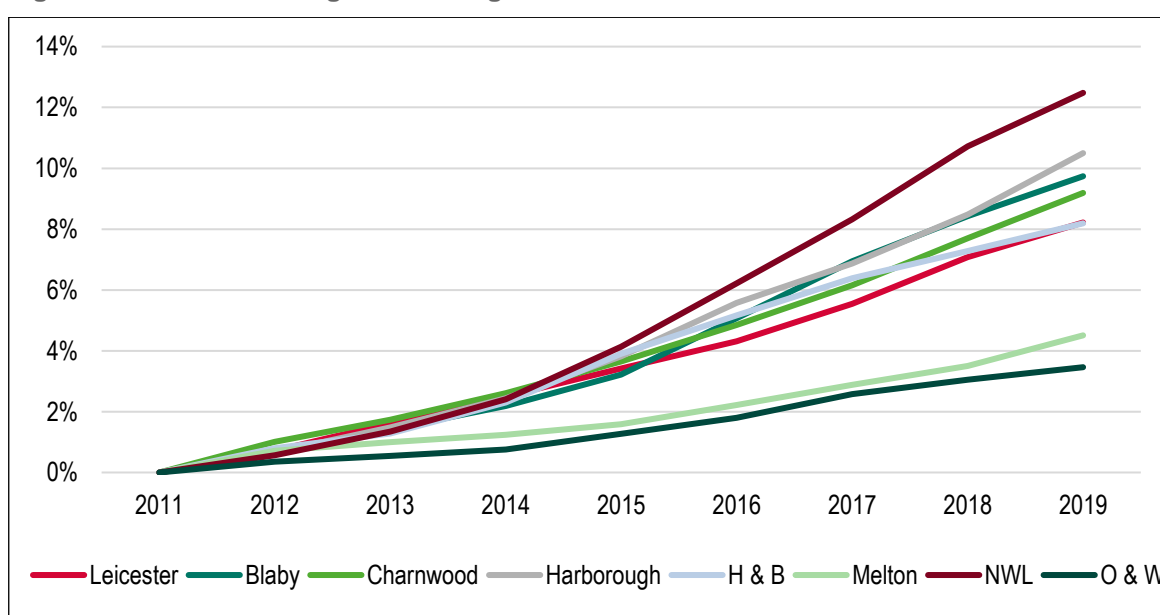
	2020	2041	Change in population	% change
Under 16	127,412	136,526	9,114	7.2%
16-64	436,625	473,695	37,070	8.5%
65 and over	147,489	210,016	62,526	42.4%
Total	711,526	820,237	108,711	15.3%

Source: ONS 2018-based SNPP

Inter-relationship between Population Growth and Housing Delivery

- 5.34 The ONS projections are trend based and will therefore to a considerable extent link to past levels of population growth. It is possible that higher population growth is to some extent linked to past housing delivery (as providing homes would provide opportunities for households to move to the area and influence net migration).
- 5.35 The analysis in the figure below therefore looks at changes to the housing stock since 2011. This shows that areas with more modest population growth (Melton and Oadby & Wigston) are also the locations to have seen the lowest net change to the housing stock. At the other end of the scale, NW Leicestershire has seen one of the highest levels of population growth, and also the highest increase in the number of dwellings. This analysis does point to the likelihood that housing delivery has had an impact on past population growth and hence future (trend-based) projections, although household size and structure will also play a part in respective changes.

Figure 5.9: Indexed Change to Housing Stock since 2011



Source: MHCLG Live Table 125

5.36 The table below provides future evidence of the link between dwelling changes and population growth. Generally, proportionate increases in population are slightly lower than changes to stock, the only exception to this is in Charnwood where there has been a 12% increase in the population but a lower (9%) increase in the number of dwellings. Overall, however, the relationship across the whole study area is pretty clear. This is a potential influence on considering the future distribution of development.

Table 5.16 Comparison of Growth in Dwelling Stock and Population, 2011-19

	% increase in stock	% increase in population
Leicester	8.2%	7.5%
Blaby	9.7%	7.9%
Charnwood	9.2%	12.0%
Harborough	10.5%	9.5%
Hinckley & Bosworth	8.2%	7.4%
Melton	4.5%	1.4%
North West Leicestershire	12.5%	10.6%
Oadby & Wigston	3.5%	1.9%
Leicestershire	8.9%	8.4%
Leicester & Leicestershire	8.7%	8.1%

Source: MHCLG Live Table 125 and ONS

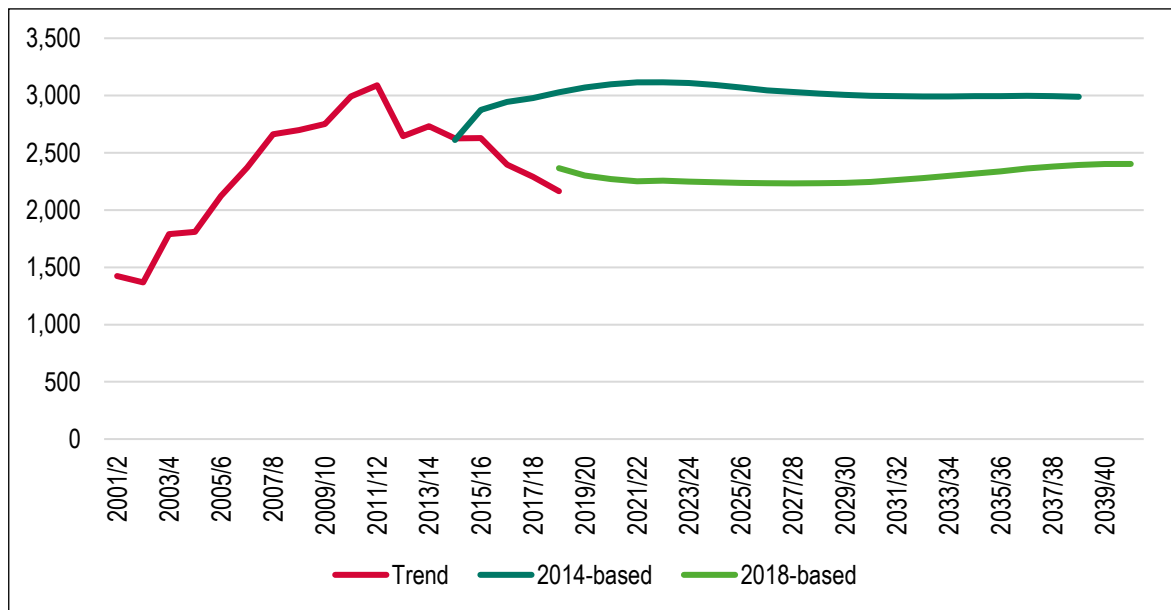
Comparing 2014- and 2018-based SNPP

5.37 The analysis above shows that projected population growth in the 2014-based SNPP is somewhat higher than in the 2018-based version in Leicestershire, with the opposite being the case for Leicester. It is of interest to see what reasons there are for the differences. Essentially this means looking at the components of population change - natural change (births minus deaths) and migration.

5.38 The figures below show past trends in natural change and also projected figures from both the 2014- and 2018-based projections. From this it is clear that natural change has been declining and the 2018-based SNPP project for natural change to continue at a lower level in the future (continuing to decline in Leicestershire). In both areas, natural change in the 2014-based SNPP is projected to be somewhat higher and can already be seen to be too high in comparison to estimates made by ONS since 2014.

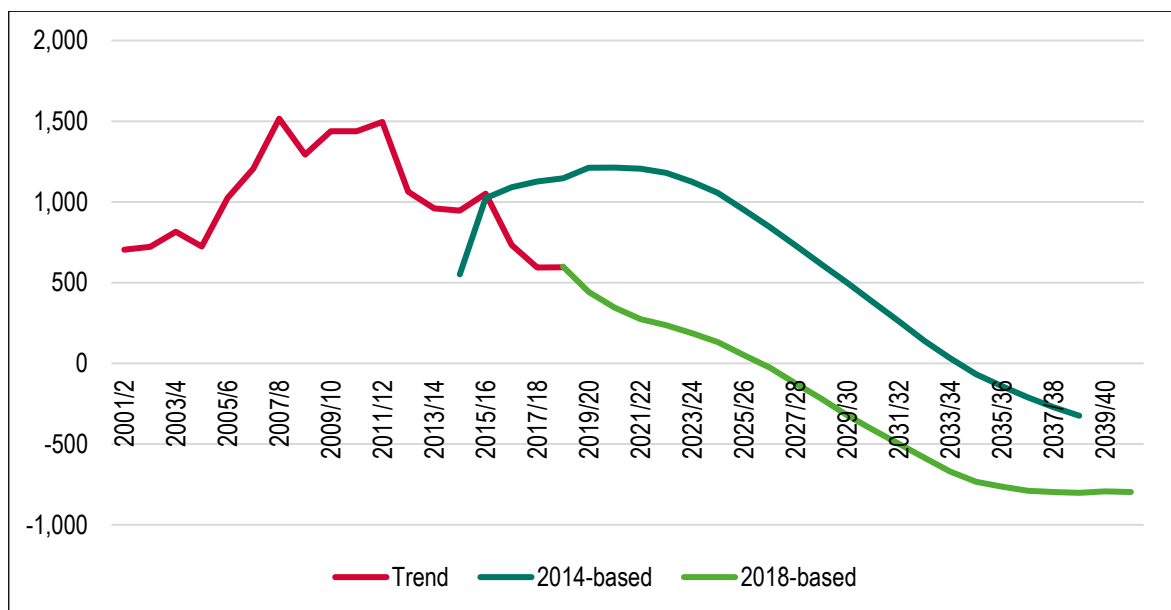
5.39 Given that the latest projections build in trends towards lower fertility rates and lower improvements to life expectancy, the difference between the two projections is to be expected and does point to the 2018-based sub-national population projections being more realistic. It should however be noted that the trends observed for Leicester & Leicestershire are not unique to the area and are replicated for most local authorities across the country. They do not therefore constitute an exceptional circumstance for deviation from the standard methodology for assessing housing need.

Figure 5.10: Past Trends and Projected Natural Change – Leicester



Source: ONS

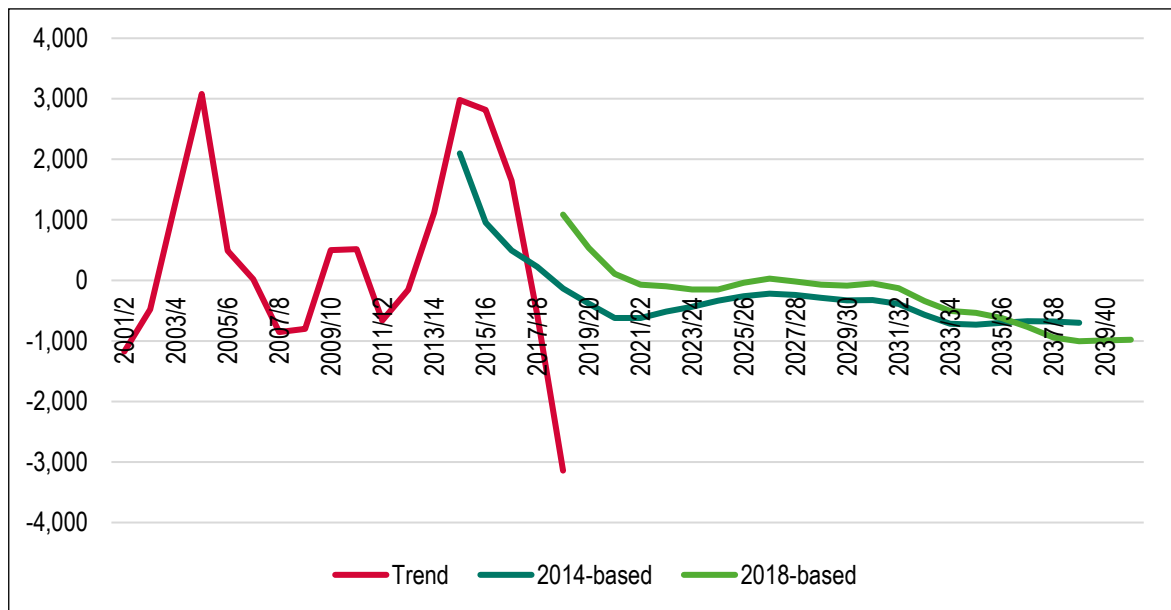
Figure 5.11: Past Trends and Projected Natural Change – Leicestershire



Source: ONS

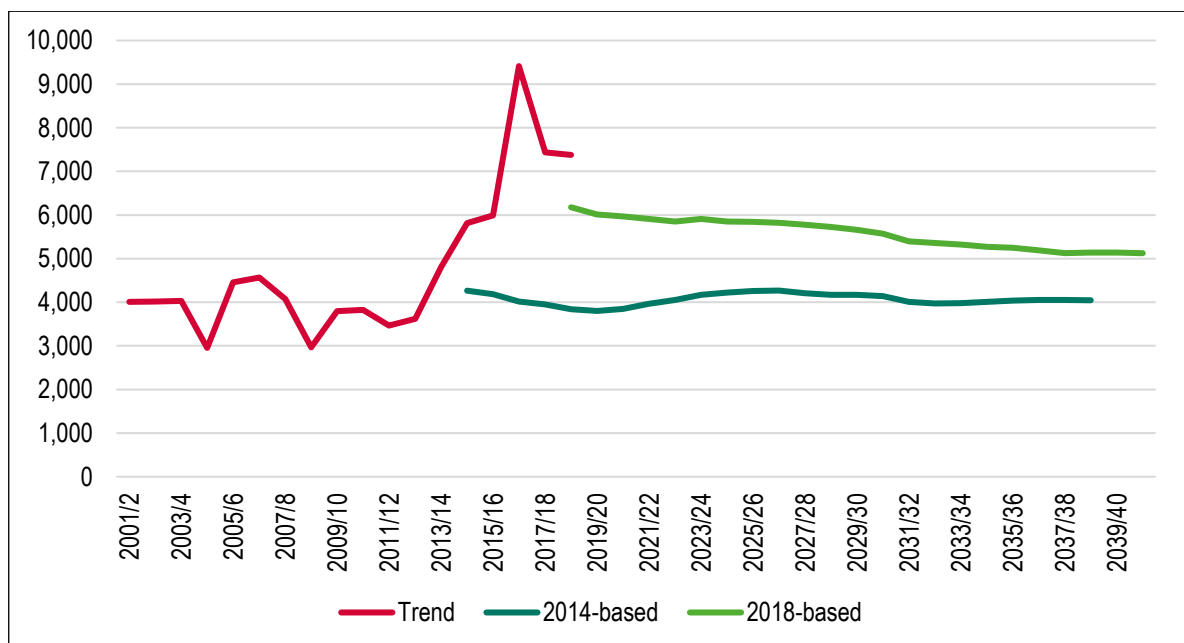
5.40 For migration, the analysis below looks at trends in net migration, this combines figures for internal, cross-border and international migration. In Leicester the data shows broadly similar net migration estimates for both projections (slightly higher in the 2018-based SNPP, and particularly in the early years of the projection). For Leicestershire, the migration in the 2018-based SNPP is notably higher than the 2014-based version.

Figure 5.12: Past Trends and Projected Net Migration in Leicester



Source: ONS

Figure 5.13: Past Trends and Projected Net Migration in Leicestershire



Source: ONS

- 5.41 Overall, the analysis shows higher migration in the 2018-based SNPP but **there is unlikely to be a case to suggest therefore that the 2014-based figures (which drive the Standard Method) are too high.** The higher levels of migration are however in part offset by lower levels of natural change so that population growth across the whole study area is broadly similar regardless of the projection chosen. That said there is a clear difference between Leicester and Leicestershire, with the 2018-based figures being lower for the City, and the opposite being the case for the County.

Household Formation

- 5.42 Projections for household formation are required to relate growth in population to households. To do this the concept of household representative rates (HRR) is used. HRRs can be described in their most simple terms as the number of people who are counted as heads of households (or in this case the more widely used Household Reference Person (HRP)).
- 5.43 The latest HRRs are as contained in the ONS 2018-based subnational household projections (SNHP). It would be fair to say that recent SNHP (since the 2016-based release) have come under some criticism, this is largely because they are based only on data in the 2001-11 Census period. The issue is that the projections are based on just two data points (2001 and 2011 Census data) due to definitional changes; and do so over a period in which affordability deteriorated substantially in many areas and therefore potentially build in and project forward the suppression of household formation experienced in that period.
- 5.44 In Leicester, this suppression can be seen in the figure below, and particularly for the 25-34 age group where there was a notable drop in formation rates from 2001 to 2011, and ONS are projecting this forward as far as 2021 (following which the rate is held broadly stable). In Leicestershire, the evidence of suppression in the 2018-SNHP is less clear-cut. Nonetheless, household formation amongst younger households falls.
- 5.45 Given the criticisms of the 2018-SNHP a sensitivity analysis has been developed that applies the HRRs from an earlier 2014-based household projections. The rates from this projection are also shown on the figures below and clearly identify less suppression being built into future projections in Leicester (although they do still recognise the apparent change from 2001 to 2011). In Leicestershire the general trends for younger age groups are similar in the two sets of data.
- 5.46 The 2014-based data has the advantage of using more data points for analysis. It looks at a time series back to 1971. It should also be noted that the 2014-based figures do take a slightly different approach to establishing the households reference person. In the 2014-SNHP a male is taken as a default HRP where there is a couple household (of different sexes) whereas the 2018-SNHP uses the Census definition of a HRP which takes account of the economic activity and age of people in a household.
- 5.47 Therefore, two scenarios have been developed, firstly using the HRRs in the 2018-based SNHP and secondly using the same data but from an earlier (2014-based) release. For clarity these two scenarios have been labelled as:
- 2018-HRRs; and
 - 2014-HRRs.

Figure 5.14: Projected Household Representative Rates by age of head of household – Leicester (2014- and 2018-based SNHP)



Source: Derived from ONS and CLG data

Figure 5.15: Projected Household Representative Rates by age of head of household – Leicestershire (2014- and 2018-based SNHP)



Source: Derived from ONS and CLG data

5.48 It is evident that there is a substantial degree of suppression in the 2018-based Household Projections for Leicester in particular within younger age groups. It is also notable that the projections result in quite different results for older age groups. Icenis and JGC consider that the 2014-based HRR assumptions should be preferred for demographic modelling herein, not least as they are based on longer-term trend data and look more realistic.

PART 2: FUTURE DEVELOPMENT NEEDS

6. FUTURE ECONOMIC PERFORMANCE

6.1 This section considers potential future economic performance. The starting point has been a set of ‘baseline’ projections provided by Cambridge Econometrics (CE). IcenI has been through a process of:

- Interrogating and testing the baseline projections, including comparing them to past economic performance (see **Appendix A2**);
- Undertaking an economic strategy review which considers, reviews and collates information from local and sub-regional economic strategy documents (see **Appendix A3**);
- Engagement with economic development officers from the each of the local authorities together with the County Council – including its Research/Business Intelligence Function which is aligned to the Leicester and Leicestershire Enterprise Partnership (LLEP).

6.2 Alongside this, Cambridge Econometrics has been working with the LLEP on the development of its Economic Growth Strategy 2021-30¹⁰, which includes work to consider sector growth opportunities in the Study Area.

6.3 Drawing together the stakeholder engagement, baseline analysis, policy review and IcenI’s consideration of the baseline projections an alternative ‘Growth Scenario’ has been developed. The Growth Scenario results are summarised in this section. The detailed narrative associated with this scenario overall, and for specific sectors, is set out in **Appendix A4**.

6.4 **The baseline and growth scenarios together should be considered as a set of parameters for future economic performance**, recognising that the baseline has had regard to past trends whilst the Growth Scenario considers economic initiatives and ambitions but is potentially somewhat aspirational in nature.

Baseline Growth Scenario

6.5 The local area baseline projections are developed based on CE’s March 2021 UK and regional forecast. The projections include historical local area employment data to 2019, regional and national employment data to 2020, and GVA data to 2018.

¹⁰ <https://llep.org.uk/app/uploads/2021/12/LLEP-Economic-Growth-Strategy.pdf>

UK Forecast

6.6 CE's UK forecast is developed using CE's Multi-Sectoral Dynamic Model (MDM). The model determines final expenditure, output and employment by disaggregating sectors, commodities, and household and government expenditures, as well as foreign trade and investment, within an input-output framework to identify the inter-relationships between sectors. The forecasts are based on the latest available national and regional historical data and macroeconomic assumptions (e.g. components of output). The key COVID-19 and EU exit assumptions are summarised below.

Covid-19

6.7 The baseline projections assumed that lockdown and social distancing measures will follow the Government's envisaged 'road map', with lockdown formally ending in late-March, social distancing to progressively ease over spring and the domestic economy to open fully by mid/late summer (with all UK adults expected to be offered a dose of the COVID vaccine by this time). The assumed 'post-lockdown' pick-up in activity will mean that GDP is assumed to increase in 2021, though to a lesser extent than previously forecast due to the weak start to the year.

6.8 Despite the assumed opening of the UK economy in 2021 Q2, persistent economic scarring and a muted economic recovery in 2021/2022 is expected. This comes as a result of rising unemployment, business closures, weak capital accumulation and permanent productivity impacts of the pandemic.

6.9 Moreover, UK trade prospects remain very weak due to slow global economic growth (exacerbated/perpetuated by inequalities in the global allocation of the vaccine) and Brexit trade disruptions (see EU exit section below). Given this, the central assumption of the forecast is a 3.6% increase in GDP in 2021 and a 2.8% increase in GDP in 2022.

EU Exit

6.10 Based on the general terms included in the EU–UK Trade and Cooperation Agreement that was signed on 30th December 2020, the following political assumptions were adopted:

- The agreed Free Trade Agreement with the EU avoids reversal to WTO terms, but results in some barriers to trade which will gradually phase in.
- The points-based migration system introduces restrictions on inward migration from the EU.
- The uncertainty about the possibility of no-deal Brexit is lifted. However, some uncertainty remains over the speed of regulatory divergence.
- Some uncertainty remains over the possibility of changes to the agreement in the future that could affect the barriers to trade, such as the equivalence rules in the financial sector.

- The UK will continue to seek other trade agreements, which could reduce barriers to trade with non-EU countries in the future.

6.11 These feed into the assumptions which are made on the future growth outlook for different economic sectors.

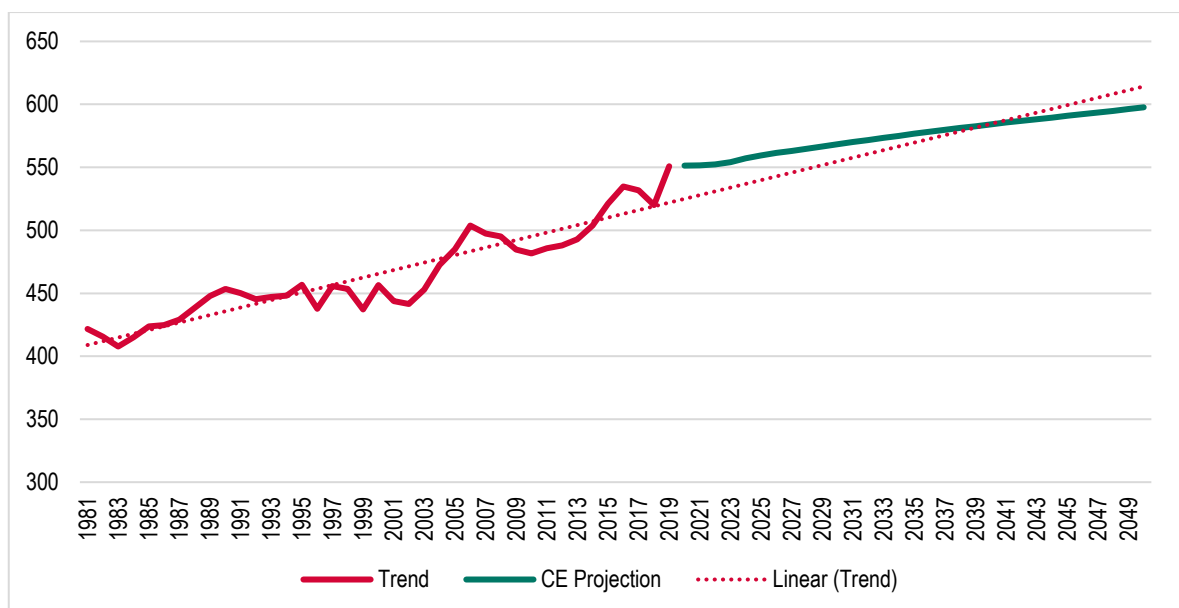
6.12 The local area baseline projections are based on historical growth in the local area (i.e. the relevant local authority) relative to the region (East Midlands) or UK (depending on which area it has the strongest relationship with), on a sector-by-sector basis. They assume that those relationships continue into the future. Thus, if a sector in the local area outperformed the sector in the region (or UK) as a whole in the past, then it will be assumed to do so in the future. Similarly, if it underperformed the region (or UK) in the past then it will be assumed to underperform the region (or UK) in the future.

6.13 The projections further assume that economic growth in the local area is not constrained by supply-side factors, such as population and the supply of labour. They assume that there will be enough labour (either locally or through commuting) with the right skills to fill the jobs. If, for example, in reality, the labour supply is not there to meet projected growth in employment, growth could be slower.

6.14 The measure of employment is workplace-based jobs, which include full-time, part-time and self-employed.

6.15 The projections show employment growth of 34,100 jobs between 2020-41 which, as the chart below shows, represents a weaker rate of growth in employment relative to the long-term trend.

Figure 6.1: Projection of Total Employment – Leicester & Leicestershire



Source: Cambridge Econometrics/Iceni

- 6.16 Drilling into the performance of individual authorities, the strongest forecast growth in absolute terms is projected to be in Leicester and NW Leicestershire; but in relative terms the rate of growth in total employment in the baseline projections is strongest in Harborough and NW Leicestershire. Weaker growth is forecast in particular in Charnwood, and in Oadby and Wigston.

Table 6.1 Baseline Projections by District, 2020-41

	Employment, 2020 (‘000s)	Employment Projection, 2020-41	% Change
Blaby	69.9	6.5	9.3%
Charnwood	77.7	3.2	4.2%
Harborough	48.0	4.8	10.1%
Hinckley and Bosworth	49.8	2.0	4.1%
Leicester	190.7	8.5	4.5%
Melton	22.3	1.8	7.9%
North West Leicestershire	71.1	6.5	9.2%
Oadby and Wigston	21.9	0.7	3.2%
Leicester & Leicestershire	551.4	34.1	6.2%
East Midlands	2415.2	158.7	6.6%
UK	35517.0	3941.0	11.2%

Source: Cambridge Econometrics

- 6.17 The scale of employment growth envisaged in the Baseline Projection over different timescales, including to 2036 and 2050 is shown in Table 6.2 below. Across the sub-region, employment is projected to grow by 0.3% pa.

**Table 6.2 Baseline Projections by District to 2036, 2041 and 2050 – Employment Change
(‘000s)**

	2020-36	2020-41	2020-50
Blaby	5.1	6.5	8.8
Charnwood	2.4	3.2	4.7
Harborough	3.9	4.8	6.5
Hinckley and Bosworth	1.6	2.0	2.9
Leicester	6.8	8.5	11.3
Melton	1.4	1.8	2.3
North West Leicestershire	5.2	6.5	8.8
Oadby and Wigston	0.5	0.7	1.0
Leicester & Leicestershire	26.9	34.1	46.3

Source: Cambridge Econometrics

Growth Scenario

- 6.18 IcenI has reviewed the sectoral outlook and the projections for performance of individual districts, including how this compares to historical growth. This is set out in **Appendix A2**. IcenI have also

undertaken a review of relevant economic policy/strategy documents at a sub-regional and local level. This is set out in **Appendix A3**.

6.19 This analysis and evidence has been brought together with the strategy set out within the LLEP's Economic Growth Strategy to 2030. This is based on the four core pillars of productivity, innovation, inclusivity and sustainability to deliver an innovative, technology-led and knowledge economy. It addresses short-term measures to support recovery from the Covid-19 pandemic and transition to new trading arrangements after leaving the EU; as well as seeking to support longer-term competitiveness.

6.20 There are several sectors, where the Leicester and Leicestershire offer has significant potential – where the R&D, firms, and sites give good prospects for growth:

- **Advanced manufacturing and engineering** – this is a real specialism, particularly in automotive, and already active in alternative fuels, electric and autonomous vehicles.
- **Life sciences and biotechnology** – there are significant university specialisms, a new regenerative medicine hospital for military injuries; and a reasonable amount of start-up / SME development.
- **Logistics and distribution** - there are several large sites (e.g. Magna Park, EM Gateway), plus development of rail freight and East Midlands Airport (principally freight) plus the new Freeport. The area falls within the Golden Triangle which is the core area nationally for National Distribution Centres (NDCs).
- **Sports science** – this is a world class specialism at Loughborough University and ripe for further commercialisation. It's a niche, but some good prospects that are probably much higher than the national trend rates of growth
- **Space / aerospace / earth observation** – this is a niche, but Leicester is well placed with SpacePark Leicester and surrounding sites, and government interest / investment in space sector

6.21 In addition, there are some office-based sectors, where the locational factors are strong - workforce availability, graduate skills (where relevant), location, infrastructure - but the limiting factors are mostly about office accommodation in Leicester City Centre and other centres, and the commercial viability of bringing forward new development. The Growth Scenario recognises the potential in **IT and Digital** recognising the area has the graduate skills, university R&D and teaching specialisms; and that these also support the potential for **Professional and Financial Services**, with the potential to benefit from jobs growth outside London. However there is modest commercial interest in office development and much of the office space in the past 20 years has been from public sector investment and initiatives. So growth in these areas will depend on significant public intervention.

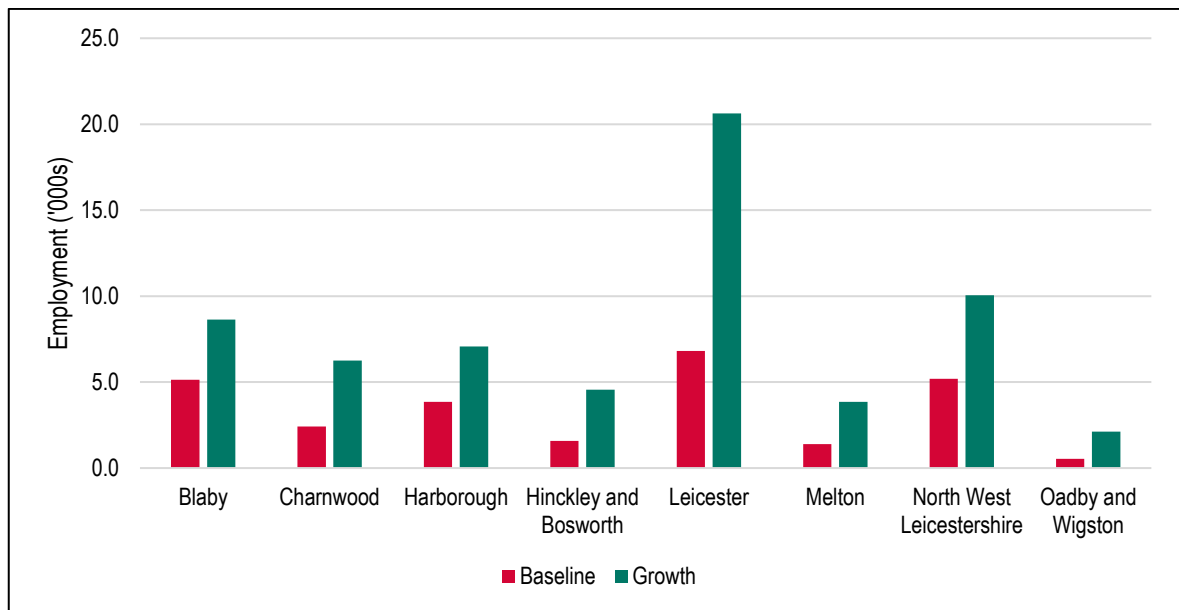
- 6.22 The Growth Scenario recognises the sub-region’s universities are important innovation assets and support the growth potential in key sectors; with the potential that a scenario is aligned to driving forward both GVA and productivity; increasing innovation activities; and supporting sustainable growth including in low carbon sectors/ activities. It takes account of sustainability principles and the implications of a shift towards a green economy.
- 6.23 Taking account of the Economic Growth Strategy, Cambridge Econometrics and IcenI have therefore worked with stakeholders to define a Growth Scenario which takes account of enhanced performance across a number of sectors. The sector specific outlook is set out in **Appendix A4**. There is a strong alignment of the sectors/activities (identified through the work on the LLEP Strategy) with the HENA baseline analysis and stakeholder engagement.
- 6.24 The results of the Aspirational Growth Scenario for growth in employment are shown below, with a comparison to the baseline growth shown. Total employment is expected to grow in this scenario by 0.7% pa compared to 0.3% pa in the Baseline Projection.

Table 6.3 Projections for Jobs Growth, 2020-36 ('000s)

	Baseline	Growth
Blaby	5.1	8.6
Charnwood	2.4	6.3
Harborough	3.9	7.1
Hinckley and Bosworth	1.6	4.6
Leicester	6.8	20.6
Melton	1.4	3.9
North West Leicestershire	5.2	10.0
Oadby and Wigston	0.5	2.1
Leicestershire	26.9	63.2
CAGR	0.3%	0.7%

- 6.25 As Figure 6.2 below shows, the strongest employment growth in absolute terms is expected in Leicester followed by NW Leicestershire and Blaby.

Figure 6.2: Employment Growth by Authority, 2020-36



Source: Cambridge Econometrics

6.26 The scenarios for employment growth to 2041 are shown in Table 6.4 below, and to 2050 in Table 6.5. Table 6.5 then summarises and compares the growth in employment envisaged in the two scenarios between 2020-50. The Growth Scenario envisages notably stronger employment growth in all authorities. The strongest growth rate in this scenario is in Melton, but this is influenced by the relatively low base position. Absolute growth is strongest in Leicester and NW Leicestershire in the Growth Scenario.

Table 6.4 Projections for Jobs Growth, 2020-41 ('000s)

	Baseline	Growth
Blaby	6.5	11.1
Charnwood	3.2	8.2
Harborough	4.8	9.0
Hinckley and Bosworth	2.0	5.9
Leicester	8.5	26.3
Melton	1.8	5.0
North West Leicestershire	6.5	12.9
Oadby and Wigston	0.7	2.9
Leicester & Leicestershire	34.1	81.4
CAGR	0.3%	0.7%

Source: Cambridge Econometrics

Table 6.5 Projections for Jobs Growth, 2020-50 ('000s)

	Baseline	Growth
Blaby	8.8	15.4
Charnwood	4.7	11.8
Harborough	6.5	12.5
Hinckley and Bosworth	2.9	8.3
Leicester	11.3	36.1
Melton	2.3	7.2
North West Leicestershire	8.8	17.8
Oadby and Wigston	1.0	4.1
Leicester & Leicestershire	46.3	113.2
CAGR	0.3%	0.6%

Source: Cambridge Econometrics

7. EMPLOYMENT LAND NEEDS

- 7.1 This section provides commentary on the future employment land needs by type from 2021¹¹ to 2036, 2041 and 2050. It considers labour demand (baseline and growth) scenarios provided by Cambridge Econometrics, as well as completions trends using Local Planning Authority (LPA) monitoring data. Consideration is also given to margins for flexibility, vacancy and replacement demand.
- 7.2 Recommendations are made regarding future needs for office, industrial and local warehousing / distribution units under 9,000 sqm. Large scale warehousing/ distribution unit needs are reported in the Strategic Warehousing Study prepared by GL Hearn and finalised in April 2021.¹²
- 7.3 Different forecasting techniques have their advantages and disadvantages. Econometric forecasts take account of differences in expected economic performance moving forward relative to the past. However a detailed model is required to relate net forecasts to use classes and estimate gross floorspace and land requirements. For office based sectors consideration needs to be given to the impacts of trends in home working. For industrial sectors however the relationship between floorspace needs and employment trends may be weak – influenced by productivity improvements. In contrast, past take-up is based on actual delivery of employment development; but does not take account of implications of growth in labour supply or housing growth nor any differences in economic performance relative to the past. It is also potentially influenced by past land supply and/or policies.
- 7.4 Ultimately therefore an appropriate approach is therefore to utilise different forecasting techniques and an understanding of the merits of different approaches in drawing conclusions. This approach of comparing different approaches and testing findings, which Iceni adopts, is consistent with the Planning Practice Guidance (PPG).

Labour Demand Model: Baseline and Growth

- 7.5 Using the baseline and growth employment forecasts from CE (see previous section), Iceni has developed a set of employment floorspace requirements. They relate to the floorspace and land required to accommodate net growth in jobs. Provision for flexibility of supply and replacement demand is then considered.

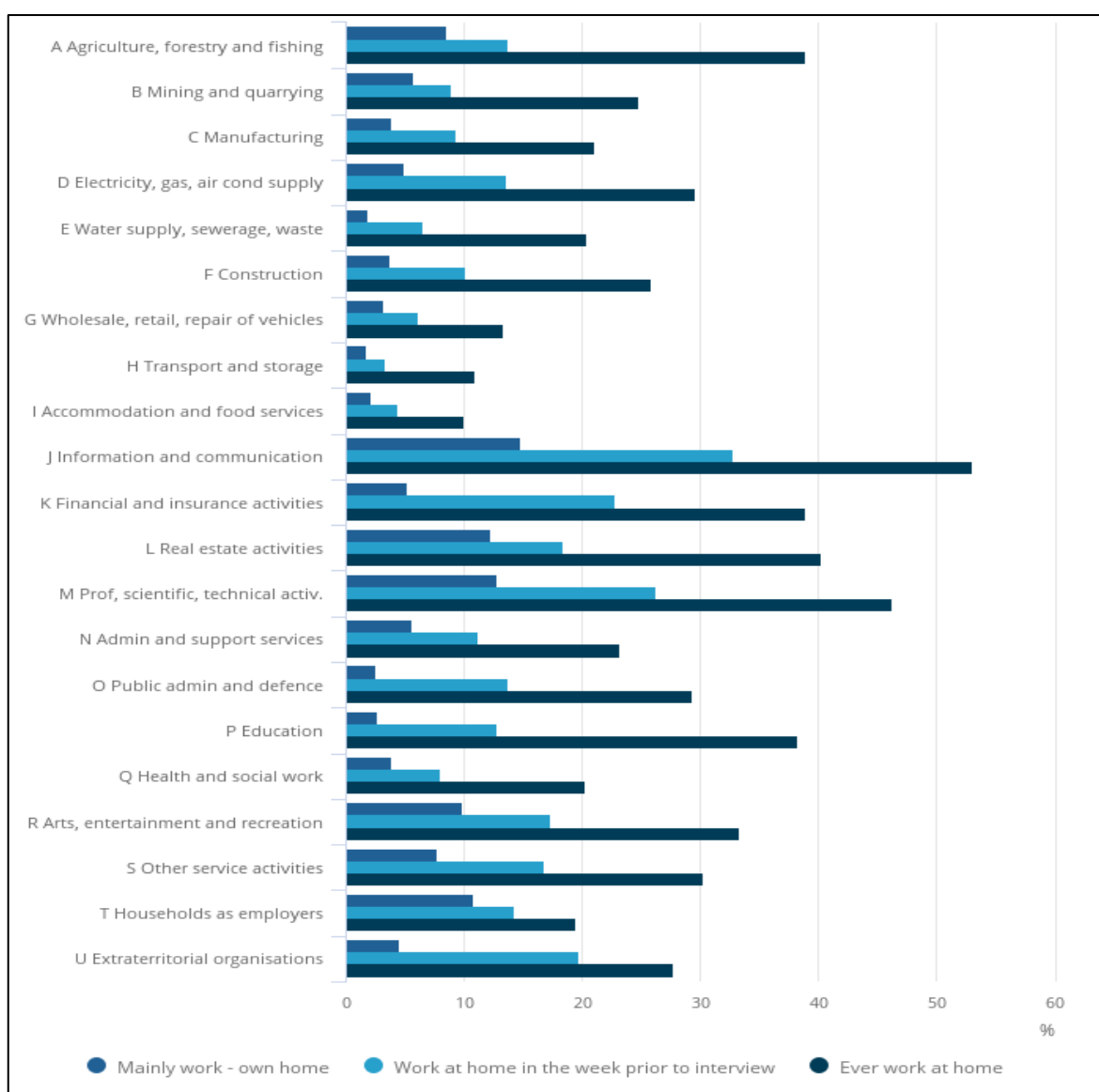
¹¹ Note: employment land forecasting base 2021, job projections chapter 6 start 2020

¹² <https://www.lstrategicgrowthplan.org.uk/wp-content/uploads/2021/09/Leicester-and-Leicestershire-Strategic-Distribution-Study-2021.pdf>

7.6 CE provided a 45 sector breakdown which we have used to model floorspace needs. A Leicestershire wide ratio of jobs to FTEs has been used to convert jobs to FTEs.

7.7 Prior to converting FTEs to floorspace, an adjustment has been made for typical homeworking levels – therefore those not requiring commercial floorspace – using pre pandemic data for 2019. This has been developed from ONS data on homeworking by sector as set out below. This is up to 15% for office-based sectors and between 2-5% for industrial/ warehousing with sector-specific assumptions informed by the data in Figure 7.1 below. A further adjustment is considered later in terms of a post Covid scenario.

Figure 7.1: Homeworking by Sector, 2019



Source: ONS

7.8 Converting the residual FTEs to floorspace, employment density ratios are assumed as follows:

- 15 sqm offices¹³
- 30 sqm R&D
- 44 sqm industrial
- 80 sqm warehousing

- 7.9 These are derived having regard to the Homes and Communities Agency *Employment Densities Guide* (3rd Edition, 2015). They relate to the Gross External Area (GEA) floorspace. The industrial density figure relates to the midpoint of E(g)(iii) light industrial and B2 uses; whilst that for warehousing takes account of the demand focus on 'big box' larger units (but assumes a range of different sizes of units are delivered). Offices and R&D now relate to E(g)(i) and E(g)(ii) use classes.
- 7.10 It is of note that the warehousing needs reported in this paper are considered to be focused on non strategic warehousing, as the 2021 Strategic Warehousing Study reports on needs for units over 9,000 sqm / 100,000 sqft. However the labour demand models cannot separate local and strategic units, which is dealt with via completions trends.
- 7.11 The summary outputs for the authorities for 2021 to 2036, 2041 and 2050 are as follows. Over the period to 2041, a net need for 132,600 – 213,500 sq.m of office space and 40,200 – 59,100 sq.m for R&D is shown. Figures for other timeframes are shown in the respective tables.
- 7.12 A negative need for industrial space is shown in the baseline projection to 2041 (-226,000 sq.m) with a modest positive need for almost 80,000 sq.m in the growth scenario. Productivity improvements in the manufacturing sector are modelled that still result in a decline in employment in the baseline scenario which drives these figures. In reality there is likely to be a weaker relationship between employment trends and floorspace/ land requirements due to the need to invest in capital to drive productivity, meaning that greater weight should be given to the completions trend analysis in drawing conclusions on industrial floorspace/ land needs to the completions trends analysis.
- 7.13 For warehousing and distribution, a floorspace need for between 277,900 – 829,600 sq.m is shown to 2041. For this market segment, automation is expected to change (and indeed weaken) the relationship between floorspace and employment numbers over time. This is built into the CE model which assumes automation influences growth in employment. The labour demand modelling is driven by job numbers, and therefore for this sector likely under-estimates the scale of need.

¹³ Equivalent to 12 s.m NIA per job

Table 7.1 Labour Demand Floorspace Needs (net), 2021-2036, sqm

	Offices		R&D		Industrial		Distribution	
	Basel.	Growth	Basel.	Growth	Basel.	Growth	Basel.	Growth
Blaby	24,400	37,200	3,000	4,300	-8,200	5,700	14,900	48,300
Charnwood	13,200	20,300	3,400	5,800	-33,000	-6,300	13,400	53,300
Harborough	8,700	13,500	4,200	5,800	-19,000	-9,200	54,500	146,100
H&B	10,000	14,300	4,100	6,300	-44,200	-17,000	27,100	73,000
Leicester	16,200	32,600	8,200	12,000	-56,400	64,600	19,500	94,400
Melton	3,200	5,800	1,200	1,600	24,400	33,900	3,700	14,500
NW Leics	25,400	36,100	7,900	9,900	-31,900	-6,700	79,100	199,600
O&W	2,600	4,200	400	900	-14,900	-6,300	7,900	19,300
Total	103,600	164,000	32,300	46,600	-183,200	58,600	220,000	648,500

Source: CE/ Icenl

Table 7.2 Labour Demand Floorspace Needs (net), 2021-2041, sqm

	Offices		R&D		Industrial		Distribution	
	Basel.	Growth	Basel.	Growth	Basel.	Growth	Basel.	Growth
Blaby	31,100	48,300	3,700	5,400	-10,500	6,600	18,700	61,500
Charnwood	17,000	26,500	4,100	7,300	-39,300	-5,700	16,700	68,100
Harborough	11,100	17,600	5,200	7,300	-23,200	-10,500	69,700	187,700
H&B	12,900	18,900	5,100	7,900	-54,200	-20,400	34,700	93,900
Leicester	19,900	41,500	10,100	15,200	-71,500	81,700	24,100	120,500
Melton	4,200	7,800	1,600	2,100	30,100	42,600	4,500	18,600
NW Leics	32,900	47,400	10,000	12,700	-39,300	-6,900	99,500	254,500
O&W	3,300	5,500	500	1,100	-18,300	-7,400	9,900	24,800
Total	132,600	213,500	40,200	59,100	-226,000	79,900	277,900	829,600

Source: CE/ Icenl

Table 7.3 Labour Demand Floorspace Needs (net), 2021-2050, sqm

	Offices		R&D		Industrial		Distribution	
	Basel.	Growth	Basel.	Growth	Basel.	Growth	Basel.	Growth
Blaby	42,100	67,100	5,100	7,500	- 14,200	7,900	25,200	84,800
Charnwood	23,600	37,400	5,800	10,200	- 47,300	- 2,700	22,100	93,800
Harborough	15,300	24,800	7,200	10,200	- 28,500	- 11,500	95,400	262,300
H&B	17,900	26,700	6,800	10,800	- 68,800	- 25,000	47,600	131,300
Leicester	26,100	56,500	13,300	20,600	- 97,300	106,500	31,400	166,000
Melton	5,900	11,200	2,200	2,900	36,600	54,700	5,900	26,100
NW Leics	45,800	67,200	13,900	17,900	- 51,300	- 7,100	133,700	352,500
O&W	4,500	7,700	500	1,500	- 22,900	- 8,400	13,200	34,400
Total	181,200	298,600	54,700	81,600	- 293,800	114,300	374,400	1,151,200

Source: CE/ Icenl

7.14 These have been converted to land using plot ratios of:

- 0.35 for offices (2.0 in Leicester, in line with 2017 HEDNA / Leicester 2020 EDNA)

- 0.4 for industrial and distribution uses.

7.15 The plot ratio described the relationship between floorspace and site area, and allows for provision for parking; vehicle turning etc. It should be noted that the land requirements generated through the modelling relate to the developable area, and that site areas may be greater to allow for landscaping and infrastructure.

7.16 The initial summary outputs on land requirements for the individual authorities are as follows:

Table 7.4 Labour Demand Land Needs, 2021-2036, ha

	Offices		R&D		Industrial		Distribution	
	Basel.	Growth	Basel.	Growth	Basel.	Growth	Basel.	Growth
Blaby	7.0	10.6	0.7	1.1	-2.0	1.4	3.7	12.1
Charnwood	3.8	5.8	0.8	1.4	-8.2	-1.6	3.3	13.3
Harborough	2.5	3.9	1.0	1.4	-4.8	-2.3	13.6	36.5
H&B	2.8	4.1	1.0	1.6	-11.0	-4.2	6.8	18.3
Leicester	0.8	1.6	2.0	3.0	-14.1	16.2	4.9	23.6
Melton	0.9	1.7	0.3	0.4	6.1	8.5	0.9	3.6
NWL	7.3	10.3	2.0	2.5	-8.0	-1.7	19.8	49.9
O&W	0.7	1.2	0.1	0.2	-3.7	-1.6	2.0	4.8
Total	25.8	39.2	8.1	11.7	-45.8	14.7	55.0	162.1

Source: CE/ Icenl

Table 7.5 Labour demand land needs 2021-2041, ha

	Offices		R&D		Industrial		Distribution	
	Basel.	Growth	Basel.	Growth	Basel.	Growth	Basel.	Growth
Blaby	8.9	13.8	0.9	1.4	-2.6	1.6	4.7	15.4
Charnwood	4.9	7.6	1.0	1.8	-9.8	-1.4	4.2	17.0
Harborough	3.2	5.0	1.3	1.8	-5.8	-2.6	17.4	46.9
H&B	3.7	5.4	1.3	2.0	-13.5	-5.1	8.7	23.5
Leicester	1.0	2.1	2.5	3.8	-17.9	20.4	6.0	30.1
Melton	1.2	2.2	0.4	0.5	7.5	10.6	1.1	4.6
NWL	9.4	13.5	2.5	3.2	-9.8	-1.7	24.9	63.6
O&W	0.9	1.6	0.1	0.3	-4.6	-1.8	2.5	6.2
Total	33.2	51.2	10.1	14.8	-56.5	20.0	69.5	207.4

Source: CE/ Icenl

Table 7.6 Labour demand land needs 2021-2050, ha

	Offices		R&D		Industrial		Distribution	
	Basel.	Growth	Basel.	Growth	Basel.	Growth	Basel.	Growth
Blaby	12.0	19.2	1.3	1.9	-3.6	2.0	6.3	21.2
Charnwood	6.7	10.7	1.4	2.6	-11.8	-0.7	5.5	23.5
Harborough	4.4	7.1	1.8	2.6	-7.1	-2.9	23.8	65.6
H&B	5.1	7.6	1.7	2.7	-17.2	-6.3	11.9	32.8
Leicester	1.3	2.8	3.3	5.1	-24.3	26.6	7.8	41.5
Melton	1.7	3.2	0.5	0.7	9.1	13.7	1.5	6.5
NWL	13.1	19.2	3.5	4.5	-12.8	-1.8	33.4	88.1
O&W	1.3	2.2	0.1	0.4	-5.7	-2.1	3.3	8.6
Total	45.6	72.0	13.7	20.4	-73.4	28.6	93.6	287.8

Source: CE/ Icen

- 7.17 The most significant differences between the scenarios are evidenced in the industrial and warehousing/distribution sectors.
- 7.18 A sensitivity model has been developed which reflects the very significant impact of the Covid-19 pandemic on the use of offices and enforced use of home working. At the time of writing (mid 2021) there remains considerable uncertainty on the long term trend for office space. Property market feedback for Leicestershire reports a freeze on transactions since the initial 2020 lockdown. The sensitivity scenario reduces the office based requirements under the circumstance that post pandemic there is a reduced requirement for new space despite growth in office type jobs due to an increased prevalence of home working.
- 7.19 Whilst it is likely that office usage may see a reorganisation of space, for example more breakout / collaboration space, it remains plausible that there will be a reduced overall requirement for new offices. Some examples of major corporate activity in this regard include: HSBC cutting its global office space by 40%; Lloyds cutting desk numbers by 20%; Alphabet developing a model where staff work three days in the office and two days from home; and Facebook allowing 'complete flexibility'. Whilst recognising these are global corporations, as can be best judged at present there does seem to be a likely move to greater home working.
- 7.20 On balance, Icen considers it reasonable to run a scenario that reduces future need by 30% against that of the typical office needs, as below. Given the uncertainty at the current time (given ongoing impacts of the pandemic), it is recommended that trends are monitored in the near term.

Table 7.7 Labour demand land needs, sqm office sensitivity

	Offices							
	Standard need				Need reduced 30%			
	2021-36		2021-41		2021-36		2021-41	
	Basel.	Growth	Basel.	Growth	Basel.	Growth	Basel.	Growth
Blaby	24,400	37,200	31,100	48,300	17,100	26,000	21,800	33,800
Charnwood	13,200	20,300	17,000	26,500	9,200	14,200	11,900	18,600
Harborough	8,700	13,500	11,100	17,600	6,100	9,500	7,800	12,300
H&B	10,000	14,300	12,900	18,900	7,000	10,000	9,000	13,200
Leicester	16,200	32,600	19,900	41,500	11,300	22,800	13,900	29,100
Melton	3,200	5,800	4,200	7,800	2,200	4,100	2,900	5,500
NWL	25,400	36,100	32,900	47,400	17,800	25,300	23,000	33,200
O&W	2,600	4,200	3,300	5,500	1,800	2,900	2,300	3,900
Total	103,600	164,000	132,600	213,500	72,500	114,800	92,800	149,500

Source: CE/ Icen

7.21 Furthermore to the above, we can consider from the authority completions data that there has been limited overall net change in office floorspace from 2011-19 (suppressed through losses in Leicester) whilst there had been growth in office FTE employees of around 17,000 against gross office gains of around 125,000 sqm, which is in itself around half of what would be expected through a typical density model. This suggests that the prevalence of home based working is more common than suggested in Figure 7.1, facilitated in part by changes in technology, and that the sensitivity reduction above of 30% is appropriate as a minimum discount to adjust for non office based activities for these sectors.

Completions Trend Model

7.22 Using gross and net completion data provided by the authorities for the 2011/12 to 2019/20 period, Icen has derived a past completions trend to model a future completions trend based need. For Charnwood only gross completions were provided and for Charnwood and Oadby and Wigston, provision in hectares has been converted to sqm. The data used represents the longest time period for which a consistent dataset is available and includes periods of stronger and weaker economic and market conditions.

7.23 All completions refer to non strategic units (i.e. those under 9,000 sqm). Non strategic B8 completions have been provided by North West Leicestershire and Harborough as defined by the LPAs whilst large completions (B8 units of over 9,000 sq.m) have been manually excluded from Blaby (3) and Hinckley & Bosworth (2). Strategic need completions are covered in the Strategic Warehousing Study that uses completions and traffic growth with replacement demand models to project future needs.

7.24 The key trends are:

- Gross gains in all floorspace typologies.
- Strongest gross office gains in Leicester, Harborough (from two developments early in the period) and NW Leicestershire (notably Ivanhoe Business Park). In net terms Leicester has seen significant losses in offices through conversion to residential.
- Gross non strategic industrial and warehousing development has occurred in all areas other than Oadby and Wigston. In net terms there has been a decline of industrial stock overall in Leicester, NW Leicestershire, Hinckley and Bosworth and Blaby. In some instances this is due to large single demolitions of older premises (such as Arla Dairies, 2018/19 NW Leicestershire for 21,000 sqm).
- Only Leicester and Oadby and Wigston have seen losses of warehousing and distribution.

Table 7.8 Completions trend forecast 2021/22-2036/37, sqm

	Gross				Net			
	Offices	R&D	Industrial	Local Distribution	Offices	R&D	Industrial	Local Distribution
Blaby	27,400	-	19,700	44,300	24,900	-	-23,300	34,600
Charnwood	21,100	6,800	45,300	38,600	-	-	-	-
Harborough	42,500	6,600	74,100	29,000	33,700	6,600	66,900	18,900
H&B	23,300	740*	50,100	82,700	-1,500	-800	-76,300	46,700
Leicester	47,000	5,100	84,100	52,800	-89,900	5,100	-209,300	-270,700
Melton	11,900	700	68,800	34,300	11,400	700	56,400	17,900
NWL	30,300	-	15,300	56,800	28,300	-	-113,200	52,800
O&W	1,900	-	-	-	1,500	-	-1,500	-17,800
Total	205,300	20,000	357,400	338,600	8,400	11,600	-300,300	-117,400

Source: LPAs / Icenl (* excludes MIRA)

Table 7.9 Completions trend forecast 2021/22-2041/42, sqm

	Gross				Net			
	Offices	R&D	Industrial	Local Distribution	Offices	R&D	Industrial	Local Distribution
Blaby	36,600	-	26,200	59,100	33,300	-	-31,100	46,200
Charnwood	28,100	9,100	60,400	51,400	-	-	-	-
Harborough	56,700	8,800	98,800	38,700	44,900	8,800	89,200	25,200
H&B	31,000	1,000*	66,800	110,300	-2,000	-1,100	-101,800	62,300
Leicester	62,600	6,800	112,100	70,400	-119,900	6,800	-279,100	-360,900
Melton	15,800	900	91,700	45,700	15,200	900	75,300	23,900
NWL	40,400	-	20,400	75,800	37,700	-	-150,900	70,400
O&W	2,600	-	-	-	2,000	-	-2,000	-23,700
Total	273,800	26,600	476,500	451,500	11,200	15,400	-400,400	-156,600

Source: LPAs / Icenl (* excludes MIRA)

Table 7.10 Completions trend forecast 2021/22-2050/51, sqm

	Gross				Net			
	Offices	R&D	Industrial	Local Distribution	Offices	R&D	Industrial	Local Distribution
Blaby	53,000	-	38,000	85,700	48,200	-	-45,100	67,000
Charnwood	40,800	13,200	87,600	74,600	-	-	-	-
Harborough	82,200	12,800	143,200	56,100	65,200	12,800	129,400	36,600
H&B	45,000	1,400*	96,900	159,900	-2,900	-1,600	-147,600	90,300
Leicester	90,800	9,900	162,600	102,100	-173,900	9,900	-404,700	-523,300
Melton	23,000	1,300	133,000	66,300	22,000	1,300	109,100	34,600
NWL	58,500	-	29,600	109,900	54,700	-	-218,800	102,100
O&W	3,700	-	-	-	2,900	-	-2,800	-34,400
Total	396,900	38,600	690,900	654,600	16,200	22,400	-580,500	-227,000

Source: LPAs / IcenI (* excludes MIRA)

7.25 The net change from 2011-19 has also been compared with the VOA records from the same period alongside the 2001-19 period. Industrial records have not been compared as this would encompass strategic development (strategic distribution units of > 9000 sq.m) which are not being considered at this time.

7.26 The recent results between VOA and monitoring broadly follow a similar pattern, except in Blaby, although tend to be more conservative (other than for Charnwood). The longer term trend is more positive for all areas which indicates a decrease in office demand over the last economic cycle, influenced partly by changes in technology that reduce the need for office presence, as well as increased demand for other types of premises such as residential (notably in Leicester) and industrial / warehousing.

Table 7.11 Comparison of average annual change: monitoring and & VOA (sqm)

	Offices			
	Gross completions (2011-19)	Net completions (2011-19)	VOA (2011-19)	VOA (2001-19)
Blaby	1,800	1,700	-1,800	1,500
Charnwood	1,400	1,400	2,400	3,200
Harborough	2,800	2,200	1,100	2,300
Hinckley and Bosworth	1,600	-100	100	600
Leicester	3,100	-6,000	-4,800	-3,400
Melton	800	800	0	100
North West Leicestershire	2,000	1,900	600	1,500
Oadby and Wigston	100	100	-200	100
Total	13,700	600	-2,600	5,800

Source: LPAs / IcenI / VOA

Comparing Labour Demand and Completions Trend

- 7.27 The table below compares the labour demand models and the completions trends for the 2021-36, 2021-41 and 2021-50 periods. The labour demand for offices *with* the sensitivity reduction is assumed below.
- 7.28 It is of note that the completions trends are not directly comparable with the labour demand for warehousing as strategic developments (strategic distribution units of > 9000 sq.m) have been excluded from the monitoring data.

Table 7.12 Employment needs 2021-2036, sqm

	Offices				R&D				Industrial				Distribution			
	Basel.	Growth	Compl. Gr.	Compl Ne.	Basel.	Growth	Compl. Gr.	Compl Ne.	Basel.	Growth	Compl. Gr.	Compl Ne.	Basel.	Growth	Compl. Gr.*	Compl Ne.*
Blaby	17,100	26,000	27,400	24,900	3,000	4,300	-	-	-8,200	5,700	19,700	-23,300	14,900	48,300	44,300	34,600
Charnwood	9,200	14,200	21,100	-	3,400	5,800	6,800	-	-33,000	-6,300	45,300	-	13,400	53,300	38,600	-
Harborough	6,100	9,500	42,500	33,700	4,200	5,800	6,600	6,600	-19,000	-9,200	74,100	66,900	54,500	146,100	29,000	18,900
H&B	7,000	10,000	23,300	-1,500	4,100	6,300	700	-800	-44,200	-17,000	50,100	-76,300	27,100	73,000	82,700	46,700
Leicester	11,300	22,800	47,000	-89,900	8,200	12,000	5,100	5,100	-56,400	64,600	84,100	-209,300	19,500	94,400	52,800	-270,700
Melton	2,200	4,100	11,900	11,400	1,200	1,600	700	700	24,400	33,900	68,800	56,400	3,700	14,500	34,300	17,900
NWL	17,800	25,300	30,300	28,300	7,900	9,900	-	-	-31,900	-6,700	15,300	-113,200	79,100	199,600	56,800	52,800
O&W	1,800	2,900	1,900	1,500	400	900	-	-	-14,900	-6,300	-	-1,500	7,900	19,300	-	-17,800
Total	72,500	114,800	205,300	8,400	32,300	46,600	20,000	11,600	-183,200	58,600	357,400	-300,300	220,000	648,500	338,600	-117,400

Source: CE/ Icen

* In the case of completions this solely relates to those under 9,000 sqm

Table 7.13 Employment needs 2021-2041, sqm

	Offices				R&D				Industrial				Distribution			
	Basel.	Growth	Compl. Gr.	Compl Ne.	Basel.	Growth	Compl. Gr.	Compl Ne.	Basel.	Growth	Compl. Gr.	Compl Ne.	Basel.	Growth	Compl. Gr.*	Compl Ne.*
Blaby	21,800	33,800	36,600	33,300	3,700	5,400	-	-	-10,500	6,600	26,200	-31,100	18,700	61,500	59,100	46,200
Charnwood	11,900	18,600	28,100	-	4,100	7,300	9,100	-	-39,300	-5,700	60,400	-	16,700	68,100	51,400	-
Harborough	7,800	12,300	56,700	44,900	5,200	7,300	8,800	8,800	-23,200	-10,500	98,800	89,200	69,700	187,700	38,700	25,200
H&B	9,000	13,200	31,000	-2,000	5,100	7,900	1,000	-1,100	-54,200	-20,400	66,800	-101,800	34,700	93,900	110,300	62,300
Leicester	13,900	29,100	62,600	-119,900	10,100	15,200	6,800	6,800	-71,500	81,700	112,100	-279,100	24,100	120,500	70,400	-360,900
Melton	2,900	5,500	15,800	15,200	1,600	2,100	900	900	30,100	42,600	91,700	75,300	4,500	18,600	45,700	23,900
NWL	23,000	33,200	40,400	37,700	10,000	12,700	-	-	-39,300	-6,900	20,400	-150,900	99,500	254,500	75,800	70,400
O&W	2,300	3,900	2,600	2,000	500	1,100	-	-	-18,300	-7,400	-	-2,000	9,900	24,800	-	-23,700
Total	92,800	149,500	273,800	11,200	40,200	59,100	26,600	15,400	-226,000	79,900	476,500	-400,400	277,900	829,600	451,500	-156,600

Source: CE/ Icenl

* In the case of completions this solely relates to those under 9,000 sqm

Table 7.14 Employment needs 2021-2050, sqm

	Offices				R&D				Industrial				Distribution			
	Basel.	Growth	Compl. Gr.	Compl Ne.	Basel.	Growth	Compl. Gr.	Compl Ne.	Basel.	Growth	Compl. Gr.	Compl Ne.	Basel.	Growth	Compl. Gr.*	Compl Ne.*
Blaby	29,500	47,000	53,000	48,200	5,100	7,500	-	-	-14,200	7,900	38,000	-45,100	25,200	84,800	85,700	67,000
Charnwood	16,500	26,200	40,800	-	5,800	10,200	13,200	-	-47,300	-2,700	87,600	-	22,100	93,800	74,600	-
Harborough	10,700	17,400	82,200	65,200	7,200	10,200	12,800	12,800	-28,500	-11,500	143,200	129,400	95,400	262,300	56,100	36,600
H&B	12,500	18,700	45,000	-2,900	6,800	10,800	1,400	-1,600	-68,800	-25,000	96,900	-147,600	47,600	131,300	159,900	90,300
Leicester	18,300	39,600	90,800	-173,900	13,300	20,600	9,900	9,900	-97,300	106,500	162,600	-404,700	31,400	166,000	102,100	-523,300
Melton	4,100	7,800	23,000	22,000	2,200	2,900	1,300	1,300	36,600	54,700	133,000	109,100	5,900	26,100	66,300	34,600
NWL	32,100	47,000	58,500	54,700	13,900	17,900	-	-	-51,300	-7,100	29,600	-218,800	133,700	352,500	109,900	102,100
O&W	3,200	5,400	3,700	2,900	500	1,500	-	-	-22,900	-8,400	0	-2,800	13,200	34,400	-	-34,400
Total	126,800	209,000	396,900	16,200	54,700	81,600	38,600	22,400	-293,800	114,300	690,900	-580,500	374,400	1,151,200	654,600	-227,000

Source: CE/ Icenl

* In the case of completions this solely relates to those under 9,000 sqm

Drawing Conclusions on Employment Land Needs

- 7.29 The outcomes of the modelling and recommended future requirements are considered below.
- 7.30 **Offices:** gross completions exceed even the growth model for almost all authorities, reflecting the past delivery of new floorspace. The labour demand models (adjusted) sit suitably above net completions trends at the overall study area level which are suppressed by Leicester's losses – which are unlikely to be continued in the future, given that much of the stock able to be converted to residential has now done so. In some instances the net completions trends are in line with growth model labour demand figures (Blaby, NW Leicestershire, Oadby & Wigston) which suggests that the historic stable volume of offices supports a workforce in line with the growth labour demand model. There are a number of exceptions, being: Harborough, with completions driven by single developments early in the monitoring period; Hinckley and Bosworth, which appears to have been affected by losses; and Melton, which has a higher net completion rate although VOA data suggests this may be overstated. Net figures are not provided for Charnwood and Leicester, which has been heavily affected by losses to residential.
- 7.31 In Icen's view, although weakened by technology, office requirements are still best represented by changes in employment levels. Therefore, it is recommended that the labour demand models best represent future needs. The growth scenario model should best represent the future economic outlook given that this has been adjusted to reflect local economic ambitions and interventions and it is recommended that this be used for planning policy requirements. There is some uncertainty about future levels of occupancy and utilisation of offices post pandemic, so a 'sensitivity' model has been run which helps to inform parameters for office floorspace and job needs. Based on historic job and floorspace delivery tested above, even the sensitivity model may be aspirational.
- 7.32 **R&D:** the R&D labour demand figures are generally higher than the completions. Planning for the labour demand risks overprovision of land for this requirement. On balance it seems most appropriate to include the R&D completions trend gross within the overall office needs figure for the relevant authorities.
- 7.33 **Industrial:** gross completions vastly exceed the labour demand models (which only see notable growth demand in Leicester and Melton), whilst net completion trends are negative due to strong losses in most areas. The pattern suggests that older premises not suitable for modern business needs are being lost, whilst strong demand for new modern premises exists to support employment growth and replacement demand for older premises. In this context it is recommended that the projected gross completions are planned for, which assumes that some older stock will continue to be lost and need to be replaced.

7.34 **Local distribution and warehousing:** gross completions (for sub 9,000 sqm sites) requirements fall between the labour demand models. However many of the jobs under the growth model are expected to occur in larger scale distribution whilst even the baseline labour demand forecast will incorporate some strategic needs. On balance therefore, completions trends are therefore most likely to represent future needs. Gross completions trends are recommended to plan for however it should be recognised that some of this need will be met through recycling of sites on existing industrial areas, the potential for which can be identified through local employment land studies. Simply planning for the net change is likely to underestimate the future level of need if patterns of past loss continue, and market signals indicate current delivery rates are insufficient. It is of note that demand for industrial and distribution premises has been steadily rising since 2011 after a previous period of decline, particularly since 2001. It is expected that the current levels of demand will continue in at least the medium term (i.e. 5-10 years). On this basis the completions trend is reasonable. It is possible that the market will stabilise in the future and for the longer term to 2041 and beyond there will be a slowdown in demand for premises compared to the last decade. Monitoring and future updates can consider how the market has performed and whether new planning policy figures and targets should be considered.

7.35 The table below therefore represents the recommended needs taking into account the above and assumes that industrial losses will continue to occur at a comparable rate to the past.

Table 7.15 Recommended employment land need needs 2021-2036, sqm

	Offices inc R&D	Industrial	Local Distribution	Total
Blaby	26,000	19,700	44,300	90,000
Charnwood	21,000	45,300	38,600	104,900
Harborough	16,100	74,100	29,000	119,200
H&B	10,700	50,100	82,700	143,100
Leicester	27,900	84,100	52,800	164,800
Melton	4,800	68,800	34,300	107,900
NWL	25,300	15,300	56,800	97,400
O&W	2,900	0	0	2,900
Total	134,800	357,400	338,600	830,800

Source: Icenl

Table 7.16 Recommended employment land need needs 2021-2041, sqm

	Offices inc R&D	Industrial	Local Distribution	Total
Blaby	33,800	26,200	59,100	119,100
Charnwood	27,700	60,400	51,400	139,500
Harborough	21,100	98,800	38,700	158,600
H&B	14,200	66,800	110,300	191,300
Leicester	35,900	112,100	70,400	218,400
Melton	6,400	91,700	45,700	143,800
NWL	33,200	20,400	75,800	129,400
O&W	3,900	0	0	3,900
Total	176,200	476,500	451,500	1,104,100

Source: Icenl

Table 7.17 Recommended employment land need needs 2021-2050, sqm

	Offices inc R&D	Industrial	Local Distribution	Total
Blaby	47,000	38,000	85,700	170,700
Charnwood	39,400	87,600	74,600	201,600
Harborough	30,200	143,200	56,100	229,500
H&B	20,100	96,900	159,900	276,900
Leicester	49,500	162,600	102,100	314,200
Melton	9,100	133,000	66,300	208,400
NWL	47,000	29,600	109,900	186,500
O&W	5,400	0	0	5,400
Total	247,600	690,900	654,600	1,593,100

Source: Icenl

Margin for Flexibility

7.36 As in the 2017 HEDNA and as common in other studies, it is recommended a margin for flexibility be applied that recognises:

- Forecasting is not an exact science;
- Locational and site size requirements vary; and
- Potential for delay/slippage in sites coming forward.

7.37 This is included as five years of gross completions for industrial / distribution and 2 years for offices / R&D, as shown below. Five years is traditionally considered suitable as a margin however in the case of offices it is disproportionate to the scale of need modelled and likely to lead to an over inflation of figures.

Table 7.18 Margin for Flexibility

	Offices inc R&D	Industrial	Local Distribution	Total
Blaby	3,700	6,600	14,800	25,100
Charnwood	3,700	15,100	12,900	31,700
Harborough	6,500	24,700	9,700	40,900
H&B	3,200	16,700	27,600	47,500
Leicester	6,900	28,000	17,600	52,500
Melton	1,700	22,900	11,400	36,000
NWL	4,000	5,100	18,900	28,000
O&W	300	-	-	300
Total	30,000	119,100	112,900	262,000

Source: Icenii

Margin for Churn and Choice

- 7.38 It is widely recognised that a level of vacancy in property markets needs to be maintained of 5-10% of total stock (with 7.5% as a central marker) to ensure that businesses have space to grow, downsize or for inward investment opportunities. Any future needs therefore should include this margin in addition to the core recommended requirement. This is set out below, being 7.5% of Table 7.15 (figures rise for future periods reflecting tables 7.16 and 7.17).

Table 7.19 Margin for vacancy, future need (sqm) 2021-36 period

	Offices inc R&D	Industrial	Local Distribution	Total
Blaby	2,000	1,500	3,300	6,800
Charnwood	1,600	3,400	2,900	7,900
Harborough	1,200	5,600	2,200	8,900
Hinckley & Bosworth	800	3,800	6,200	10,800
Leicester	2,100	6,300	4,000	12,400
Melton	400	5,200	2,600	8,100
NW Leicestershire	1,900	1,100	4,300	7,300
O&W	200	-	-	200
Total	10,100	26,800	25,400	62,300

Source: Icenii (figures may not sum due to rounding)

- 7.39 Furthermore, at the present time the current property markets are reporting levels of vacancy significantly below the preferred 7.5%, as below. The availability rate is also included, which includes stock that is being marketed, usually as it is expected to come onto the market in the short-term as current leases end alongside that which is already vacant, indicating the market direction. CoStar does not differentiate industrial and distribution however the market reports have been filtered to units under 100,000 sqft. Given the limited vacancy, which is corroborated as acute by commercial agents, it is recommended that a further margin be included to increase provision in stock. However,

at the present time there is some uncertainty in future levels of office demand and availability rates are typically over 5% and rising, which indicates that vacancy is likely to increase in the future. As a result it is only considered necessary to increase industrial stock provision (and not offices). Stock count is based on CoStar which has been filtered to exclude large scale units that would be captured by VOA, CoStar data may differ from VOA.

Table 7.20 Current Vacancy and Availability

	Offices				Industrial / Distribution				
	Vacancy %	Availability %	Stock (m sqm)	m sqm req'd for 7.5% V.	Vacancy %	Availability %	Stock (m sqm)	m sqm req'd for 7.5% V.	Ha req'd for 7.5% V.
Blaby	2.6	5.3	0.2		1.0	4.0	0.4	0.03	6.4
Charnwood	5.5	12.2	0.2		3.2	3.4	0.6	0.02	6.1
Harborough	4.6	8.8	0.1		2.4	5.2	0.2	0.01	3.0
H&B	2.4	6.3	0.1		0.3	2.3	0.4	0.03	6.6
Leicester	2.4	5.8	0.6		0.3	2.0	1.4	0.10	24.5
Melton	0.5	2.7	0.0		3.5	6.9	0.2	0.01	1.8
NWL	1.9	5.4	0.2		3.4	5.3	0.6	0.03	6.4
O&W	1.0	1.2	0.0		0.0	1.7	0.2	0.01	3.0
Total	2.9	6.6	1.5		1.6	3.4	3.9	0.23	57.5

Source: Icen / CoStar July 2021

Replacement Demand

- 7.40 Replacement demand factors make provision for future losses of existing stock, assuming that past patterns of losses continue. It is normal that some stock is lost as it ages and premises become redundant. This can be due to changing industry patterns or because firms simply need new premises. In fully functioning markets, replacement demand needs are met through the market itself, however in reality many smaller businesses survive on older cheaper premises that the market cannot viably supply. Provision for new land for development is required and public intervention may also be needed to ensure premises can viably be brought forward. In Leicestershire, market feedback suggests that both smaller industrial premises and general office space can suffer from marginal viability.
- 7.41 Differences between losses and gains as well as market feedback can be useful indicators of the need for replacement demand. The sector by sector matters are discussed below.
- 7.42 **Offices:** considerable losses have occurred in Leicester City through permitted development rights, although elsewhere, other than Hinckley & Bosworth, differences between net and gross trends are more limited. On balance it is considered that there is limited need for provision over and above the need factors noted previously however monitoring of office losses would be prudent in order to consider changes in market activity particularly post pandemic.

- 7.43 **Industrial and warehousing:** given the positive approach taken to provision overall, through the use of gross completions, there is no need to make further inclusion for replacement demand. If net trends were used then a considerable additional allowance would be required. Making a judgement on the rate of replacement of older stock (such as 50% of historic losses) preferably requires a detailed understanding of the pattern, type and nature of losses in local areas which is better suited to individual area ELRs. Using the gross completions does assume that past losses will to an extent continue and some of the forecast need may occur on recycled existing industrial premises.
- 7.44 It would be reasonable to assume however that historic stock loss rates will decline particularly in Leicester City as older employment and industrial areas are regenerated and remaining areas protected.

Quantitative Conclusions on Need

- 7.45 Drawing together the previous section, the overall needs for employment are set out below. The margin to improve current vacancy levels does not differentiate B2/B8 and so is combined with the sub totals. This is considered practical as these requirements would be merged under any allocation.
- 7.46 Overall the figures point to a moderate level of office needs, based on future labour demand projections, adjusted downwards for home working patterns. In Harborough, Hinckley & Bosworth and Leicester the office figures are inflated by 5,000 – 10,000 sqm of R&D included.
- 7.47 Industrial and local distribution figures are based on gross completions from 2011-19. A further adjustment is made as below to try and improve the considerable existing tightness in the industrial markets that requires additional stock to relieve pressure. Some of the need may be met by the intensification and redevelopment of existing sites. Viability for smaller scale units of 10,000 sqft and below can be challenging and may benefit from being included in mixed use development allocations.

Table 7.21 Total Employment Floorspace Needs 2021-2036, sqm

	Offices inc R&D	Industrial Sub Total	Distribution Sub Total	Current V. adjustment (Ind. & Dist.)	Industrial & Distribution Total	All Employment Land
Blaby	31,700	27,800	62,400	25,700	115,900	147,600
Charnwood	26,300	63,800	54,400	24,400	142,600	168,900
Harborough	23,800	104,400	40,900	11,900	157,200	181,000
H&B	14,700	70,600	116,500	26,600	213,700	228,400
Leicester	36,900	118,400	74,400	97,800	290,600	327,500
Melton	6,900	96,900	48,300	7,200	152,400	159,300
NWL	31,200	21,500	80,000	25,500	127,000	158,200
O&W	3,400	-	-	12,200	12,200	15,600
Total	174,900	503,300	476,900	231,300	1,211,500	1,386,400

Source: Icenl (figures may not sum due to rounding)

Table 7.22 Total Employment Floorspace Needs 2021-2041, sqm

	Offices inc R&D	Industrial Sub Total	Distribution Sub Total	Current V. adjustment (Ind. & Dist.)	Industrial & Distribution Total	All Employment Land
Blaby	40,000	34,800	78,300	25,700	138,800	178,800
Charnwood	33,500	80,000	68,200	24,400	172,600	206,100
Harborough	29,200	130,900	51,300	11,900	194,100	223,300
H&B	18,500	88,500	146,200	26,600	261,300	279,800
Leicester	45,500	148,500	93,300	97,800	339,600	385,100
Melton	8,600	121,500	60,500	7,200	189,200	197,800
NWL	39,700	27,000	100,400	25,500	152,900	192,600
O&W	4,500	-	-	12,200	12,200	16,700
Total	219,300	631,300	598,200	231,300	1,460,900	1,680,200

Source: Iceni (figures may not sum due to rounding)

Table 7.23 Total Employment Floorspace Needs 2021-2050, sqm

	Offices inc R&D	Industrial Sub Total	Distribution Sub Total	Current V. adjustment (Ind. & Dist.)	Industrial & Distribution Total	All Employment Land
Blaby	54,200	47,500	106,900	25,700	180,100	234,300
Charnwood	46,100	109,300	93,100	24,400	226,800	272,900
Harborough	39,000	178,600	70,000	11,900	260,500	299,500
H&B	24,800	120,900	199,500	26,600	347,000	371,800
Leicester	60,100	202,800	127,400	97,800	428,000	488,100
Melton	11,500	165,900	82,700	7,200	255,800	267,300
NWL	54,500	36,900	137,000	25,500	199,400	253,900
O&W	6,100	-	-	12,200	12,200	18,300
Total	296,200	861,800	816,600	231,300	1,909,700	2,205,900

Source: Iceni (figures may not sum due to rounding)

7.48 The land needs are reported below including for up to 2050.

Table 7.24 Employment Land Needs 2021-2036, ha

	Offices inc R&D	Ind. & Dist.	All Employment Land
Blaby	9.1	29.0	38.0
Charnwood	7.5	35.7	43.2
Harborough	6.8	39.3	46.1
H&B	4.2	53.4	57.6
Leicester	1.8	72.7	74.5
Melton	2.0	38.1	40.1
NW Leicestershire	8.9	31.8	40.7
O&W	1.0	3.1	4.0
Total	41.3	302.9	344.1

Source: CE/ Iceni, * 2.0 plot ratio equivalent to 10.5 ha at same 0.35 ratio as other areas

Table 7.25 Employment Land Needs 2021-2041, ha

	Offices inc R&D	Ind. & Dist.	All Employment Land
Blaby	11.4	34.7	46.1
Charnwood	9.6	43.2	52.7
Harborough	8.3	48.5	56.9
H&B	5.3	65.3	70.6
Leicester	2.3*	84.9	87.2
Melton	2.5	47.3	49.8
NW Leicestershire	11.3	38.2	49.6
O&W	1.3	3.1	4.3
Total	52.0	365.2	417.2

Source: CE/ Iceni, * 2.0 plot ratio equivalent to 13.0 ha at same 0.35 ratio as other areas

Table 7.26 Employment Land Needs 2021-2050, ha

	Offices inc R&D	Ind. & Dist.	All Employment Land
Blaby	15.5	45.0	60.5
Charnwood	13.2	56.7	69.9
Harborough	11.1	65.1	76.3
H&B	7.1	86.8	93.8
Leicester	3.0	107.0	110.0
Melton	3.3	64.0	67.2
NW Leicestershire	15.6	49.9	65.4
O&W	1.7	3.1	4.8
Total	70.5	477.4	546.2

Source: CE/ Iceni, * 2.0 plot ratio equivalent to 17.2 ha at same 0.35 ratio as other areas

Locational Approach to Meeting Needs

Offices

- 7.49 Office markets had been slowing prior to the pandemic and Leicester based agents Innes England report almost no office transactions since the pandemic outbreak other than occasional downsizing. This study necessarily takes a medium term and balanced albeit cautious perspective on office requirements. Businesses will still require space to work and collaborate, including both refurbished and new workspaces, and in due course growth of existing and new firms is expected to generate requirements. In reality the viability of new offices, particularly speculatively, has been and will remain to be very weak in most areas (including Leicester), due to rising build costs and competing land interests for residential and distribution, making delivery often challenging.
- 7.50 The expectation is that in the medium term demand will give rise to new office requirements manifesting in historical growth locations including Leicester City Centre - although viability is not likely to improve and may require public sector assistance as has seen successful schemes in other East Midlands cities. Accessible out of town locations akin to Grove Park or Meridian Business Park are also likely to be desirable in due course given reduced deliverability constraints for new stock.

This is expected to be applicable to other districts in the FEMA, with smaller flexible spaces potentially desirable in both town centre and business centre locations, giving way to office requirements later in the plan period(s) assuming employment growth achieves levels forecast. The potential to repurpose redundant retail space to deliver office floorspace in town centres should be supported.

R&D

- 7.51 R&D type space is expected to come forward again in line with historic patterns of growth at MIRA and Loughborough University Science and Enterprise Park, although based on past trends and forecast job growth this is unlikely to exceed 10,000 sqm without substantial inward investment. The nature of future employment growth also suggests that higher end traditional business parks or distribution parks might see combined R&D with other types of commercial development given increasingly automated and technologically advanced processes across food manufacture, ICT and distribution of perishable goods.

Industrial and local Distribution

- 7.52 The key locations of demand for industrial and local distribution from a market perspective are at accessible locations in proximity to the labour force ideally at motorway or A road junctions. There are numerous examples of recent and ongoing developments of mid-sized industrial stock around Leicester such as Optimus Point and Leicester Distribution Park which represent market preferences.
- 7.53 Mid-sized and smaller stock opportunities should be considered as intensification or extensions of existing estates around the FEMA often in proximity to local settlements, examples include Genesis Park (Wigston), Stoney Stanton (Blaby), Bardon Hill (NW Leicestershire) and Beauchamp Business Park (Harborough). Many of the authorities have a pipeline of proposals for mid-sized units.
- 7.54 Urban extensions or other future growth locations such as Leicester south-eastern growth corridor¹⁴ present an opportunity to support the delivery of new employment spaces of smaller and mid-sized units where well connected to the road network. Smaller units tend to rely on closer proximity to the population centres due to the nature of occupiers.

¹⁴ As identified in the Strategic Growth Plan

8. OVERALL HOUSING NEEDS

8.1 The section considers overall housing needs. It begins by reviewing the Government’s standard method, before overlaying broader considerations including the performance of the economy and the need for affordable housing.

National Policy

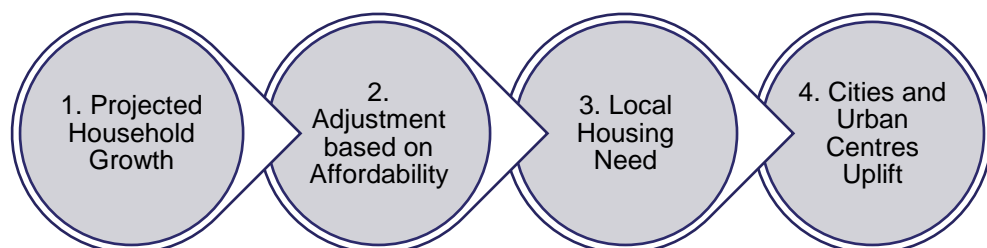
8.2 In 2018, the Government amended the NPPF and released new Planning Practice Guidance to introduce the ‘standard method’ for calculating local housing need. This replaced the approach to defining Objectively Assessed Needs (OAN) set out in the 2014 Planning Practice Guidance.

8.3 The Government’s intention in doing so was to introduce a standardised approach using consistent data sources for all local authorities nationally to calculate housing need. Its ambitions were to make the process of doing so simpler, quicker and more transparent, with the intention of speeding up plan-making.

8.4 The 2021 NPPF now sets out in Para 61 that to determine the minimum number of homes needed, *“strategic policies should be informed by a local housing need assessment, conducted using the standard method in national planning guidance – unless exceptional circumstances justify an alternative approach which also reflects current and future demographic trends and market signals. In addition to the local housing need figure, any need that cannot be met within neighbouring areas should also be taken into account in establishing the amount of housing to be planned for.”*

8.5 The standard method is a 4-stepped calculation using nationally published data, as set out below.

Figure 8.1: Overview of the Current Standard Method for Calculating Local Housing Need



8.6 The PPG sets out that the standard method does not predict the impact that future Government policies, changing economic circumstances or other factors may have. The PPG¹⁵ states that there will be circumstances where it is appropriate to consider whether actual housing need is higher than the standard method indicates. It outlines the circumstances where this may be appropriate, which include:

- Where funding is in place to promote and facilitate additional growth (i.e. Housing Deals, City Growth Deals, etc.); or
- Where strategic infrastructure improvements are likely to drive an increase in the homes needed locally; or
- An authority agreeing to take on unmet need from neighbouring authorities, as set out in a Statement of Common Ground.

8.7 The PPG¹⁶ also requires consideration to be given to the inter-relationship with the assessed need for affordable housing. It sets out that:

“The total affordable housing need [once assessed] can then be considered in the context of its likely delivery as a proportion of mixed market and affordable housing developments, taking into account the probable percentage of affordable housing to be delivered by eligible market housing led developments. An increase in the total housing figures included in the plan may need to be considered where it could help deliver the required number of affordable homes.”

8.8 This section therefore works through these issues to consider overall housing need.

Standard Method

8.9 The methodology for calculating housing need is clearly set out by Government in Planning Practice Guidance and follows a four-step process worked through in the following sub-sections.

¹⁵ Paragraph: 010 Reference ID: 2a-010-20201216

¹⁶ Paragraph: 024 Reference ID: 2a-024-20190220

Step One: Setting the Baseline

- 8.10 The first step in considering housing need against the Standard Method is to establish a demographic baseline of household growth. This baseline is drawn from the 2014-based Household Projections and should be the annual average household growth over a ten-year period, with the current year being the first year. Data for the 2022 to 2032 period has therefore been used with the exception of Charnwood where the 2021-31 period is used due to the Council having already submitted a plan for examination using this period. This results in household growth of around 40,000 households (4,000 per annum) over the ten-year period for the Leicester and Leicestershire Study Area.
- 8.11 Although this figure is calculated over a ten-year period from 2022 to 2032, Paragraph 12 of the PPG states that this average household growth and the local housing need arising from it can then “be applied to the whole plan period”.

Step Two: Affordability Adjustment

- 8.12 The second step of the standard method is to consider the application of an uplift on the demographic baseline, to take account of market signals (i.e. relative affordability of housing). The adjustment increases the housing need where house prices are high relative to workplace incomes. It uses the published median affordability ratios from ONS based on workplace-based median house price to median earnings ratio for the most recent year for which data is available.
- 8.13 The latest (workplace-based) affordability data is for 2021-based and was published by ONS in March 2022 (although 2020 data has been used for Charnwood as its Local Plan has been submitted for Examination). The Government’s Guidance states that for each 1% increase in the ratio of house prices to earnings, above 4, the average household growth should be increased by 6.25%, with the calculation being as follows:

$$Adjustment\ factor = \left(\frac{Local\ affordability\ ratio - 4}{4} \right) \times 0.25 + 1$$

Step Three: The Cap

- 8.14 The third step of the standard method is to consider the application of a cap on any increase and ensure that the figure which arises through the first two steps does not exceed a level which can be delivered. There are two situations where a cap is applied:
- The first is where an authority has reviewed their plan (including developing an assessment of housing need) or adopted a plan within the last five years. In this instance the need may be capped at 40% above the requirement figure set out in the plan.

-
- The second situation is where plans and evidence are more than five years old. In such circumstances a cap may be applied at 40% of the higher of the projected household growth (step 1) or the housing requirement in the most recent plan, where this exists.

8.15 A cap is not applicable to the calculations for any of the local authorities. In the case of Harborough District and Melton Borough, an affordability uplift of over 40% is applicable as the cap is applied to the higher figure generated by the adopted Local Plan (the requirement of 557 dpa in Harborough's 2019 Local Plan and 245 dpa in Melton's 2018 Local Plan). For the other authorities, the affordability ratios give an uplift of below 40% there is no cap is applied.

Step Four: Urban Uplift

8.16 The fourth and final step in the calculation means that the 20 largest urban areas in England are subject to a further 35% uplift. This uplift ensures that the Governments stated target of 300,000 dwellings per annum is met and that "*homes are built in the right places, to make the most of existing infrastructure, and to allow people to live nearby the service they rely on, making travel patterns more sustainable.*"¹⁷ (Paragraph: 035).

8.17 Leicester City is listed within the top 20 urban areas in the country it is therefore subject to this additional uplift of 35%.

Standard Method Calculation

8.18 The table below works through the Standard Method calculations and for the whole of the study area shows a need for 5,074 dwellings per annum before the urban uplift; this increases to 5,713 dpa with the inclusion of this uplift, with a further 639 dpa dwellings in Leicester.

8.19 The standard method local housing need is equivalent to 91,410 dwellings over the 2020-36 period or 119,970 dwellings over the 2020-41 period.¹⁸

¹⁷ Reference ID: 2a-035-20201216

¹⁸ Rounded to the nearest 10 dwellings

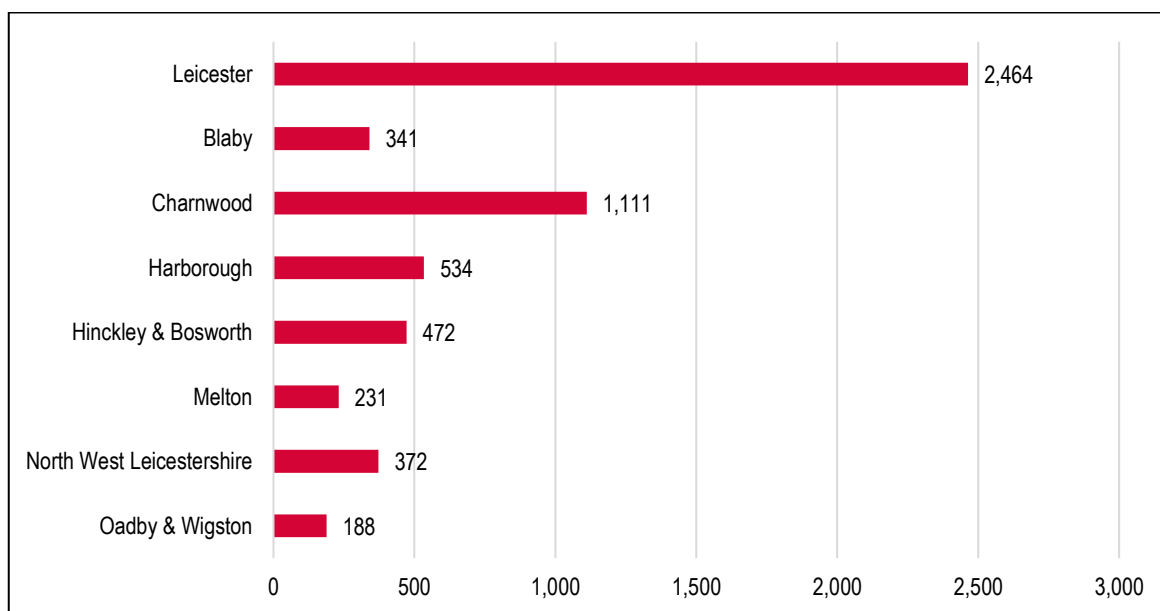
Table 8.1 Standard Method Calculations – Minimum Local Housing Need

	Leicester	Blaby	Charnwood	Harborough	H & B	Melton	NWL	O & W	L & L
Change in households (pa)	1,492	272	903	377	371	152	298	136	4,000
Affordability ratio (2020/1)	22%	25%	23%	42%	27%	52%	25%	38%	-
Initial need (per annum)	1,825	341	1,111	534	472	231	372	188	5,074
Capped	NA	NA	NA	NA	NA	NA	NA	NA	-
Urban uplift	35%	0%	0%	0%	0%	0%	0%	0%	-
Total need (per annum)	2,464	341	1,111	534	472	231	372	188	5,713

Source: Derived from ONS data

8.20 These figures (on a dpa basis) are shown in Figure 8.2 below. The PPG is clear that these are a starting point for assessing housing need and a range of broader considerations need to be overlaid.

Figure 8.2: Standard Method Minimum Local Housing Need (dpa)



Source: Derived from ONS data

Inter-relationship with Economic Growth

8.21 Whilst there may be circumstances where it may be appropriate to plan for higher housing growth than the standard method, as set out in the PPG in Para 2a-010, it does not appear that these affect dynamics within this HMA when considered as a whole (as explored in this section).

8.22 The NPPF sets out that plans should encourage sustainable economic growth but also limit the need to travel. In spatial terms, it makes sense to seek to align the strategy for housing and employment,

and in broad terms this means seeking to ensure sufficient workforce growth (through housing development) is available to align with expected employment growth. IcenI has sought to consider this issue as two levels: firstly the alignment of housing and economic growth at the HMA level, recognising this as the relevant functional geography (which has been considered in this section); and secondly how the distribution of economic growth might influence the appropriate distribution of homes to minimise the need to travel (which is considered in this Section and the next).

Homes-Jobs Alignment to 2036

- 8.23 We consider first the alignment between economic growth and the standard method housing need over the period to 2036, as this feeds into consideration of the potential distribution of housing provision over this period. Then consideration is given to the economic-led need to housing over longer time periods recognising that some local plans look beyond this.
- 8.24 The Cambridge Econometrics (CE) baseline projections envisage employment growth of 27,000 jobs over the period to 2036. At the headline level across the HMA, this is about a third of the level of workforce growth which the standard method LHN figures could potentially support (see Table 8.3 below). There is therefore no need to plan for housing provision across Leicester and Leicestershire above the standard method to support the baseline economic growth scenario.
- 8.25 However there are potentially some distributional issues. The baseline economic forecasts expect stronger relative employment growth in Harborough and NW Leicestershire. Weak growth is expected in Oadby and Wigston in particular.

Table 8.2 CE Baseline Economic Projections ('000s Jobs)

'000s	2020	2036	Change	% Change
Leicester	190.7	197.6	6.8	3.6%
Blaby	69.9	75.0	5.1	7.3%
Charnwood	77.7	80.1	2.4	3.1%
Harborough	48.0	51.8	3.9	8.0%
Hinckley & Bosworth	49.8	51.4	1.6	3.2%
Melton	22.3	23.7	1.4	6.3%
NW Leicestershire	71.1	76.3	5.2	7.3%
Oadby & Wigston	21.9	22.4	0.5	2.4%
L&L	551.4	578.3	26.9	4.9%

Source: Cambridge Econometrics

- 8.26 IcenI has then sought to compare this to the jobs which would be supported by the standard method figures in each area. Our modelling is shown below. Our modelling assumptions are as follows in considering the workforce supported by the standard method LHN figures:

- 2018 SNPP Internal Migration provides base population projection

- 2014 headship rates as a starting point
- Part return to rent (PRT) headship adjustment for under 45s and adjustment to 75+
- Migration then adjusted to align to projected growth
- Workforce calculated using OBR economic participation rates

8.27 The resultant number of jobs supported is set out below. Comparing this to Table 8.2 it is clear that in most authorities housing provision in line with the standard method LHN would result in sufficient workforce growth to support the baseline employment projections. The exception is North West Leicestershire – where the evidence indicates that stronger housing provision would be needed to support the Borough’s economy.

Table 8.3 Comparing Jobs Growth supported by the Standard Method (Labour Supply) against CE Baseline Projections (Labour Demand)

	Jobs Growth - Baseline 2020-36	Jobs Supported by Standard Method 2020-36	
		Census Commuting	1:1 commuting on new jobs
Leicester	6,800	50,558	42,569
Blaby	5,100	5,489	5,100
Charnwood	2,400	15,034	17,620
Harborough	3,900	6,672	6,973
Hinckley & Bosworth	1,600	5,379	6,791
Melton	1,400	2,610	3,088
NW Leicestershire	5,200	4,562	3,932
Oadby & Wigston	500	2,677	3,342
L&L	26,900	92,981	89,415

Source: Cambridge Econometrics and Demographic Modelling

8.28 North West Leicestershire is the only authority where the Baseline Scenario results in potentially upward pressure on housing need. With the Baseline Scenario for employment growth, our analysis envisages that between 391-418 homes per year would be required in NW Leicestershire. The higher end of this range is based on a 1:1 commuting ratio. A 1:1 commuting ratio means that growth in the resident labour force and employment is assumed to align to one another. Where the Census commuting pattern is applied, this assumes that the commuting ratio (the ratio of workers in an area to residents in work) in 2011 is maintained, such that where areas see net in-commuting this is predicted to continue and visa versa.

Table 8.4 Housing Need in Baseline Economic Growth Scenario, 2020-41 (dpa)

	Baseline (Census commuting)	Baseline (1-1 Commuting)
Leicester	699	743
Blaby	303	316
Charnwood	464	447
Harborough	398	392
H&B	269	252
Melton	163	153
NWL	371	398
O&W	113	108
Leicestershire	2,080	2,067
L&L	2,779	2,810

Source: Demographic Modelling

Aspirational Economic Growth Scenario

- 8.29 The Aspirational Growth Scenario constructed aligns with the emerging Leicester & Leicestershire Economic Growth Strategy 2021-30. This is considered next.
- 8.30 Adopting consistent assumptions to those described above (see Para 8.26) we have assessed the implications for housing need. The analysis indicates that to support the Aspirational Growth Scenario would require between 4,200 – 4,250 homes across Leicester and Leicestershire to 2041. This is below the standard method figure of 5,713 dpa.
- 8.31 However there are some individual authorities where this economic scenario generates a higher housing need than the standard method baseline – in Blaby, NW Leicestershire and Melton. These needs can be met through agreeing a redistribution of housing needs (in addressing Leicester’s unmet need) and are considered in the Housing Distribution Paper which accompanies this HENA Report.
- 8.32 Icen consider that given the potential changes which have occurred to commuting patterns since 2011 and the effects of the pandemic on growth in home-based working, but also the potential for supply constraints in Leicester to influence workforce growth in the City, it is reasonable to consider both scenarios for commuting.

Table 8.5 Implications of Aspirational Growth Scenario on Housing Need, 2020-41

	Jobs Growth ('000s)	Housing Need - Aspirational Growth Scenario (dpa)		Housing Need - Standard Method Comparator (dpa)
		Census Commuting	1:1 Commuting	
Leicester	26.3	1,182	1,317	2,464
Blaby	11.1	424	447	341
Charnwood	8.2	640	598	1,111
Harborough	9.0	526	514	534
H&B	5.9	417	370	472
Melton	5.0	278	250	231
NW Leics	12.9	535	589	372
O&W	2.9	179	161	188
Leicestershire	55.1	2,999	2,929	3,249
L&L	81.4	4,182	4,246	5,713

Source: Cambridge Econometrics and Demographic Modelling

- 8.33 The analysis suggests that upward adjustments to housing provision (relative to the standard method starting point) should be considered in Blaby, Melton and NW Leicestershire could help to support economic growth in these areas. This might be considered as a 1st stage redistribution. Redistributing unmet need from Leicester to these areas would support workforce growth within them and help them to achieve their economic potential. These issues are considered further in the Housing Distribution Paper.

Homes-Jobs Alignment to 2041 and 2050

- 8.34 Drawing on consistent modelling assumptions to those described above, we have modelled the level of housing need which would be generated by the economic baseline and growth scenarios to 2050.
- 8.35 The scale of housing need generated to 2050 falls notably below that generated by the standard method. However the Growth Scenario generates a higher need in Blaby, Melton and NW Leicestershire which can be met through agreeing a revised distribution of housing need which supports greater housing provision in these authorities. This is considered in the Housing Distribution Paper which accompanies the HENA.

Table 8.6 Economic-led Housing Need, Dwellings per Annum 2020-50

Dpa	Base (Census commuting)	Base (1-1 Commuting)	Growth (Census Commuting)	Growth (1-1 Commuting)
Leicester	676	718	1,171	1,306
Blaby	283	295	406	428
Charnwood	437	420	619	575
Harborough	355	349	485	473
H&B	246	230	394	347
Melton	132	123	256	228
NWL	338	364	506	558
O&W	102	97	172	153
Leicestershire	1,893	1,878	2,837	2,762
L&L	2,568	2,596	4,008	4,068

Source: Demographic Modelling

Wider Considerations

8.36 IcenI has had regard to the set of wider considerations identified in the Planning Practice Guidance, and would comment:

- The area is not identified as a growth area and it is not expected that there are strategic infrastructure improvements which will come forward over the period to 2036 which will have an upward impact on overall housing need. Indeed infrastructure provision is needed to accommodate growth.
- There is no unmet need from areas outside of the L&L HMA which it is envisaged will need to be accommodated within the HMA. This will however need to be kept under review.
- The standard method LHN (5,713 dpa) is above the equivalent assessment of need from the L&L 2017 HEDNA (4,716 dpa, 2011-36). Indeed it is around 21% higher. It is also above past housing delivery which has averaged 4,133 dpa over the 2006-20 period or 5,255 dpa over the last 5 years (2015-20), noting that the latter does not cover a full economic cycle. It is not therefore necessary to consider any uplift to the standard method associated with these issues.
- In respect of affordable housing need, there is not a basis for this specifically driving the assessment of overall housing need; but it is a consideration in setting a housing target. The affordability adjustment within the standard method represents in the aggregate across the HMA a 43% upward adjustment to the household projections. This will, in theory/notionally more than deal with the needs of concealed/ overcrowded households and contribute to boosting both the delivery of market and affordable housing. The LHN represents a 38% boost on long-term delivery rates in the HMA which will also, in theory/notionally contribute to boosting affordable housing delivery.

Conclusions on Local Housing Need

- 8.37 The standard method defines a need for 5,713 dwellings per annum across the Leicester and Leicestershire sub-region. The demographic analysis undertaken does not point to any exceptional circumstances to depart from the standard method. Consideration has been given to whether there are factors which might result in an upward adjustment to the overall housing need; with the evidence finding no such factors across the HMA – but factors which would influence the distribution of housing need. These distributional considerations are taken forward in the Housing Distribution Paper.

PART 3: NEED FOR DIFFERENT TYPES OF HOMES

9. AFFORDABLE HOUSING NEED

- 9.1 This section provides an assessment of the need for affordable housing in Leicester & Leicestershire and the eight local authorities. Whilst data is provided for each of the local authorities it does need to be noted that there will be variations within areas (including around housing costs as well as levels of need) – this is not considered in this report which can be considered as ‘strategic’; however, local authorities might consider smaller-area assessments to supplement the findings in this section.
- 9.2 The analysis follows the PPG (Sections 2a-018 to 2a-024) and provides two main outputs, linked to Annex 2 of the NPPF – this is firstly an assessment of the need for social/affordable rented housing and secondly to consider the need for affordable home ownership products.
- 9.3 The analysis also considers First Homes, a new tenure (similar to discounted market housing) being promoted by the Government. Information about First Homes was set out in the Government’s consultation document ‘Changes to the current planning system’ in August 2020; with the consultation being reported on in early April 2021. In May 2021 a new PPG and Written Ministerial Statement were published specifically dealing with First Homes.

Methodology Overview

- 9.4 The method for studying the need for affordable housing has been enshrined in Government Practice Guidance for many years, with an established approach to look at the number of households who are unable to afford market housing (to either rent or buy) – it is considered that this group will mainly be a target for rented affordable homes (social/affordable rented) and therefore the analysis looks at need for ‘*affordable housing for rent*’ as set out in Annex 2 of the NPPF. The methodology for looking at the need for rented (social/affordable) housing considers the following:
- **Current affordable housing need:** an estimate of the number of households who have a need now, at the point of the assessment, based on a range of data modelled from local information – this figure is then annualised so as to meet the current need over a period of time;
 - **Projected newly forming households in need:** using demographic projections to establish gross household formation, and then applying an affordability test to estimate numbers of such households unable to afford market housing;
 - **Existing households falling into need:** based on studying past trends in the types of households who have accessed social/affordable rented housing; and
 - **Supply of affordable housing:** an estimate of the likely number of lettings that will become available from the existing social/affordable housing stock.

-
- 9.5 The first three bullet points above are added together to identify a gross need, from which the supply of relets of existing properties is subtracted to identify a net annual need for additional affordable housing. For the purposes of this assessment, this analysis is used to identify the overall (net) need for social/affordable rented housing.
- 9.6 This approach has traditionally been used to consider the needs of households who have not been able to afford market housing (either to buy or to rent). As the income necessary to afford to rent homes without financial support is typically lower than that needed to buy, the ability of households to afford private rents has influenced whether or not they are in need of affordable housing.
- 9.7 The NPPF and associated guidance has expanded the definition of those in affordable housing need to include households who might be able to rent without financial support but who aspire to own a home, and require support to do so. The PPG includes households that “*cannot afford their own homes, either to rent, or to own, where that is their aspiration*” as having an affordable housing need.
- 9.8 This widened definition has been introduced by national Government to support increased access to home ownership, given evidence of declining home ownership and growth in private renting over the last 10-15 years. PPG does not however provide specific guidance on how the needs of such households should be assessed and so this study adopts a broadly consistent methodology to that identified in the PPG, and consider a current need; a newly-arising need on an annual basis; existing households falling into need; and an annual estimate of supply.
- 9.9 For some of the analysis in this section it has been necessary to draw on other sources of data (applied to local information) to make estimates of the need. The approach is consistent with the PPG (Housing and economic needs assessment – see 2a-020 for example) and includes linking local Census data to national changes (as evidenced in national surveys such as the English Housing Survey).
- 9.10 Additionally, information drawn from local surveys previously undertaken by JGC across the country have been used to look at potential prevalence rates for some elements of need where comprehensive local data is lacking. This includes considering what proportion of households in the private rented sector might have a need due to potential loss of accommodation (e.g. tenancies ending) although again such rates are applied to local information about the size of the sector.
- 9.11 This approach is considered to provide a reasonable view about likely local needs and is an approach that has been accepted through a range of Local Plan Examinations over the past five or more years. Our analysis of affordable housing need is therefore structured to consider the need for rented affordable housing, and separately the need for affordable home ownership. The overall need is expressed as an annual figure, which can then be compared with likely future delivery (as required by 2a-024).

- 9.12 Whilst the need for social/affordable rented housing and affordable home ownership are analysed separately, there are a number of pieces of information that are common to both assessments. In particular, this includes an understanding of local housing costs, incomes and affordability.
- 9.13 An important part of the affordable needs model is to establish the entry-level costs of housing to buy and rent. These are assessed in **Appendix A7**. Appendix A7 also addresses household incomes and the distribution of incomes.
- 9.14 The table below shows the estimated incomes required to both buy and rent (privately) in each local authority. This shows a notable 'gap' in most areas across the study area, particularly locations with higher house prices. The information in the tables below is taken forward into further analysis in this section to look at affordable needs in different locations.

Table 9.1 Estimated Household Income Required to Buy and Privately Rent by local authority – Leicester & Leicestershire

	To buy	To rent (privately)	Income gap
Leicester	£29,600	£21,900	£7,700
Blaby	£38,000	£25,300	£12,700
Charnwood	£33,600	£22,500	£11,100
Harborough	£42,400	£25,900	£16,500
Hinckley & Bosworth	£32,800	£23,400	£9,400
Melton	£33,800	£23,300	£10,500
North West Leicestershire	£32,000	£23,500	£8,500
Oadby & Wigston	£35,000	£24,700	£10,300

Source: Based on Housing Market Cost Analysis

Need for Social/Affordable Rented Housing

- 9.15 The sections below work through the various stages of analysis to estimate the need for social/affordable housing in each local authority. Final figures are provided as an annual need (including an allowance to deal with current need). As per 2a-024 of the PPG, this figure can then be compared with likely delivery of affordable housing.

Current Need

- 9.16 In line with PPG paragraph 2a-020, the current need for affordable housing has been based on considering the likely number of households with one or more housing problems. The table below sets out the categories in the PPG and the sources of data being used to establish numbers. The PPG also includes a category where households cannot afford to own despite it being their aspiration – this category is considered separately in this report (under the title of the need for affordable home ownership).

Table 9.2 Main sources for assessing the current unmet need for affordable housing

	Source	Notes
Homeless households (those in temporary accommodation)	MHCLG Statutory Homelessness data	Household in temporary accommodation at end of quarter.
Households in overcrowded housing	Census table LC4108EW	Analysis undertaken by tenure and updated by reference to national changes (from the English Housing Survey (EHS))
Concealed households	Census table LC1110EW	Number of concealed families
Existing affordable housing tenants in need	Modelled data linking to past survey analysis	Excludes overcrowded households – tenure estimates updated by reference to the EHS
Households from other tenures in need	Modelled data linking to past survey analysis	

Source: PPG [2a-020]

- 9.17 It should be noted that there may be some overlap between categories (such as overcrowding and concealed households, whereby the overcrowding would be remedied if the concealed household moved). The data available does not enable analysis to be undertaken to study the impact of this and so it is possible that the figures presented include a small element of double counting (although this is likely to be small). Additionally, some of the concealed households may be older people who have moved back in with their families, or where households chose to live together in multi-generational households, and might not be considered as in need.
- 9.18 The table below shows the initial estimate of the number of households within each local authority with a current housing need. These figures are before any ‘affordability test’ has been applied to assess the ability of households to meet their own housing needs; and has been termed ‘the number of households in unsuitable housing’. Overall, the analysis estimates that there are currently some 39,400 households living in unsuitable housing (or without housing), with 23,700 of these being in Leicester.

Table 9.3 Estimated Number of Households Living in Unsuitable Housing – Leicester & Leicestershire

	Homeless/ concealed households	Households in overcrowded housing	Existing affordable housing tenants in need	Households from other tenures in need	Total
Leicester	4,096	15,403	708	3,527	23,734
Blaby	450	788	67	775	2,080
Charnwood	740	2,000	178	1,537	4,455
Harborough	302	619	66	740	1,727
Hinckley & Bosworth	384	935	106	950	2,375
Melton	171	409	54	507	1,141
NWL	351	897	127	803	2,178
Oadby & Wigston	497	757	36	430	1,720
Leicestershire	2,895	6,405	634	5,741	15,676
L & L	6,991	21,808	1,342	9,269	39,410

Source: MHCLG Live Tables, Census 2011 and Data Modelling

9.19 In taking this estimate forward, the data modelling next estimates housing unsuitability by tenure. From the overall number in unsuitable housing, households living in affordable housing are excluded (as these households would release a dwelling on moving and so no net need for affordable housing will arise). The analysis also excludes 90% of owner-occupiers under the assumption (which is supported by analysis of survey data) that the vast majority will be able to afford housing once savings and equity are taken into account.

9.20 A final adjustment is to slightly reduce the unsuitability figures in the private rented sector to take account of student-only households – such households could technically be overcrowded/living in unsuitable housing but would be unlikely to be allocated affordable housing (student needs are essentially assumed to be transient). Once these households are removed from the analysis, the remainder are taken forward for affordability testing.

The tables below show it is estimated that there are around 21,200 households living in unsuitable housing (excluding current social tenants and the majority of owner-occupiers) in Leicester & Leicestershire.

Table 9.4 Unsuitable Housing by Tenure and Number to Take Forward into Affordability Modelling (Leicester & Leicestershire)

	In Unsuitable Housing	Number to Take Forward for Affordability Testing
Owner-occupied	9,763	976
Affordable housing	8,360	0
Private rented	14,295	13,185
No housing (homeless/concealed)	6,991	6,991
Total	39,410	21,152

Source: MHCLG Live Tables, Census 2011 and Data Modelling

- 9.21 Having established this figure, it needs to be considered that a number of these households might be able to afford market housing without the need for subsidy. To consider this, the income data has been used, with the distribution adjusted to reflect a lower average income amongst households living in unsuitable housing – for the purposes of the modelling an income distribution that reduces the average household income to 88% of the figure for all households has been used to identify the proportion of households whose needs could not be met within the market (for households currently living in housing). A lower figure of 42% has been used to apply an affordability test for the concealed/homeless households who do not currently occupy housing.
- 9.22 These two percentage figures have been based on a consideration of typical income levels of households who are in unsuitable housing (based mainly on estimates in the private rented sector) along with typical income levels of households accessing social rented housing (for those without accommodation).
- 9.23 The figures have been based on analysis of the English Housing Survey (mainly looking at relative incomes of households in each of the private and social rented sectors) as well as consideration of similar information collected through household surveys across the country by JGC. These modelling assumptions are considered reasonable and have not been challenged through the Local Plan process in other locations (where the same assumptions have been used).
- 9.24 Overall, around half of households with a current need are estimated to be likely to have insufficient income to afford market housing and so the estimate of the total current need is around 11,100 households across the study area – approaching two-thirds of the need estimated to be arising in the City. The table below shows how this is estimated to vary by local authority.

Table 9.5 Estimated Current Affordable Housing Need (for social/affordable rented housing)

	In unsuitable housing (taken forward for affordability test)	% Unable to Afford Market Housing (without subsidy)	Revised Gross Need (including Affordability)
Leicester	12,879	54.9%	7,076
Blaby	1,132	52.3%	592
Charnwood	2,250	46.4%	1,044
Harborough	929	48.0%	446
Hinckley & Bosworth	1,236	47.6%	589
Melton	651	45.5%	296
NWL	1,109	47.0%	522
Oadby & Wigston	966	55.0%	531
Leicestershire	8,273	48.6%	4,019
L & L	21,152	52.5%	11,096

Source: CLG Live Tables, Census 2011 and Data Modelling

- 9.25 The estimated figures shown above represents the number of households with a need currently. For the purposes of analysis, it is assumed that the local authorities would seek to meet this need over a period of time. Given that this report typically looks at needs in the period from 2020 to 2041, the need is annualised by dividing by 21 (to give an annual need for 528 dwellings across all areas). This does not mean that some households would be expected to wait 21-years for housing as the need is likely to be dynamic, with households leaving the current need as they are housed but with other households developing a need over time.

Newly Forming Households

- 9.26 The number of newly forming households has been estimated through demographic modelling with an affordability test also being applied. This has been undertaken by considering the changes in households in specific 5-year age bands relative to numbers in the age band below, 5 years previously, to provide an estimate of gross household formation.
- 9.27 The number of newly-forming households is limited to households forming who are aged under 45 – this is consistent with MHCLG guidance (from 2007) which notes after age 45 that headship (household formation) rates ‘plateau’. There may be a small number of household formations beyond age 45 (e.g. due to relationship breakdown) although the number is expected to be fairly small when compared with formation of younger households.
- 9.28 The number of newly forming households has been estimated through demographic modelling (linked to 2018-based SNHP and 2014-based HRRs). This is considered to provide the best view about trend-based household formation in Leicester & Leicestershire.

- 9.29 In assessing the ability of newly forming households to afford market housing, data has been drawn from previous surveys undertaken nationally by JGC. This establishes that the average income of newly forming households is around 84% of the figure for all households. This figure is remarkably consistent across areas (and is also consistent with analysis of English Housing Survey data at a national level).
- 9.30 The analysis has therefore adjusted the overall household income data to reflect the lower average income for newly forming households. The adjustments have been made by changing the distribution of income by bands such that average income level is 84% of the all household average. In doing this it is possible to calculate the proportion of households unable to afford market housing. For the purposes of the need for social/affordable rented housing this will relate to households unable to afford to buy OR rent in the market.
- 9.31 The assessment suggests overall that around two-fifths of newly forming households will be unable to afford market housing (to rent privately) and this equates a total of 3,600 newly forming households will have a need per annum on average across the study area – the table below provides a breakdown by local authority.

Table 9.6 Estimated Need for Social/Affordable Rented Housing from Newly Forming Households (per annum) – Leicester & Leicestershire

	Number of new households	% unable to afford	Annual newly forming households unable to afford to rent
Leicester	3,033	46.0%	1,394
Blaby	873	40.2%	351
Charnwood	1,644	37.0%	607
Harborough	695	38.5%	268
Hinckley & Bosworth	969	38.8%	376
Melton	285	38.4%	109
NWL	872	38.0%	331
Oadby & Wigston	338	38.8%	131
Leicestershire	5,677	38.3%	2,173
L & L	8,710	40.9%	3,566

Source: Projection Modelling/Affordability Analysis

Existing Households Falling into Affordable Housing Need

- 9.32 The second element of newly arising need is existing households falling into need. To assess this, information about past lettings in social/affordable rented has been used. The assessment looked at households who have been housed in general needs housing over the past three years – this group will represent the flow of households onto the Housing Register over this period. From this, newly forming households (e.g. those currently living with family) have been discounted as well as

households who have transferred from another social/affordable rented property. An affordability test has also been applied.

9.33 This method for assessing existing households falling into need is consistent with the 2007 SHMA guide which says on page 46 that *'Partnerships should estimate the number of existing households falling into need each year by looking at recent trends. This should include households who have entered the housing register and been housed within the year as well as households housed outside of the register (such as priority homeless household applicants)'*.

9.34 Following the analysis through suggests a need arising from 1,221 existing households each year across the study area, with just over half of these households being in Leicester. The table below breaks this down by local authority.

Table 9.7 Estimated Need for Social/Affordable Rented Housing from Existing Households Falling into Need (per annum) – Leicester & Leicestershire

	Total Additional Need	% of Total
Leicester	646	52.9%
Blaby	48	3.9%
Charnwood	193	15.8%
Harborough	41	3.3%
Hinckley & Bosworth	116	9.5%
Melton	43	3.5%
NWL	117	9.6%
Oadby & Wigston	18	1.5%
Leicestershire	575	47.1%
L & L	1,221	100.0%

Source: Derived from a range of sources¹⁹

Supply of Social/Affordable Rented Housing Through Relets

9.35 The future supply of affordable housing through relets is the flow of affordable housing arising from the existing stock that is available to meet future need. This focusses on the annual supply of social/affordable rent relets.

9.36 The Practice Guidance suggests that the estimate of likely future relets from the social rented stock should be based on past trend data which can be taken as a prediction for the future. Information from CoRe has been used to establish past patterns of social housing turnover. The figures are for general needs lettings but exclude lettings of new properties and exclude an estimate of the number

¹⁹ Sources include: CoRe data and affordability analysis (prices, rents and incomes)

of transfers from other social rented homes. These exclusions are made to ensure that the figures presented reflect relets from the existing stock.

- 9.37 On the basis of past trend data it has been estimated that 2,240 units of social/affordable rented housing are likely to become available each year moving forward for occupation by newly forming households and existing households falling into need from other tenures – around half of the supply is expected to arise in Leicester.

Table 9.8 Analysis of Past Social/Affordable Rented Housing Supply, 2017/18 – 2019/20 (average per annum) – Leicester & Leicestershire

	Total Lettings	% as Non-New Build	Lettings in Existing Stock	% Non-Transfers	Lettings to New Tenants
Leicester	1,954	93.5%	1,827	61.7%	1,128
Blaby	188	63.2%	119	71.9%	85
Charnwood	731	83.3%	609	65.0%	396
Harborough	167	63.1%	105	72.3%	76
Hinckley & Bosworth	352	77.7%	273	72.7%	199
Melton	151	82.4%	124	68.0%	84
NWL	503	78.2%	394	60.1%	236
Oadby & Wigston	77	84.7%	65	54.1%	35
Leicestershire	2,168	77.9%	1,688	65.8%	1,112
L & L	4,122	85.3%	3,516	63.7%	2,240

Source: CoRe/LAHS

- 9.38 The PPG model also includes the bringing back of vacant homes into use and the pipeline of affordable housing as part of the supply calculation. These have however not been included within the modelling in this report. Firstly, there is no evidence of any substantial stock of vacant homes (over and above a level that might be expected to allow movement in the stock). Secondly, with the pipeline supply, it is not considered appropriate to include this as to net off new housing would be to fail to show the full extent of the need, although in monitoring it will be important to net off these dwellings as they are completed.

Net Need for Social/Affordable Rented Housing

- 9.39 The table below shows the overall calculation of affordable housing need. The analysis shows that there is a need for 3,076 dwellings per annum across the area – an affordable need is seen in all local authorities. The net need is calculated as follows:

$$\text{Net Need} = \text{Current Need (allowance for)} + \text{Need from Newly-Forming Households} + \text{Existing Households falling into Need} - \text{Supply of Affordable Housing}$$

Table 9.9 Estimated Need for Social/Affordable Rented Housing by local authority (per annum)

	Current need	Newly forming households	Existing households falling into need	Total Gross Need	Relet Supply	Net Need
Leicester	337	1,394	646	2,376	1,128	1,249
Blaby	28	351	48	426	85	341
Charnwood	50	607	193	850	396	455
Harborough	21	268	41	330	76	254
Hinckley & Bosworth	28	376	116	519	199	321
Melton	14	109	43	166	84	82
NWL	25	331	117	473	236	236
Oadby & Wigston	25	131	18	174	35	139
Leicestershire	191	2,173	575	2,939	1,112	1,827
L & L	528	3,566	1,221	5,315	2,240	3,076

Source: See data in Tables 9.5 to 9.8

The Relationship Between Affordable Need and Overall Housing Need

- 9.40 The PPG encourages local authorities to consider increasing planned housing numbers where this can help to meet the identified affordable need. Specifically, the wording of the PPG [2a-024] states:

'The total affordable housing need can then be considered in the context of its likely delivery as a proportion of mixed market and affordable housing developments, given the probable percentage of affordable housing to be delivered by market housing led developments. An increase in the total housing figures included in the strategic plan may need to be considered where it could help deliver the required number of affordable homes'

- 9.41 However, the relationship between affordable housing need and overall housing need is complex. This was recognised in the Planning Advisory Service (PAS) Technical Advice Note of July 2015. PAS conclude that there is no arithmetical way of combining the OAN (calculated through demographic projections) and the affordable need. There are a number of reasons why the two cannot be 'arithmetically' linked.
- 9.42 Firstly, the modelling contains a category in the projection of 'existing households falling into need'; these households already have accommodation and hence if they were to move to alternative accommodation, they would release a dwelling for use by another household – there is no net need to provide additional homes. The modelling also contains 'newly forming households'; these households are a direct output from the demographic modelling and are therefore already included in the overall housing need figures.

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- 9.43 This just leaves the '*current need*'; much of this group will be similar to the existing households already described (in that they are already living in accommodation) although it is possible that a number will be households without housing (mainly concealed households) – these households are not included in the demographic modelling and so are arguably an additional need, although uplifts for market signals/affordability (as included in the Government's Standard Method) would be expected to deal with such households.
- 9.44 The analysis estimates an annual need for 3,076 rented affordable homes, which is notionally 54% of the minimum Local Housing Need of 5,713 dwellings per annum. However, as noted, caution should be exercised in trying to make a direct link between affordable need and planned delivery, with the key point being that many of those households picked up as having a need will already be living in housing and so providing an affordable option does not lead to an overall net increase in the need for housing (as they would vacate a home to be used by someone else).
- 9.45 It is possible to investigate this in some more detail by re-running the model and excluding those already living in accommodation. This is shown in the table below which identifies that meeting these needs would lead to an affordable need for 1,580 homes per annum across the study area – notionally 28% of the Standard Method. This figure is theoretical and should not be seen to be minimising the need (which is clearly acute). It does however serve to show that there is a substantial difference in the figures when looking at overall housing shortages.
- 9.46 The analysis is arguably even more complex than this – it can be observed that the main group of households in need are newly forming households. These households are already included within demographic projections and so the demonstrating of a need for this group again should not be seen as over and above any need derived through the normal process of looking at need. Indeed, only the 253 per annum (current need) is in addition to demographic projections and this scale of uplift will already have been included in figures when moving from a demographic start point to an estimate of housing need using the Standard Method.

Table 9.10 Estimated Need for Social/Affordable Rented Housing by local authority (per annum) – excluding existing households

	Current need	Newly forming households	Existing households falling into need	Total Gross Need	Relet Supply	Net Need
Leicester	154	1,394	0	1,548	1,128	420
Blaby	16	351	0	366	85	281
Charnwood	25	607	0	632	396	237
Harborough	10	268	0	278	76	202
Hinckley & Bosworth	13	376	0	389	199	190
Melton	6	109	0	115	84	31
NWL	12	331	0	343	236	107
Oadby & Wigston	17	131	0	148	35	113
Leicestershire	99	2,173	0	2,272	1,112	1,160
L & L	253	3,566	0	3,819	2,240	1,580

Source: Range of sources as discussed

- 9.47 The discussion above has already noted that the need for affordable housing does not generally lead to a need to increase overall provision (with the exception of potentially providing housing for concealed households although this should be picked up as part of an affordability uplift). It is however worth briefly thinking about how affordable need works in practice and the housing available to those unable to access market housing without Housing Benefit. In particular, the increasing role played by the Private Rented Sector (PRS) in providing housing for households who require financial support in meeting their housing needs should be recognised.
- 9.48 Whilst the Private Rented Sector (PRS) does not fall within the types of affordable housing set out in the NPPF (other than affordable private rent which is a specific tenure separate from the main ‘full market’ PRS), it has evidently – in reality - been playing a role in meeting the needs of households who require financial support in meeting their housing need. Government recognises this, and indeed legislated through the 2011 Localism Act to allow Councils to discharge their “homelessness duty” through providing an offer of a suitable property in the PRS. This reflects historical under-delivery of affordable housing relative to need, losses of stock (such as through right-to-buy sales) and constraints to future delivery (which is focused on delivery through S106 Agreements subject to viability).
- 9.49 Data from the Department of Work and Pensions (DWP) has been used to look at the number of Housing Benefit supported private rented homes. As of February 2021, it is estimated that there were over 28,600 benefit claimants in the private rented sector in Leicester and Leicestershire. From this, it is clear that the PRS contributes to the wider delivery of ‘affordable homes’ (and addressing the shortfall of affordable housing) with the support of benefit claims.

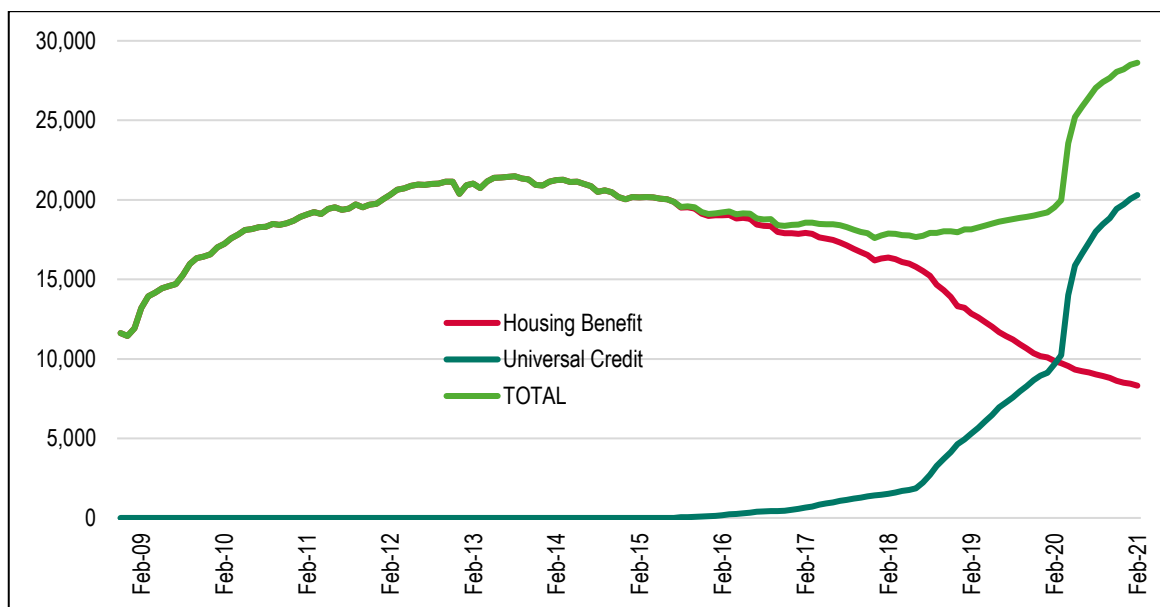
9.50 The table below shows the number of households in each authority claiming Housing Benefit or Universal Credit where there is a housing entitlement (in the PRS). The figure below the table shows the trend in the number of claimants for the whole study area. This shows there has been a notable increase since March 2020, which is likely to be related to the Covid-19 pandemic. However, even the more historical data shows a substantial number of households claiming benefit support for their housing in the private sector (typically around 20,000 households).

Table 9.11 Number of Housing Benefit claimants in the Private Rented Sector, Feb 2021

	Housing Benefit	Universal Credit (with housing allowance)	TOTAL
Leicester	4,496	10,574	15,070
Blaby	522	1,321	1,843
Charnwood	1,026	2,511	3,537
Harborough	378	1,047	1,425
Hinckley & Bosworth	604	1,779	2,383
Melton	286	838	1,124
NWL	521	1,330	1,851
Oadby & Wigston	484	910	1,394
Leicestershire	3,821	9,736	13,557
L & L	8,317	20,310	28,627

Source: Department of Work and Pensions

Figure 9.1: Number of Housing Benefit claimants in the Private Rented Sector – Leicester & Leicestershire



Source: Department of Work and Pensions

Split Between Social and Affordable Rented Housing

- 9.51 The analysis above has studied the overall need for social and affordable rented housing with a focus on households who cannot afford to rent in the market. These households will therefore have a need for some form of rented housing at a cost below typical market rates. Typically, there are two main types of rented affordable accommodation (social and affordable rented) with the analysis below initially considering what a reasonable split might be between these two tenures.
- 9.52 An analysis has been undertaken to compare the income distribution of households with the cost of different products. Data about average social and affordable rents has been taken from the Regulator of Social Housing (RSH) and this is compared with lower quartile and median market rents (from ONS data). This analysis shows that social rents are lower than affordable rents; the analysis also shows that affordable rents are less than both lower quartile and median market rents – the data is fairly consistent across areas. This is presented in **Appendix A8**.
- 9.53 For the affordability test, a standardised average rent for each product has been used. The table below suggests that around 15%-26% of households who cannot afford to rent privately could afford an affordable rent, with a further 14%-21% being able to afford a social rent (but not an affordable one). A total of 53%-70% of households would need some degree of benefit support to be able to afford their housing (regardless of the tenure).

Table 9.12 Estimated need for affordable rented housing (% of households unable to afford)

	Afford affordable rent	Afford social rent	Need benefit support	All unable to afford market
Leicester	15%	17%	69%	100%
Blaby	24%	20%	56%	100%
Charnwood	18%	15%	68%	100%
Harborough	26%	21%	53%	100%
H & B	20%	14%	66%	100%
Melton	13%	16%	70%	100%
NWL	17%	19%	65%	100%
O & W	25%	15%	60%	100%
Leicestershire	20%	17%	63%	100%
L & L	18%	17%	65%	100%

Source: Affordability analysis

- 9.54 The finding that only 15%-26% of households can afford an affordable rent does not automatically lead to a policy conclusion on the split between the two types of housing. For example, many households who will need to access rented accommodation will be benefit dependent and as such could technically afford an affordable rent. Hence a higher proportion of affordable rented housing might be appropriate – indeed the analysis does identify a substantial proportion of households as

being likely to need benefit support. On the flip side, providing more social rents would reduce households recourse to benefits.

- 9.55 There will be a series of other considerations both at a strategic level and for specific schemes. For example, there may be funding streams that are only available for a particular type of housing, and this may exist independently to any local assessment of need. Additionally, there will be the consideration of the balance between the cost of housing and the amount that can be viably provided, for example, it is likely that affordable rented housing is more viable, and therefore a greater number of units could be provided. Finally, in considering a split between social and affordable rented housing it needs to be considered that having different tenures on the same site (at least at initial occupation) may be difficult – e.g. if tenants are paying a different rent for essentially the same size/type of property and services.
- 9.56 On this basis, it is not recommended that the Councils have a rigid policy for the split between social and affordable rented housing, although the analysis is clear that both tenures of homes are likely to be required in all areas.

Establishing a Need for Affordable Home Ownership

- 9.57 The Planning Practice Guidance confirms a widening definition of those to be considered as in affordable need; now including 'households which can afford to rent in the private rental market but cannot afford to buy despite a preference for owning their own home'. However, at the time of writing, there is no guidance about how the number of such households should be measured.
- 9.58 The methodology used in this report therefore draws on the current methodology, and includes an assessment of current needs, and projected need (newly forming and existing households). The key difference is that in looking at affordability an estimate of the number of households in the 'gap' between buying and renting is used. There is also the issue of establishing an estimate of the supply of affordable home ownership homes – this is considered separately below.
- 9.59 The analysis has been developed in the context of First Homes with the Government requiring that 25% of all affordable housing secured through developer contributions should be within this tenure. First Homes are defined in PPG (70-001) as a specific kind of discounted market sale housing, sold at a minimum discount of 30% of market value to eligible persons, with a sale price of no greater than £250,000.

Gross Need for Affordable Home Ownership

- 9.60 The first part of the analysis seeks to understand what the gap between renting and buying actually means in the study area – in particular establishing the typical incomes that might be required. The

information about incomes required to both buy and rent in different locations has already been provided earlier in this section and so the discussion below is a broad example.

9.61 Using the income distributions developed (as set out earlier in this section) along with data about price and rents, it has been estimated that of all households living in the private rented sector, around 44% already have sufficient income to buy a lower quartile home, with 17% falling in the rent/buy 'gap'. The final 39% are estimated to have an income below what they need to afford to rent privately (i.e. they would need to spend more than the calculated threshold of their income on housing costs) although in reality it should be noted that many households will spend a higher proportion of their income on housing. These figures have been based on an assumption that incomes in the private rented sector are around 88% of the equivalent figure for all households (a proportion derived from the English Housing Survey) and are used as it is clear that affordable home ownership products are likely to be targeted at households living in or who might be expected to access this sector (e.g. newly forming households).

9.62 The table below shows an estimate of the proportion of households living in the private rented sector who are able to afford different housing products by local authority. This shows a higher proportion of households in the rent/buy gap in Harborough and Blaby. Lower figures can be seen in North West Leicestershire and Leicester.

Table 9.13 Estimated proportion of households living in Private Rented Sector able to buy and/or rent market housing – Leicester & Leicestershire

	Can afford to buy OR rent	Can afford to rent but not buy	Cannot afford to buy OR rent
Leicester	41%	15%	44%
Blaby	42%	20%	38%
Charnwood	46%	19%	35%
Harborough	40%	24%	36%
H & B	47%	16%	37%
Melton	46%	18%	36%
NWL	50%	14%	36%
O & W	47%	17%	37%
L & L	44%	17%	39%

Source: Derived from Housing Market Cost Analysis and Affordability Testing

9.63 The finding that a significant proportion of households in the private rented sector are likely to have an income that would allow them to buy a home is also noteworthy and suggests that for many households, barriers to accessing owner-occupation are less about income/the cost of housing and more about other factors (which could for example include the lack of a deposit or difficulties obtaining a mortgage (for example due to a poor credit rating or insecure employment)). However, some households will choose to privately rent, for example as it is a more flexible option that may be more suitable for a particular household's life stage (e.g. if moving locations with employment).

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- 9.64 To study current need, an estimate of the number of households living in the Private Rented Sector (PRS) has been established, with the same (rent/buy gap) affordability test (as described above) then applied. The start point is the number of households living in private rented accommodation; as of the 2011 Census there were some 59,900 households living in the sector across the study area. Data from the English Housing Survey (EHS) suggests that since 2011, the number of households in the PRS has risen by about 19% - if the same proportion is relevant to Leicester & Leicestershire then the number of households in the sector would now be around 71,300.
- 9.65 Additional data from the EHS suggests that 60% of all PRS households expect to become an owner at some point (42,800 households if applied to L & L) and of these some 40% (17,100 households) would expect this to happen in the next 2-years. These figures are taken as the number of households potentially with a current need for affordable home ownership before any affordability testing.
- 9.66 As noted above, on the basis of income it is estimated that around 14%-24% of the private rented sector sit in the gap between renting and buying (depending on location). Applying this proportion to the above figures would suggest a current need for around 2,860 affordable home ownership units (136 per annum respectively if annualised over a 21-year period).
- 9.67 In projecting forward, the analysis can consider newly forming households and also the remaining existing households who expect to become owners further into the future. Applying the same affordability test (albeit on a very slightly different income assumption for newly forming households) suggests an annual need from these two groups of around 1,702 dwellings (1,498 from newly forming households and 204 from existing households in the private rented sector).
- 9.68 Bringing together the above analysis suggests that there is a need for around 1,839 affordable home ownership homes (priced for households able to afford to rent but not buy) per annum across the study area. This is before any assessment of the potential supply of housing is considered.

Table 9.14 Estimated Gross Need for Affordable Home Ownership by local authority (per annum) – Leicester & Leicestershire

	Current need	Newly forming households	Existing households falling into need	Total Gross Need
Leicester	57	449	85	591
Blaby	10	172	15	198
Charnwood	24	317	37	378
Harborough	13	163	19	195
H & B	11	159	17	187
Melton	7	51	11	70
NWL	9	129	13	151
O & W	5	58	7	70
Leicestershire	79	1,049	119	1,248
L & L	136	1,498	204	1,839

Source: Range of sources as discussed

*Numbers may not add up due to rounding

Potential Supply of Housing to Meet the Affordable Home Ownership Need

- 9.69 As with the need for social/affordable rented housing, it is also necessary to consider if there is any supply of affordable home ownership products from the existing stock of housing. As with assessing the need for affordable home ownership, it is the case that at present the PPG does not include any suggestions about how the supply of housing to meet these needs should be calculated.
- 9.70 The main source is likely to be resales of products such as shared ownership and an analysis of CoRe data about resales of affordable housing shows an average of around 44 resales per annum across the study area (based on data for the 2016-19 period). These properties would be available for these households and can be included as the potential supply.
- 9.71 The table below therefore shows an estimate of the net need for affordable home ownership. This suggests a need for around 1,795 dwellings per annum, with a need being shown in all areas.

Table 9.15 Estimated Need for Affordable Home Ownership by local authority (per annum) – Leicester & Leicestershire

	Total Gross Need	LCHO supply	Net need
Leicester	591	6	585
Blaby	198	3	195
Charnwood	378	7	372
Harborough	195	10	185
H & B	187	10	177
Melton	70	2	67
NWL	151	5	146
O & W	70	1	69
Leicestershire	1,248	38	1,210
L & L	1,839	44	1,795

Source: Range of sources as discussed

*Numbers may not add up due to rounding

An Alternative view of the Supply of Affordable Home Ownership Properties

9.72 The analysis above has looked at the supply of resales of affordable housing. However, it should be noted that the analysis to consider need looks at households unable to afford a lower quartile property price. By definition, a quarter of all homes sold will be priced at or below a lower quartile level. According to the Land Registry, in Leicester & Leicestershire there were a total of 9,917 resales (i.e. excluding newly-built homes) in the last year (year to September 2020) and therefore around 2,479 would be priced below the lower quartile. This is 2,479 homes that would potentially be affordable to the target group for affordable home ownership products and is a potential supply that is well in excess of the level of need calculated. The table below shows the estimated number of sales and the number at or below a lower quartile price for each local authority.

Table 9.16 Number of sales of existing dwellings (year to September 2020) and number at or below lower quartile – Leicester & Leicestershire

	Number of sales	Sales at or below LQ
Leicester	1,967	492
Blaby	1,226	307
Charnwood	1,868	467
Harborough	1,056	264
H & B	1,478	370
Melton	567	142
NWL	1,214	304
O & W	541	135
Leicestershire	7,950	1,988
L & L	9,917	2,479

Source: Land Registry

9.73 If a further supply of dwellings below lower quartile were taken from the estimated need then it would be suggested that there is actually a surplus of affordable home ownership properties (of around 700 per annum). This figure should be treated as theoretical, not least because it is the case that market housing is not allocated in the same way as social/affordable rented homes (i.e. anyone is able to buy a home as long as they can afford it and it is possible that a number of lower quartile homes would be sold to households able to afford more, or potentially to investment buyers). However, it is clear that looking at a wider definition of supply does make it difficult to conclude what the need for affordable home ownership is (and indeed if there is one).

Implications of the Analysis

9.74 Given the analysis above, it would be reasonable to conclude that there is a need to provide housing under the definition of 'affordable home ownership' – although this conclusion is based on only considering supply from resales of affordable housing (notably shared ownership). If supply estimates are expanded to include market housing for sale below a lower quartile price, then the need for AHO is less clear-cut.

9.75 Regardless, it does seem that there are many households in Leicester & Leicestershire who are being excluded from the owner-occupied sector. This can be seen by analysis of tenure change, which saw the number of households living in private rented accommodation increasing by 103% from 2001 to 2011 (with the likelihood that there have been further increases since). Over the same period, the number of owners with a mortgage dropped by 10%. That said, some households will choose to privately rent, for example as it is a more flexible option that may be more suitable for a particular household's life stage (e.g. if moving locations with employment).

Table 9.17 Change in number of owner-occupiers with a mortgage and number of households in the private rented sector (2001-11)

	Owners with a mortgage				Private rented			
	2001	2011	Change	% change	2001	2011	Change	% change
Leicester	37,455	33,152	-4,303	-11.5%	14,025	27,999	13,974	99.6%
Blaby	18,810	16,564	-2,246	-11.9%	1,444	3,876	2,432	168.4%
Charnwood	27,227	24,232	-2,995	-11.0%	5,026	9,396	4,370	86.9%
Harborough	15,000	13,849	-1,151	-7.7%	1,800	3,922	2,122	117.9%
H & B	19,709	17,967	-1,742	-8.8%	2,261	5,156	2,895	128.0%
Melton	8,549	7,770	-779	-9.1%	1,836	3,054	1,218	66.3%
NWL	15,331	14,779	-552	-3.6%	1,933	4,411	2,478	128.2%
O & W	10,316	8,170	-2,146	-20.8%	1,183	2,117	934	79.0%
Leicestershire	114,942	103,331	-11,611	-10.1%	15,483	31,932	16,449	106.2%
L & L	152,397	136,483	-15,914	-10.4%	29,508	59,931	30,423	103.1%

Source: Census (2001 and 2011)

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- 9.76 On this basis, and as previously noted, it seems likely in Leicester & Leicestershire that access to owner-occupation is being restricted by access to capital (e.g. for deposits, stamp duty, legal costs) as well as potentially some mortgage restrictions (e.g. where employment is temporary) rather than just being due to the cost of housing to buy.
- 9.77 The February 2019 NPPF (updated in July 2021) gave a clear direction that 10% of all new housing (on larger sites) should be for affordable home ownership (in other words, if 20% of homes were to be affordable then half would be affordable home ownership) and it is now the case that policy compliant planning applications would be expected to deliver a minimum of 25% affordable housing as First Homes (as a proportion of the total affordable housing), with Councils being able to specify the requirement for any remaining affordable housing (subject to at least 10% of all housing being for AHO).
- 9.78 It is not clear at this stage whether there is any scope to challenge the 'minimum of 25%', nor what role other tenures of affordable home ownership (such as shared ownership) might play. It is possible that provision of First Homes could squeeze out other forms of LCHO such as shared ownership, although it is likely that there will still be a role for this type of housing given typically lower deposit requirements.
- 9.79 Whilst there are clearly many households in the gap between renting and buying, they in some cases will be able to afford homes below lower quartile housing costs. That said, it is important to recognise that some households will have insufficient savings to be able to afford to buy a home on the open market (particularly in terms of the ability to afford a deposit) and low-cost home ownership homes – and shared ownership homes in particular – will therefore continue to play a role in supporting some households in this respect.
- 9.80 The evidence points to a clear and acute need for rented affordable housing for lower income households, and it is important that a supply of rented affordable housing is maintained to meet the needs of this group including those to which the authority has a statutory housing duty. Such housing is notably cheaper than that available in the open market and can be accessed by many more households (some of whom may be supported by benefit payments).
- 9.81 There will also be a role for AHO on any 100% affordable housing schemes that may come forward (as well as through Section 106). Including a mix of both rented and intermediate homes to buy would make such schemes more viable, as well as enabling a range of tenures and therefore potential client groups to access housing.
- 9.82 In addition, it should also be noted that the finding of a 'need' for affordable home ownership does not have any impact on the overall need for housing. It seems clear that this group of households is simply a case of seeking to move households from one tenure to another (in this case from private

renting to owner-occupation); there is therefore no net change in the total number of households, or the number of homes required.

How Much Should Affordable Home Ownership Homes Cost?

- 9.83 The analysis and discussion above suggest that there are a number of households likely to fall under the PPG definition of needing affordable home ownership (including First Homes) – i.e. in the gap between renting and buying – but that the potential supply of low-cost housing to buy makes it difficult to fully quantify this need. However, given the NPPF, it seems likely that the Councils may need to consider some additional homes on larger sites as some form of home ownership.
- 9.84 The analysis below focusses firstly on the cost of First Homes to make them genuinely affordable before moving on to consider shared ownership (in this case suggestions are made about the equity shares likely to be affordable and whether these shares are likely to be offered). It is considered that First Homes and shared ownership are likely to be the main affordable home ownership tenures moving forward although it is accepted that some delivery may be of other products. This section also provides some comments about Rent to Buy housing.
- 9.85 The reason for the analysis to follow is that it will be important for the Councils to ensure that any affordable home ownership is sold at a price that is genuinely affordable for the intended target group – for example there is no point in discounting a new market home by 30% if the price still remains above that for which a reasonable home can already be bought in the open market.

Discounted Market Sales Housing (focussing on First Homes)

- 9.86 In May 2021, MHCLG published a new Planning Practice Guidance (PPG) regarding First Homes – this sets out that the minimum discount should be 30% from market price with local authorities having discretion to increase the discount to 40% or 50%. In some ways First Homes are similar to discounted market sale (a product currently within the NPPF), although for discounted market sales a discount of at least 20% (rather than 30%) from Open Market Value (OMV) is required.
- 9.87 As noted above, the problem with having a percentage discount is that it is possible in some locations or types of property that such a discount still means that the discounted housing is more expensive than that typically available in the open market. This is often the case as new build housing itself attracts a premium. The preferred approach in this report is to set out a series of purchase costs for different sizes of accommodation which ensure these products are affordable for the intended group. These purchase costs are based on current lower quartile rental prices and also consideration of the income required to access the private rented sector and then estimating what property price this level of income might support (assuming a 10% deposit and a 4.5 times mortgage multiple). Below is an example of a calculation based on a 2-bedroom home in Leicester:

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- Previous analysis has shown that the lower quartile rent for a 2-bedroom home in Leicester is £560 per month;
 - On the basis of a household spending no more than 27% of their income on housing, a household would need an income of around £2,100 per month to afford (£560/0.27) or £24,800 per annum (rounded); and
 - With an income of £24,800, it is estimated that a household could afford to buy a home for around £124,000. This is based on assuming a 10% deposit (mortgage for 90% of value) and a four and a half times mortgage multiple – calculated as $£24,800 \times 4.5 / 0.9$.

9.88 Therefore, £124,000 is a suggested purchase price to make First Homes/discouted home ownership affordable for households in the rent/buy gap in Leicester. This figure is essentially the equivalent price that is affordable to a household who can just afford to rent privately. In reality, there will be a range of incomes in the rent/buy gap and so some households could afford a higher price; however, setting all homes at a higher price would mean that some households will still be unable to afford to buy.

9.89 On this basis, it is considered reasonable to look at the cost of First Homes as a range, from the equivalent private rent figure up to a midpoint of the cost of open market purchase (for a 2-bedroom home this is £138,000) and the relevant private rented figure. The use of a midpoint would mean that only around half of households in the rent/buy gap could afford, and therefore any housing provided at such a cost would need to also be supplemented by an equivalent number at a lower cost (which might include other tenures such as shared ownership).

9.90 The tables below therefore set out a suggested purchase price for discounted market housing/First Homes in each area. The tables also show an estimated OMV and the level of discount likely to be required to achieve affordability. The OMV is based on taking the estimated lower quartile price by size and adding 15% (which is the typically newbuild premium seen nationally). It should be noted that the discounts are based on the OMV as estimated, in reality the OMV might be quite different for specific schemes and therefore the percentage discount would not be applicable. For example, if the OMV for a 2-bedroom home in Leicester were to actually be £200,000 (rather than the modelled £159,000) then the discount would be in the range of 35% and 38%. It is therefore the affordable price rather than the discount that should be focused on when determining affordability. On the basis of the specific assumptions used, the analysis points to a discount of around 30% for 2-bedroom homes in most locations and a figure of 40% for larger (3+-bedroom) properties being appropriate to make units affordable.

9.91 The analysis only looks at homes with 2+-bedrooms as for most areas it was not possible to estimate a typical lower quartile price due to a small current stock. In the two areas where a cost could be estimated (Leicester and Charnwood) it looked as if existing market homes are relatively affordable

in this size category (although again with a relatively small sample). This analysis does not suggest that no First Homes should be provided as 1-bedroom units and it is considered that the relevant discount for 2-bedroom homes could apply to any 1-bedroom units.

Table 9.18 Affordable home ownership prices – data for year to September 2020 – Leicester

	Affordable Price	Estimated newbuild OMV	Estimated Discount required
2-bedrooms	£124,000-£131,000	£158,700	17%-22%
3-bedrooms	£138,400-£174,200	£241,500	28%-43%
4+-bedrooms	£193,700-£231,900	£310,500	25%-38%

Source: Derived from a range of sources as described

Table 9.19 Affordable home ownership prices – data for year to September 2020 – Blaby

	Affordable Price	Estimated newbuild OMV	Estimated Discount required
2-bedrooms	£117,500-£137,700	£181,700	24%-35%
3-bedrooms	£151,900-£179,500	£238,050	25%-36%
4+-bedrooms	£169,100-£227,600	£328,900	31%-49%

Source: Derived from a range of sources as described

Table 9.20 Affordable home ownership prices – data for year to September 2020 – Charnwood

	Affordable Price	Estimated newbuild OMV	Estimated Discount required
2-bedrooms	£119,900-£124,500	£148,350	16%-19%
3-bedrooms	£141,700-£171,400	£231,150	26%-39%
4+-bedrooms	£196,300-£241,600	£330,050	27%-41%

Source: Derived from a range of sources as described

Table 9.21 Affordable home ownership prices – data for year to September 2020 – Harborough

	Affordable Price	Estimated newbuild OMV	Estimated Discount required
2-bedrooms	£123,700-£145,400	£192,050	24%-36%
3-bedrooms	£149,700-£189,800	£264,500	28%-43%
4+-bedrooms	£219,500-£278,800	£388,700	28%-44%

Source: Derived from a range of sources as described

Table 9.22 Affordable home ownership prices – data for year to September 2020 – Hinckley & Bosworth

	Affordable Price	Estimated newbuild OMV	Estimated Discount required
2-bedrooms	£117,000-£126,000	£155,250	19%-25%
3-bedrooms	£147,800-£172,400	£226,550	24%-35%
4+-bedrooms	£199,900-£241,900	£326,600	26%-39%

Source: Derived from a range of sources as described

Table 9.23 Affordable home ownership prices – data for year to September 2020 – Melton

	Affordable Price	Estimated newbuild OMV	Estimated Discount required
2-bedrooms	£114,200-£124,100	£154,100	19%-26%
3-bedrooms	£122,700-£159,900	£226,550	29%-46%
4+-bedrooms	£183,500-£248,300	£359,950	31%-49%

Source: Derived from a range of sources as described

Table 9.24 Affordable home ownership prices – data for year to September 2020 – North West Leicestershire

	Affordable Price	Estimated newbuild OMV	Estimated Discount required
2-bedrooms	£111,300-£113,100	£132,250	14%-16%
3-bedrooms	£132,500-£158,200	£211,600	25%-37%
4+-bedrooms	£180,100-£218,600	£295,550	26%-39%

Source: Derived from a range of sources as described

Table 9.25 Affordable home ownership prices – data for year to September 2020 – Oadby & Wigston

	Affordable Price	Estimated newbuild OMV	Estimated Discount required
2-bedrooms	£118,300-£134,600	£173,650	22%-32%
3-bedrooms	£144,000-£174,500	£235,750	26%-39%
4+-bedrooms	£205,700-£236,400	£307,050	23%-33%

Source: Derived from a range of sources as described

9.92 In policy terms, ideally Councils could consider setting out expectations of costs for First Homes in terms of the discounted purchase price – such costs could be updated every six months (by reference to ONS private rental market data and a market survey of sale prices (such as consideration of Land Registry data and an internet search of homes for sale/recently sold)). The Council could then expect housing to be available for either the costs set out or with a 30% discount (whichever the lower). However, it seems for First Homes guidance that flexibility to set prices rather than a discount figure is not possible and that a percentage discount needs to be set out in policy at 30%, 40% etc on the Open Market Value (OMV).

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- 9.93 It is quite likely there will be occasions where a greater discount than 30% will be required to make homes genuinely affordable. In these circumstances, the Councils will need to consider if they want an additional discount, or whether this might prejudice the viability of providing other forms of affordable housing (such as rented homes) Decisions about what to do in such circumstances would ideally be made on a case-by-case basis although it appears from guidance on First Homes that decisions about discounts would need to be made in advance of any specific site circumstances. In determining whether a discount of above 30% is justified, the Councils need to consider both the needs evidence and viability, in particular given that higher discounts applied to First Homes could impact on the delivery of rented affordable homes.
- 9.94 It should also be noted that the analysis above is for the whole of each local authority area; the pricing of housing does vary across the local authorities and therefore some small adjustments to the figures might be appropriate in some instances. That said, affordable needs can be met anywhere in the authorities (where opportunities arise) and so using an expectation of an authority-wide affordability calculation should ensure affordable products on sites regardless of location.
- 9.95 Taking account of the figures shown in the tables above, the table below summarises a suggested level of discount by local authority and size of home. Whilst this report considers the cost of the housing to be most important, it seems likely that Government will expect discounts to be set out in policy (so as to give certainty to the development industry). The table below works on the basis that discounts will be either 30%, 40% or 50% and it should be stressed that these are solely based on the analysis in this report and there may be justification to use different figures in the future.
- 9.96 Generally, the suggested figures are at the upper end of the range – this is to ensure a reasonable proportion of households would be able to afford products and it can be seen that discounts in excess of 30% are suggested in many instances. On the basis of the analysis there is certainly a case to seek a discount in excess of 30% - a higher discount will certainly make homes cheaper and therefore potentially open up additional households as being able to afford. However, providing a higher discount may well have an impact on viability, meaning the Councils will not be able to provide as many homes in other tenures (such as rented affordable housing which is likely to be needed by those with more acute needs and fewer choices in the housing market).
- 9.97 Councils could therefore investigate higher discounts (with 40% generally being suggested by the analysis), but it is not recommended to seek a higher figure unless this can be proven to not impact on overall affordable delivery. Additionally, although not specifically set out in the PPG, it does seem likely that the Councils would need to have a single discount for all dwelling sizes and on that basis consideration would need to be given to the likely profile of First Homes (by size) in choosing an appropriate discount (subject to any issue related to viability noted above).

Table 9.26 Suggested discount required to make First Homes affordable, by local authority and dwelling size

	1- and 2-bedroom	3-bedroom	4+-bedroom
Leicester	30%	40%	30%
Blaby	30%	40%	40%
Charnwood	30%	40%	40%
Harborough	30%	40%	40%
H & B	30%	30%	40%
Melton	30%	40%	40%
NWL	30%	40%	40%
O & W	30%	40%	30%

Source: Based on a range of analysis as above

Shared Ownership

- 9.98 Whilst the Government has a clear focus on First Homes, they also see a continued role for Shared Ownership, launching a 'New Model for Shared Ownership' in early 2021 (following a 2020 consultation) – this includes a number of proposals, with the main one for the purposes of this assessment being the reduction of the minimum initial share from 25% to 10%. A key advantage of shared ownership over other tenures is that a lower deposit is likely to be required than for full or discounted purchase. Additionally, the rental part of the cost will be subsidised by a Registered Provider and therefore keeps monthly outgoings down.
- 9.99 For the purposes of the analysis in this report it is considered that for shared ownership to be affordable, total outgoings should not exceed that needed to rent privately.
- 9.100 Because shared ownership is based on buying part of a property, it is the case that the sale will need to be at open market value. Where there is a large gap between the typical incomes required to buy or rent, it may be the case that lower equity shares are needed for homes to be affordable (at the level of renting privately). The analysis below therefore seeks to estimate the typical equity share that might be affordable for different sizes of property with any share lower than 10% likely to be unavailable. The key assumptions used in the analysis are:
- OMV at LQ price plus 15% (reflecting likelihood that newbuild homes will have a premium attached and that they may well be priced above a LQ level) – it should be noted that this is an assumption for modelling purposes and consideration will need to be given to the OMV of any specific product;
 - 10% deposit on the equity share;
 - Rent at 2.75% pa on unsold equity;

- Repayment mortgage over 25-years at 4%;
- Service charge of £100 per month for flatted development (assumed to be 2-bedroom homes);
- It is also assumed that shared ownership would be priced for households sitting towards the bottom end of the rent/buy gap and so the calculations assume that total outgoings should be no higher than the equivalent private rent (lower quartile) cost for that size of property; and
- As with the analysis of First Homes, no figures are provided for 1-bedroom homes due to a lack of information about pricing generally across the study area.

9.101 The tables below show that to make shared ownership affordable, equity shares of no higher than 40% could work for some sizes of home in some locations, however, much lower shares are likely to be needed to make homes affordable for most dwelling sizes/locations. Overall, it is suggested that equity shares in the range of 10%-35% should be considered but that it will be important to make sure the actual cost to the household is genuinely affordable in a local context.

9.102 It should also be noted that the analysis below is predicated on a particular set of assumptions (notably about likely OMV). In reality costs do vary across the area and will vary from site to site. Therefore, this analysis should be seen as indicative with specific schemes being tested individually to determine if the product being offered is genuinely (or reasonably) affordable.

Table 9.27 Estimated Affordable Equity Share by Size – Leicester

	2-Bedrooms	3-Bedrooms	4-Bedrooms
OMV	£158,700	£241,500	£310,500
Share	25%	12%	21%
Equity Bought	£39,199	£28,980	£66,447
Mortgage Needed	£35,279	£26,082	£59,802
Monthly Cost of Mortgage	£186	£138	£316
Retained Equity	£119,501	£212,520	£244,053
Monthly Rent on Retained Equity	£274	£487	£559
Service Charge per month	£100	£0	£0
Total Cost per month	£560	£625	£875

Source: Data based on Housing Market Cost Analysis

Table 9.28 Estimated Affordable Equity Share by Size – Blaby

	2-Bedrooms	3-Bedrooms	4-Bedrooms
OMV	181,700	£238,050	£328,900
Share	14%	35%	10%
Equity Bought	£25,801	£83,079	£32,890
Mortgage Needed	£23,221	£74,772	£29,601
Monthly Cost of Mortgage	£123	£395	£156
Retained Equity	£155,899	£154,971	£296,010
Monthly Rent on Retained Equity	£357	£355	£678
Service Charge per month	£100	£0	£0
Total Cost per month	£580	£750	£835

Source: Data based on Housing Market Cost Analysis

Table 9.29 Estimated Affordable Equity Share by Size – Charnwood

	2-Bedrooms	3-Bedrooms	4-Bedrooms
OMV	£148,350	£231,150	£330,050
Share	30%	21%	18%
Equity Bought	£44,802	£48,773	£58,419
Mortgage Needed	£40,322	£43,895	£52,577
Monthly Cost of Mortgage	£213	£232	£278
Retained Equity	£103,548	£182,377	£271,631
Monthly Rent on Retained Equity	£237	£418	£622
Service Charge per month	£100	£0	£0
Total Cost per month	£550	£650	£900

Source: Data based on Housing Market Cost Analysis

Table 9.30 Estimated Affordable Equity Share by Size – Harborough

	2-Bedrooms	3-Bedrooms	4-Bedrooms
OMV	£192,050	£264,500	£388,700
Share	17%	22%	22%
Equity Bought	£32,649	£58,455	£85,125
Mortgage Needed	£29,384	£52,609	£76,613
Monthly Cost of Mortgage	£155	£278	£405
Retained Equity	£159,402	£206,046	£303,575
Monthly Rent on Retained Equity	£365	£472	£696
Service Charge per month	£100	£0	£0
Total Cost per month	£620	£750	£1,100

Source: Data based on Housing Market Cost Analysis

Table 9.31 Estimated Affordable Equity Share by Size – Hinckley & Bosworth

	2-Bedrooms	3-Bedrooms	4-Bedrooms
OMV	£155,250	£226,550	£326,600
Share	25%	32%	25%
Equity Bought	£38,347	£71,590	£81,977
Mortgage Needed	£34,512	£64,431	£73,779
Monthly Cost of Mortgage	£182	£340	£390
Retained Equity	£116,903	£154,960	£244,623
Monthly Rent on Retained Equity	£268	£355	£561
Service Charge per month	£100	£0	£0
Total Cost per month	£550	£695	£950

Source: Data based on Housing Market Cost Analysis

Table 9.32 Estimated Affordable Equity Share by Size – Melton

	2-Bedrooms	3-Bedrooms	4-Bedrooms
OMV	£154,100	£226,550	£359,950
Share	22%	10%	4%
Equity Bought	£33,286	£22,655	£14,398
Mortgage Needed	£29,957	£20,390	£12,958
Monthly Cost of Mortgage	£158	£108	£68
Retained Equity	£120,814	£203,895	£345,552
Monthly Rent on Retained Equity	£277	£467	£792
Service Charge per month	£100	£0	£0
Total Cost per month	£535	£575	£860

Source: Data based on Housing Market Cost Analysis

Table 9.33 Estimated Affordable Equity Share by Size – North West Leicestershire

	2-Bedrooms	3-Bedrooms	4-Bedrooms
OMV	£132,250	£211,600	£295,550
Share	37%	27%	24%
Equity Bought	£49,462	£57,132	£70,045
Mortgage Needed	£44,515	£51,419	£63,041
Monthly Cost of Mortgage	£235	£271	£333
Retained Equity	£82,789	£154,468	£225,505
Monthly Rent on Retained Equity	£190	£354	£517
Service Charge per month	£100	£0	£0
Total Cost per month	£525	£625	£850

Source: Data based on Housing Market Cost Analysis

Table 9.34 Estimated Affordable Equity Share by Size – Oadby & Wigston

	2-Bedrooms	3-Bedrooms	4-Bedrooms
OMV	£173,650	£235,750	£307,050
Share	18%	28%	39%
Equity Bought	£31,257	£65,067	£120,364
Mortgage Needed	£28,131	£58,560	£108,327
Monthly Cost of Mortgage	£149	£309	£572
Retained Equity	£142,393	£170,683	£186,686
Monthly Rent on Retained Equity	£326	£391	£428
Service Charge per month	£100	£0	£0
Total Cost per month	£575	£700	£1,000

Source: Data based on Housing Market Cost Analysis

- 9.103 In policy terms, whilst the analysis has provided an indication of the equity shares possibly required by size, the key figure is actually the total cost per month (and how this compares with the costs to access private rented housing). For example, whilst the tables suggest a 25% equity share for 2-bedroom home in Leicester, this is based on a specific set of assumptions. Were a scheme to come forward with a 25% share, but a total cost in excess of £560 per month, then it would be clear that a lower share is likely to be required to make the home genuinely affordable. Hence the actual share can only be calculated on a scheme-by-scheme basis. Any policy position should seek to ensure that outgoings are no more than can reasonably be achieved in the private rented sector, rather than seeking a specific equity share.

Rent to Buy

- 9.104 A further affordable option is Rent to Buy; this is a government scheme designed to ease the transition from renting to buying the same home. Initially (typically five years) the newly built home will be provided at the equivalent of an affordable rent (approximately 20% below the market rate). The expectation is that the discount provided in that first five years is saved in order to put towards a deposit on the purchase of the same property. Rent to Buy can be advantageous for some households as it allows for a smaller 'step' to be taken on to the home ownership ladder.
- 9.105 At the end of the five-year period, depending on the scheme, the property is either sold as a shared ownership product or to be purchased outright as a full market property. If the occupant is not able to do either of these then the property is vacated.
- 9.106 In order to access this tenure it effectively requires the same income threshold for the initial phase as a market rental property although the cost of accommodation will be that of affordable rent. The lower than market rent will allow the household to save for a deposit for the eventual shared ownership or market property. In considering the affordability of rent-to-buy schemes there is a direct read across to the income required to access affordable home ownership (including shared

ownership), it should therefore be treated as part of the affordable home ownership products suggested by the NPPF.

Essential Local Workers

9.107 Annex 2 of the NPPF also includes the needs of essential local workers *‘Affordable housing: housing for sale or rent, for those whose needs are not met by the market (including housing that provided a subsidised route to home ownership and/or is for essential local workers’ [emphasis added]. Essential local workers are defined as *‘Public sector employees who provide frontline services in areas including health, education and community safety – such as NHS staff, teachers, police, firefighters and military personnel, social care and childcare workers’*.*

9.108 To give an indication of the number of essential workers in Leicester & Leicestershire analysis has been undertaken looking at Standard Industrial Classification 2007 (SIC) categories – this shows employment sectors based on industry, and for the purposes of this analysis the public administration, education and health industries have been used to represent ‘essential workers’. The analysis shows that around 28% of resident workers are considered ‘essential workers’ in Leicester, with a similar figure of 27% in Leicestershire – these figures are similar to those seen regionally and nationally.

Table 9.35 Number and proportion of essential workers in a range of areas

	Leicester		Leicestershire		East Midlands	England
	Resident workers	% of workers	Resident workers	% of workers	% of workers	% of workers
Agriculture, energy and water	2,968	2.2%	10,454	3.2%	3.1%	2.3%
Manufacturing	20,674	15.0%	42,545	13.0%	12.9%	8.9%
Construction	7,109	5.2%	26,892	8.2%	7.7%	7.7%
Distribution, hotels and restaurants	34,420	24.9%	73,180	22.4%	22.9%	21.5%
Transport and communication	10,601	7.7%	24,466	7.5%	7.9%	9.1%
Financial, Real Estate, Professional and Administration	17,950	13.0%	45,107	13.8%	13.1%	17.5%
Public administration, education and health	38,826	28.1%	89,172	27.3%	28.0%	28.2%
Other	5,439	3.9%	14,622	4.5%	4.4%	5.0%
All industries	137,987	100.0%	326,438	100.0%	100.0%	100.0%

Source: 2011 Census

9.109 The table below shows how the number of essential workers varies across local authorities. Generally, the authorities have similar proportions of essential workers, with the main notable differences being a lower proportion in NWL (24% of workers) and a higher proportion in Oadby & Wigston (32%).

Table 9.36 Number and proportion of essential workers – local authorities

	Resident essential workers	% of workers in area	% of resident workers
Leicester	38,826	28.1%	30.3%
Blaby	13,658	28.2%	10.7%
Charnwood	23,377	29.2%	18.3%
Harborough	12,178	27.4%	9.5%
H & B	13,640	25.2%	10.7%
Melton	6,780	25.7%	5.3%
NWL	11,069	23.8%	8.6%
O & W	8,470	31.9%	6.6%
Leicestershire	89,172	27.3%	69.7%
L & L	127,998	27.6%	100.0%

Source 2011 Census

9.110 The 2011 Census also enables analysis to be conducted as to the tenure of workers by industry. It can be seen that essential workers see a fairly average profile, with similar levels of owner-occupation, social renting and private renting as is seen across each individual authority (Leicester and Leicestershire).

Table 9.37 Housing tenure by industry of employment (2011) – Leicester

	Owner-occupied	Social rented	Private rented
Agriculture, energy and water	58%	16%	26%
Manufacturing	62%	15%	23%
Construction	66%	14%	20%
Distribution, hotels and restaurants	50%	19%	31%
Transport and communication	58%	17%	25%
Financial, Real Estate, Professional and Administration	55%	17%	28%
Public administration, education and health	59%	16%	24%
Other	48%	18%	34%
All industries	57%	17%	26%

Source: 2011 Census

Table 9.38 Housing tenure by industry of employment (2011) – Leicestershire

	Owner-occupied	Social rented	Private rented
Agriculture, energy and water	76%	7%	17%
Manufacturing	82%	6%	12%
Construction	83%	5%	12%
Distribution, hotels and restaurants	74%	8%	18%
Transport and communication	79%	7%	14%
Financial, Real Estate, Professional and Administration	82%	5%	14%
Public administration, education and health	80%	6%	14%
Other	71%	7%	22%
All industries	79%	6%	15%

Source: 2011 Census

- 9.111 It is also possible to consider the affordability of housing for essential workers by considering local salaries. An online assessment of local jobs (across Leicester & Leicestershire) for nurses, firefighters, teachers, police officers and childcare was undertaken in June 2021. This showed a range of salaries, but typically in the range of about £20,000 to £30,000 per annum. The average salary was around £25,000 although it does need to be noted that there are a variety of roles with a range of salaries in these professions depending on level of expertise and experience.
- 9.112 With a salary of £25,000, an individual might be able to buy a home for around £125,000 (based on a 10% deposit and 4.5 times mortgage multiple) and with two salaries at this level would be able to afford around £250,000. This latter figure would allow the household to afford to buy a home across much of the study area, but the single income would make home ownership difficult (particularly in higher value locations), and this population could be a potential target for affordable home ownership products.
- 9.113 Overall, the analysis does not point towards there being a particular and specific need for affordable housing for essential workers. Such workers make up a similar part of the workforce as is the case in many areas and households are as likely to be owner-occupiers than many other industry groups. However, on the basis of local incomes (notably for single income essential workers), access to the owner-occupied sector may be restricted by income and it may be appropriate to consider whether or not some affordable properties should be set aside for essential local workers.

Implications of Covid-19

- 9.114 The long-term impact of Covid-19 on affordable housing need is somewhat unclear; but some conclusions on shorter-term impacts can be drawn. As the HENA has examined, there was an increase in unemployment through 2020, but since Spring 2021 unemployment levels have been falling. Higher unemployment/claimants could make it difficult for some households to afford their

housing and would lead them to need to seek a housing solution through the local authority or Registered Providers.

9.115 As noted, data from the Department of Work and Pensions shows the number of Housing Benefit (or Universal Credit with a housing element) claimants in the private rented sector increasing significantly (this has been previously set out in this section). The table below shows the number of Housing Benefit claimants (including Universal Credit) in each of February 2020 and February 2021.

9.116 The analysis shows all areas have seen a notable increase in Housing Benefit claimants, increase by between 37% in Oadby & Wigston and 56% in Charnwood. Across the whole study area, the number of claimants increased by 46%. All of this points to an impact of Covid-19 being to see increased pressure on affordable housing.

Table 9.39 Change in Number of Housing Benefit claimants in the private rented sector – Leicester & Leicestershire

	Claimants (February 2020)	Claimants (February 2021)	Change in claimants	% change
Leicester	10,395	15,070	4,675	45.0%
Blaby	1,284	1,843	559	43.5%
Charnwood	2,263	3,537	1,274	56.3%
Harborough	969	1,425	456	47.1%
H & B	1,609	2,383	774	48.1%
Melton	812	1,124	312	38.4%
NWL	1,200	1,851	651	54.3%
O & W	1,016	1,394	378	37.2%
Leicestershire	9,153	13,557	4,404	48.1%
L & L	19,548	28,627	9,079	46.4%

Source: Department of Work and Pensions

Summary of Affordable Housing Need

9.117 The table below brings together the estimates of annual need for rented affordable housing and affordable home ownership to consider the balance between tenures in different areas. This table should be considered for reference purposes and will not directly inform decisions about an appropriate mix for any individual area – that will in part be informed by viability and also any local priorities such as to maximise provision of rented accommodation as that is likely to be required by households with the most acute needs.

9.118 In interpreting the figures, it should also be noted, that affordable home ownership figures do not include any reduction due to the availability of homes in the market at a price below lower quartile or market-based initiatives to make homes affordable such as the Help-to-Buy Equity Loan scheme which the HENA evidence shows has comprised a significant proportion of new-build delivery (c.

50% across Leicester and Leicestershire). This would significantly reduce estimated need for AHO products and again point to Councils needing to focus on meeting rented needs where possible. Additionally, it needs to be recognised that the analysis is based on local household incomes, for many households there will be additional barriers to AHO (e.g. existing debt, poor credit, lack of deposit etc.) which would make it difficult to access such products.

Table 9.40 Estimated annual need for affordable housing split between rented and affordable home ownership – Leicester & Leicestershire

	Rented affordable need	Affordable home ownership need
Leicester	1,249	585
Blaby	341	195
Charnwood	455	372
Harborough	254	185
H & B	321	177
Melton	82	67
NWL	236	146
O & W	139	69
Leicestershire	1,827	1,210
L & L	3,076	1,795

Source: Draws from earlier analysis

9.119 The HENA analysis points to an acute need for rented affordable housing in all parts of the County. There is an overlap between the affordable home ownership need shown and the role which market housing plays in supporting home ownership through schemes such as the Help-to-Buy Equity Loan scheme and mortgage guarantee schemes. The evidence would support policy approaches which seek to prioritise rented affordable housing delivery to meet those with acute needs with few alternative housing options; but there are viability considerations and policy priorities which individual authorities will need to balance. The figures shown represent the highest possible requirement for Affordable Home Ownership. Individual Local Authorities may consider that a proportion of those captured may either choose to purchase lower quartile market homes, be unable able to obtain mortgages or may want the flexibility afforded by renting. Individual local authorities may look to discount a proportion of the identified Affordable Home Ownership numbers to reflect these scenarios.

10. NEED FOR DIFFERENT SIZES OF HOMES

10.1 This section considers the appropriate mix of housing across the study area, with a particular focus on the sizes of homes required in different tenure groups for new development. This section looks at a range of statistics in relation to families (generally described as households with dependent children) before moving on to look at how the number of households in different age groups are projected to change moving forward.

Background Data

10.2 The number of families in Leicester & Leicestershire (defined for the purpose of this assessment as any household which contains at least one dependent child) totalled 118,500 as of the 2011 Census, accounting for 30% of households; this proportion is similar to the regional and national average (both 29%).

10.3 This analysis has drawn on 2011 Census data which is now somewhat out-of-date. However, it would be expected that general patterns between areas will remain broadly the same (i.e. areas with greater proportions of family households in 2011, will still be expected to have greater proportions now). New (2021) Census data should start to filter through from Spring/Summer 2022, which will allow for this analysis to be updated.

Table 10.1 Households with dependent children (2011)

		Married couple	Cohabiting couple	Lone parent	Other household (with dependent s)	All other households (no dependent children)	Total	Total with dependent children
Leicester & Leicestershire	No.	65,077	16,010	25,411	12,016	272,045	390,559	118,514
	%	16.7%	4.1%	6.5%	3.1%	69.7%	100.0%	30.3%
East Midlands	%	15.3%	4.5%	6.7%	2.3%	71.3%	100.0%	28.7%
England	%	15.3%	4.0%	7.1%	2.6%	70.9%	100.0%	29.1%

Source: Census (2011)

10.4 The table below shows the same information for each local authority. The analysis shows relatively few family households in Hinckley & Bosworth (27%) and just over a third of households in Leicester; Leicester also sees a higher proportion of lone parent households than other locations.

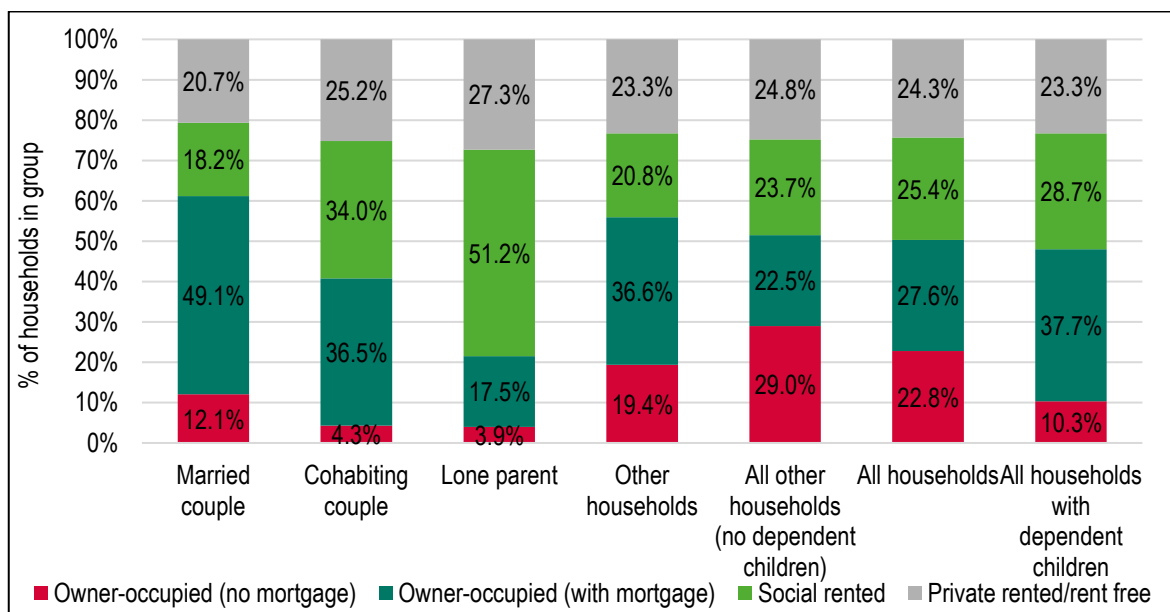
Table 10.2 Households with dependent children (2011) – local authorities

	Married couple	Cohabiting couple	Lone parent	Other households	All other households	Total	Total with dependent children
Leicester	15.8%	3.7%	8.5%	5.4%	66.6%	100.0%	33.4%
Blaby	17.6%	4.5%	6.0%	2.1%	69.7%	100.0%	30.3%
Charnwood	16.3%	4.1%	5.7%	2.0%	71.9%	100.0%	28.1%
Harborough	19.8%	3.9%	4.7%	1.6%	69.9%	100.0%	30.1%
H & B	15.7%	4.4%	5.8%	1.6%	72.6%	100.0%	27.4%
Melton	16.5%	4.3%	5.7%	1.6%	71.9%	100.0%	28.1%
NWL	17.0%	4.6%	5.8%	1.8%	70.7%	100.0%	29.3%
O & W	17.4%	4.2%	5.2%	3.9%	69.4%	100.0%	30.6%
Leicestershire	17.1%	4.3%	5.6%	2.0%	71.1%	100.0%	28.9%
L & L	16.7%	4.1%	6.5%	3.1%	69.7%	100.0%	30.3%

Source: Census (2011)

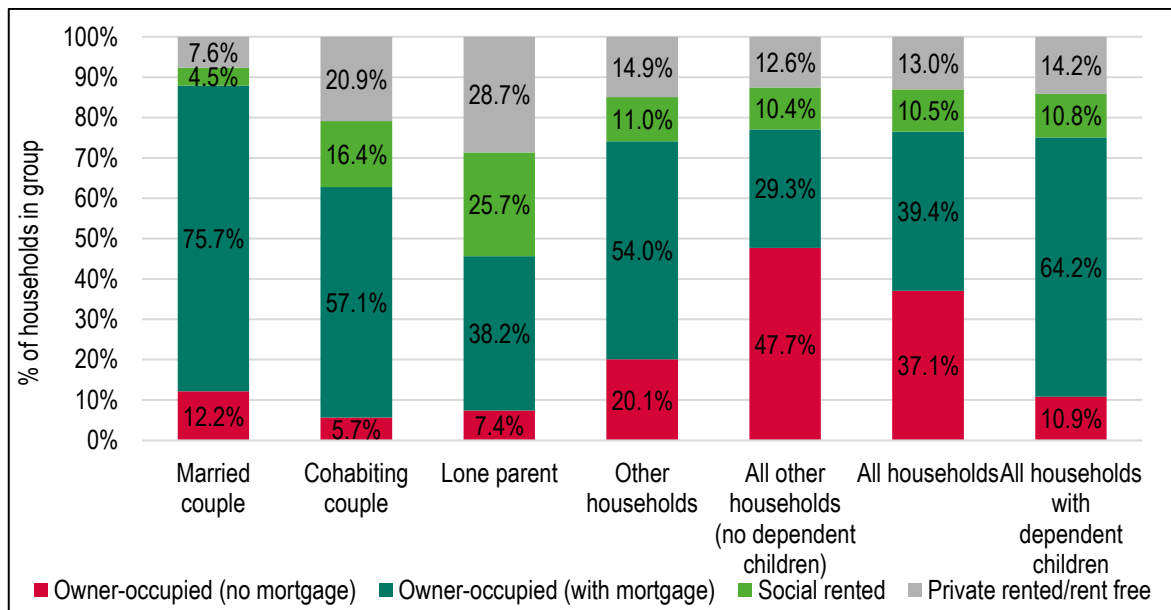
10.5 The figures below show the current tenure of households with dependent children. There are some considerable differences by household type with lone parents having a very high proportion living in the social rented sector and also in private rented accommodation. In Leicester, only 21% of lone parent households are owner-occupiers compared with 61% of married couples with children. In Leicestershire these figures are 46% and 88% respectively.

Figure 10.1: Tenure of households with dependent children (2011) – Leicester



Source: Census (2011)

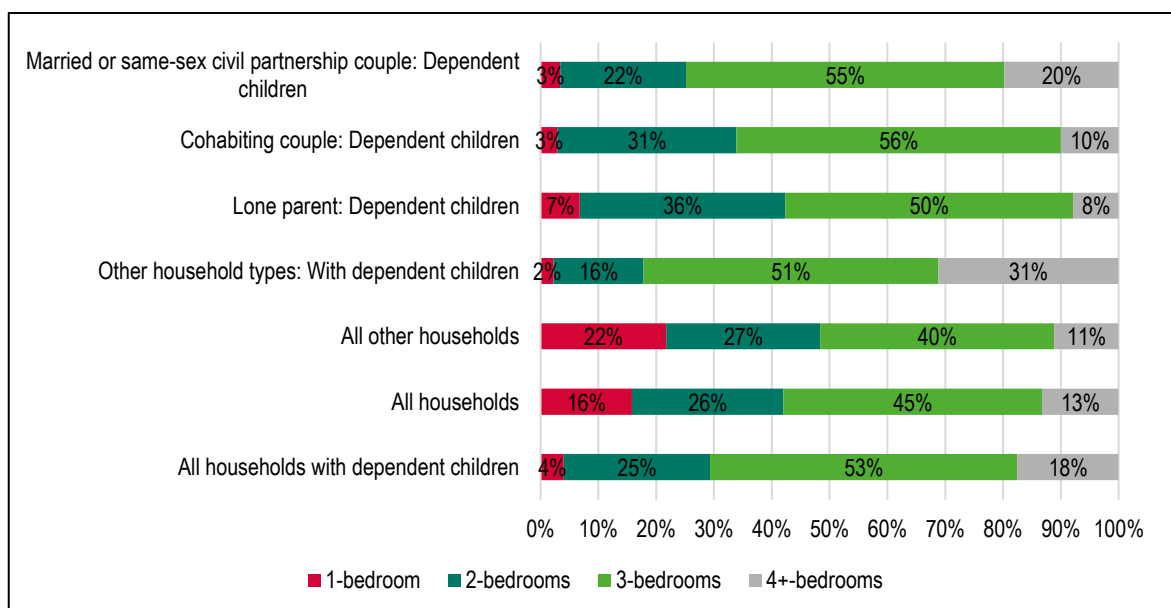
Figure 10.2 Tenure of households with dependent children (2011) – Leicestershire



Source: Census (2011)

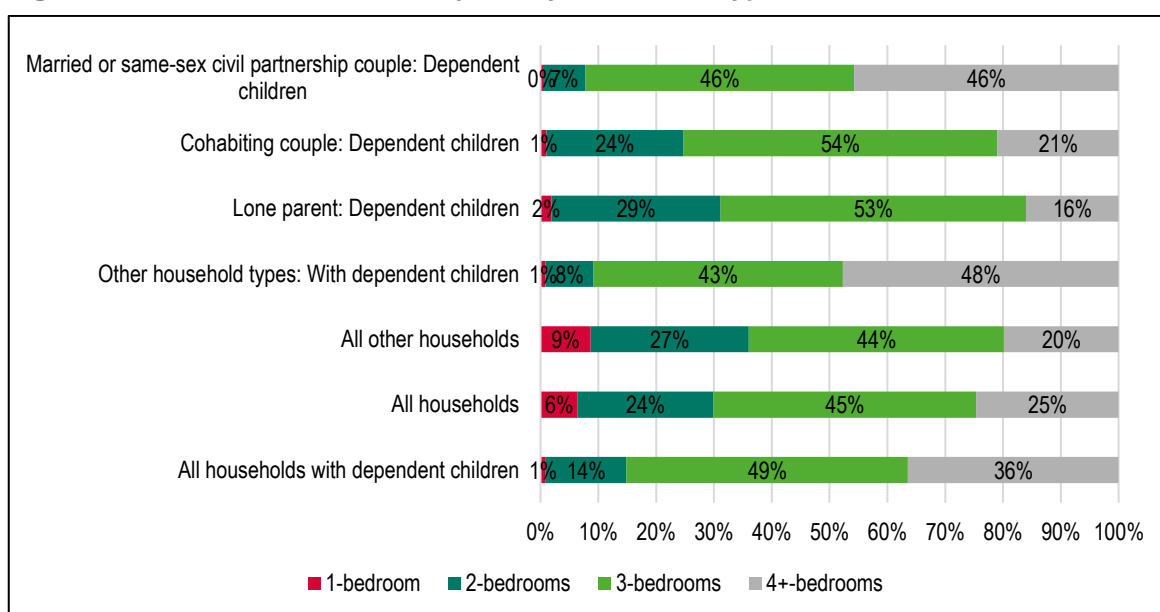
10.6 The figures below show the number of bedrooms for family households at the point of the 2011 Census. The analysis shows the differences between married, cohabiting and lone parent families. Across the study area, the tendency is for family households to occupy 3-bedroom housing with varying degrees of 2-and 4+-bedroom properties depending on the household composition. The data also, unsurprisingly, highlights the small level of 1-bed stock occupied by families across the board. As a result, we could expect continued demand for 3+-bedroom homes from family households.

Figure 10.3 Number of Bedrooms by Family Household Type, 2011 – Leicester



Source: Census (2011)

Figure 10.4 Number of Bedrooms by Family Household Type, 2011 – Leicestershire



Source: Census (2011)

The Mix of Housing

- 10.7 A model has been developed that starts with the current profile of housing in terms of size (bedrooms) and tenure. Within the data, information is available about the age of households and the typical sizes of homes they occupy. By using demographic projections linked to the local housing need calculated through the standard method, it is possible to see which age groups are expected to change in number, and by how much. The model is consistent to that used in the 2017 HEDNA.
- 10.8 On the assumption that occupancy patterns for each age group (within each tenure) remain the same, it is therefore possible to assess the profile of housing needed over the assessment period to 2041 (from 2020).
- 10.9 An important starting point is to understand the current balance of housing in the area – the table below profiles the sizes of homes in different tenure groups across areas. The data shows a generally smaller market sector in Leicester than other areas, with the opposite being the case for Leicestershire. The profile of the social rented sector is broadly similar across areas. Observations about the current mix feed into conclusions about future mix later in this section.

Table 10.3 Number of Bedrooms by Tenure, 2011

		Leicester	Leicestershire	East Midlands	England
Owner-occupied	1-bedroom	3%	2%	2%	4%
	2-bedrooms	21%	20%	22%	23%
	3-bedrooms	58%	49%	51%	48%
	4+-bedrooms	19%	30%	26%	25%
	Total	100%	100%	100%	100%
Social rented	1-bedroom	33%	31%	29%	31%
	2-bedrooms	29%	32%	34%	34%
	3-bedrooms	33%	34%	34%	31%
	4+-bedrooms	5%	3%	3%	4%
	Total	100%	100%	100%	100%
Private rented	1-bedroom	25%	13%	15%	23%
	2-bedrooms	34%	39%	39%	39%
	3-bedrooms	30%	35%	35%	28%
	4+-bedrooms	11%	13%	11%	10%
	Total	100%	100%	100%	100%

Source: Census (2011)

10.10 The table below shows the same information for each of the local authorities in Leicestershire – this shows broadly similar patterns across areas although there are a few notable differences; this includes a high proportion of 4+-bedroom market homes in Harborough, lower proportions of 1-bedroom social rented homes in Hinckley & Bosworth and North West Leicestershire and a larger private rented sector in Charnwood (which will be associated with the student population).

Table 10.4 Number of Bedrooms by Tenure, 2011 – local authorities in Leicestershire

		Blaby	Charnwood	Har-boro.	H&B	Melton	NWL	O&W
Owner-occupied	1-bedroom	1%	2%	2%	2%	1%	2%	2%
	2-bedrooms	17%	21%	18%	23%	17%	19%	21%
	3-bedrooms	55%	49%	39%	49%	50%	50%	51%
	4+-bedrooms	27%	27%	41%	27%	32%	29%	26%
	Total	100%	100%	100%	100%	100%	100%	100%
Social rented	1-bedroom	38%	39%	32%	23%	29%	22%	29%
	2-bedrooms	38%	24%	37%	38%	35%	31%	33%
	3-bedrooms	22%	33%	29%	37%	32%	42%	36%
	4+-bedrooms	2%	4%	2%	2%	4%	4%	2%
	Total	100%	100%	100%	100%	100%	100%	100%
Private rented	1-bedroom	10%	15%	14%	16%	12%	13%	10%
	2-bedrooms	37%	36%	41%	42%	35%	39%	43%
	3-bedrooms	44%	31%	32%	33%	40%	38%	40%
	4+-bedrooms	9%	18%	13%	9%	13%	10%	7%
	Total	100%	100%	100%	100%	100%	100%	100%

Source: Census (2011)

Overview of Methodology

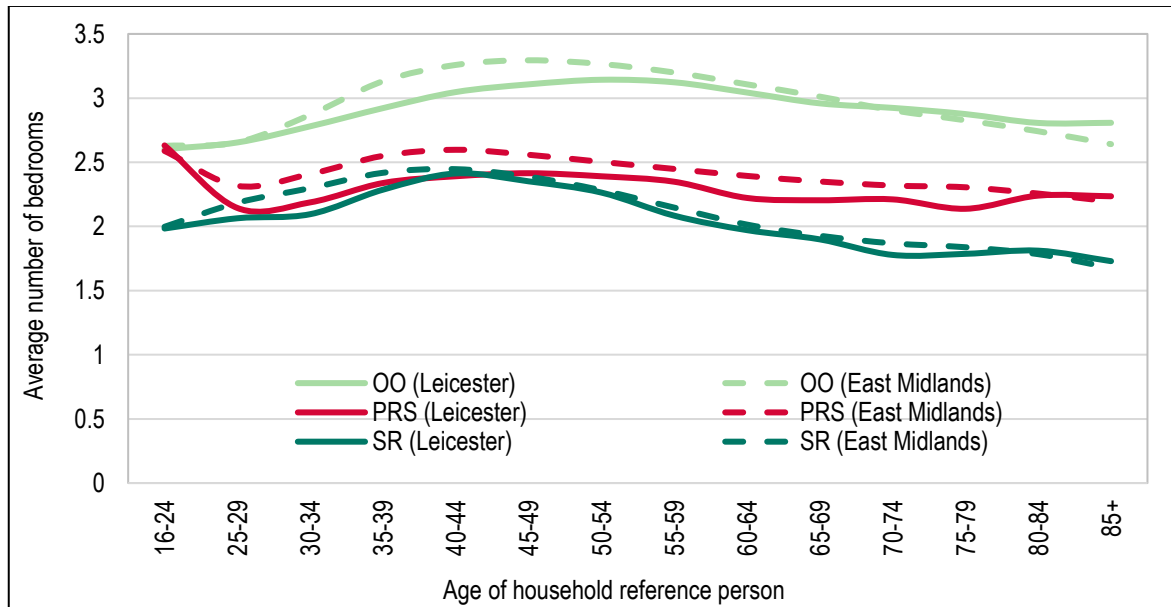
- 10.11 The method to consider future housing mix looks at the ages of the Household Reference Persons and how these are projected to change over time. The sub-sections to follow describe some of the key analysis.

Understanding How Households Occupy Homes

- 10.12 Whilst the demographic projections provide a good indication of how the population and household structure will develop, it is not a simple task to convert the net increase in the number of households into a suggested profile for additional housing to be provided. The main reason for this is that in the market sector, households are able to buy or rent any size of property (subject to what they can afford) and therefore knowledge of the profile of households in an area does not directly transfer into the sizes of property to be provided.
- 10.13 The size of housing which households occupy relates more to their wealth and age than the number of people they contain. For example, there is no reason why a single person cannot buy (or choose to live in) a 4-bedroom home as long as they can afford it, and hence projecting an increase in single person households does not automatically translate into a need for smaller units.
- 10.14 That said, issues of supply can also impact occupancy patterns, for example it may be that a supply of additional smaller bungalows (say 2-bedrooms) would encourage older people to downsize but in the absence of such accommodation these households remain living in their larger accommodation.
- 10.15 The issue of choice is less relevant in the affordable sector (particularly since the introduction of the social sector size criteria) where households are allocated properties which reflect the size of the household, although there will still be some level of under-occupation moving forward with regard to older person and working households who may be able to under-occupy housing (e.g. those who can afford to pay the spare room subsidy ('bedroom tax')).
- 10.16 The approach used is to interrogate information derived in the projections about the number of household reference persons (HRPs) in each age group and apply this to the profile of housing within these groups. The data for this analysis has been formed from a commissioned table by ONS (Table CT0621 which provides relevant data for all local authorities in England and Wales from the 2011 Census).
- 10.17 The figures below show an estimate of how the average number of bedrooms varies by different ages of HRP and broad tenure group for Leicester, Leicestershire and the East Midlands. In the owner-occupied sector the average size of accommodation rises over time to typically reach a peak around the age of 45-50; a similar pattern (but with smaller dwelling sizes and an earlier peak) is seen in both the social and private rented sector. After peaking, the average dwelling size decreases

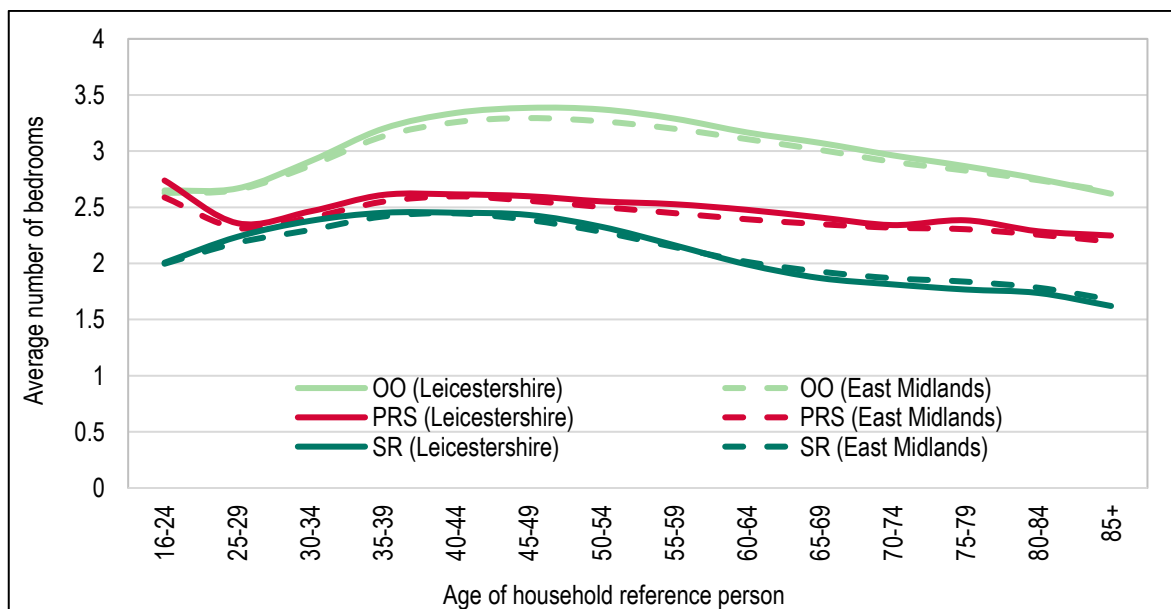
– as typically some households downsize as they get older. The analysis identifies some small differences between Leicester and Leicestershire and the region, with Leicester typically having smaller dwelling sizes the market sector and the opposite being true across Leicestershire.

Figure 10.5 Average Bedrooms by Age and Tenure in Leicester and the East Midlands



Source: Census (2011)

Figure 10.6 Average Bedrooms by Age and Tenure in Leicestershire and the East Midlands



Source: Census (2011)

10.18 Replicating the existing occupancy patterns at a local level would however result in the conclusions being skewed by the existing housing profile. On this basis a further model has been developed that applies regional occupancy assumptions for the East Midlands region. Assumptions are applied to the projected changes in Household Reference Person by age discussed below.

10.19 The analysis has been used to derive outputs for three broad categories. These are:

- **Market Housing** – which is taken to follow the occupancy profiles in the owner-occupied sector;
- **Affordable Home Ownership** – which is taken to follow the occupancy profile in the private rented sector (this is seen as reasonable as the Government’s desired growth in home ownership looks to be largely driven by a wish to see households move out of private renting); and
- **Rented Affordable Housing** – which is taken to follow the occupancy profile in the social rented sector. The affordable sector in the analysis to follow would include social and affordable rented housing.

Changes to Households by Age

10.20 The tables below present the projected change in households by age of household reference person, this clearly shows particularly strong growth as being expected in older age groups (and to some extent some younger age groups e.g. those aged up to 49). The number of households headed by someone aged 50-59 is projected to see more modest growth over the period studied. The tables show estimated change using the Standard Method with the next two tables looking at the proposed redistribution of housing (as set out in Housing Distribution Paper). One clear impact of the proposed redistribution is a higher increase in the number of households headed by someone who might be considered as ‘working-age’ relative to the Standard Method in Leicestershire (with the opposite being seen in Leicester).

Table 10.5 Projected Change in Household by Age of HRP in Leicester – linking to the Standard Method

	2020	2041	Change in Households	% Change
16-24	10,513	13,432	2,919	27.8%
25-29	11,648	16,062	4,414	37.9%
30-34	12,671	19,953	7,282	57.5%
35-39	13,544	19,553	6,009	44.4%
40-44	12,318	17,267	4,949	40.2%
45-49	11,246	14,628	3,382	30.1%
50-54	11,238	14,207	2,969	26.4%
55-59	11,305	12,929	1,624	14.4%
60-64	10,156	12,063	1,907	18.8%
65-69	8,891	10,716	1,824	20.5%
70-74	7,667	10,783	3,116	40.6%
75-79	5,021	8,861	3,840	76.5%
80-84	4,201	7,201	3,000	71.4%
85 & over	4,115	7,117	3,002	73.0%
Total	134,534	184,771	50,237	37.3%

Source: Demographic Projections

Table 10.6 Projected Change in Household by Age of HRP in Leicestershire – linking to the Standard Method

	2020	2041	Change in Households	% Change
16-24	7,182	8,261	1,079	15.0%
25-29	15,396	16,744	1,347	8.7%
30-34	19,067	22,497	3,430	18.0%
35-39	22,092	25,441	3,349	15.2%
40-44	22,689	28,610	5,921	26.1%
45-49	26,591	30,457	3,867	14.5%
50-54	29,729	30,252	523	1.8%
55-59	29,536	29,054	-481	-1.6%
60-64	25,514	27,563	2,049	8.0%
65-69	23,991	28,665	4,674	19.5%
70-74	26,037	32,497	6,460	24.8%
75-79	19,302	30,245	10,943	56.7%
80-84	14,735	24,836	10,101	68.6%
85 & over	13,845	26,826	12,981	93.8%
Total	295,707	361,949	66,241	22.4%

Source: Demographic Projections

Table 10.7 Projected Change in Household by Age of HRP in Leicester – linking to Proposed Redistribution

	2020	2041	Change in Households	% Change
16-24	10,513	12,013	1,500	14.3%
25-29	11,648	13,398	1,750	15.0%
30-34	12,671	15,872	3,201	25.3%
35-39	13,544	14,879	1,335	9.9%
40-44	12,318	13,660	1,343	10.9%
45-49	11,246	12,419	1,173	10.4%
50-54	11,238	12,660	1,423	12.7%
55-59	11,305	11,869	564	5.0%
60-64	10,156	11,304	1,148	11.3%
65-69	8,891	10,166	1,274	14.3%
70-74	7,667	10,321	2,653	34.6%
75-79	5,021	8,539	3,519	70.1%
80-84	4,201	6,973	2,772	66.0%
85 & over	4,115	6,864	2,749	66.8%
Total	134,534	160,937	26,403	19.6%

Source: Demographic Projections

Table 10.8 Projected Change in Household by Age of HRP in Leicestershire – linking to Proposed Redistribution

	2020	2041	Change in Households	% Change
16-24	7,182	8,932	1,750	24.4%
25-29	15,396	18,574	3,178	20.6%
30-34	19,067	25,158	6,091	31.9%
35-39	22,092	28,602	6,510	29.5%
40-44	22,689	31,619	8,930	39.4%
45-49	26,591	33,022	6,431	24.2%
50-54	29,729	32,327	2,598	8.7%
55-59	29,536	30,683	1,148	3.9%
60-64	25,514	28,880	3,366	13.2%
65-69	23,991	29,863	5,872	24.5%
70-74	26,037	33,677	7,640	29.3%
75-79	19,302	31,208	11,905	61.7%
80-84	14,735	25,549	10,813	73.4%
85 & over	13,845	27,689	13,844	100.0%
Total	295,707	385,783	90,075	30.5%

Source: Demographic Projections

Initial Modelled Outputs

- 10.21 By following the methodology set out above and drawing on the sources shown, a series of outputs have been derived to consider the likely size requirement of housing within each of the three broad tenures at a local authority level. Two tables are provided, considering both local and regional occupancy patterns. The data linking to local occupancy will to some extent reflect the role and function of the local area, whilst the regional data will help to establish any particular gaps (or relative surpluses) of different sizes/tenures of homes when considered in a wider context.
- 10.22 The analysis for rented affordable housing can also draw on data from the local authority Housing Register with regards to the profile of need. The data has been taken from the Local Authority Housing Statistics (“LAHS”) and shows a pattern of need which is focussed on 1- and 2-bedroom homes but also showing approaching a quarter of households as requiring 3+- bedroom homes (nearly a third in Leicester).

Table 10.9 Breakdown of Housing Register by Current Bedroom Need, 2020

	1-bedroom	2-bedrooms	3-bedrooms	4+-bedrooms
Leicester	33%	34%	22%	10%
Blaby	42%	37%	17%	4%
Charnwood	49%	34%	11%	6%
Harborough	49%	33%	13%	6%
H & B	39%	39%	17%	5%
Melton	50%	33%	13%	4%
NWL	49%	39%	10%	3%
O & W	38%	40%	17%	5%
Leicestershire	47%	35%	13%	5%
L & L	41%	35%	17%	7%

Source: Local Authority Housing Statistics, 2020

- 10.23 The tables below show the modelled outputs of need by dwelling size in the three broad tenures. Tables are providing by linking to local and regional occupancy patterns with the data taking an average of the two positions. Four tables are provided, two each of Leicester and Leicestershire and also with the two different demographic models (linking to the Standard Method and also the Proposed Distribution).

Table 10.10 Modelled Mix of Housing by Size and Tenure in Leicester – linked to Standard Method

	1-bedroom	2-bedrooms	3-bedrooms	4+-bedrooms
Market	2%	23%	55%	20%
Affordable home ownership	20%	37%	32%	11%
Affordable housing (rented)	31%	32%	32%	4%

Source: Housing Market Model

Table 10.11 Modelled Mix of Housing by Size and Tenure in Leicestershire – linked to Standard Method

	1-bedroom	2-bedrooms	3-bedrooms	4+-bedrooms
Market	3%	28%	50%	19%
Affordable home ownership	15%	39%	35%	11%
Affordable housing (rented)	35%	33%	29%	3%

Source: Housing Market Model

Table 10.12 Modelled Mix of Housing by Size and Tenure in Leicester – linked to Proposed Distribution

	1-bedroom	2-bedrooms	3-bedrooms	4+-bedrooms
Market	3%	25%	55%	18%
Affordable home ownership	21%	37%	32%	11%
Affordable housing (rented)	33%	32%	31%	4%

Source: Housing Market Model

Table 10.13 Modelled Mix of Housing by Size and Tenure in Leicestershire – linked to Proposed Distribution

	1-bedroom	2-bedrooms	3-bedrooms	4+-bedrooms
Market	2%	26%	50%	21%
Affordable home ownership	15%	39%	35%	11%
Affordable housing (rented)	34%	33%	30%	3%

Source: Housing Market Model

Adjustments for Under-Occupation and Overcrowding

- 10.24 The analysis above sets out the potential need for housing if occupancy patterns remained the same as they were in 2011 (with differences from the current stock profile being driven by demographic change). It is however worth also considering that the 2011 profile will have included households who are overcrowded (and therefore need a larger home than they actually live in) and also those who under-occupy (have more bedrooms than they need).
- 10.25 Whilst it would not be reasonable to expect to remove all under-occupancy (particularly in the market sector) it is the case that in seeking to make the most efficient use of land it would be prudent to look to reduce this over time. Indeed, in the future there may be a move away from current (2011) occupancy patterns due to affordability issues (or eligibility in social rented housing) as well as the type of stock likely to be provided (potentially a higher proportion of flats). Further adjustments to the modelled figures above have therefore been made to take account of overcrowding and under-occupancy (by tenure).
- 10.26 The table below shows a cross-tabulation of a household's occupancy rating and the number of bedrooms in their home (for owner-occupiers) in Leicester, in particular, this shows a higher number of households with at least 2 spare bedrooms who are living in homes with 3 or more bedrooms (which have a positive occupancy rating). There are also a small number of overcrowded households (which are shown as having a negative occupancy rating). Overall, in the owner-occupied sector in 2011, there were 45,500 households with some degree of under-occupation and just 3,900 overcrowded households. For clarity the figure used in the tables below are:
- +2 – household has two or more spare bedrooms
 - +1 – household has one spare bedroom
 - 0 – household has the same number of bedrooms as required for family members
 - -1 – household is overcrowded with one bedroom too few
 - -2 – household is overcrowded with at least two bedroom too few

Table 10.14 Cross-tabulation of occupancy rating and number of bedrooms (owner-occupied sector) – Leicester

Occupancy rating	Number of bedrooms				
	1-bed	2-bed	3-bed	4+-bed	TOTAL
+2	0	0	15,463	8,094	23,557
+1	0	8,757	10,925	2,218	21,900
0	1,463	3,166	7,216	771	12,616
-1	143	847	1,769	269	3,028
-2	73	216	440	114	843
TOTAL	1,679	12,986	35,813	11,466	61,944

Source: Census (2011)

10.27 For completeness the tables below show the same information for the social and private rented sectors. In both cases there are more under-occupying households than overcrowded, but differences are less marked than seen for owner-occupied housing.

Table 10.15 Cross-tabulation of occupancy rating and number of bedrooms (social rented sector) – Leicester

Occupancy rating	Number of bedrooms				
	1-bed	2-bed	3-bed	4+-bed	TOTAL
+2	0	0	2,813	387	3,200
+1	0	3,617	2,941	626	7,184
0	9,197	3,990	3,315	413	16,915
-1	1,015	1,291	966	79	3,351
-2	208	205	186	21	620
TOTAL	10,420	9,103	10,220	1,527	31,270

Source: Census (2011)

Table 10.16 Cross-tabulation of occupancy rating and number of bedrooms (private rented sector) – Leicester

Occupancy rating	Number of bedrooms				
	1-bed	2-bed	3-bed	4+-bed	TOTAL
+2	0	0	2,687	952	3,639
+1	0	4,639	2,550	1,509	8,698
0	6,038	4,030	2,675	621	13,364
-1	1,119	1,190	870	200	3,379
-2	237	278	243	73	831
TOTAL	7,394	10,137	9,026	3,354	29,911

Source: Census (2011)

10.28 The equivalent tables for Leicestershire are provided below. This shows higher levels of under-occupancy and lower levels of overcrowding in all tenures within the County when compared with the City data.

Table 10.17 Cross-tabulation of occupancy rating and number of bedrooms (owner-occupied sector) – Leicestershire

Occupancy rating	Number of bedrooms				
	1-bed	2-bed	3-bed	4+-bed	TOTAL
+2	0	0	57,402	47,976	105,378
+1	0	32,482	29,523	10,234	72,239
0	3,487	7,065	11,519	2,062	24,133
-1	210	844	1,092	274	2,420
-2	76	90	157	66	389
TOTAL	3,773	40,481	99,693	60,612	204,559

Source: Census (2011)

Table 10.18 Cross-tabulation of occupancy rating and number of bedrooms (social rented sector) – Leicestershire

Occupancy rating	Number of bedrooms				
	1-bed	2-bed	3-bed	4+-bed	TOTAL
+2	0	0	3,160	267	3,427
+1	0	5,261	3,047	370	8,678
0	8,273	3,237	2,770	224	14,504
-1	300	425	506	27	1,258
-2	56	42	48	4	150
TOTAL	8,629	8,965	9,531	892	28,017

Source: Census (2011)

Table 10.19 Cross-tabulation of occupancy rating and number of bedrooms (private rented sector) – Leicestershire

Occupancy rating	Number of bedrooms				
	1-bed	2-bed	3-bed	4+-bed	TOTAL
+2	0	0	5,985	1,894	7,879
+1	0	8,697	3,732	1,917	14,346
0	4,250	4,320	2,355	508	11,433
-1	365	404	253	54	1,076
-2	49	37	30	8	124
TOTAL	4,664	13,458	12,355	4,381	34,858

Source: Census (2011)

- 10.29 In using this data in the modelling an adjustment is made to move some of those who would have been picked up in the modelling as under-occupying into smaller accommodation. Where there is under-occupation by 2 or more bedrooms, the adjustment takes 25% of this group and assigns to a '+1' occupancy rating and a further 12.5% (i.e. an eighth) to a '0' rating. For households with one spare bedroom, 12.5% are assigned to a '0' rating (with the others remaining as '+1'). These do need to be recognised as assumptions but can be seen to be reasonable as they do retain some degree of under-occupation (which is likely) but does also seek to model a better match between household needs and the size of their home. For overcrowded households a move in the other direction is made, in this case households are moved up as many bedrooms as is needed to resolve the problems.

10.30 The adjustments for under-occupation and overcrowding lead to the suggested mix as set out in the following tables. It can be seen that this tends to suggest a smaller profile of homes as being needed (compared to the initial modelling) with the biggest change being in the market sector – which was the sector where under-occupation is currently most notable.

10.31 The figures in the tables below take an average from all of the scenarios developed to look at mix (i.e. linking to both local and regional occupancy patterns as well as the different housing numbers (Standard Method and Proposed Redistribution).

Table 10.20 Adjusted Modelled Mix of Housing by Size and Tenure – Leicester

	1-bedroom	2-bedrooms	3-bedrooms	4+-bedrooms
Market	5%	29%	49%	18%
Affordable home ownership	20%	38%	31%	12%
Affordable housing (rented)	32%	33%	30%	5%

Source: Housing Market Model (with adjustments)

Table 10.21 Adjusted Modelled Mix of Housing by Size and Tenure – Leicestershire

	1-bedroom	2-bedrooms	3-bedrooms	4+-bedrooms
Market	6%	33%	45%	17%
Affordable home ownership	17%	41%	32%	10%
Affordable housing (rented)	36%	34%	27%	3%

Source: Housing Market Model (with adjustments)

10.32 The tables below show the same outputs for each of the local authorities in Leicestershire. Generally the figures show similar patterns, although there are variations due to the current stock profile, projected future demographic change and levels of over- and under-occupation.

Table 10.22 Adjusted Modelled Mix of Housing by Size and Tenure – Blaby

	1-bedroom	2-bedrooms	3-bedrooms	4+-bedrooms
Market	6%	32%	46%	16%
Affordable home ownership	16%	41%	35%	9%
Affordable housing (rented)	39%	36%	23%	3%

Source: Housing Market Model (with adjustments)

Table 10.23 Adjusted Modelled Mix of Housing by Size and Tenure – Charnwood

	1-bedroom	2-bedrooms	3-bedrooms	4+-bedrooms
Market	5%	31%	45%	18%
Affordable home ownership	17%	40%	31%	12%
Affordable housing (rented)	37%	31%	28%	4%

Source: Housing Market Model (with adjustments)

Table 10.24 Adjusted Modelled Mix of Housing by Size and Tenure – Harborough

	1-bedroom	2-bedrooms	3-bedrooms	4+-bedrooms
Market	6%	33%	42%	19%
Affordable home ownership	18%	42%	31%	9%
Affordable housing (rented)	38%	35%	24%	3%

Source: Housing Market Model (with adjustments)

Table 10.25 Adjusted Modelled Mix of Housing by Size and Tenure – Hinckley & Bosworth

	1-bedroom	2-bedrooms	3-bedrooms	4+-bedrooms
Market	6%	35%	44%	15%
Affordable home ownership	18%	43%	31%	8%
Affordable housing (rented)	33%	36%	27%	3%

Source: Housing Market Model (with adjustments)

Table 10.26 Adjusted Modelled Mix of Housing by Size and Tenure – Melton

	1-bedroom	2-bedrooms	3-bedrooms	4+-bedrooms
Market	7%	35%	45%	13%
Affordable home ownership	17%	41%	33%	9%
Affordable housing (rented)	39%	36%	23%	3%

Source: Housing Market Model (with adjustments)

Table 10.27 Adjusted Modelled Mix of Housing by Size and Tenure – North West Leicestershire

	1-bedroom	2-bedrooms	3-bedrooms	4+-bedrooms
Market	6%	34%	45%	15%
Affordable home ownership	17%	41%	33%	9%
Affordable housing (rented)	33%	35%	29%	3%

Source: Housing Market Model (with adjustments)

Table 10.28 Adjusted Modelled Mix of Housing by Size and Tenure – Oadby & Wigston

	1-bedroom	2-bedrooms	3-bedrooms	4+-bedrooms
Market	6%	36%	45%	13%
Affordable home ownership	16%	43%	33%	8%
Affordable housing (rented)	34%	34%	28%	4%

Source: Housing Market Model (with adjustments)

Indicative Targets for Different Sizes of Properties by Tenure

- 10.33 The analysis below provides some indicative targets for different sizes of home (by tenure). The conclusions take account of a range of factors, including the modelled outputs and an understanding of the stock profile in different locations. The analysis (for rented affordable housing) also draws on the Housing Register data as well as taking a broader view of issues such as the flexibility of homes to accommodate changes to households (e.g. the lack of flexibility offered by a 1-bedroom home for a couple looking to start a family).

10.34 Where information has been drawn from the modelling, this is based on looking at averages across all of the scenarios developed (i.e. linking to both the Standard Method and the Proposed Redistribution (as set out in the separate Distribution Paper) and local/regional models). In general the modelled mix does not vary significantly across scenarios or areas and so can be considered relevant for individual authorities regardless of ultimate decisions about the quantum and distribution of housing across the area.

Social/Affordable Rented Housing

10.35 Bringing together the above, a number of factors are recognised. This includes recognising that it is unlikely that all affordable housing needs will be met and that it is possible that households with a need for larger homes will have greater priority (as they are more likely to contain children). That said, there is also a possible need for 1-bedroom social housing arising due to homelessness (typically homeless households are more likely to be younger single people); that said this group might also be expected to need other forms of accommodation (e.g. foyer or supported housing). In taking any recommendations forward, the Councils will therefore need to consider any specific issues in their local area.

10.36 As noted, the conclusions also consider the Housing Register, but recognises that this will be based on a strict determination of need using the bedroom standard; there will be some households able to afford a slightly larger home or who can claim benefits for a larger home than they strictly need (i.e. are not caught by the spare room subsidy ('bedroom tax') – this will include older person households). The conclusions also take account of the current profile of housing in this sector (which for example shows a varying proportion of 1-bedroom homes in the current stock across areas).

10.37 In taking account of the modelled outputs, the Housing Register and the discussion above, it is suggested that the following mix of social/affordable rented housing (which is close to the modelled outputs) would be appropriate.

Table 10.29 Suggested Mix of Social/Affordable Rented Housing by area

	1-bedroom	2-bedrooms	3-bedrooms	4+-bedrooms
Leicester	30%	35%	25%	10%
Blaby	35%	35%	25%	5%
Charwood	35%	35%	25%	5%
Harborough	35%	40%	20%	5%
H & B	30%	40%	25%	5%
Melton	35%	40%	20%	5%
NWL	35%	40%	20%	5%
O & W	30%	40%	25%	5%
Leicestershire	35%	35%	25%	5%
L & L	30%	40%	25%	5%

Source: Conclusions drawn on a variety of sources as discussed

10.38 Regarding 1-bedroom homes, Councils will need to also be mindful of what social housing providers will deliver as it is possible for management purposes (and due to issues about turnover) that a smaller proportion might be sought in some circumstances.

10.39 Across the study area, the analysis points to around a third of the social/affordable housing need being for 1-bedroom homes and it is of interest to see how much of this is due to older person households. In the future household sizes are projected to drop whilst the population of older people will increase. Older person households (as shown earlier) are more likely to occupy smaller dwellings. The impacts of older people have on demand for smaller stock is outlined in the table below. This illustrates that approximately three-fifths of the demand for one bedroom affordable housing will be down to the ageing population, with a higher proportion typically being seen outside of Leicester (and to a lesser extent Charnwood).

Table 10.30 Estimated proportion of affordable one bedroom housing needs due to the ageing of the population

	Linking to Standard Method	Linking to Proposed Redistribution
Leicester	42%	47%
Blaby	71%	68%
Charnwood	60%	60%
Harborough	76%	75%
H & B	72%	71%
Melton	84%	82%
NWL	76%	72%
O & W	69%	67%
Leicestershire	70%	68%
L & L	59%	60%

Source: Housing Market Model

Affordable Home Ownership

10.40 In the affordable home ownership and market sectors a profile of housing that closely matches the outputs of the modelling is suggested (with some adjustments to take account of student households in Leicester and Charnwood). It is considered that the provision of affordable home ownership should be more explicitly focused on delivering smaller family housing for younger households. Based on this analysis, it is suggested that the following mix of affordable home ownership would be appropriate, and it can be noted that there really is very little difference in the recommendations across areas.

10.41 It can be seen that the profile of housing in this sector is generally for slightly larger homes than for the social/affordable rented sector – this will in part reflect the fact that some degree of under-occupation would be allowed in such homes. For 1-bedroom units, it needs to be recognised that the figures are driven by the modelling linked to demographic change; again Councils may need to consider if the figures are appropriate on a local context. For example, in some areas Registered

Providers find difficulties selling 1-bedroom affordable home ownership homes and therefore the 1-bedroom elements of AHO might be better provided as 2-bedroom accommodation. Equally demand for shared ownership properties is likely to be more limited for larger property sizes.

Table 10.31 Suggested Mix of Affordable Home Ownership Housing by area

	1-bedroom	2-bedrooms	3-bedrooms	4+-bedrooms
Leicester	20%	40%	30%	10%
Blaby	15%	40%	35%	10%
Charnwood	20%	40%	30%	10%
Harborough	20%	40%	30%	10%
H & B	20%	40%	30%	10%
Melton	15%	40%	35%	10%
NWL	15%	40%	35%	10%
O & W	15%	45%	30%	10%
Leicestershire	15%	40%	35%	10%
L & L	20%	40%	30%	10%

Source: Conclusions drawn on a variety of sources as discussed

Market Housing

- 10.42 Finally, in the market sector, a balance of dwellings is suggested that takes account of both the demand for homes and the changing demographic profile (as well as observations about the current mix when compared with other locations and also the potential to slightly reduce levels of under-occupancy). This sees a slightly larger recommended profile compared with other tenure groups – again there is little variation across areas.

Table 10.32 Suggested Mix of Market Housing by area

	1-bedroom	2-bedrooms	3-bedrooms	4+-bedrooms
Leicester	5%	30%	45%	20%
Blaby	5%	35%	45%	15%
Charnwood	5%	30%	45%	20%
Harborough	5%	35%	40%	20%
H & B	5%	35%	45%	15%
Melton	5%	35%	45%	15%
NWL	5%	35%	45%	15%
O & W	5%	35%	45%	15%
Leicestershire	5%	35%	45%	15%
L & L	5%	30%	45%	20%

Source: Conclusions drawn on a variety of sources as discussed

- 10.43 Although the analysis has quantified this on the basis of the market modelling and an understanding of the current housing market, it does not necessarily follow that such prescriptive figures should be included in the plan making process (although it will be useful to include an indication of the broad mix to be sought across the study area) – demand can change over time linked to macro-economic factors and local supply. Policy aspirations could also influence the mix sought.

10.44 The suggested figures can be used as a monitoring tool to ensure that future delivery is not unbalanced when compared with the likely requirements as driven by demographic change in the area. The recommendations can also be used as a set of guidelines to consider the appropriate mix on larger development sites, and the Councils could expect justification for a housing mix on such sites which significantly differs from that modelled herein. Site location and area character are also however relevant considerations the appropriate mix of market housing on individual development sites.

Smaller-area Housing Mix

10.45 The analysis above has focussed on overall study area-wide and local authority needs with conclusions very much at the strategic level. It should however be recognised that there will be variations in the need within areas due the different role and function of a location and the specific characteristics of local households (which can also vary over time). This report does not seek to look at smaller-area needs, and this would be best suited to individual projects for local authorities; however, below are some points for consideration when looking at needs in any specific location.

- a) Whilst there will be differences in the stock profile in different locations this should not necessarily be seen as indicating particular surpluses or shortfalls of particular types and sizes of homes;
- b) As well as looking at the stock, an understanding of the role and function of areas is important. For example, higher priced rural areas are typically sought by wealthier families and therefore such areas would be expected to provide a greater proportion of larger homes;
- c) That said, some of these areas will have very few small/cheaper stock and so consideration needs to be given to diversifying the stock;
- d) The location/quality of sites will also have an impact on the mix of housing. For example, brownfield sites in the centre of towns may be more suited to flatted development (as well as recognising the point above about role and function) whereas a rural site on the edge of an existing village may be more appropriate for family housing. Other considerations (such as proximity to public transport) may impact on a reasonable mix at a local level;

10.46 Overall, it is suggested that Councils should broadly seek the same mix of housing in all locations, rather than setting more locally specific policies for different parts of individual districts, but would be flexible to a different mix where specific local characteristics suggest. The Councils should also monitor what is being built to ensure that a reasonable mix is provided in a settlement overall.

- 10.47 Additionally, in the affordable sector it may be the case that Housing Register data for a smaller area identifies a shortage of housing of a particular size/type which could lead to the mix of housing being altered from the overall suggested requirement

Built Form

- 10.48 A final issue is a discussion of the need/demand for different built-forms of homes. In particular this discussion focusses on bungalows and the need for flats vs. houses.

Bungalows

- 10.49 The sources used for analysis in this report make it difficult to quantify a need/demand for bungalows in the HMA and constituent authorities as Census data (which is used to look at occupancy profiles) does not separately identify this type of accommodation. Data from the Valuation Office Agency (VOA) does however provide estimates of the number of bungalows (by bedrooms) although no tenure split is available.
- 10.50 The tables below show a notable proportion of homes in Leicestershire are bungalows (12% of all flats and houses) with over half of these having 2-bedrooms (and most of the rest having 3-bedrooms); a slightly lower proportion (9%) of homes across England are bungalows. In Leicester, the number of bungalows is notably lower (at just 4% of the stock).

Table 10.33 Number of dwellings by property type and number of bedrooms (March 2020) – Leicester

	Number of bedrooms					All
	1	2	3	4+	Not Known	
Bungalow	2,980	2,040	780	110	30	5,930
Flat/Maisonette	23,340	10,670	1,480	1,980	540	38,000
Terraced house	480	17,420	28,160	3,060	80	49,200
Semi-detached house	50	4,140	29,330	2,460	70	36,050
Detached house	10	310	4,070	4,910	40	9,340
All flats/houses	26,860	34,580	63,820	12,520	760	138,520
Annexe	-	-	-	-	-	50
Other	-	-	-	-	-	20
Unknown	-	-	-	-	-	2,310
All properties	-	-	-	-	-	140,900

Source: Valuation Office Agency

Table 10.34 Number of dwellings by property type and number of bedrooms (March 2020) – Leicestershire

	Number of bedrooms					All
	1	2	3	4+	Not Known	
Bungalow	3,090	21,010	11,070	1,700	170	37,050
Flat/Maisonette	13,160	10,980	950	410	220	25,690
Terraced house	1,460	23,370	26,160	2,840	170	54,010
Semi-detached house	260	13,200	73,780	6,760	200	94,170
Detached house	120	2,770	33,410	50,060	690	87,020
All flats/houses	18,090	71,330	145,370	61,770	1,450	297,940
Annexe	-	-	-	-	-	350
Other	-	-	-	-	-	1,240
Unknown	-	-	-	-	-	3,720
All properties	-	-	-	-	-	303,220

Source: Valuation Office Agency

10.51 For individual local authorities the proportion of the stock that is bungalows is shown below. Generally across the County, the proportion does not vary much, going from 11.2% in Charnwood, up to 14.0% in Hinckley & Bosworth:

- Leicester – 4.3%;
- Blaby – 12.5%;
- Charnwood – 11.2%;
- Harborough – 12.9%;
- Hinckley & Bosworth – 14.0%;
- Melton – 12.3%;
- North West Leicestershire – 12.0%;
- Oadby & Wigston – 13.0%;
- Leicestershire – 12.4%; and
- Leicester & Leicestershire – 9.8%

10.52 In general, discussions with local estate agents find that there is a demand for bungalows and in addition, analysis of survey data (in other locations) points to a high demand for bungalows (from people aged 65 and over in particular). Bungalows are often a first choice for older people seeking suitable accommodation in later life and there is generally a high demand for such accommodation when it becomes available (this is different from specialist accommodation for older people which would have some degree of care or support).

10.53 As a new build option, bungalows are often not supported by either house builders or planners (due to potential plot sizes and their generally low densities). There may, however, be instances where bungalows are the most suitable house type for a particular site; for example, to overcome objections about dwellings overlooking existing dwellings or preserving sight lines.

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- 10.54 There is also the possibility of a wider need/demand for retirement accommodation. Retirement apartments can prove very popular if they are well located in terms of access to facilities and services, and environmentally attractive (e.g. have a good view). However, some potential purchasers may find high service charges unacceptable or unaffordable and new build units may not retain their value on re-sale.
- 10.55 Overall, the Councils should consider the potential role of bungalows as part of the future mix of housing. Such housing may be particularly attractive to older owner-occupiers (many of whom are equity-rich) which may assist in encouraging households to downsize. However, the downside to providing bungalows is that they can often be relatively land intensive.
- 10.56 Bungalows are likely to see a particular need and demand in the market sector and also for rented affordable housing (for older people as discussed in the next section of the report). Bungalows are likely to particularly focus on 2-bedroom homes, including in the affordable sector where such housing may encourage households to move from larger 'family-sized' accommodation (with 3+-bedrooms).

Flats vs. Houses

- 10.57 Although there are some 1-bedroom houses and 3-bedroom flats, it is considered that the key discussion on built-form will be for 2-bedroom accommodation, where it might be expected that there would be a combination of both flats and houses. At a national level, 81% of all flats 1-bedroom homes, 35% of 2-bedroom homes and just 4% of homes with 3-bedrooms.
- 10.58 The table below shows (for 2-bedroom accommodation) the proportion of homes by tenure that are classified as a flat, maisonette or apartment in Leicester, Leicestershire and England. This shows a relatively low proportion of flats in both areas (particularly the County with just 14% of all 2-bedroom homes) and this would point to the majority of 2-bedroom homes in the future also being houses. The analysis does however show a higher proportion of flats in the social and private rented sectors. Icen consider that greater emphasis should be given to mix by dwelling size than type recognising the potential for built-form to vary in different locations.
- 10.59 This analysis is based on considering the current built-form in different tenures. Any decisions about the types of dwelling to be provided will need to take account of factors such as households type of those likely to occupy dwellings (where for example households with children will be more suited to a house than a flat). However, site characteristics may also play a role in deciding the most suitable built-form (e.g. city/town centre developments may be more suited to flats).

Table 10.35 Proportion of 2-bedroom homes that are a flat, maisonette or apartment (by tenure)

	Owner-occupied	Social rented	Private rented	All (2-bedroom)
Leicester	12%	44%	38%	29%
Blaby	6%	33%	24%	14%
Charnwood	7%	55%	30%	18%
Harborough	6%	25%	24%	14%
H & B	5%	32%	30%	14%
Melton	4%	25%	18%	12%
NWL	3%	25%	22%	11%
O & W	6%	45%	20%	13%
Leicestershire	6%	35%	25%	14%
L & L	7%	39%	31%	20%
England	21%	48%	50%	35%

Source: 2011 Census

- 10.60 As noted, this analysis would suggest that most 2-bedroom homes should be built as houses (or bungalows) rather than flats. However, any decisions will still have to take account of site characteristics, which in some cases might point towards flatted development as being most appropriate.

Housing Mix: Key Messages

- The proportion of households with dependent children is similar to the regional and national average with around 30% of all households containing dependent children in 2011. The County does however have a greater proportion of married couple households, whilst the City see more lone parents.
- There are a range of factors which will influence demand for different sizes of homes, including demographic changes; future growth in real earnings and households' ability to save; economic performance and housing affordability. The analysis linked to long-term demographic change (2020-41) concludes that the following represents an appropriate mix of affordable and market homes for new development, this takes account of both household changes and the ageing of the population – the analysis also models for there to be a modest decrease in levels of under-occupancy (which are particularly high in the market sector and in areas outside of the City):

Suggested Mix of Housing by Size and Tenure – Leicester				
	1-bedroom	2-bedrooms	3-bedrooms	4+-bedrooms
Market	5%	30%	45%	20%
Affordable home ownership	20%	40%	30%	10%
Affordable housing (rented)	30%	35%	25%	10%

Suggested Mix of Housing by Size and Tenure – Leicestershire				
	1-bedroom	2-bedrooms	3-bedrooms	4+-bedrooms
Market	5%	35%	45%	15%
Affordable home ownership	15%	40%	35%	10%
Affordable housing (rented)	35%	35%	25%	5%

- The strategic conclusions in the affordable sector recognise the role which delivery of larger family homes can play in releasing a supply of smaller properties for other households. Also recognised is the limited flexibility which 1-bed properties offer to changing household circumstances, which feed through into higher turnover and management issues. The conclusions also take account of the current mix of housing by tenure and also the size requirements shown on the Housing Register.
- The mix identified above could inform strategic policies although a flexible approach should be adopted. For example, in some areas Registered Providers find difficulties selling 1-bedroom affordable home ownership homes and therefore the 1-bedroom elements of AHO might be better provided as 2-bedroom accommodation. Additionally, in applying the mix to individual development sites, regard should be had to the nature of the site and character of the area, and to up-to-date evidence of need as well as the existing mix and turnover of properties at the local level. The Councils should also monitor the mix of housing delivered.
- Analysis also suggests that the majority of units should be houses rather than flats, although consideration will need to be given to site specific circumstances (which may in some cases lend themselves to flatted development). Additionally, the Councils should consider the role of bungalows within the mix – such housing can be particularly attractive to older person households downsizing and may help to release larger (family-sized) accommodation back into the market.
- Based on the evidence, it is expected that the focus of new market housing provision will be on 2- and 3-bed properties. Continued demand for family housing can be expected from newly forming households. There may also be some demand for medium-sized properties (2- and 3-beds) from older households downsizing and looking to release equity in existing homes, but still retaining flexibility for friends and family to come and stay.

11. NEEDS OF PARTICULAR GROUPS

- 11.1 This section studies the characteristics and housing needs of the older person population and the population with some form of disability. The two groups are taken together as there is a clear link between age and disability. It responds to Planning Practice Guidance on *Housing for Older and Disabled People* published by Government in June 2019. It includes an assessment of the need for specialist accommodation for older people and the potential requirements for housing to be built to M4(2) and M4(3) housing technical standards (accessibility and wheelchair standards).
- 11.2 The first part of this chapter provides a policy review and discussion around the housing needs of older people. We then calculate the need for specialist housing for older people first; and then younger people.

Policy Review

Leicester All Age Commissioning Strategy 2020

- 11.3 The Leicester All Age Commissioning Strategy 2020²⁰ sets out the commissioning intentions for the Council's Social Care and Education Department. In commissioning services the strategy sets out a set of principles including a commitment to "*intervene early, quickly and as effectively as possible...personalise our approach to fit the needs of the individual...(and) ensure we give those we work with the best life opportunities.*" The Strategy notes that due to budget cuts there is a huge challenge for the social care sector "*which means we have to focus provision where it is most needed and most likely to make a difference and where there are statutory duties to provide support.*"
- 11.4 The Council also highlight a significant increase in the number of people unable to manage self-care tasks. Between 2020 and 2025 the Council (drawing on POPPI and PANSI data) expect a rise of around 40% of people aged 65+ unable to manage at least one self-care activity on their own. They also estimate that the number of people with a learning disability will increase by around 400 people over the same period.
- 11.5 The strategy also sets out that "*an estimated 39,770 adults aged 16-64 living in Leicester have mental health problems*" equivalent to 17.9% of adults. It also noted that this was expected to increase by 18% in the period to 2030.

²⁰ <https://www.leicester.gov.uk/media/186505/all-age-commissioning-strategy-2020-2025.pdf>

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- 11.6 In relation to providing early help, intervention and prevention the Council's vision is to *"prevent or delay a loss of independence for vulnerable adults"* adding that *"As a result, we will reduce the need for more intrusive, high cost services in the future."*
- 11.7 The Strategy recognises the growing older population and particularly those with multiple long-term conditions. This gives rise to *"an increasing need to identify effective ways of supporting people to stay well and healthy and reduce the pressure on health and social care services."* It also notes that *"There is increasing evidence that making the strategic shift in resources towards prevention and early intervention results in better outcomes for individuals, organisations and communities and is a more efficient use of existing resources."*
- 11.8 The strategy sets out Core Outcomes delivered by services are to include reducing dependency on statutory services and delaying and reducing the need for care and support. They will achieve this by (among others) commissioning an increase in Assistive Technology options in order to ensure appropriate technologies are made available to the right customers at the right time.
- 11.9 The strategy notes that *"for adults, Leicester has a strong domiciliary support and reablement offer which supports people to remain living independently and to recover independence following episodes of ill health and challenge. The supported and independent living offer in the city ensures people with longer term support needs can gain and sustain a tenancy, reducing the need for residential care placements."*
- 11.10 The Council's vision is to ensure people will have control over their own lives wherever possible this includes *"delaying and reducing the need for care and support and, where this is required, focusing provision on those most in need."*
- 11.11 As well as assistive technology the Council will produce a 10-year plan for Supported Living and Extra Care which will give information about the type of physical developments required for this type of housing in Leicester going forward. The Council will also commission "support services for people affected by dementia with health and social care partners across Leicester and Leicestershire to ensure that services are delivered as seamlessly as possible."

Leicestershire Adult and Community Services Market Position Statement (2016)

- 11.12 The Leicestershire Adult and Community Services Market Position Statement (2016)²¹ sets out Leicestershire County Council's vision for the care and support requirements of residents as well as their commissioning intentions.
- 11.13 The MPS notes that the "*population growth patterns have implications for the provision of services for older people. There will be more older people with complex care needs that will require additional input from all parts of the health and social care system.*" It notes a greater and growing prevalence of dementia among older people and that there remains a high prevalence of mental ill health across the population.
- 11.14 The strategy sets out the number of people supported in Nursing, Residential and Community Care in the year to April 2016 by different age groups. For those aged 18-64 a total of 2,661 people required support of those twenty-one people were placed in nursing care and a further 474 in residential care. However the vast majority (2,166) were provided with community care. The reasons for requiring support were also set out with 1,225 people (46%) requiring learning disability support. Other major reasons including mental health support (507 people), personal care support (494 people) and those requiring mobility support (345 people).
- 11.15 For those aged 65+ the numbers are far larger a total of 6,913 people required support of those 484 people were placed in nursing care and a further 1,971 in residential care. However, the vast majority (4,458) were provided with community care. The reasons for requiring support for the over 65s were also set out with 4,269 people (61%) requiring personal care support and those requiring mobility support (1,178 people). A further 862 people required support due to requiring mental health support. The MPS noted that in the older age group, the incidence of dementia is increasing and there is an opportunity for providers that can provide integrated dementia care.
- 11.16 The MPS sets out a four tier model which seeks to prevent need through universal services and promoting well-being; reduce need through targeted interventions for those at risk; delay need through reablement, rehabilitation and recovery; and finally meet need through progressive planning using a broad set of social resources to ensure affordability.
- 11.17 In reducing need the County Council's work will target people most likely to develop a need, and try to prevent problems from getting worse so that they do not become dependent on support. Provision

²¹ <https://www.leicestershire.gov.uk/sites/default/files/field/pdf/2018/3/2/adult-and-community-services-market-position-statement.pdf>

might include information and advice as well as minor adaptations to housing which can prevent a fall. They will also support and assist at a distance via telephone or computer.

- 11.18 In delaying need the Council will provide support for those who have experienced an illness or disability. The Council will try to minimise the effect of the illness or disability by collaborating with individuals and their support network to ensure people experience the best outcomes through the most cost effective support.
- 11.19 In meeting need local authority social care requirements will be determined once the County Council has identified and explored what is available within their family and community. People who need the County Council's help and are assessed as eligible for funding, will be supported through a personal budget which can be a direct payment.
- 11.20 Wherever possible the County Council will work with people to provide a choice of help which is suitable to meet their outcomes. However, in all cases the Council will ensure that the cost of services provides the best value for money. The MPS notes that whilst choice is important in delivering the outcomes that people want, maintaining people's independence and achieving value for money is paramount.
- 11.21 The MPS is clear that "*the main opportunities in the year ahead will related to the provision of services that offer a cost effective alternative to Residential Care, (such as Supported Living and Extra Care) and services that focus on maximising independence (such as Community Life Choices).*"
- 11.22 The Community Life Choices programme recognises "*that good lives happen for people when they are supported in their communities.*" The County Council aims to support people to work towards being as independent as they can, promoting progression wherever possible throughout a person's life. Their vision for the social care market is underpinned by the principle that wherever possible people should be supported to achieve greater independence, focusing on what people can do.
- 11.23 The County Council will be exploring further opportunities to expand on their reablement offer, to delay the need for more extensive and longer term support. The County Council are also keen to explore the further use of Assistive Technology and integrated services that promote independence and reduce need.
- 11.24 The MPS is clear that "*the focus on prevention and supporting people to remain independent in their own home as long as possible is expected to reduce the proportion spent on residential and nursing care, whilst increasing the amount used for domiciliary care and alternatives to residential care.*"

11.25 The report also set out a surveys of occupancy of Residential and Nursing Homes during the summer of 2015 which indicated that occupancy was running at 95% in the residential care sector. This was seen as a good balance of being able to place people and provide viability to the development.

Building accommodation to meet the needs of people in Leicestershire Investment Prospectus 2019 – 2037

11.26 The Leicestershire Investment Prospectus 2019 – 2037²² outlines the County Council's proposals for diverse types of accommodation to meet their vision of "offering different care and community options, in a range of locations for both older adults and working age adults with disabilities." It is an investment prospects which to deliver accommodation for those with adult social care needs, including housing with care and support schemes.

11.27 The objective of the prospectus is to

- To improve options for service users;
- To influence the market;
- To manage demand and contain growth;
- To alleviate cost pressures;
- To create a prosperous venture;
- Identify opportunities to invest and develop In Leicestershire; and
- Explain Social Care accommodation.

11.28 The prospectus recognises that there is a need to enable older people to right-size as underoccupancy is an issue. They want to mitigate this problem by encouraging developers to build mainstream homes that are suitable for and attractive to older people.

11.29 This means developing and designing homes with older people in mind. Such housing would be "*accessible accommodation that takes into consideration ramps, lifts, grab rails and wet rooms or ground floor apartments.*"

11.30 The prospectus estimates that by 2037, a further 750 units of Supported Living and 1,200 units of Extra Care accommodation are required. The prospectus also notes that "*Leicestershire requires more specialist units being built that will be able to accommodate individuals with more complex needs such as those leaving long stay hospital. Typically, these schemes would each provide*

²² <https://resources.leicestershire.gov.uk/sites/resource/files/field/pdf/2019/10/25/Building-accommodation-to-meet-the-needs-of-people-in-Leicestershire.pdf>

accommodation for four individuals.” It also states that “The majority of older people living in Leicestershire are owner-occupiers and represent a large proportion of potential customers who would have significant resources and experience in housing market changes.”

- 11.31 The Leicestershire Investment Prospectus notes that during 2018- 19, 18% of referrals received by the County for Supported Living were for young people (aged 17-18). Twelve of the sixteen individuals had a learning disability, three required mental health support needs and one had a physical disability. This demonstrates that there was a growing need for transitional accommodation that can support young people with emotional and behaviour difficulties. It notes that the current offer for young people is limited and recognised that they would like to see the development of additional accommodation. The County Council anticipated developing one transitional accommodation unit per year over the next five years for around six young people at a time.
- 11.32 The prospectus notes that investing in residential care for working age adults is an opportunity for the council to control the building design, associated costs, profit levels and quality of care service commissioned and ensure a progression model for individuals living within the homes. The prospectus sets out that “There is also a recognised gap for specialist assessment and reablement units for older people and dementia provision that can also meet nursing needs” and adds that the County Council are keen to collaborate with partners to explore models where these types of units can be included within wider extra care schemes or residential care.
- 11.33 The County Council is encouraging organisations to consider the needs of those requiring dementia care. In Leicestershire, there are around 9,600 people living with dementia and only six Extra Care schemes described as dementia-friendly. In response purpose-built accommodation that responds to specific needs of those with dementia is integral to the County Council’s investment plans.
- 11.34 The Prospectus goes on to breakdown need and future housing priorities in each of the local authorities in the county. In summary these are:
- In Blaby, LCC are looking to primarily increase the amount of Supported Living for working age adults in need of additional support from existing supply up to eighty units by 2037.
 - In Charnwood, LCC are looking to primarily build specialist extra care support and mainstream accommodation that has been adapted and built with older people in mind. They are also looking to primarily increase the amount of Supported Living for working age adults in need of additional support to 120 units by 2037.
 - In Harborough, there is a requirement for an increase in either mainstream accommodation that is suitable for older people or an increase in Extra Care.

-
- In Hinckley and Bosworth, there are opportunities to provide Extra Care as well as specialist accommodation for older people. There is also demand for accommodation suitable for working age adults in need of additional support and they are seeking to increase this to 192 units by 2037.
 - In Melton, LCC are looking to build sustainable accommodation and mainstream or specialist accommodation for older people.
 - In North West Leicestershire, there is a slight increase required in accommodation suitable for working age adults
 - In Oadby and Wigston, LCC are keen to look at developing Extra Care schemes particularly in this area as there are currently none and demand will be significant over the next 20 years.

11.35 The report also highlights a large need for extra-care accommodation (which we consider further and assess later in this section). It also acknowledged that *“investment in older persons’ residential units would also allow the Council to influence the supply of residential care homes able to meet the needs of both council funded residents and self-funders who continue to require support beyond their level of assets.”*

Discussion

11.36 The documents above make it clear that both the City Council and the County Council both seek to minimise the need for care and nursing accommodation in particular to reduce pressures on social care budgets; with a strategy to do so by providing earlier interventions, which take a range of forms including through information and support, adaptations to existing homes and/or providing additional supported and extra -care accommodation.

11.37 While additional supported and extra-care accommodation is clearly welcome, it is important that this is delivered in sustainable locations. Typically such housing should be close to facilities and public transport links, therefore towns are typically more appropriate locations. This will allow residents to access a range of facilities, support local businesses and be in more sustainable locations which visitors can access by a range of means. The Leicestershire Investment Prospectus states that *“older people who routinely visit their town centre play a vital role in enabling local businesses to thrive. Building housing solutions close by town centres will be beneficial to locals and attractive to those currently living on the outskirts.”* It also adds that *“Accommodation built for Extra Care Schemes should be located appropriately close by town or village centres to ensure they remain part of the community and have access to the facilities, activities and amenities promoted in their local area.”* It added that appropriate practical features which should feature in the design of such schemes include:

- Handwriting and wi-fi enabled telecare and telehealth equipment;
- Catering facilities;

- Low Windowsills;
- Energy Efficient Design;
- Communal facilities;
- Open landscaped outdoor space; and
- Signage, equipment (e.g. hoists), décor and facilities that enable people with physical, sensory or cognitive impairments to be independent where possible.

11.38 Specialist housing schemes which involve provision of care and communal facilities typically need to be of a critical mass (50+ unit schemes) to be viable. Ensuring a supply of such accommodation for local people in locations which people are familiar with and with nearby amenities will allow for a smoother transition. The provision of such schemes in locations close to local facilities and amenities will help to support sustainable development.

Understanding the Implications of Demographic Changes

11.39 The population of older persons is increasing, driven by demographic changes including increasing life expectancy. This is a key driver of the need for housing which is capable of meeting the needs of older persons.

Current Population of Older People

11.40 The table below provides baseline population data about older persons in Leicester & Leicestershire and compares this with other areas. The population data has been taken from the published 2019 ONS mid-year population estimates (MYE). The table shows that Leicester has a much younger age structure than other areas with only 12% of the population being aged 65 and over. Leicestershire has an older age structure, although fairly similar to the regional and national average. As of 2019, it is estimated that 12% of the population of Leicester and 21% in Leicestershire is aged 65+, this compares with 20% regionally and 18% nationally.

Table 11.1 Older Persons Population, 2019

	Leicester	Leicestershire	East Midlands	England
Under 65	87.8%	79.5%	80.5%	81.6%
65-74	6.8%	11.2%	10.7%	9.9%
75-84	3.7%	6.6%	6.3%	6.0%
85+	1.7%	2.6%	2.5%	2.5%
Total	100.0%	100.0%	100.0%	100.0%
Total 65+	12.2%	20.5%	19.5%	18.4%
Total 75+	5.4%	9.3%	8.8%	8.5%

Source: ONS Mid-Year Population Estimates

11.41 The table below shows the same information for local authorities, this shows some variation in the proportion of people aged 65 and over, ranging from 12% in Leicester, up to 23% of the population in Melton.

Table 11.2 Older Persons Population, 2019 – local authorities

	Under 65	65-74	75-84	85+	Total	Total 65+	Total 75+
Leicester	87.8%	6.8%	3.7%	1.7%	100.0%	12.2%	5.4%
Blaby	79.7%	11.0%	6.7%	2.7%	100.0%	20.3%	9.4%
Charnwood	81.9%	9.9%	5.8%	2.4%	100.0%	18.1%	8.2%
Harborough	78.1%	12.0%	7.1%	2.8%	100.0%	21.9%	9.9%
Hinckley & Bosworth	77.9%	12.4%	7.1%	2.6%	100.0%	22.1%	9.7%
Melton	76.9%	13.0%	7.2%	2.8%	100.0%	23.1%	10.1%
NW Leicestershire	79.9%	11.5%	6.3%	2.3%	100.0%	20.1%	8.5%
Oadby & Wigston	78.3%	10.5%	7.4%	3.8%	100.0%	21.7%	11.2%
Leicestershire	79.5%	11.2%	6.6%	2.6%	100.0%	20.5%	9.3%
L & L	82.3%	9.8%	5.6%	2.3%	100.0%	17.7%	8.0%

Source: ONS Mid-Year Population Estimates

Projected Future Change in the Population of Older People

11.42 Population projections can next be used to provide an indication of how the number of older persons might change in the future with the tables below showing that both Leicester and Leicestershire are projected to see a notable increase in the older person population (projections using the 2018-based SNPP (alternative internal migration variant)).

11.43 In Leicester, the total number of people aged 65 and over projected to increase by 43% over the 22-years to 2041. This compares with overall population growth of 12% and a more modest increase in the Under 65 population of 8%. In total population terms, the projections show an increase in the population aged 65 and over of 18,500 people. This is against a backdrop of an overall increase of 42,900 – population growth of people aged 65 and over therefore accounts for 43% of the total projected population change.

11.44 In Leicestershire, the total number of people aged 65 and over is projected to increase by 45% over the 22-years to 2041. This compares with overall population growth of 16% and an increase in the Under 65 population of 9%. The projections show an increase in the population aged 65 and over of 64,900 people – population growth of people aged 65 and over accounts for 56% of the total projected population change.

Table 11.3 Projected Change in Population of Older Persons, 2020 to 2041 – Leicester (based on 2018-SNPP)

	2020	2041	Change in population	% change
Under 65	317,462	339,787	22,325	7.0%
65-74	24,869	29,868	4,999	20.1%
75-84	13,203	22,002	8,799	66.6%
85+	5,965	9,879	3,913	65.6%
Total	361,500	401,536	40,036	11.1%
Total 65+	44,038	61,749	17,711	40.2%
Total 75+	19,169	31,880	12,712	66.3%

Source: Demographic Projections

Table 11.4 Projected Change in Population of Older Persons, 2020 to 2041 – Leicestershire (based on 2018-SNPP)

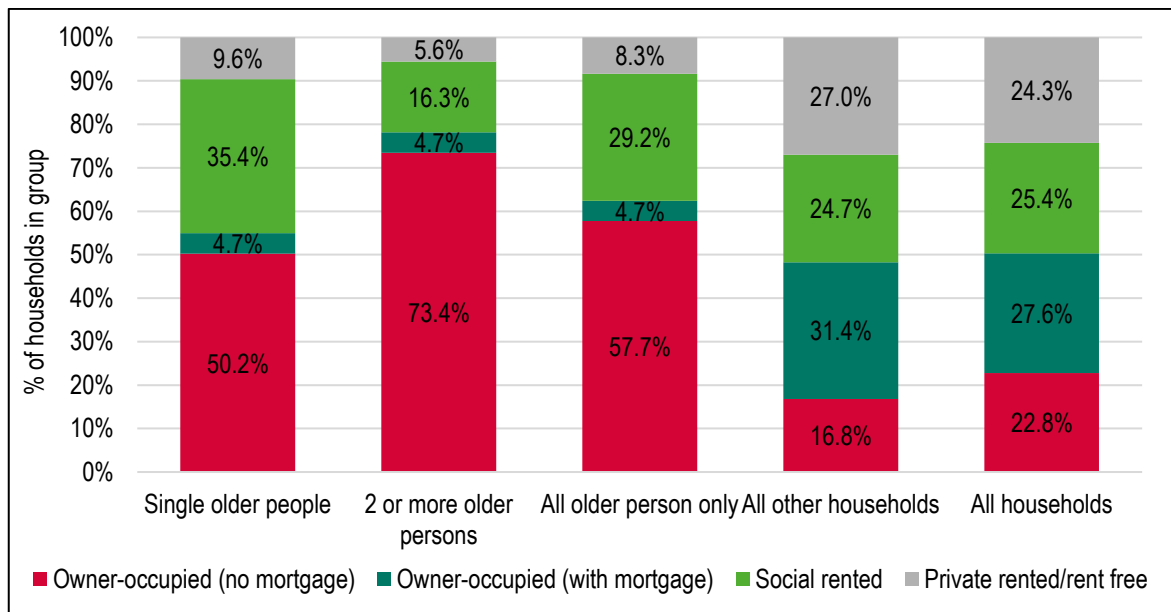
	2020	2041	Change in population	% change
Under 65	564,037	610,221	46,184	8.2%
65-74	79,735	96,019	16,284	20.4%
75-84	48,755	78,326	29,571	60.7%
85+	18,999	35,671	16,672	87.7%
Total	711,526	820,237	108,711	15.3%
Total 65+	147,489	210,016	62,526	42.4%
Total 75+	67,754	113,997	46,242	68.2%

Source: Demographic Projections

Characteristics of Older Person Households

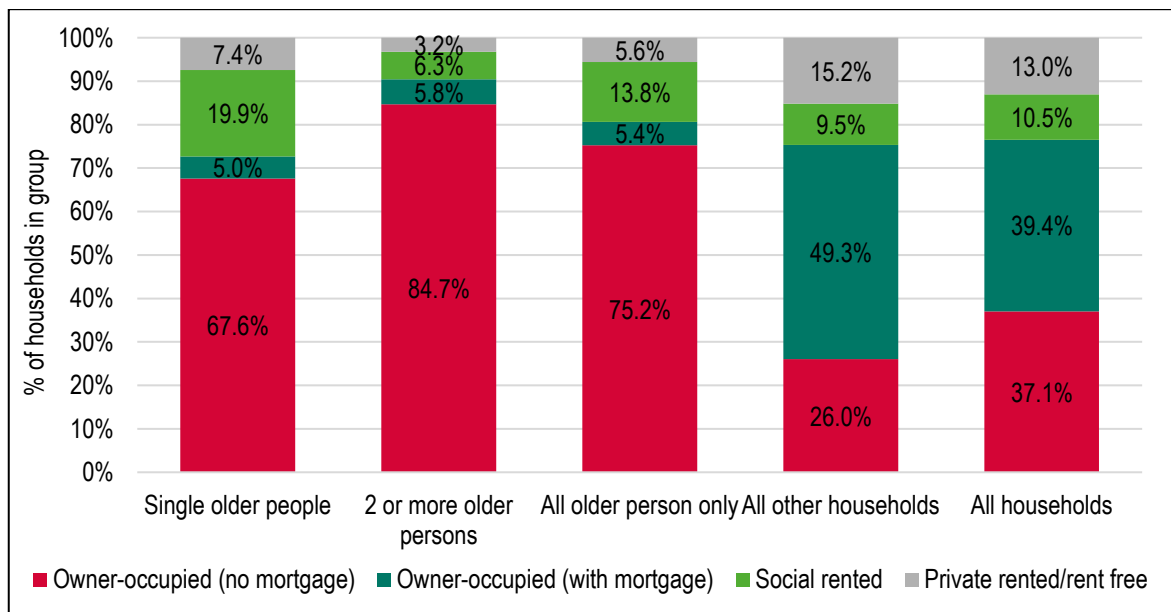
- 11.45 The tenures in which older persons currently live provides a useful indication of the potential tenure profile of demand for new-build development.
- 11.46 The figures below show the tenure of older person households. The data has been split between single older person households and those with two or more older people (which will largely be couples). The data shows that the majority of older persons households are owner occupiers (62% in Leicester and 81% in Leicestershire), and indeed most are owner occupiers with no mortgage and thus may have significant equity which can be put towards the purchase of a new home. Some 29% of older persons households across Leicester live in the social rented sector along with 14% in Leicestershire. The proportion of older person households living in the private rented sector is relatively low (about 6%-8%).
- 11.47 There are also notable differences for different types of older person households with single older people having a much lower level of owner-occupation than larger older person households – this group also has a much higher proportion living in the social rented sector.

Figure 11.1: Tenure of Older Persons Households in Leicester, 2011



Source: 2011 Census

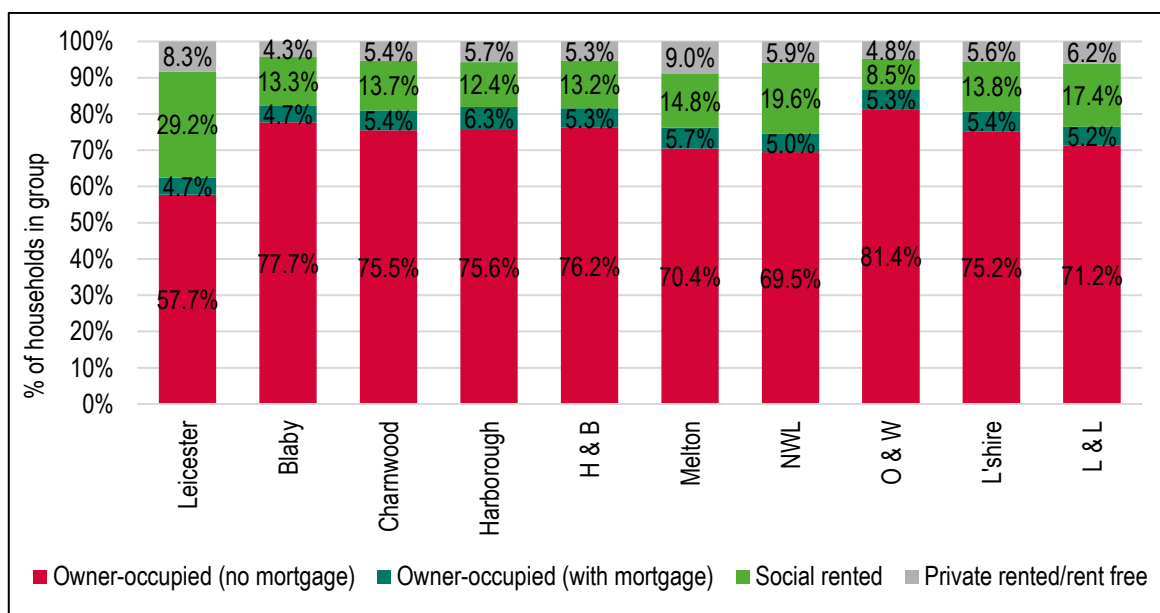
Figure 11.2: Tenure of Older Persons Households in Leicestershire, 2011



Source: 2011 Census

11.48 The figure below shows the same information for local authorities – the data is provided for all older person households. The data shows that the tenure profile of older person households varies notably across the study area; a key observation is the lower level of owner-occupation amongst older people in Leicester – this area does however have a relatively low proportion of older people in the population. In Oadby & Wigston, some 87% of older person households are owner-occupiers.

Figure 11.3: Tenure of Older Persons Households in Leicester & Leicestershire, 2011 – local authorities



Source: 2011 Census

Prevalence of Disabilities

11.49 The table below shows the proportion of people with a long-term health problem or disability (LTHPD)²³ drawn from 2011 Census data, and the proportion of households where at least one person has a LTHPD. The data suggests that some 35% of households in Leicester and 31% in Leicestershire contain someone with a LTHPD. These figures are broadly similar to that seen across the region and nationally average. The figures for the population with a LTHPD again show a similar pattern in comparison with other areas (an estimated 17% of the population of Leicester and 16% in Leicestershire having a LTHPD).

Table 11.5 Households and People with a Long-Term Health Problem or Disability, 2011

	Households Containing Someone with a Health Problem		Population with a Health Problem	
	No.	%	No.	%
Leicester	42,750	34.7%	57,137	17.3%
Leicestershire	81,585	30.5%	105,423	16.2%
East Midlands	644,852	34.0%	844,297	18.6%
England	7,217,905	32.7%	9,352,586	17.6%

Source: 2011 Census

11.50 The analysis also shows some differences between different parts of the study area, with NW Leicestershire seeing a higher proportion of the population with a LTHPD, the lowest proportion being

²³ A long-term health problem or disability that limits a person's day-to-day activities and has lasted or is expected to last at least 12 months.

in Harborough. Leicester has the highest proportion of households with someone who has a LTHPD, closely followed by Oadby & Wigston.

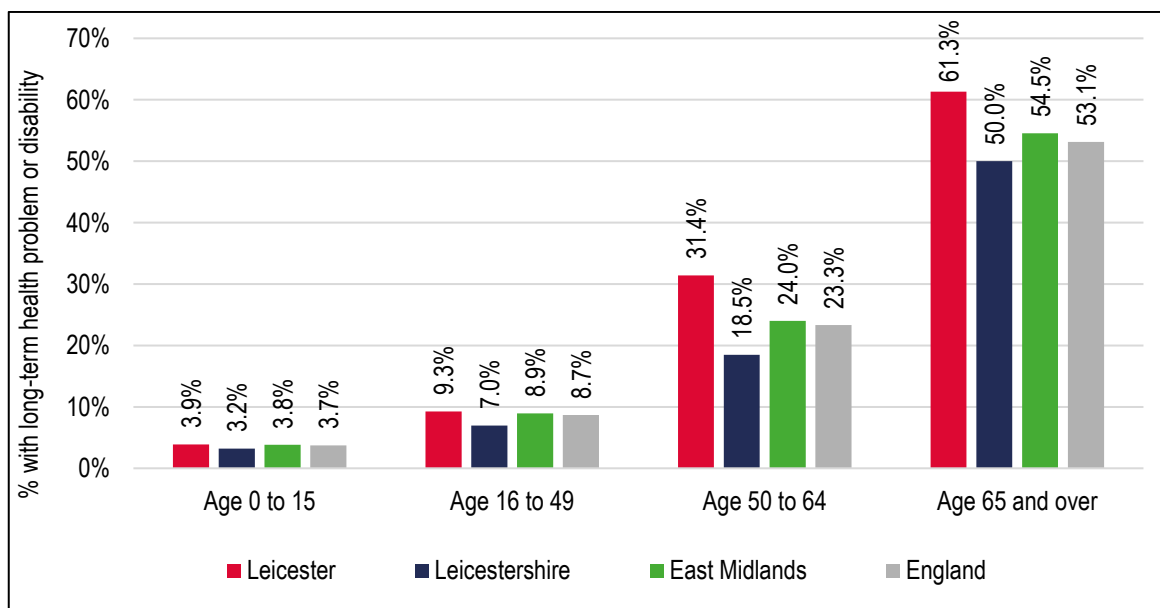
Table 11.6 Households and People with a Long-Term Health Problem or Disability, 2011 – local authorities – Leicester & Leicestershire

	Households Containing Someone with a Health Problem		Population with a Health Problem	
	No.	%	No.	%
Leicester	42,750	34.7%	57,137	17.3%
Blaby	11,490	29.7%	14,798	15.8%
Charnwood	19,921	29.9%	25,869	15.6%
Harborough	9,678	27.7%	12,424	14.6%
Hinckley & Bosworth	13,949	30.7%	17,832	17.0%
Melton	6,220	28.9%	7,849	15.6%
NWL	12,995	33.2%	16,930	18.1%
Oadby & Wigston	7,332	34.4%	9,721	17.3%
Leicestershire	81,585	30.5%	105,423	16.2%
L & L	124,335	31.8%	162,560	16.6%

Source: 2011 Census

11.51 It is likely that the age profile will impact upon the numbers of people with a LTHPD, as older people tend to be more likely to have a LTHPD. The figure below shows the age bands of people with a LTHPD. It is clear from this analysis that those people in the oldest age bands are more likely to have a LTHPD. The analysis also typically shows lower levels of LTHPD in each age band within Leicestershire when compared with the national position but the opposite trend when looking at Leicester.

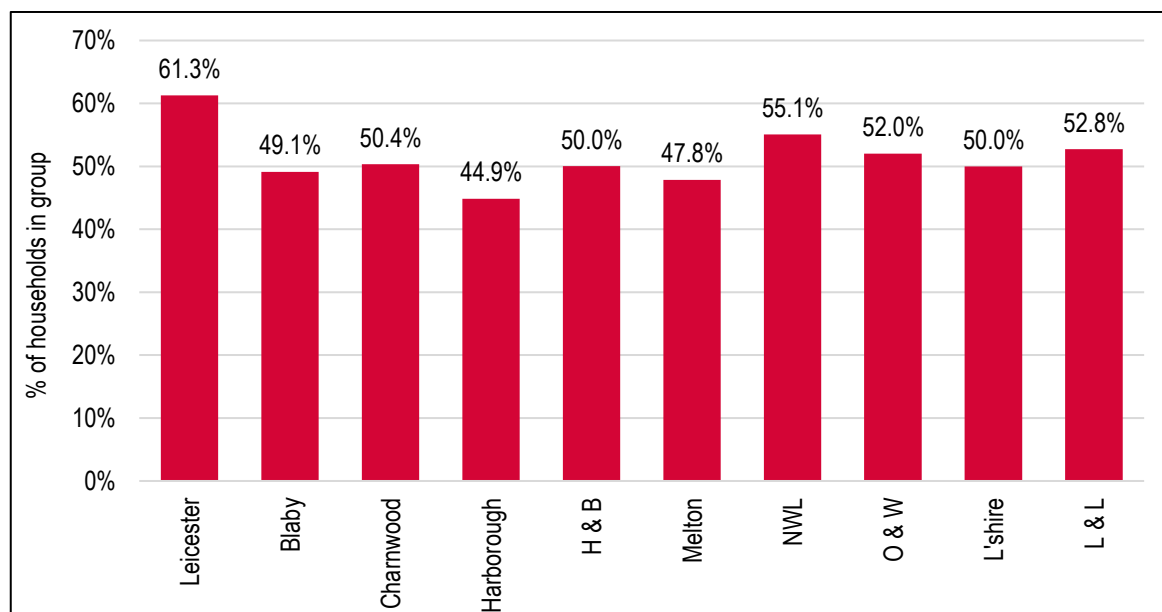
Figure 11.3: Population with Long-Term Health Problem or Disability by Age



Source: 2011 Census

11.52 The figures below show the proportion of the population aged 65 and over with a LTHPD by local authority. This shows some notable differences, from 45% of the population in Harborough, up to 61% in Leicester.

Figure 11.4: Proportion of population aged 65 and over with a Long-Term Health Problem or Disability – local authorities



Source: 2011 Census

Health Related Population Projections

11.53 The incidence of a range of health conditions is an important component in understanding the potential need for care or support for a growing older population.

11.54 The analysis undertaken covers both younger and older age groups and draws on prevalence rates from the PANSI (Projecting Adult Needs and Service Information) and POPPI (Projecting Older People Population Information) websites. Adjustments have been made to take account of the age specific health/disabilities previously shown. In all cases the analysis links to estimates of population growth based on the 2018-SNPP (alternative internal migration variant).

11.55 Of particular note are the large increases in the number of older people with dementia (increasing by 56% from 2020 to 2041 in Leicester and 66% in Leicestershire) and mobility problems (50% increase in Leicester and 56% in Leicestershire over the same period).

11.56 When related back to the total projected change to the population, the increase of 4,600 people aged 65+ with a mobility problem represents 11% of total projected population growth in Leicester and a higher (13%) seen in Leicestershire.

Table 11.7 Projected Changes to Population with a Range of Disabilities – Leicester (population aged 65+)

Disability	2020	2041	Change	% Change
Dementia	3,478	5,438	1,959	56.3%
Mobility problems	9,195	13,767	4,572	49.7%
Autistic Spectrum Disorders	473	676	203	42.9%
Learning Disabilities	1,056	1,475	419	39.6%

Source: POPPI and Demographic Projections

Table 11.8 Projected Changes to Population with a Range of Disabilities – Leicestershire (population aged 65+)

Disability	2020	2041	Change	% Change
Dementia	9,474	15,680	6,207	65.5%
Mobility problems	25,129	39,093	13,964	55.6%
Autistic Spectrum Disorders	1,309	1,870	561	42.9%
Learning Disabilities	2,896	4,087	1,191	41.1%

Source: POPPI and Demographic Projections

- 11.57 It should be noted that there will be an overlap between categories (i.e. some people will have both dementia and mobility problems). Hence the numbers for each of the illnesses/disabilities should not be added together to arrive at a total.
- 11.58 We have also examined the projections for these conditions at a local authority level. These are set out in the table below. As shown the highest increase in those dementia and mobility problems is expected to be in Harborough. This can be linked to the growth and age structure in the borough.
- 11.59 Invariably, there will be a combination of those with disabilities and long-term health problems that continue to live at home with family, those who choose to live independently with the possibility of incorporating adaptations into their homes and those who choose to move into supported housing.

Table 11.9 Projected Changes to Population with dementia or mobility problems – local authorities (population aged 65+)

Local authority	Disability	2020	2041	Change	% Change
Leicester	Dementia	3,478	5,438	1,959	56.3%
	Mobility problems	9,195	13,767	4,572	49.7%
Blaby	Dementia	1,343	2,137	794	59.1%
	Mobility problems	3,561	5,354	1,793	50.4%
Charnwood	Dementia	2,213	3,570	1,357	61.3%
	Mobility problems	5,873	8,975	3,102	52.8%
Harborough	Dementia	1,235	2,222	987	80.0%
	Mobility problems	3,254	5,466	2,212	68.0%
Hinckley & Bosworth	Dementia	1,584	2,665	1,080	68.2%
	Mobility problems	4,264	6,660	2,396	56.2%
Melton	Dementia	714	1,185	471	66.0%
	Mobility problems	1,913	2,957	1,045	54.6%
North West Leicestershire	Dementia	1,415	2,477	1,062	75.1%
	Mobility problems	3,828	6,311	2,483	64.8%
Oadby & Wigston	Dementia	971	1,425	454	46.8%
	Mobility problems	2,437	3,370	933	38.3%

Source: POPPI and Demographic Projections

- 11.60 The projected change shown in the number of people with disabilities provides clear evidence justifying delivering ‘accessible and adaptable’ homes as defined in Part M4(2) of Building Regulations, subject to viability and site suitability. The Councils should ensure that the viability of doing so is also tested as part of drawing together its evidence base although the cost of meeting this standard is unlikely to have any significant impact on viability and would potentially provide a greater number of homes that will allow households to remain in the same property for longer.
- 11.61 The PPG for Housing for Older and Disabled People [63-006] refers only to specialist housing for older people; however, clearly the local authority should support specialist housing schemes for younger adults which come forward across the plan area.
- 11.62 The analysis suggests that there is likely to be some increase in the number of younger people (generally those aged 16/18 to 64) with a disability across the study area. There are a range of disabilities that are likely to require some degree of support, or potentially some form of specialised housing solution.
- 11.63 This report does not seek to be specific about the exact number of units that need to be provided for different groups, nor where such accommodation should be located. Indeed some types of specialist accommodation might have a wide catchment, and would be suitable for clients from outside of the study area; whilst it is also possible that some people in the area would be placed in accommodation elsewhere.

Need for Specialist Accommodation for Older Persons

- 11.64 Given the ageing population and higher levels of disability and health problems amongst older people, there is likely to be an increased requirement for specialist housing options moving forward. The box below shows the different types of older persons housing which are considered.

Definitions of Different Types of Older Persons' Accommodation

Age-restricted general market housing: This type of housing is generally for people aged 55 and over and the active elderly. It may include some shared amenities such as communal gardens, but does not include support or care services.

Retirement living or sheltered housing (housing with support): This usually consists of purpose-built flats or bungalows with limited communal facilities such as a lounge, laundry room and guest room. It does not generally provide care services, but provides some support to enable residents to live independently. This can include 24-hour on-site assistance (alarm) and a warden or house manager.

Extra care housing or housing-with-care (housing with care): This usually consists of purpose-built or adapted flats or bungalows with a medium to high level of care available if required, through an onsite care agency registered through the Care Quality Commission (CQC). Residents are able to live independently with 24-hour access to support services and staff, and meals are also available. There are often extensive communal areas, such as space to socialise or a wellbeing centre. In some cases, these developments are known as retirement communities or villages - the intention is for residents to benefit from varying levels of care as time progresses.

Residential care homes and nursing homes (care bedspaces): These have individual rooms within a residential building and provide a high level of care meeting all activities of daily living. They do not usually include support services for independent living. This type of housing can also include dementia care homes.

Source: Planning Practice Guidance [63-010]

- 11.65 The need for specialist housing for older persons is typically modelled by applying prevalence rates to current and projected population changes and considering the level of existing supply. There is no standard methodology for assessing the housing and care needs of older people. The current and future demand for elderly care is influenced by a host of factors including the balance between demand and supply in any given area and social, political, regulatory and financial issues. Additionally, the extent to which new homes are built to accessible and adaptable standards may over time have an impact on specialist demand (given that older people often want to remain at home rather than move to care) – this will need to be monitored.
- 11.66 There are a number of 'models' for considering older persons' needs, but they all essentially work in the same way. The model results are however particularly sensitive to the prevalence rates applied, which are typically calculated as a proportion of people aged over 75 who could be expected to live in different forms of specialist housing. Whilst the population aged 75 and over is used in the modelling, the estimates of need would include people of all ages.

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- 11.67 Whilst there are no definitive rates, the PPG [63-004] notes that *'the future need for specialist accommodation for older people broken down by tenure and type (e.g. sheltered housing, extra care) may need to be assessed and can be obtained from a number of online tool kits provided by the sector, for example SHOP@ for Older People Analysis Tool)*'. The PPG does not specifically mention any other tools and therefore seems to be indicating that SHOP@ would be a good starting point for analysis. Since the PPG was published the Housing Learning and Information Network (Housing LIN) has removed the Shop@ online toolkit although the base rates used for analysis are known.
- 11.68 The SHOP@ tool was originally based on data in a 2008 report (*More Choice Greater Voice*) and in 2011 a further suggested set of rates was published (rates which were repeated in a 2012 publications). In 2016, Housing LIN published a review document which noted that the 2008 rates are 'outdated' but also noting that the rates from 2011/12 were 'not substantiated'. The 2016 review document therefore set out a series of proposals for new rates to be taken forward onto the Housing LIN website. Whilst the 2016 review rates do not appear to have ever led to an update of the website, it does appear from reviewing work by Housing LIN over the past couple of years as if it is these rates which typically inform their own analysis (subject to evidence based localised adjustments).
- 11.69 For clarity, the table below shows the base prevalence rates set out in the various documents described above. For the analysis in this report the age-restricted and retirement/sheltered have been merged into a single category (housing with support) with the middle of the range shown for housing with care forming the base position for analysis.

Table 11.10 Range of suggested baseline prevalence rates from a number of tools and publications

Type/Rate per 1000 population 75+	SHOP@ (2008) ²⁴	Housing in Later Life (2012) ²⁵	2016 Housing LIN Review
Age-restricted general market housing	-	-	25
Retirement living or sheltered housing (housing with support)	125	180	100
Extra care housing or housing-with-care (housing with care)	45	65	30-40 (‘proactive range’)
Residential care homes	65	(no figure apart from 6 for dementia)	40
Nursing homes (care bedspaces), including dementia	45		45

Source: Range of sources as identified

11.70 In interpreting the different potential prevalence rates it is clear that:

- The prevalence rates used should be considered and assessed taking account of an authority’s strategy for delivering specialist housing for older people (see start of this chapter). The degree for instance which the Council want to require extra care housing as an alternative to residential care provision would influence the relative balance of need between these two housing types;
- The Housing LIN model has been influenced by existing levels of provision and their view on what future level of provision might be reasonable taking account of how the market is developing, funding availability etc. It is more focused towards publicly commissioned provision. There is a degree to which the model and assumptions within it may not fully capture the growing recent private sector interest and involvement in the sector, particularly in extra care; and
- The assumptions in these studies look at the situation nationally. At a more local level, the relative health of an area’s population is likely to influence the need for specialist housing with better levels of health likely to mean residents are able to stay in their own homes for longer.

²⁴ Based on the More Choice Greater Voice publication of 2008 (https://www.housinglin.org.uk/_assets/Resources/Housing/Support_materials/Reports/MCGVdocument.pdf). It should be noted that although these rates are from 2008, they are the same rates as were being used in the online toolkit when it was taken offline in 2019.

²⁵ https://www.housinglin.org.uk/_assets/Resources/Housing/Support_materials/Toolkit/Housing_in_Later_Life_Toolkit.pdf

- 11.71 Icenl and JGC have therefore sought to consider these issues and the appropriate modelling assumptions for assessing future needs. Nationally, there has been a clear focus on strengthening a community-led approach and reducing reliance on residential and nursing care – in particular focussing where possible on providing households with care in their own home. This could however be provision of care within general needs housing; but also care which is provided in a housing with care development such as in extra care housing.
- 11.72 We consider that the lower prevalence rates shown in the 2016 Housing LIN Review is an appropriate starting point for considering care home needs; but that the corollary of lower care home provision should be a greater focus on delivery of housing with care. Having regard to market growth in this sector in recent years, and since the above studies were prepared, we consider that the starting point for housing with care should be the higher rate shown in the SHOP@ report (this is the figure that would align with the PPG). This takes account of the County Council's and City Council's strategic approach to future provision.
- 11.73 Rather than simply taking the base prevalence rates, an initial adjustment has been made to reflect the relative health of the local older person population. This has been based on Census data about the proportion of the population aged 65 and over who have a long-term health problem or disability (LTHPD) compared with the England average. Most authorities in the study area show slightly better health in the older person population (the exceptions being Leicester and NW Leicestershire) and so the prevalence rates used have been decreased slightly (by up to 15.5% in the case of Harborough. For Leicester and NW Leicestershire prevalence rates are calculated to be above the base figure. The calculations are based on comparing the proportion of people aged 65 and over with a LTHPD (61.3% in the case of Leicester) with the equivalent figure for England (53.1%). The table below also shows data from the Index of Multiple Deprivation (IMD) which is used to determine the local tenure split (discussed below).

Table 11.11 Data on health adjustments and Index of Multiple Deprivation

	% 65+ with LTHPD	Health adjustment	2019 IMD (rank of 317)
Leicester	61.3%	115.4%	22
Blaby	49.1%	92.5%	281
Charnwood	50.4%	94.8%	244
Harborough	44.9%	84.5%	308
Hinckley & Bosworth	50.0%	94.2%	232
Melton	47.8%	90.1%	248
NWL	55.1%	103.8%	216
Oadby & Wigston	52.0%	97.9%	249

Source: 2011 Census and Index of Multiple Deprivation

11.74 A second local adjustment has been to estimate a tenure split for the housing with support and housing with care categories. This again draws on suggestions in the 2016 Review which suggests that less deprived local authorities could expect a higher proportion of their specialist housing to be in the market sector. Using 2019 Index of Multiple Deprivation (IMD) data, the analysis suggests Leicester is the 22nd most deprived local authority in England (out of 317). This suggests a greater proportion of affordable housing than for an authority in the middle of the range. All other authorities have relatively low deprivation and might therefore be expected to see a higher proportion of market housing. To be clear this is market housing within the categories described above (e.g. housing with support and housing with care).

11.75 The table below shows the prevalence rates used in analysis with adjustments for health and deprivation. This shows higher needs for affordable housing in Leicester, with all other areas having higher prevalence in the market sector. As noted, this reflects the health of the local population and deprivation although it is interesting to also note that Leicester was shown above to have a much lower proportion of older people as owner-occupiers than in other locations.

Table 11.12 Prevalence rates used in analysis of older person needs – Leicester & Leicestershire (rates per 1,000 population aged 75+)

	Housing with support		Housing with care		Residential care	Nursing care
	Market	Affordable	Market	Affordable		
Leicester	33	112	16	36	46	52
Blaby	71	45	30	12	37	42
Charnwood	66	53	30	13	38	43
Harborough	69	36	28	10	34	38
H & B	63	55	29	13	38	42
Melton	63	50	28	12	36	41
NWL	66	64	31	15	41	47
O & W	69	54	31	13	39	44

Source: Range of sources

11.76 The tables below show estimated needs for different types of housing linked to the population projections. The analysis is separated into the various different types and tenures although it should be recognised that there could be some overlap between categories (i.e. some households might be suited to more than one type of accommodation).

11.77 Overall, the analysis suggests that there will be a notable need for both housing with support and housing with care (in both market and affordable sectors), as well as some additional nursing and residential care bedspaces. In Leicester the need is particularly for affordable housing, with the opposite being the case in Leicestershire.

Table 11.13 Specialist Housing Need using adjusted SHOP@Review Assumptions, 2020-41 – Leicester

		Housing demand per 1,000 75+	Current supply	Current demand	Current shortfall/surplus (-ve)	Additional demand to 2041	Shortfall /surplus by 2041
Housing with support	Market	33	206	625	419	414	833
	Affordable	112	1,296	2,140	844	1,419	2,263
Total (housing with support)		144	1,502	2,765	1,263	1,833	3,096
Housing with care	Market	16	12	299	287	198	485
	Affordable	36	173	697	524	462	986
Total (housing with care)		52	185	995	810	660	1,470
Residential care bedspaces		46	1,233	885	-348	587	238
Nursing care bedspaces		52	1,004	995	-9	660	651
Total bedspaces		98	2,237	1,880	-357	1,247	890

Source: Derived from Demographic Projections and Housing LIN/EAC

*Numbers may not add up due to rounding

Table 11.14 Specialist Housing Need using adjusted SHOP@Review Assumptions, 2020-41 – Leicestershire

		Housing demand per 1,000 75+	Current supply	Current demand	Current shortfall/surplus (-ve)	Additional demand to 2041	Shortfall /surplus by 2041
Housing with support	Market	66	1,565	4,506	2,941	3,071	6,012
	Affordable	51	5,103	3,454	-1,649	2,351	703
Total (housing with support)		117	6,668	7,960	1,292	5,422	6,714
Housing with care	Market	30	202	2,009	1,807	1,369	3,176
	Affordable	13	229	857	628	583	1,211
Total (housing with care)		42	431	2,866	2,435	1,952	4,387
Residential care bedspaces		38	2,828	2,547	-281	1,735	1,454
Nursing care bedspaces		42	1,284	2,866	1,582	1,952	3,534
Total bedspaces		80	4,112	5,413	1,301	3,687	4,988

Source: Derived from Demographic Projections and Housing LIN/EAC

*Numbers may not add up due to rounding

11.78 The series of tables below provide the same information for each local authority (excluding Leicester).

Table 11.15 Specialist Housing Need using adjusted SHOP@Review Assumptions, 2020-41 – Blaby

		Housing demand per 1,000 75+	Current supply	Current demand	Current shortfall/surplus (-ve)	Additional demand to 2041	Shortfall/surplus by 2041
Housing with support	Market	71	107	697	590	423	1,013
	Affordable	45	1,057	441	-616	268	-347
Total (housing with support)		116	1,164	1,139	-25	691	666
Housing with care	Market	30	59	296	237	180	417
	Affordable	12	86	114	28	69	97
Total (housing with care)		42	145	410	265	249	514
Residential care bedspaces		37	564	364	-200	221	22
Nursing care bedspaces		42	60	410	350	249	599
Total bedspaces		79	624	774	150	470	620

Source: Derived from Demographic Projections and Housing LIN/EAC

*Numbers may not add up due to rounding

Table 11.16 Specialist Housing Need using adjusted SHOP@Review Assumptions, 2020-41 – Charnwood

		Housing demand per 1,000 75+	Current supply	Current demand	Current shortfall/surplus (-ve)	Additional demand to 2041	Shortfall/surplus by 2041
Housing with support	Market	66	446	998	552	697	1,249
	Affordable	53	884	807	-77	564	487
Total (housing with support)		118	1,330	1,806	476	1,261	1,736
Housing with care	Market	30	0	452	452	315	767
	Affordable	13	38	198	160	138	299
Total (housing with care)		43	38	650	612	454	1,066
Residential care bedspaces		38	625	578	-47	403	356
Nursing care bedspaces		43	289	650	361	454	815
Total bedspaces		81	914	1,228	314	857	1,171

Source: Derived from Demographic Projections and Housing LIN/EAC

*Numbers may not add up due to rounding

**Table 11.17 Specialist Housing Need using adjusted SHOP@Review Assumptions, 2020-41 –
Harborough**

		Housing demand per 1,000 75+	Current supply	Current demand	Current shortfall/surplus (-ve)	Additional demand to 2041	Shortfall/surplus by 2041
Housing with support	Market	69	339	678	339	554	893
	Affordable	36	520	356	-164	291	127
Total (housing with support)		106	859	1,035	176	845	1,021
Housing with care	Market	28	75	277	202	226	428
	Affordable	10	55	96	41	78	119
Total (housing with care)		38	130	373	243	304	547
Residential care bedspaces		34	329	331	2	270	273
Nursing care bedspaces		38	286	373	87	304	391
Total bedspaces		72	615	704	89	575	663

Source: Derived from Demographic Projections and Housing LIN/EAC

*Numbers may not add up due to rounding

**Table 11.18 Specialist Housing Need using adjusted SHOP@Review Assumptions, 2020-41 –
Hinckley & Bosworth**

		Housing demand per 1,000 75+	Current supply	Current demand	Current shortfall/surplus (-ve)	Additional demand to 2041	Shortfall/surplus by 2041
Housing with support	Market	63	351	719	368	498	866
	Affordable	55	484	628	144	435	579
Total (housing with support)		118	835	1,347	512	933	1,445
Housing with care	Market	29	50	333	283	230	513
	Affordable	13	0	152	152	106	258
Total (housing with care)		42	50	485	435	336	771
Residential care bedspaces		38	407	431	24	299	323
Nursing care bedspaces		42	126	485	359	336	695
Total bedspaces		80	533	916	383	635	1,018

Source: Derived from Demographic Projections and Housing LIN/EAC

*Numbers may not add up due to rounding

Table 11.19 Specialist Housing Need using adjusted SHOP@Review Assumptions, 2020-41 – Melton

		Housing demand per 1,000 75+	Current supply	Current demand	Current shortfall/surplus (-ve)	Additional demand to 2041	Shortfall/surplus by 2041
Housing with support	Market	63	41	333	292	241	533
	Affordable	50	604	262	-342	190	-152
Total (housing with support)		113	645	595	-50	431	381
Housing with care	Market	28	0	150	150	108	258
	Affordable	12	40	65	25	47	72
Total (housing with care)		41	40	214	174	155	329
Residential care bedspaces		36	268	190	-78	138	60
Nursing care bedspaces		41	149	214	65	155	220
Total bedspaces		77	417	405	-12	293	280

Source: Derived from Demographic Projections and Housing LIN/EAC

*Numbers may not add up due to rounding

Table 11.20 Specialist Housing Need using adjusted SHOP@Review Assumptions, 2020-41 – North West Leicestershire

		Housing demand per 1,000 75+	Current supply	Current demand	Current shortfall/surplus (-ve)	Additional demand to 2041	Shortfall/surplus by 2041
Housing with support	Market	66	96	608	512	481	993
	Affordable	64	1,243	588	-655	466	-188
Total (housing with support)		130	1,339	1,196	-143	948	805
Housing with care	Market	31	0	290	290	230	520
	Affordable	15	0	140	140	111	252
Total (housing with care)		47	0	431	431	341	772
Residential care bedspaces		41	299	383	84	303	387
Nursing care bedspaces		47	194	431	237	341	578
Total bedspaces		88	493	813	320	644	965

Source: Derived from Demographic Projections and Housing LIN/EAC

*Numbers may not add up due to rounding

Table 11.21 Specialist Housing Need using adjusted SHOP@Review Assumptions, 2020-41 – Oadby & Wigston

		Housing demand per 1,000 75+	Current supply	Current demand	Current shortfall/surplus (-ve)	Additional demand to 2041	Shortfall/surplus by 2041
Housing with support	Market	69	185	443	258	206	464
	Affordable	54	311	347	36	161	197
Total (housing with support)		122	496	790	294	367	661
Housing with care	Market	31	18	199	181	92	273
	Affordable	13	10	86	76	40	116
Total (housing with care)		44	28	284	256	132	389
Residential care bedspaces		39	336	253	-83	117	34
Nursing care bedspaces		44	180	284	104	132	237
Total bedspaces		83	516	537	21	249	271

Source: Derived from Demographic Projections and Housing LIN/EAC

*Numbers may not add up due to rounding

- 11.79 It can be seen by 2041 there is an estimated need for 15,670 additional dwellings with support or care across the whole study area. In addition, there is a need for 5,879 additional nursing and residential care bedspaces. Typically for bedspaces it is conventional to convert to dwellings using a standard multiplier (1.80 bedspaces per dwelling for older persons accommodation) and this would therefore equate to around 3,266 dwellings. In total, the older persons analysis therefore points towards a need for around 18,933 units over the 2020-41 period. Using the 2018-SNPP and HRRs from the 2014-SNHP (plus an adjustment to the 75+ age group) the total need in the area is estimated to be 87,848 and therefore the older person need equates to some 22% of all homes needing to be some form of specialist accommodation for older people.
- 11.80 The supply position shown is Tables 12.18 – 12.26 a point-in-time assessment based on information from the Elderly Accommodation Council. It should be reviewed and updated as appropriate, such as part of the determination of planning applications.
- 11.81 The table below summarises this information for local authorities. This shows a much higher older person need in those areas where the population/household projections are more modest (notably Melton and Oadby & Wigston). All areas clearly see a need for provision of additional older persons housing. Melton BC is planning for higher levels of housing growth (with a residual requirement for 300 dpa) which would reduce the relative share of need appropriate for older persons housing. The scale of housing growth planned for in Oadby and Wigston will equally influence the proportional need for older persons specialist housing.

Table 11.22 Estimated proportion of need as older persons housing – linking to baseline projections

	Housing with care/support	Bedspace allowance	Total need	Indicative % all homes
Leicester	4,566	494	5,060	18.8%
Blaby	1,180	345	1,524	17.9%
Charnwood	2,802	651	3,453	18.5%
Harborough	1,567	368	1,936	22.2%
H & B	2,216	565	2,781	26.9%
Melton	710	156	866	56.2%
NWL	1,576	536	2,112	18.3%
O & W	1,050	150	1,200	75.0%
Leicestershire	11,101	2,771	13,872	22.8%
L & L	15,667	3,265	18,933	21.6%

Source: Derived from a range of sources

- 11.82 The provision of a choice of attractive housing options to older households is a component of achieving good housing mix. The availability of such housing options for the growing older population may enable some older households to downsize from homes which no longer meet their housing needs or are expensive to run. The availability of housing options which are accessible to older people will also provide the opportunity for older households to 'rightsize' which can help improve their quality of life.
- 11.83 It should also be noted that within any category of need there may be a range of products. For example, many recent market extra-care schemes have tended to be focused towards the 'top-end' of the market and may have significant service charges (due to the level and quality of facilities and services). Such homes may therefore only be affordable to a small proportion of the potential market, and it will be important for the Councils to seek a range of products that will be accessible to a wider number of households if needs are to be met.

Older Persons' Housing, Planning Use Classes and Affordable Housing Policies

- 11.84 The issue of use classes and affordable housing generally arises in respect of extra care/ assisted living development schemes. The Planning Practice Guidance defines extra care housing or housing with care as follows:

"This usually consists of purpose-built or adapted flats or bungalows with a medium to high level of care available if required, through an onsite care agency registered through the Care Quality Commission (CQC). Residents are able to live independently with 24 hour access to support services and staff, and meals are also available. There are often extensive communal areas, such as space to socialise or a wellbeing centre. In some cases, these

developments are known as retirement communities or villages - the intention is for residents to benefit from varying levels of care as time progresses”.

- 11.85 There is a degree to which different terms can be used for this type of development inter-changeably, with reference sometimes made to extra care, assisted living, continuing care retirement communities, or retirement villages. Accommodation units typically include sleeping and living accommodation, bathrooms and kitchens; and have their own front door. Properties having their own front doors is not however determinative of use.
- 11.86 The distinguishing features of housing with care is the provision of personal care through an agency registered with the Care Quality Commission, and the inclusion of extensive facilities and communal space within these forms of development, which distinguish them from blocks of retirement flats.

Use Classes

- 11.87 Use classes are defined in the Town and Country Planning (Use Classes) Order 1987 (as amended). Use Class C2: Residential Institutions is defined as *“use for the provision of residential accommodation and care to people in need of care (other than a use within class C3 (dwelling houses).”* C3 (dwelling houses) are defined as *“use as a dwelling house (whether or not as a sole or main residence) a) by a single person or by people living together as a family; or b) by no more than 6 residents living together as a single household (including a household where care is provided for residents).”*
- 11.88 Care is defined in the Use Class Order as meaning *“personal care for people in need of such care by reason of old age, disablement, past or present dependence on alcohol or drugs or past or present mental disorder, and in class C2 also includes the personal care or children and medical care and treatment.”*
- 11.89 Personal care has been defined in Regulations²⁶ as *“the provision of personal care for persons who, by reasons of old age, illness or disability are unable to provide it for themselves, and which is provided in a place where those persons are living at the time the care is provided.”*
- 11.90 Government has released new Planning Practice Guidance of *Housing for Older and Disabled People* in June 2019. In respect of Use Classes, Para 63-014 therein states that:

“It is for a local planning authority to consider into which use class a particular development may fall. When determining whether a development for specialist housing for older people falls within C2 (Residential Institutions) or C3 (Dwelling house) of the Use Classes Order,

26 Schedule 1 of the Health and Social Care Act 2008 (Regulated Activities) Regulations 2010.

consideration could, for example, be given to the level of care and scale of communal facilities provided.”

11.91 The relevant factors identified herein are the level of care which is provided, and the scale of communal facilities. It is notable that no reference is made to whether units of accommodation have separate front doors. This is consistent with the Use Class Order, where it is the ongoing provision of care which is the distinguishing feature within the C2 definition. In a C2 use, the provision of care is an essential and ongoing characteristic of the development and would normally be secured as such through the S106 Agreement.

11.92 A range of appeal decisions have addressed issues relating to how to define the use class of a development. These are fact specific, and there is a need to consider the particular nature of the scheme. What arises from this, is that schemes which have been accepted as a C2 use commonly demonstrate the following characteristics:

- Occupation restricted to people (at least one within a household) in need of personal care, with an obligation for such residents to subscribe to a minimum care package. Whilst there has been debate about the minimum level of care to which residents must sign-up to, it is considered that this should not be determinative given that a) residents' care needs would typically change over time, and in most cases increase; and b) for those without a care need the relative costs associated with the care package would be off-putting.
- Provision of access to a range of communal areas and facilities, typically beyond that of simply a communal lounge, with the access to these facilities typically reflected in the service charge.

NPPF Policies on Affordable Housing

11.93 For the purposes of developing planning policies in a new Local Plan, use class on its own need not be determinative on whether affordable housing provision could be applied. In all cases we are dealing with residential accommodation. But nor is there a clear policy basis for seeking affordable housing provision or contributions from a C2 use in the absence of a development plan policy which seeks to do so.

11.94 The 2021 NPPF sets out in Para 34 that Plans should set out the contributions expected from development, including levels of affordable housing. Such policies should not undermine the deliverability of the Plan. Para 65 states that where a need for affordable housing is identified, planning policies should specify the type of affordable housing required, and expect it to be met on-site unless off-site provision or a financial contribution can be robustly justified; and the agreed approach contributes to the objective of creating mixed and balanced communities.

11.95 Para 64 states that affordable housing should not be sought from residential developments that are not major developments other than in designated rural areas. Para 65 sets out that specialist accommodation for a group of people with specific needs (such as purpose-built accommodation for the elderly or students) are exempt from the requirement for 10% of homes (as part of the affordable housing contribution) to be for affordable home ownership. But neither of these paragraphs set out that certain types of specialist accommodation for older persons are exempt from affordable housing contributions.

11.96 The implication for Leicester and Leicestershire is that:

- The ability to seek affordable housing contributions from a C2 use at the current time is influenced by how its current development plan policies were constructed and evidenced; and
- If policies in a new development plan are appropriately crafted and supported by the necessary evidence on need and viability, affordable housing contributions could be sought from a C2 use through policies in a new Local Plan.

11.97 Within a local plan, it would be possible to craft a policy in such a way that affordable housing could be sought on extra care housing from both C2 and C3 use classes and it should be noted that in July 2020 the High Court rejected claims that 'extra care' housing should not contribute affordable homes because it falls outside C3 use (CO/4682/2019). It is however important to recognise that the viability of extra care housing will differ from general mixed tenure development schemes, and there are practical issues associated with how mixed tenure schemes may operate.

Viability

11.98 There are a number of features of a typical extra care housing scheme which can result in substantively different viability characteristics relative to general housing. In particular:

- Schemes typically include a significant level of communal space and on-site facilities, such that the floorspace of individual units might equate to 65% of the total floorspace, compared to 100% for a scheme of houses and perhaps 85% for typical flatted development. There is a significant proportion of space from which value is not generated through sales (although individual units may be smaller);
- Higher construction and fit out-costs as schemes need to achieve higher accessibility requirements and often include lifts, specially adapted bathrooms, treatment rooms etc. In many instances, developers need to employ third party building contractors and are not able to secure the same economies of scale as the larger volume housebuilders;

-
- Sales rates are also typically slower for extra care schemes, not least as older residents are less likely to buy 'off plan.' The combination of this and the limited ability to phase flatted schemes to sales rates can result in higher finance costs for a development.

11.99 There are a number of implications arising from this. Firstly, there is a need for viability evidence to specifically test and consider what level of affordable housing could be applied to different forms of older persons accommodation, potentially making a distinction between general market housing; retirement living/sheltered housing; and extra care/housing with care. It may well be that a differential and lower affordable housing policy is justified for housing with care.

11.100 Secondly, developers of extra care schemes can struggle to secure land when competing against mainstream housebuilders or strategic land promoters. One way of dealing with this is to allocate sites specifically for specialist older persons housing, and this may be something that the Councils wish to consider through the preparation of new Local Plans. There could be benefits of doing this through achieving relatively high-density development of land at accessible locations, and in doing so, releasing larger family housing elsewhere as residents move out.

Practical Issues

11.101 In considering policies for affordable housing provision on housing with care schemes, there is one further factor which warrants consideration relating to the practicalities of mixed-tenure schemes. The market for extra care development schemes is currently focused particularly towards providers at the affordable and higher ends of the market, with limited providers currently delivering within the 'mid-market.' At the higher ends of the market, the level of facilities and services/support available can be significant, and the management model is often to recharge this through service charges.

11.102 Whilst recognising the benefits associated with mixed income/tenure development, in considering whether mixed tenure schemes can work it is important to consider the degree to which service charges will be affordable to those on lower incomes and whether Registered Providers will want or be able to support access to the range of services/facilities on site. In a range of instances, this has meant that authorities have accepted off-site contributions to affordable housing provision.

Wheelchair User Housing

11.103 Information about the need for housing for wheelchair users is difficult to obtain, particularly at a local level and estimates of need produced in this report draw on data from the English Housing Survey (EHS) which provides a range of relevant data, but often for different time periods. The EHS data used includes the age structure profile of wheelchair users, information about work needed to homes to make them 'visitable' for wheelchair users and data about wheelchair users by tenure.

11.104 The analysis below sets out estimates of the number of wheelchair users in each local authority; this has been based on estimating prevalence rates from the 2011-12 EHS (Annex Table 6.11) combined with Census data. At the time, the EHS showed there were 184,000 households with a wheelchair user and the oldest person in the household was aged under 60; the 2011 Census showed around 41.2 million people aged under 60 and therefore a base prevalence rate of 0.004 has been calculated for this group – essentially for every 1,000 people aged under 60 there are around 4 wheelchair user households. The table below shows data for a full range of age groups; it should be noted that whilst the prevalence rates mix households and population they will provide a reasonable estimate of the number of wheelchair user households.

Table 11.23 Baseline prevalence rates by age used to estimate wheelchair user households – England

	Number of wheelchair user households	Household population	Prevalence (per 1,000 population)
under 60 years	184,000	40,562,000	5
60 - 74 years	205,000	7,668,000	27
75 - 84 years	191,000	2,832,000	68
85 years or over	146,000	997,000	146

Source: Derived from EHS (2011-12) and 2011 Census

11.105 The analysis also considers the relative health of the population of Leicester and Leicestershire. For this, data has been taken from the 2011 Census for the household population with ‘day to day activities limited a lot’ by their disability. The tables below show this information by age in Leicester/Leicestershire and England, and also shows the adjustment made to reflect differences in health between the areas. Due to the age bands used in the Census, there has been some degree of adjustment for the under 60 and 60-74 age groups. The data shows higher levels of disability for all age groups in Leicester, pointing to a slightly higher than average proportion of wheelchair user households – the opposite is largely true for Leicestershire (although the 85+ age group does show a slightly higher than average level of disability).

Table 11.24 Proportion of people with day to day activities limited a lot (by age) – 2011 – Leicester

	% of age group with day to day activities limited a lot		Leicester as % of England	Prevalence rate (per 1,000 population)
	Leicester	England		
under 60 years	4.6%	4.2%	110.5%	5
60-74 years	19.2%	13.9%	137.6%	37
75-84 years	35.9%	29.1%	123.3%	83
85 years or over	55.3%	52.3%	105.6%	154

Source: 2011 Census

Table 11.25 Proportion of people with day to day activities limited a lot (by age) – 2011 – Leicestershire

	% of age group with day to day activities limited a lot		Leicestershire as % of England	Prevalence rate (per 1,000 population)
	Leicestershire	England		
under 60 years	3.1%	4.2%	73.7%	3
60-74 years	10.3%	13.9%	73.8%	20
75-84 years	27.2%	29.1%	93.4%	63
85 years or over	53.8%	52.3%	102.8%	150

Source: 2011 Census

11.106 The local prevalence rate data can be brought together with information about the population age structure and how this is likely to change moving forward. For Leicester, the data estimates a total of 4,800 wheelchair user households in 2020, and that this will rise to 6,400 by 2041 (an increase of 1,600). For Leicestershire, the current number of wheelchair users is put at 9,600 in 2020, increasing to 14,200 by 2041.

Table 11.26 Estimated number of wheelchair user households (2020-41) – Leicester

	Prevalence rate (per 1,000 population)	Household population 2020	Household population 2041	Wheelchair user households (2020)	Wheelchair user households (2041)
under 60 years	5	294,588	316,024	1,476	1,584
60 - 74 years	37	40,858	46,750	1,502	1,718
75 - 84 years	83	12,676	21,023	1,056	1,751
85 years or over	154	5,063	8,477	782	1,309
Total		353,186	392,275	4,816	6,362

Source: Derived from a range of sources

Table 11.27 Estimated number of wheelchair user households (2020-41) – Leicestershire

	Prevalence rate (per 1,000 population)	Household population 2020	Household population 2041	Wheelchair user households (2020)	Wheelchair user households (2041)
under 60 years	3	510,583	553,443	1,705	1,848
60 - 74 years	20	122,188	141,796	2,409	2,795
75 - 84 years	63	47,552	76,198	2,998	4,804
85 years or over	150	16,478	31,417	2,478	4,725
TOTAL		696,801	802,854	9,590	14,173

Source: Derived from a range of sources

11.107 The finding of an estimated current number of wheelchair user households does not *per se* indicate how many homes might be needed for this group – some households will be living in a home that is suitable for wheelchair use, whilst others may need improvements to accommodation, or a move to

an alternative home. Data from the EHS (2014-15) shows that of the 814,000 wheelchair user households, some 200,000 live in a home that would either be problematic or not feasible to make fully 'visitable' – this is around 25% of wheelchair user households. Applying this (a rate of 25%) to the current number of wheelchair user households and adding the additional number projected forward suggests a need for 2,700 additional wheelchair user homes in the 2020-41 period in Leicester and 7,000 in Leicestershire – this equates to 8%-11% of all housing need (as set out in the table below).

Table 11.28 Estimated need for wheelchair user homes, 2020-41

	Current need	Projected need (2020-41)	Total current and future need	Housing need (2020-41)	% of Housing Need
Leicester	1,183	1,546	2,730	51,744	5.3%
Blaby	338	612	949	7,161	13.3%
Charnwood	555	1,022	1,577	23,331	6.8%
Harborough	279	692	971	11,214	8.7%
H & B	411	815	1,226	9,912	12.4%
Melton	163	315	479	4,851	9.9%
NWL	401	872	1,274	7,812	16.3%
O & W	208	270	478	3,948	12.1%
Leicestershire	2,356	4,599	6,954	68,229	10.2%
L & L	3,539	6,145	9,684	119,973	8.1%

Source: Derived from a range of sources

11.108 Furthermore, information in the EHS (for 2017/18) also provides national data about wheelchair users by tenure. This showed that, at that time, around 7.1% of social tenants were wheelchair users, compared with 2.7% of market households (owner-occupiers and private renters). Applying these national figures to the demographic change and need (as shown above) it is possible to estimate the potential need by tenure, as shown in the table below. This shows a need for around 9% of market homes to be M4(3) along with 23% of affordable. The high need shown in Melton and Oadby and Wigston reflects where the baseline population/household projections are more modest. The relative percentage of need will be influenced by overall housing targets in these areas.

Table 11.29 estimated need for wheelchair user homes by tenure, 2020-41

	Market	Affordable
Leicester	8%	21%
Blaby	9%	23%
Charnwood	7%	17%
Harborough	9%	23%
H & B	9%	24%
Melton	24%	64%
NWL	9%	23%
O & W	23%	61%
Leicestershire	9%	23%
L & L	9%	23%

Source: Derived from demographic projections and EHS prevalence rates

- 11.109 To meet the identified need, the Councils could seek a proportion (maybe up to 10%) of all new market homes to be M4(3) compliant and potentially around a quarter in the affordable sector. These figures reflect that not all sites would be able to deliver homes of this type. In the market sector these homes would be M4(3)A (adaptable) and M4(3)B (accessible) for affordable housing. This recognises that not all sites/ schemes will be able to deliver to policy standards.
- 11.110 As with M4(2) homes it may not be possible for some schemes to be built to these higher standards due to built-form, topography, flooding etc. Furthermore, provision of this type of property may in some cases challenge the viability of delivery given the reasonably high build out costs (see table below).
- 11.111 It is worth noting that the Government is currently consulting on changes to the way the needs of people with disabilities and wheelchair users are planned for as a result of concerns that in the drive to achieve housing numbers, the delivery of housing that suits the needs of the households (in particular those with disabilities) is being compromised on viability grounds²⁷.
- 11.112 One of the policy options tabled in the Government consultation is to remove M4(1) altogether, so that all new homes will have to at least have the accessible and adaptable features of an M4(2) home. M4(3) would apply where there is a local planning policy in place in which a need has been identified and evidenced. This is consistent with the evidence presented in this report, although the trade-off identified in the consultation paper between viability and the need to deliver sufficient numbers of market homes to meet general housing needs is unavoidable.

²⁷ Raising accessibility standards for new homes, a consultation paper, page 10

11.113 The viability challenge is particularly relevant for M4(3)(B) standards. These make properties accessible from the moment they are built and involve high additional costs that could in some cases challenge the feasibility of delivering all or any of a policy target.

Table 11.30 Access Cost Summary

	1-Bed Apartment	2-Bed Apartment	2-Bed Terrace	3-Bed Semi Detached	4-Bed Semi- Detached
M4(2)	£940	£907	£523	£521	£520
M4(3)(A) – Adaptable	£7,607	£7,891	£9,754	£10,307	£10,568
M4(3)(B) – Accessible	£7,764	£8,048	£22,238	£22,791	£23,052

Source: EC Harris, 2014

11.114 However, local authorities only have the right to request M4(3)(B) accessible compliance from homes for which they have nomination rights. They can, however, request M4(3)(A) adaptable compliance from the wider (market) housing stock.

11.115 A further option for the Councils would be to consider seeking a higher proportion of M(4) homes, where it is viable to do so, from those homes to which they have nomination rights. This would address any under delivery from other schemes (including schemes due to their size e.g. less than 10 units or 1,000 square metres) but also recognise the fact that there is a higher prevalence for wheelchair use within social rent tenures. This should be considered when setting policy.

Adults (16-64) With Disabilities or Support Needs

11.116 As well as examining older people it is also possible to draw on the PANSI data to examine the growth in adults with a disability of condition. Again these are based on the official 2018-based SNPP alternative internal migration variant rather than linked to the Standard Method.

11.117 We have set out below the projections for a range of mental health disorders as well as physical disabilities. The projections show a significant growth impaired mobility in both Leicester and Leicestershire. This would support the earlier analysis on M4(2) and M4(3) homes.

11.118 The most significant mental health changes are expected in Common Mental Disorder which would not result in a specialist residential solution. However, there will be occasions when very specialist accommodation will be required and the shire authorities will need to work with the County to understand whether the commissioning of a new supported housing scheme should address this. As with other very specialist accommodation this may require a solution which addresses the need for multiple authorities.

11.119 It is suggested that this would be most relevant to those with Psychotic disorders which PANSI describe as producing “*disturbances in thinking and perception severe enough to distort perception of reality. Psychoses can be serious and debilitating conditions, associated with high rates of suicide and early mortality*”. As such they may require a residential solution to ensure surveillance.

Table 11.31 Projected Changes to Population with a Range of Disabilities – Leicester

Disability	Age Range	2020	2041	Change	% Change
Common mental disorder	18-64	43,664	47,055	3,392	7.8%
Borderline personality disorder	18-64	5,546	5,980	433	7.8%
Antisocial personality disorder	18-64	7,841	8,635	794	10.1%
Psychotic disorder	18-64	1,624	1,763	139	8.5%
Two or more psychiatric disorders	18-64	16,691	18,092	1,401	8.4%
Autistic Spectrum Disorders	18-64	2,763	3,074	311	11.3%
Learning Disabilities	15-64	7,133	7,752	619	8.7%
Challenging behaviour	15-64	129	140	11	8.6%
Impaired mobility	16-64	12,101	12,816	715	5.9%

Source: PANSI and Demographic Projections

Table 11.32 Projected Changes to Population with a Range of Disabilities – Leicestershire

Disability	Age Range	2020	2041	Change	% Change
Common mental disorder	18-64	79,631	86,242	6,612	8.3%
Borderline personality disorder	18-64	10,111	10,951	839	8.3%
Antisocial personality disorder	18-64	14,063	15,227	1,164	8.3%
Psychotic disorder	18-64	2,946	3,190	244	8.3%
Two or more psychiatric disorders	18-64	30,306	32,821	2,514	8.3%
Autistic Spectrum Disorders	18-64	3,346	3,631	285	8.5%
Learning Disabilities	15-64	8,678	9,453	775	8.9%
Challenging behaviour	15-64	160	174	14	8.8%
Impaired mobility	16-64	19,076	20,320	1,244	6.5%

Source: PANSI and Demographic Projections

11.120 In addition to the PANSI data the scale of demand from those with a mental health condition can be drawn from homelessness representation for which MHCLG collate quarterly data from each local authority. This dataset is known as the Homelessness Case Level Information Collection (H-CLIC).

11.121 As shown in the table below, in every local authority the most common support need for those owed a prevention or relief duty is Mental Health. This ranges from 10% in Melton to 28% in Harborough. On average the 19% of those owed a prevention or relief duty require mental health support.

Table 11.33 Support needs of households owed a prevention or relief duty (June 18-Mar 21)

	Leicester	Blaby	Charn-wood	Harbo-rough	H&B	Melton	NW Leics	O&W	Average
Mental health problems	21%	23%	18%	28%	13%	10%	14%	23%	19%
ill health and disability	16%	13%	8%	9%	6%	7%	10%	16%	11%
Experienced Abuse	8%	21%	11%	12%	4%	7%	9%	13%	11%
Offending history	9%	3%	5%	7%	2%	3%	5%	3%	4%
History of homelessness	6%	4%	3%	4%	1%	4%	3%	1%	3%
Drug or Alcohol dependency	10%	6%	8%	12%	5%	6%	6%	4%	7%
Other	6%	12%	9%	7%	5%	12%	7%	8%	8%

Source: MHCLG, 2021

11.122 The appropriate strategy for providing support needs should be carefully considered through joint working by the County Council and local authorities in Leicestershire. Support needs can arise from both people both under and over 65.

11.123 For some forms of specialist supported housing, schemes may draw on needs from across local authority boundaries, in particular where needs across different authorities need to be aggregated to make schemes viable. This might include but not limited to the need for:

- Bariatric Care Homes;
- Mother and Baby Units;
- Drug and Alcohol Dependency Units;
- Anorexia Units; and
- Autistic Friendly Housing.

11.124 Current provision for these groups is often *ad-hoc* in rental accommodation which is not in any way adapted to their needs. There is a potential role for Leicestershire County Council to coordinate a strategic approach to meeting such needs, such as proposals for provision in different parts of the County. This could then inform the identification and then feed into the preparation of local plans.

11.125 In some cases developments may work within or on the outskirts of towns and large villages subject to viability where appropriate facilities are provided and there are good quality public transport links.

The Needs of Older Persons & Those with Disabilities: Key Messages

- A range of data sources and statistics have been accessed to consider the characteristics and housing needs of the older person population and the population with some form of disability. The two groups are taken together as there is a clear link between age and disability. The analysis responds to Planning Practice Guidance on *Housing for Older and Disabled People* published by Government in June 2019 and includes an assessment of the need for specialist accommodation for older people and the potential requirements for housing to be built to M4(2) and M4(3) housing technical standards (accessibility and wheelchair standards).
- The data shows in general that Leicestershire has a similar age structure and similar levels of disability compared with the national average whilst Leicester has a younger age structure (and higher age-specific rates of disability in a regional/national context). The older person population is projected to increase notably in the future and an ageing population means that the number of people with disabilities is likely to increase substantially. Key findings for the 2020-41 period include:
 - A 40% (Leicester) and 42% (Leicestershire) increase in the population aged 65+ (potentially accounting for 58% of total population growth in Leicestershire (44% of growth in Leicester);
 - A 56%-66% increase in the number of people aged 65+ with dementia and a 50%-56% increase in those aged 65+ with mobility problems;
 - A need for around 3,100 housing units with support (sheltered/retirement housing) in Leicester (2020-41) and 6,700 units in Leicestershire (mainly in the market sector in Leicestershire);
 - A need for around 1,500 additional housing units with care (e.g. extra-care) in Leicester and 4,400 in Leicestershire – focussed on market housing in Leicestershire and the affordable sector in Leicester;
 - A need for additional residential and nursing care bedspaces; and
 - a need for around 2,800 (Leicester) and 7,100 (Leicestershire) dwellings to be for wheelchair users (meeting technical standard M4(3)).
- This would suggest that there is a clear need to increase the supply of accessible and adaptable dwellings and wheelchair user dwellings as well as providing specific provision of older persons housing. Given the evidence, the Councils could consider (as a start point) requiring all dwellings (in all tenures) to meet the M4(2) standards (which are similar to the Lifetime Homes Standards) and 10%-25% of homes meeting M4(3) – wheelchair user dwellings (a higher proportion in the affordable sector).
- Where the authority has nomination rights M4(3) would be wheelchair accessible dwellings (constructed for immediate occupation) and in the market sector they should be wheelchair user adaptable dwellings (constructed to be adjustable for occupation by a wheelchair user). It should however be noted that there will be cases where this may not be possible (e.g. due to viability or site-specific circumstances) and so any policy should be applied flexibly.
- The Councils should also consider if a different approach is prudent for market housing and affordable homes, recognising that Registered Providers may already build to higher standards, and that households in the affordable sector are more likely to have some form of disability.
- In framing policies for the provision of specialist older persons accommodation, the Councils will need to consider a range of issues. This will include the different use classes of accommodation (i.e. C2 vs. C3) and requirements for affordable housing contributions (linked to this the viability of provision). There may also be some practical issues to consider, such

as the ability of any individual development being mixed tenure given the way care and support services are paid for.

- For those younger than 65 the PANSI projections show a significant growth impaired mobility in both Leicester and Leicestershire. This would support the earlier analysis on M4(2) and M4(3) homes. There is also expected to be a significant growth in those with a mental health issue. While not all of this will result in an increased demand for residential solutions the most severe conditions will.
- The Councils should work collaboratively to ensure very specialist supported accommodation is addressed across boundaries. This will ensure those that the needs of those that require this level of care will be addressed in an appropriate environment.

Gypsies and Travellers

11.126 The latest evidence in relation to the housing needs of Gypsies and Travellers in Leicester and Leicestershire was published in May 2017. The Leicester City and Leicestershire Gypsy, Traveller and Travelling Showpeople Accommodation Assessment²⁸ primary purpose was to identify the current and future need for pitches. The study covered each local authority with the exception of Hinckley and Bosworth where a separate study²⁹ was commissioned and published in November 2016 to align with their local plan timetable. We understand that a number of authorities have commissioned updated evidence to inform their Local Plan Reviews. This short section thus presents the published information at the current time.

11.127 Both GTAA was based on desktop research and Stakeholder interviews including engagement with members of the community. Overall the studies identified a need for 22 additional pitches over the 2016-36 period. The need assessed in Hinckley and Bosworth was for no additional pitches based on the new definition of gypsies and travellers; but a need for up to 15 pitches from households that *may* meet the new definition albeit the need could be as few as 1 pitch.

²⁸ http://www.harborough.gov.uk/download/downloads/id/3220/2017_06_01_leicestershire_gtaa_final_reportpdf.pdf

²⁹ <https://www.hinckley->

[bosworth.gov.uk/downloads/file/5477/hinckley_and_bosworth_gypsy_and_traveller_accommodation_assessment](https://www.hinckley-bosworth.gov.uk/downloads/file/5477/hinckley_and_bosworth_gypsy_and_traveller_accommodation_assessment)

Table 11.34 Additional need for GTAA Pitches (2016-36)

	Additional Pitches
Leicester	6
Blaby	3
Charnwood	0
Harborough	6
Hinckley and Bosworth	1
Melton	0
North West Leicestershire	6
Oadby and Wigston	0
Study Area	22

Source: L&L GTAA and H&B GTAA

11.128 As well as settled pitches the report also examined the need for transit pitches. The report identifies a need for a minimum of twelve caravan spaces in Leicester City and thirty-six caravan spaces spread over 2-3 sites in the rest of the county. No need for travelling showpeople or transit pitches was identified in the Hinckley and Bosworth evidence.

The Needs of Gypsies and Travellers: Key Messages

- The latest evidence in relation to the housing needs of Gypsies and Travellers identified a need for 22 additional pitches over the 2016-36 period. The report also identifies a need for a minimum of 12 transit caravan spaces in Leicester City and 38 transit in Leicestershire.

12. DIFFERENT HOUSING MARKET SEGMENTS

- 12.1 This section of the report moves on to consider the dynamics in different housing market segments, including the private rented sector and student housing.

Private Rental Sector

- 12.2 The Private Rented Sector has been the key growth sector in the housing market for the last 15 years and now makes up just over 20% of all UK households. Since 2011, the Private Rented Sector has been the second largest housing tenure in England behind owner-occupation, overtaking social housing.
- 12.3 In the context of the sector's growth over the last 20 years and a national housing shortage, successive Governments have looked to the private rented sector to play a greater role in providing more new build housing and have sought to encourage "Build to Rent" development. The NPPF requires authorities to assess and reflect the needs of those people who rent their homes. It defines Build to Rent as "*purpose-built housing that is typically 100% rented out. It can form part of a wider multi-tenure development comprising flats or houses, but should be on the same site or contiguous as the main development. Schemes will usually offer tenancy agreements of three years or more, and will typically be professionally managed stock in single ownership and management control.*"
- 12.4 The Build-to-Rent Sector has developed over the last few years to a position where there are now a range of schemes in London, and schemes coming forwards in other Core Cities, but in many other areas there has been limited provision to date. The level of demand and hence potential for the tenure going forward is assessed later in this section.
- 12.5 We have examined a range of issues in relation to the private rental sector including the size of the sector, costs, benefit claimants, HMOs and the demand for build to rent accommodation. This is separate from purpose built student accommodation which is assessed separately.

Size of Private Rental Sector

- 12.6 The table below shows the tenure split of housing in 2011 in Leicester & Leicestershire and a range of other areas. This shows a total of 59,900 households living in private rented housing in the study area – 15.3% of all households. This proportion is slightly above the regional average and below the national equivalent figure. The PRS makes up nearly a quarter of all households in Leicester (22.7%) but a much lower proportion in Leicestershire (11.9%). The vast majority of households in the PRS are living in housing rented from a landlord or through a letting agency, although 4,809 (1.2% of all households) are recorded as living in 'other' PRS accommodation, this is mainly households living in

housing owned by a relative or friend – these are households recorded as within the PRS, those living rent free (as seen in the table below) are a separate category.

Table 12.1 Tenure (2011)

	Leicester	Leicestershire	Leicester & Leicestershire	East Midlands	England
Owns outright	28,018	99,100	127,118	621,224	6,745,584
Owns with mortgage/loan	33,926	105,459	139,385	666,185	7,403,200
Social rented	31,270	28,017	59,287	300,423	3,903,550
Private rented	27,999	31,932	59,931	282,443	3,715,924
Living rent free	1,912	2,926	4,838	25,329	295,110
Total Households	123,125	267,434	390,559	1,895,604	22,063,368
% private rented	22.7%	11.9%	15.3%	14.9%	16.8%

Source: Census (2011)

- 12.7 The table below shows the proportion of household living in private rented accommodation in each local authority – the table also provides a breakdown within the private rented category. The analysis shows a wide range of proportions living in the PRS, varying from 9.9% of households in Oadby & Wigston, up to 22.7% in Leicester. The table also indicates that in general there are relatively few households living in PRS accommodation other than that rented directly from a landlord or through a letting agency.

Table 12.2 Breakdown of types of private rented accommodation (2011)

	Private landlord or letting agency	Employer of a household member	Relative or friend of household member	Other	Total in private rented sector
Leicester	21.3%	0.2%	1.0%	0.3%	22.7%
Blaby	9.0%	0.1%	0.8%	0.1%	10.0%
Charnwood	12.9%	0.2%	0.9%	0.2%	14.1%
Harborough	10.1%	0.2%	0.8%	0.1%	11.2%
H&B	10.3%	0.1%	0.8%	0.2%	11.4%
Melton	12.7%	0.4%	0.9%	0.3%	14.2%
NWL	10.2%	0.1%	0.9%	0.1%	11.3%
O&W	9.0%	0.1%	0.7%	0.1%	9.9%
Leicestershire	10.8%	0.1%	0.8%	0.2%	11.9%
L&L	14.1%	0.2%	0.9%	0.2%	15.3%

Source: Census (2011)

- 12.8 It is of interest to consider how the tenure profile has changed over time. The tables below show data from the 2001 and 2011 Census. From this it is clear that there has been significant growth in the number of households living in privately rented accommodation as well as an increase in outright owners (this will be due to mortgages being paid off, which may have been assisted by a period of low interest rates). There has been a decline in the number of owners with a mortgage and a small

increase in the number of households in social rented accommodation. In both areas, the number of households living in the PRS roughly doubled in just a decade.

Table 12.3 Change in Tenure (2001-11) – Leicester

	2001 households	2011 households	Change	% change
Owns outright	26,241	28,018	1,777	6.8%
Owns with mortgage/loan	38,146	33,926	-4,220	-11.1%
Social rented	31,098	31,270	172	0.6%
Private rented	14,025	27,999	13,974	99.6%
Living rent free	1,638	1,912	274	16.7%
Total	111,148	123,125	11,977	10.8%

Source: 2001 and 2011 Census

Table 12.4 Change in Tenure (2001-11) – Leicestershire

	2001 households	2011 households	Change	% change
Owns outright	82,848	99,100	16,252	19.6%
Owns with mortgage/loan	116,172	105,459	-10,713	-9.2%
Social rented	26,982	28,017	1,035	3.8%
Private rented	15,483	31,932	16,449	106.2%
Living rent free	3,760	2,926	-834	-22.2%
Total	245,245	267,434	22,189	9.0%

Source: 2001 and 2011 Census

- 12.9 The general pattern of tenure changes in the study area is broadly similar to that seen in other areas – i.e. an increase in the PRS and outright owners and a reduction in owners with a mortgage. However, the proportionate increase in the number of households in the PRS is slightly more notable in the study area than other locations; nationally, over the 10-year period the PRS grew by 82%, but by over 100% in the study area.

Table 12.5 Change in Tenure (2001-11)

	Leicester	Leicestershire	L & L	East Midlands	England
Owns outright	6.8%	19.6%	16.5%	16.4%	13.0%
Owns with mortgage/loan	-11.1%	-9.2%	-9.7%	-7.1%	-8.4%
Social rented	0.6%	3.8%	2.1%	-1.0%	-0.9%
Private rented	99.6%	106.2%	103.1%	95.9%	82.4%
Living Rent Free	16.7%	-22.2%	-10.4%	-26.3%	-29.6%
TOTAL	10.8%	9.0%	9.6%	9.4%	7.9%

Source: 2001 and 2011 Census

- 12.10 The table below shows the same data for each local authority in Leicestershire, this again shows significant increases in the PRS for all locations, although there are notable differences in the increase – ranging from 66% in Melton, up to 168% in Blaby.

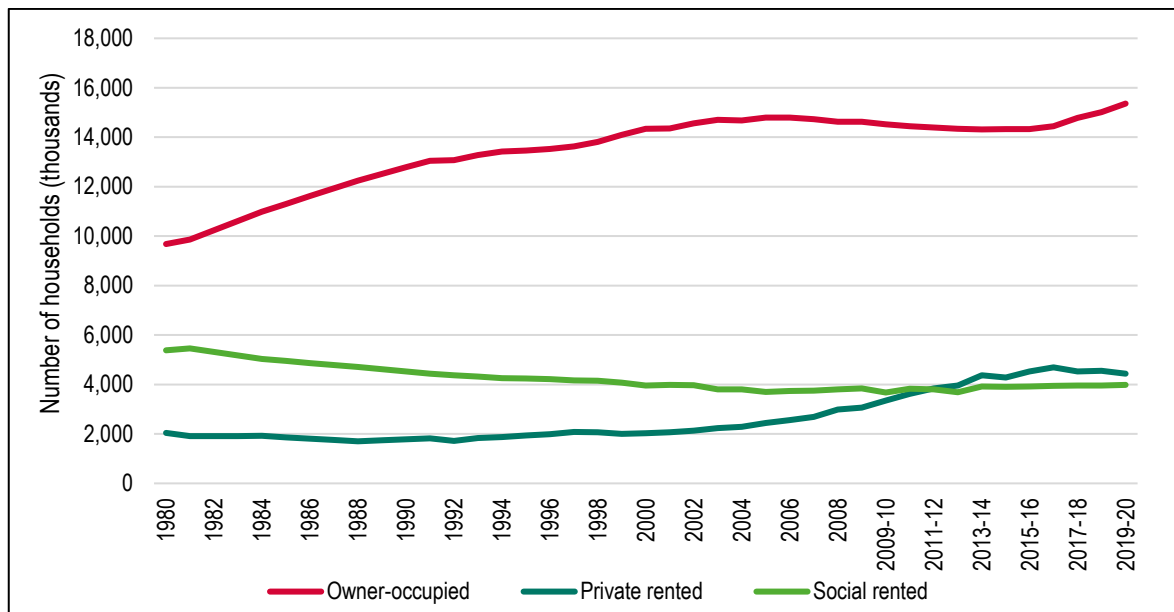
Table 12.6 Change in Tenure (2001-11) – local authorities in Leicestershire

	Blaby	Charn-wood	Har-boro.	H&B	Melton	NWL	O&W
Owns outright	20.2%	21.7%	24.9%	19.6%	21.3%	17.0%	9.4%
Owns with mortgage/loan	-11.5%	-10.0%	-6.3%	-8.0%	-7.7%	-2.8%	-20.2%
Social rented	0.2%	7.8%	12.7%	7.4%	2.5%	-2.0%	-7.6%
Private rented	168.4%	86.9%	117.9%	128.0%	66.3%	128.2%	79.0%
Living Rent Free	13.3%	-31.6%	-21.7%	-16.9%	-20.5%	-27.6%	-20.0%
TOTAL	7.7%	10.0%	13.1%	10.4%	9.6%	10.5%	-2.7%

Source: 2001 and 2011 Census

- 12.11 The PRS has clearly been growing rapidly over time, in Leicester, Leicestershire and other locations; it is also worth considering what further changes may have occurred since 2011. Unfortunately, robust local data on this topic is not available, however a national perspective can be drawn from the English Housing Survey (EHS) which has data up to 2019-20. The figure below shows changes in three main tenures back to 1980. This clearly shows the increase in the number of households living in private rented accommodation from about 2001 and also a slight decrease in the number of owners.
- 12.12 Since 2011, the EHS data shows that that PRS has risen by a further 19% and if the study area has seen a similar level of increase then this would imply about 11,400 additional households in the sector. Experimental statistics from ONS suggest that the size of the PRS may have increased more strongly, with an estimate that there were 78,500 households in the sector in 2019. The ONS data should however be treated with some caution (due to large error margins) with ONS themselves noting that the figures are not official statistics. By 2012, ONS estimates put the PRS at 69,000, which is already substantially above the Census figure of just one year previously.

Figure 12.1: Trends in Tenure, 1980 to 2019-20 – England

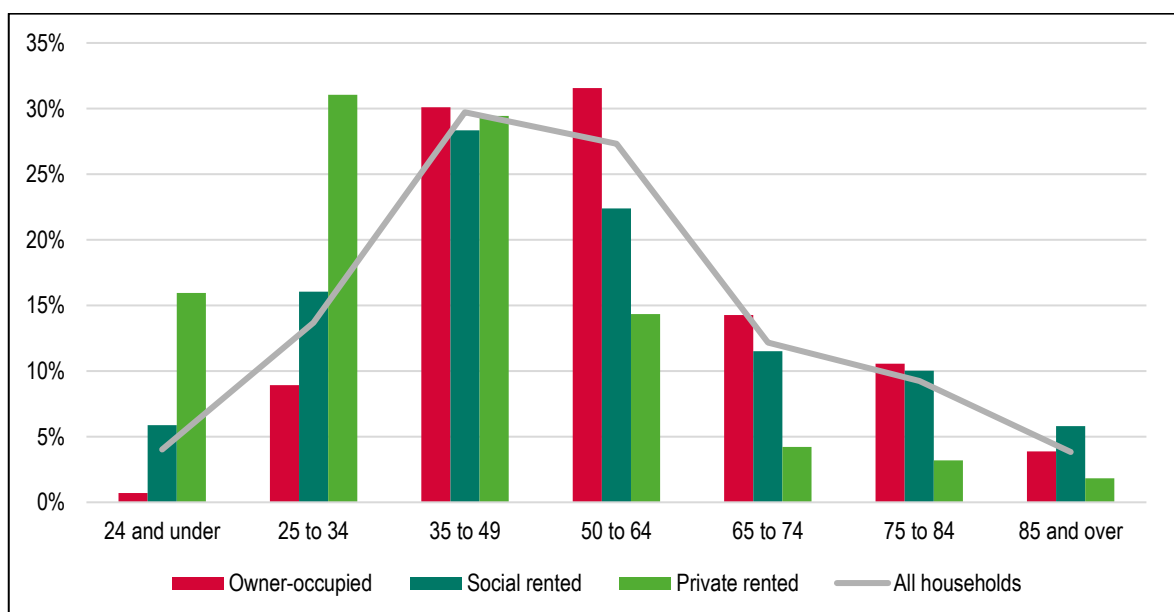


Source: English Housing Survey

Age Profile of Private Renters

12.13 Private renters are younger than social renters and owner occupiers. In 2011, the average age of household reference persons (HRPs) in the private rented sector was 40 years (compared with 56 for owner occupiers and 52 in the social rented sector). Around three-quarters (76%) of private rented sector HRPs were aged under 50 compared with 40% of social renters and 40% of owner occupiers.

Figure 12.2: Age of Household Reference Person by Tenure (2011) – Leicester & Leicestershire



Source: Census (2011)

- 12.14 At a national level, the EHS notes that the proportion of younger people in the PRS has increased over time. It notes that the proportion of those aged 25 to 34 who lived in the Private Rented Sector increased from 24% in 2005-6 to 46% in 2015-16. Over the same period, there was a corresponding decrease in the proportion of people in this age group in both the owner occupied (from 56% in 2005-6 to 38% in 2015-16) and social rented (from 20% in 2005-6 to 16% in 2015-16) sectors.
- 12.15 It is also interesting to consider how the age profile of the sector has changed, with a particular focus on younger people. As with all households, for the Under 35 age group the analysis again shows a substantial increase in the number of households living in private rented accommodation (up 83% in Leicester and 95% for Leicestershire). It should also be noted that overall there was a decline in the number of households aged under 35 in Leicestershire (decreasing by 12%). The analysis also highlights a significant decrease in the number of owner occupiers (decreasing by over a third in just 10-years) and a modest reduction in the number of young people in social rented accommodation (in Leicester). In 2001 (in Leicester), some 29% of younger households lived in the PRS; by 2011, this had increased to 50%. For Leicestershire these proportions are 17% and 39% respectively. These trends are likely to have been influenced by affordability issues, including the recession and restrictions on mortgage finance availability.

Table 12.7 Change in Tenure 2001-11 (all households aged Under 35) – Leicester

	2001	2011	Change	% change
Owned	12,548	8,206	-4,342	-34.6%
Social rented	8,639	7,856	-783	-9.1%
Private rented	8,844	16,205	7,361	83.2%
TOTAL	30,031	32,267	2,236	7.4%

Source: 2001 and 2011 Census

Table 12.8 Change in Tenure 2001-11 (all households aged Under 35) – Leicestershire

	2001	2011	Change	% change
Owned	29,572	17,466	-12,106	-40.9%
Social rented	5,128	5,145	17	0.3%
Private rented	7,305	14,241	6,936	94.9%
TOTAL	42,005	36,852	-5,153	-12.3%

Source: 2001 and 2011 Census

Housing Costs

- 12.16 The analysis of affordable housing need describes the current cost of housing in the PRS in Leicester and Leicestershire. Below, analysis is carried out to look at how costs have changed over time – this shows an increase in private rents in all areas with overall increases in the 2011-20 period of 22% in Leicester and 25% across Leicestershire – these increases are slightly above those seen across the East Midlands (21%) and slightly below the national average (26%). It should be noted that the figures below are for all sizes of home and the median rent in any period will be influenced by the profile of homes being let.

Table 12.9 Average (median) private sector rent (per month) 2011 and 2020 – range of areas

	2011	2020	Change	% change
Leicester	£490	£600	£110	22%
Blaby	£575	£725	£150	26%
Charnwood	£480	£550	£70	15%
Harborough	£550	£725	£175	32%
H & B	£495	£650	£155	31%
Melton	£495	£600	£105	21%
NWL	£525	£615	£90	17%
O & W	£550	£695	£145	26%
Leicestershire	£500	£625	£125	25%
East Midlands	£495	£600	£105	21%
England	£575	£725	£150	26%

Source: ONS and Valuation Office Agency

- 12.17 The tables below show median private rents by dwelling size for Leicester and Leicestershire. This shows for 1- and 2-bedroom homes that rents are slightly higher in the City. The analysis also shows that the highest rent increases have been for larger (4+-bedroom) homes and to a lesser extent 3-bedroom properties. The increase in rents for 4+-bedroom homes may in part to reflect the relatively small number of lettings of this size of property (which means that average figures can be quite variable). That said, figures could be monitored to see if this an ongoing trend (which may indicate a supply shortage).

Table 12.10 Average (median) private sector rent (per month) 2011 and 2020 – Leicester

	2011	2020	Change	% change
1-bedroom	£420	£525	£105	25%
2-bedrooms	£500	£630	£130	26%
3-bedrooms	£550	£710	£160	29%
4+-bedrooms	£750	£1,050	£300	40%
All dwellings	£490	£600	£110	22%

Source: ONS and Valuation Office Agency

Table 12.11 Average (median) private sector rent (per month) 2011 and 2020 – Leicestershire

	2011	2020	Change	% change
1-bedroom	£395	£475	£80	20%
2-bedrooms	£495	£595	£100	20%
3-bedrooms	£575	£750	£175	30%
4+-bedrooms	£800	£1,100	£300	38%
All dwellings	£500	£625	£125	25%

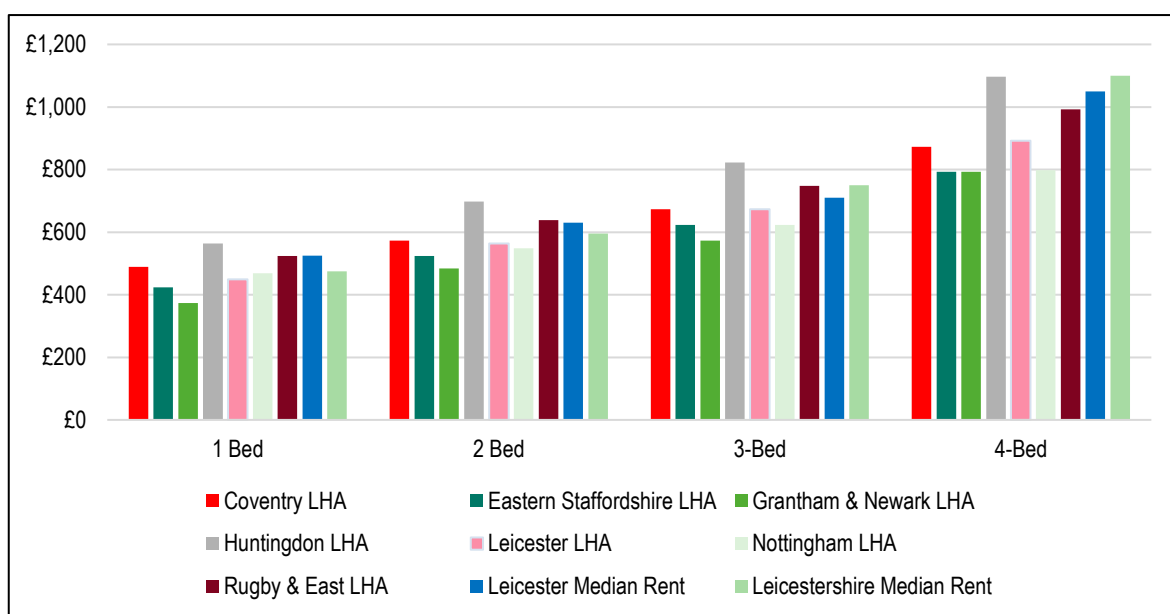
Source: ONS and Valuation Office Agency

- 12.18 As noted, the overall median private rent has increased by 22% in Leicester and 25% in Leicestershire, these figures can be compared with changes to the average house price in the same period. In both locations median house prices have increased by 50% around double the change in

rents and this analysis does not really suggest any particular pressures in PRS when taken in the context of the whole market, and therefore does not indicate any particular shortage of supply of private rented homes when compared with the owner-occupied sector.

12.19 When these rates are compared to Local Housing Allowance (LHA) for the Broad Rental Market Areas (BRMA) within Leicester and Leicestershire it is clear that for much of the study area rents are in excess of LHA. The notable exceptions being those parts of the Study area which fall within the Huntingdon and Rugby and East BRMA, In these areas the LHA is typically above median rents in Leicestershire. LHA rates in the Leicester BRMA are consistently below median rents for the City.

Figure 12.3: Local Housing Allowance Vs Median Rents (2020)



Source: ONS and Valuation Office Agency

12.20 There is a particular affordability gap in larger homes when all of the LHA rates are at or below the median rent for Leicestershire meaning that it is more difficult for lower earning households to access such properties, even with benefit support. In contrast, in three BRMA the LHA exceeds the county median rent for 1 bedroom homes. In some cases the difference between median rents and LHA is only around £6 per month which can potentially be met by some households. However, for larger homes the gap is as much as £307 per month which would be more difficult to bridge. There will still be a supply of homes which are affordable to those on LHA allowance but these are likely to be in the lower quartile.

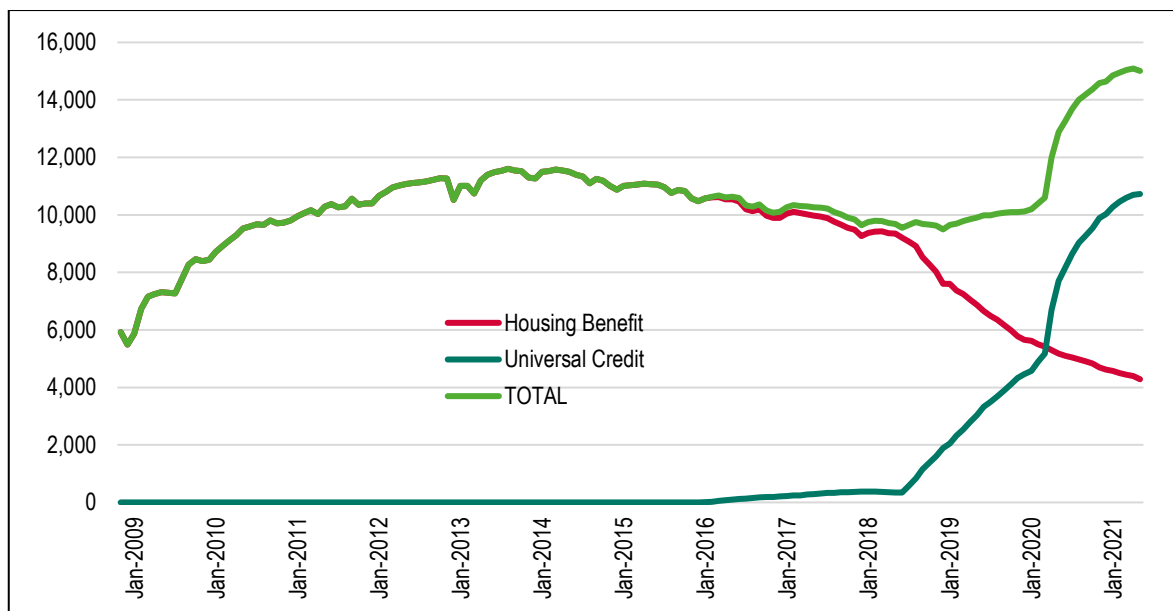
Housing Benefit Claimants

12.21 A further analysis has been carried out to look at the number of housing benefit claimants in the sector. This provides an indication of the number of people who are using the sector as a form of affordable housing, and in many cases will be living in private rented accommodation due to a lack to affordable housing (e.g. in the social rented sector). However, it should be noted that some of

these households may be in the sector through choice whilst others may be forced to use the sector if they are excluded from the Housing Register (e.g. due to rent arrears). The figures below include both Housing Benefit and also Universal Credit claims where there is a housing entitlement (in the PRS).

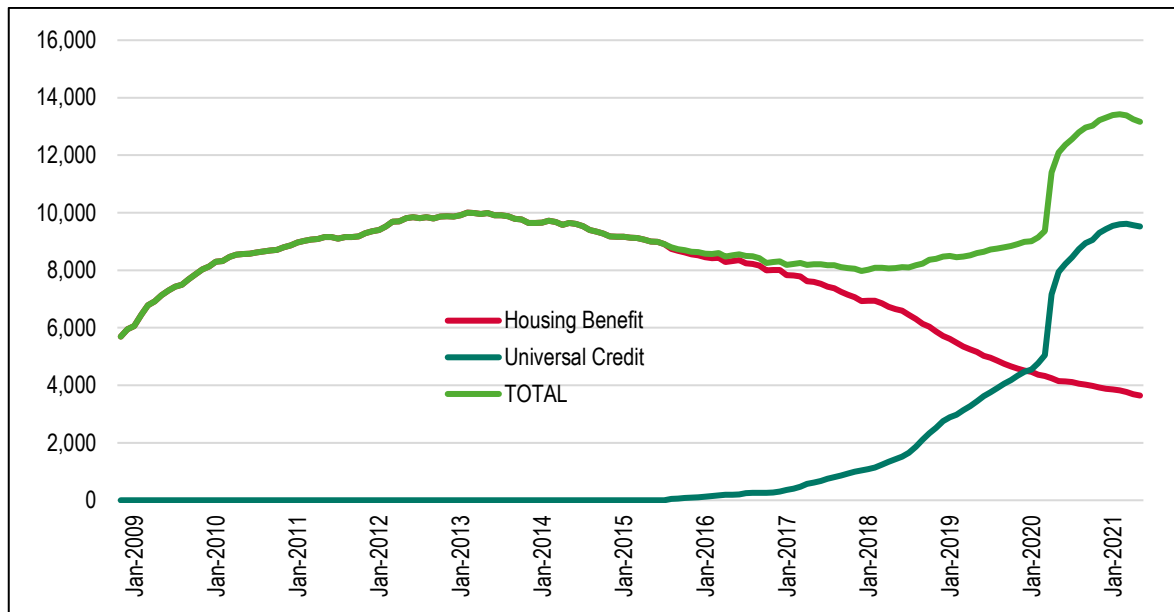
12.22 The analysis shows that from 2008, the number of claimants in the PRS rose steadily to peak at just under 12,000 in 2013 in Leicester and around 10,000 in Leicestershire. Since then the number of claimants has generally fallen (until about 2018/19). There has been a notable increase since March 2020, related to the Covid-19 pandemic; with the number of households claiming Housing Benefit or Universal Credit (with housing entitlement) standing at around 15,000 in Leicester and 13,000 in Leicestershire.

Figure 12.4: Number of Housing Benefit claimants in the Private Rented Sector – Leicester



Source: Department of Work and Pensions

Figure 12.5: Number of Housing Benefit claimants in the Private Rented Sector – Leicestershire



Source: Department of Work and Pensions

HMOs

- 12.23 Census data on household composition can be used to identify the growth in shared accommodation. Specifically the change in “Other:Other” households can be used to consider changes in shared accommodation. Such households are comprised of more than one unrelated adults sharing and is commonly used as a proxy for HMOs.³⁰
- 12.24 As shown in the table below, the number of such households increased by 4,672 households in the period 2001 to 2011. This equated to a 45% growth. Around 60% of this growth (+2,856) occurred in the City of Leicester.

³⁰ Other:other households comprise of unrelated adults sharing accommodation (excluding all student households, households with dependent children or where all household members are aged 65 and over)

Table 12.12 Change in Other:Other Households (2001-2011)

	2001	2011	Change	% Change
Blaby	754	1,001	247	33%
Charnwood	1,559	2,187	628	40%
Harborough	632	831	199	31%
Hinckley and Bosworth	904	1,124	220	24%
Leicester	4,764	7,620	2,856	60%
Melton	483	592	109	23%
North West Leicestershire	750	982	232	31%
Oadby and Wigston	504	686	182	36%
Study Area	10,350	15,023	4,673	45%

Source: ONS, Census 2001 and 2011

- 12.25 An alternative view on the number of HMO can be gained from licences issued to HMO landlords. However, only large HMOs³¹ require a license. As shown in the table below there are 1,719 HMO licenses within the study area. The largest numbers of licenses have been issued in Leicester and Charnwood which suggests that there is an element of student housing impacting on HMO numbers.

Table 12.13 Registered HMO Licenses

	HMO Register
Leicester	927
Blaby	19
Charnwood	668
Harborough	7
Hinckley and Bosworth	14
Melton	10
North West Leicestershire	57
Oadby and Wigston	17
Study Area	1,719

Source: Local Authority Registers

- 12.26 The number of all student households increased by 1,647 dwellings between 2001 and 2011. Reflecting the HMO Licenses (and the location of the Universities) the largest growth was in Leicester (+1,100 households) and Charnwood (+464 households).

³¹ Large HMOs are rented properties with 5 or more people who form more than 1 household, some or all tenants share toilet, bathroom or kitchen facilities and at least 1 tenant pays rent.

Table 12.14 All Student Households (2001-2011)

Students	2001	2011	Change	% Change
Blaby	0	8	8	n/a
Charnwood	788	1,252	464	59%
Harborough	3	18	15	500%
Hinckley and Bosworth	8	11	3	38%
Leicester	1,814	2,914	1,100	61%
Melton	9	5	-4	-44%
North West Leicestershire	23	81	58	252%
Oadby and Wigston	5	8	3	60%
Study Area	2,650	4,297	1,647	62%

Source: ONS, Census 2001 and 2011

Build to Rent

- 12.27 In August 2012, The Montague Review³² was published; having been commissioned by Government to consider the potential for attracting large-scale institutional investment in building new homes for private rent – a model of investment, which is more prevalent in other countries, and in some niche markets in the UK, like student housing. The Review author Sir Adrian Montague was clear that:

“there is real potential for investment in large scale developments of purpose-built rented housing to grow and to be viable. This type of development can bring in new money, give a boost to housing supply, and provide more choice for tenants, particularly those who may be renting long term. And there is research which suggests that the lack of high quality private rented accommodation can put a brake on the wider growth of economic activity” (our emphasis)

- 12.28 Following the publication of the Montague Review, the Government launched several initiatives aimed at ‘kick starting’ growth of the sector. It set up a Private Rented Sector Taskforce (“PRS Taskforce”) and a £1bn Build to Rent fund in line with the recommendations of the Montague Review (this fund is no longer active). In March 2015, *A Build to Rent Guide for Local Authorities*³³ was also prepared and published by Government. The benefits set out in the Guide centred on three key areas which are summarised below:

- (1) **Supporting the local community** –development of new Build to Rent housing can help local authorities to meet demand for private rented housing whilst increasing tenants choice. Successful schemes will retain their tenants for longer and maximise occupancy levels as

³² Review of the barriers to institutional investment in private rented homes (DCLG, August 2012)

³³ Accelerating housing supply and increasing tenant choice in the private rented sector: A Build to Rent Guide for Local Authorities (DCLG, March 2015)

Build to Rent investment is an income focused business model. In order to achieve this, investors will strive to provide for their tenants, and this is key reason why they want to create truly sustainable communities.

- (2) **Supporting local growth** –Build to Rent development can help increase housing supply, particularly on large, multiple phased sites as it can be built alongside build for sale and affordable housing. Build to Rent has the potential to increase the speed of housing delivery and placemaking ; and
- (3) **Financial** – some local authorities can become directly involved in provision in some instances, given the potential to generate income or capital receipts.

12.29 The Build to Rent Guide also deals directly with design and construction, noting that superior design and high quality construction are key components of the Build to Rent model. It is also highlighted that Build to Rent can also offer opportunities for innovative forms of construction, such as build off-site/ modern methods of construction.

12.30 The Government has since continued to seek to support and promote growth of the sector - most prominently through Government's 2017 Housing White Paper, which recognised the role which the sector could play in diversifying who builds and how we build homes, in particular from attracting institutional investment. This will help to increase housing supply, drive standards in the sector and provide stable accommodation for families.

12.31 In line with the clear strength of commitment from the Government on building more homes for rent, a consultation was launched alongside the Housing White Paper focussed on supporting more Build to Rent developments through measures including:

- incorporating a change to the Framework so authorities know they should plan proactively for Build to Rent where there is a need; and
- ensuring that family-friendly tenancies of three or more years are available for those tenants that want them on schemes that benefit from the changes.

12.32 These elements have now been incorporated into the NPPF and associated Planning Practice Guidance which encourages assessments such as this to consider whether a need for Build to Rent exists, and where it does encourages Councils to put in place planning policies to support its growth.

12.33 It is therefore clear from the successive announcements, reviews, initiatives and package of measures proposed that Government policy is to support and encourage growth of the private rented sector and particularly Build to Rent development as a product; in order to deliver quality rental accommodation and boost housing supply; meet demand of the private rented market and deliver quality placemaking.

Technical Research, Market Insight & Manifestos

12.34 The Urban Land Institute (“ULI”) published the first edition of its Build to Rent Guide in April 2014 at a time where there was still, in the words of the ULI, “a significant amount of market scepticism as to whether the nascent private rented sector in the UK was really going to succeed”. Following the publication of the first edition of the Guide, Build to Rent institutional investment began to increase significantly; whilst the British Property Federation (“BPF”) launched its Build to Rent Manifesto in October 2015; acknowledging it as a new emerging asset class at the time. The BPF made it clear that:

“The primary motivation of investors is to keep their buildings fully-occupied with satisfied tenants. That means offering longer tenancies, other flexibilities (to personalise the home for example), good onsite amenities, and good transport links for easy commuting” (our emphasis)

12.35 Build-to-Rent development in Leicester and Leicestershire can provide high quality housing for households who are not able to access social housing stock in many instances, and who may contribute to study area’s economic success.

12.36 Once the Build to Rent concept began to gain traction, the ULI published the second edition of its Build to Rent Guide: “A Best Practice Guide” which the intention of moving from proving the Build to Rent concept could work in the UK, to demonstrating true best practice in a UK context. The second edition of the Guide defined Build to Rent schemes as one hundred or more units which are:

“purposefully designed and built with the customer in mind. It is anticipated that they will typically incorporate dedicated staff (potentially on-site) with a strong management ethos based on maximising the customer experience, together with a level of on-site amenity befitting the size of the development. Irrespective of the overall package of amenities, the creation of a community feel, and positive customer experience is the underlying philosophy of any successful Build to Rent scheme”

12.37 The Build to Rent concept is thus not simply about increasing housing delivery and diversifying the market, it is about delivering mixed and balanced communities, high quality private rented sector accommodation and opportunities for all parts of society in housing need. Notably, at the time of the second edition of the Guide, there were 30,000 Build to Rent homes in the development pipeline with 8,000 completions.

-
- 12.38 The sector has continued to grow, and the Savills UK Build to Rent Market Update³⁴ for Q2 2021 states that the market now had 62,300 completed units, 39,500 under construction and 94,700 in the development pipeline, a total of 195,600 which is an increase from 172,500 units in Q3 2020.
- 12.39 Importantly the Rental Market Update also notes that despite the increase in BtR schemes there has been a “*consistent decline in the number of new rental listings across the country as a whole since 2018*”. This relates to falling supply resulting from the exodus of mortgaged Buy-to-Let landlords from the rental market (over 180,000 mortgage redemptions since Q1 2017) in particular following changes to the introduction of a 3% Stamp Duty surcharge in 2016 and changes to mortgage relief for earnings that have been phased in since 2017 (such that since April 2020 landlords are unable to deduct any of their mortgage expenses from taxable income and can only claim tax credits at the basic rate). This has made residential lettings less attractive for many private investors.
- 12.40 The higher rental costs also mean that savings will be reduced and movement from PRS to owner occupation can be slowed. It notes that “*This trend is already underway with mortgage approvals for FTBs down -6% in the year to March 2021 across the country (UK Finance).*”
- 12.41 Previous Savills research has reported that around 88% of the operational BTR stock was located in City Centre flats; but there had been a slight shift towards “housing led, family targeted” Build to Rent schemes in suburban locations. This more suburban offer seems to have potential for growth. The Savills research noted that annual starts outside of London have now recovered to 85% of their historic peak while starts in the capital remain subdued, at 50% of their peak in 2018. Adding that with starts now once again outpacing completions in the regions we are seeing the construction pipeline return to growth.

Profile of Build to Rent Tenants

- 12.42 The British Property Federation, London First and UK Apartment Association (UKAA) recently published (February 2021) a report³⁵ profiling those who live in built to rent accommodation in London, which makes up the bulk of the market.
- 12.43 Around 62% of residents were aged between 25 and 34 compared with 47% in the wider PRS market. The remaining residents included 17% aged between 16 and 24 and 13% aged 35-44 both of which were below the corresponding values for the wider PRS market.

³⁴ https://www.savills.co.uk/research_articles/229130/316529-0

³⁵ https://buildtorent.files.wordpress.com/2021/01/who-lives-in-build-to-rent-1.pdf?mc_cid=624df5d223&mc_eid=e05cc2220b

12.44 The survey-based data identified that incomes are similar to those in PRS accommodation with 43% earning less than £32,000 and 29% earning between £32,000 and £47,000. Typically BTR residents spend between 29% and 35% of their income of accommodation. This compares to 29% to 32% in the wider PRS demonstrating a willingness to pay slightly more.

12.45 The lower value would put this group in the lowest 40% of earners in London which would have an equivalent value of £27,704 in Leicestershire and £22,183 in Leicester. The higher values would be around the 60 percentile which would equate to around £35,892 in Leicestershire and £28,049 in Leicester.

Table 12.15 Gross Annual Residents Based Earning by Local Authority (2020)

Area	40th percentile	Median	60th percentile
Blaby	£31,355	£35,222	£40,749
Charnwood	£26,494	£30,221	£32,771
Harborough	£30,975	£36,718	£43,826
Hinckley and Bosworth	£26,495	£29,514	£33,398
Melton	£22,657	£27,398	-
North West Leicestershire	£25,990	£29,928	£34,622
Oadby and Wigston	£30,227	£33,659	£38,938
Leicestershire	£27,704	£31,283	£35,892
Leicester	£22,183	£24,644	£28,049

Source: Annual Survey of Hours and Earnings

12.46 It noted that BTR had comparable levels of affordability but was notably more affordable for couples and sharers. This is reflected in the higher incidence of these household types within the BTR sector.

12.47 The report also identified a similar levels of people working in the public and private sectors as the wider PRS market (around 85% in the private sector) across a similar good cross section of industries to those in PRS. The most common industries included Finance and Insurance (25%), Other Services (20%) and IT and Communications (including marketing) (15%) although this is likely to be influenced by London's economic structure.

Scale of Future Demand for BTR Accommodation

12.48 As established by the British Property Federation report, the current focus of Build to Rent development is in the major cities. This reflects the concentration of younger persons resident in these areas. This points to greater potential for BTR development in Leicester given its demographic structure and larger young population.

12.49 This is confirmed by the BPF map of Built to Rent Schemes and shows developer interest in Leicester to this point. This interest is comprised of the following completed schemes:

- Merlin Wharf – 413 Dwellings;

- Queen Street Apartments – 181 Dwellings;
- The Wulcomb – 150 dwellings;

12.50 The BPF report identified that around 62% of build to rent residents were aged between 25 and 34, 17% were aged between 16 and 24 and 13% aged 35-44. In examining the population of the Built Up Areas in the Study Area the greatest percentage of people in the 25-35 age groups are in Loughborough and Leicester³⁶ built-up areas.

Table 12.16 Mid-Year Population Estimate for Built Up Areas (2020)

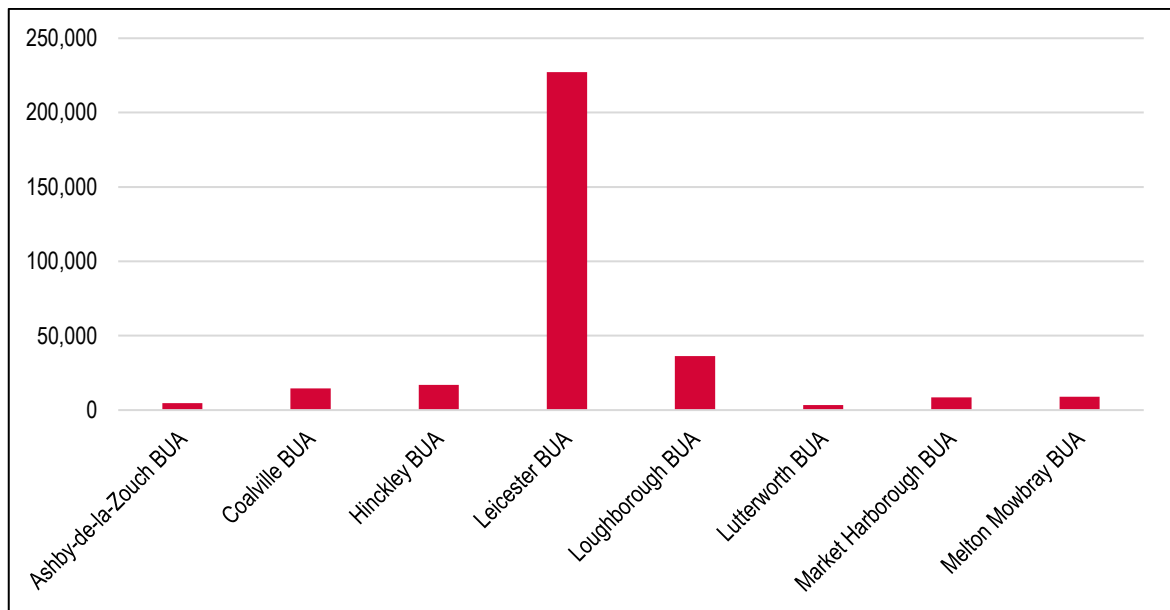
	Under 16	Aged 16-24	Aged 25-34	Aged 35-44	Aged 45+
Ashby-de-la-Zouch BUA	19.5%	8.7%	10.1%	13.0%	48.7%
Coalville BUA	18.2%	9.2%	13.3%	12.3%	47.0%
Hinckley BUA	18.0%	8.6%	12.6%	12.7%	48.1%
Leicester BUA	20.4%	14.4%	14.8%	12.5%	37.9%
Loughborough BUA	14.4%	26.0%	15.9%	10.9%	32.9%
Lutterworth BUA	18.2%	8.8%	10.4%	11.1%	51.6%
Market Harborough BUA	18.7%	8.4%	11.4%	12.3%	49.2%
Melton Mowbray BUA	18.6%	8.7%	11.8%	12.0%	48.9%

Source: ONS Mid Year Population Estimates

12.51 Looking at the absolute proportion of persons aged 16-44 this is notably higher in Leicester than other areas (227,000 persons) with Loughborough second (36,200) but notably lower. The modest absolute size of the market is likely to inhibit the limit the potential for schemes to come forwards outside Leicester (and potentially Loughborough) in the short-to-medium-term.

³⁶ This includes Oadby and Wigston as well as Bruanstone in Blaby

Figure 12.6: Population 16-44 by Built-Up Area, 2021



Source: ONS Mid Year Population Estimates

- 12.52 We have also examined the population projections for this age group (25-34) - these show a growth of 14% in Leicester (8,300 more people) and 13% in Charnwood (3,100 additional population) in the 2020-41 period. Again this would point to future demand in Leicester (and potentially Loughborough).
- 12.53 However, not all of these persons will seek rental accommodation with those able to afford to buy likely to do so. Those which are already renting privately are the target group and they are prepared to pay a premium to benefit from the additional services and professional management that the BTR sector provides.
- 12.54 As the analysis set out below shows small gap in Leicester (£2,900) in Leicester between the income required for a median rent and to buy at lower quartile values. These values are chosen, as the market for BTR is more akin to a premium rental product. There is a higher differential in Charnwood and Harborough relative to other areas, but consideration also needs to be had to the demographic analysis in considering the potential size of the market.

Table 12.17 Income Required to Rent and Buy in Leicester and Leicestershire

	To buy – Lower Quartile Resale	To rent Privately - Median	Income gap	% of households in income gap
Leicester	£29,600	£26,700	£2,900	5.3%
Blaby	£38,000	£29,000	£9,000	12.9%
Charnwood	£33,600	£23,600	£10,000	16.0%
Harborough	£42,400	£29,000	£13,400	18.1%
Hinckley & Bosworth	£32,800	£27,900	£4,900	7.5%
Melton	£33,800	£25,700	£8,100	12.5%
NWL	£32,000	£26,400	£5,600	8.6%
Oadby & Wigston	£35,000	£28,800	£6,200	9.0%

Source: Based on Housing Market Cost Analysis

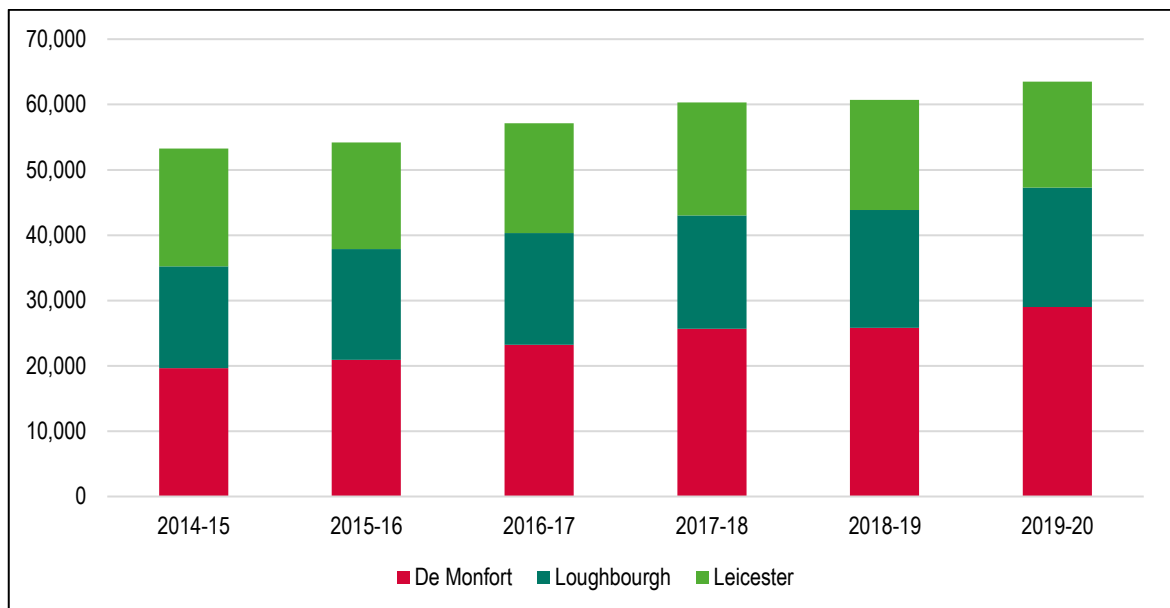
- 12.55 Based on the identified costs only around 5% to 18% of the population would fall in the income gap between median rents and lower quartile resale.
- 12.56 As a purely mathematical exercise, as other factors will be at play, if 10% of the 8,300 growth in the population aged 25-34 in Leicester and 3,100 in Charnwood did choose to move to a BTR accommodation then this would equate to around 830 homes and 310 homes respectively. That said there will be people who are currently renting in general PRS homes that might prefer the better quality product, more professional management and security of tenure that is typical of BTR developments.
- 12.57 This emphasises the need for actual demand evidence from schemes. At Merlin Wharf most apartments are already let despite only opening this Summer. At the Wulcomb, the agent said they had no trouble letting the properties. This points to a level of demand for BTR schemes in the City. No one from the Queen Street Quarter was available for comment.
- 12.58 There is a pipeline supply of 451 BTR units in Leicester while Charnwood has no pipeline supply. The pipeline supply in Leicester includes:
- The Arches, Bath Lane – Under Construction – 184 Dwellings
 - Sandacre Street – Under Construction – 267 Units
- 12.59 It should be reiterated that it is difficult to be precise about the demand for BTR as the market is embryonic (and there is therefore a lack of hard market evidence). In the short-term the market appears focused in Leicester City, in locations in/ close to the City Centre.
- 12.60 The demographics suggest that the focus of demand will remain in Leicester in the short-term. There is a lack of market evidence related to the potential for suburban build-to-rent development of houses

at the current time, but this is a sector which could develop over time. The greatest potential here beyond the City would appear to be in Loughborough and possibly Hinckley.

Students

- 12.61 There are three major higher education providers in the study area, these are: The University of Leicester; De Montfort University and Loughborough University. We have examined the profile of students at each of these alongside their aspirations for growth.
- 12.62 There are also other providers of higher education such as Loughborough College, Brooksby Melton College, Leicester College, Stephenson College and North Warwickshire and South Leicester College. These institutions typically focus on further education, as such, there is limited impact on the housing market as most students still live at home. They also do not feature in the information published by the Higher Education Statistics Authority (HESA) which is relied on below.
- 12.63 In total there were 63,475 students studying at the study area's three universities. As illustrated in the figure below, this was approximately 10,000 *more* students than in 2014-15. The vast majority of this growth took place at De Montfort University (+9,350 students).

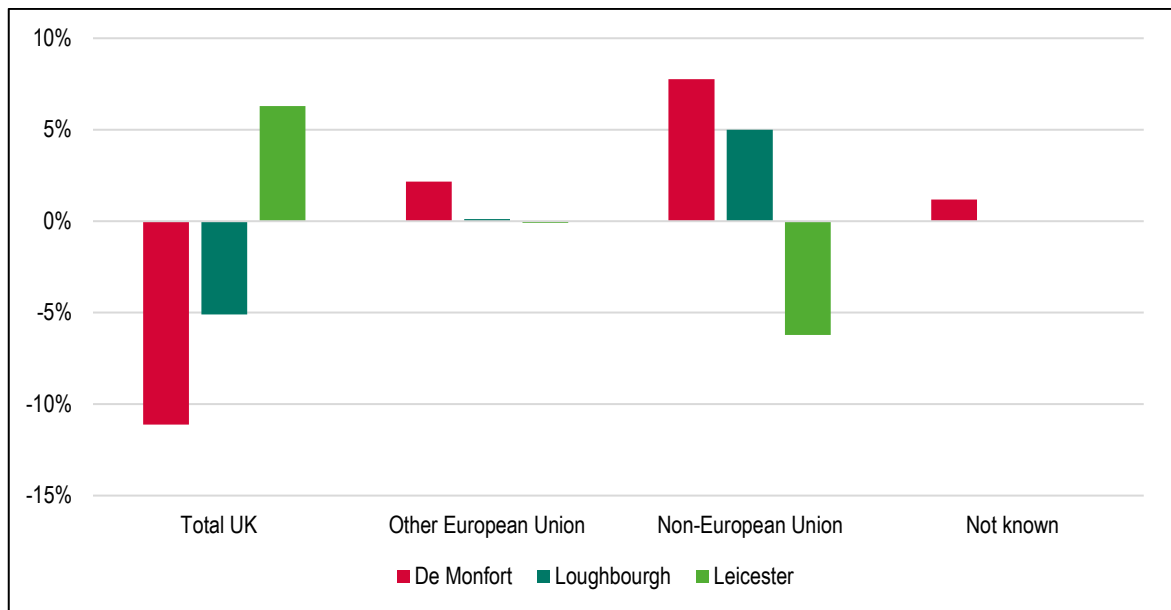
Figure 12.8: Total Students at Universities in Leicestershire



Source: Higher Education Statistics Authority, 2020

- 12.64 There has also been a significant shift in the origin of the study areas students with a move away from domestic student focus towards non-EU students. As illustrated below, this was particularly the case for De Montfort and Loughborough Universities. That said, the absolute number of domestic students increased in De Montfort by around 4,790 students and in Loughborough by 1,260 students. In contrast, the University of Leicester contracted its domestic roll by 185 students but increased their contribution, as overseas students fell by an even greater number (-1,630 students).

Figure 12.9: Change in Domicile 2014/15-2019/20

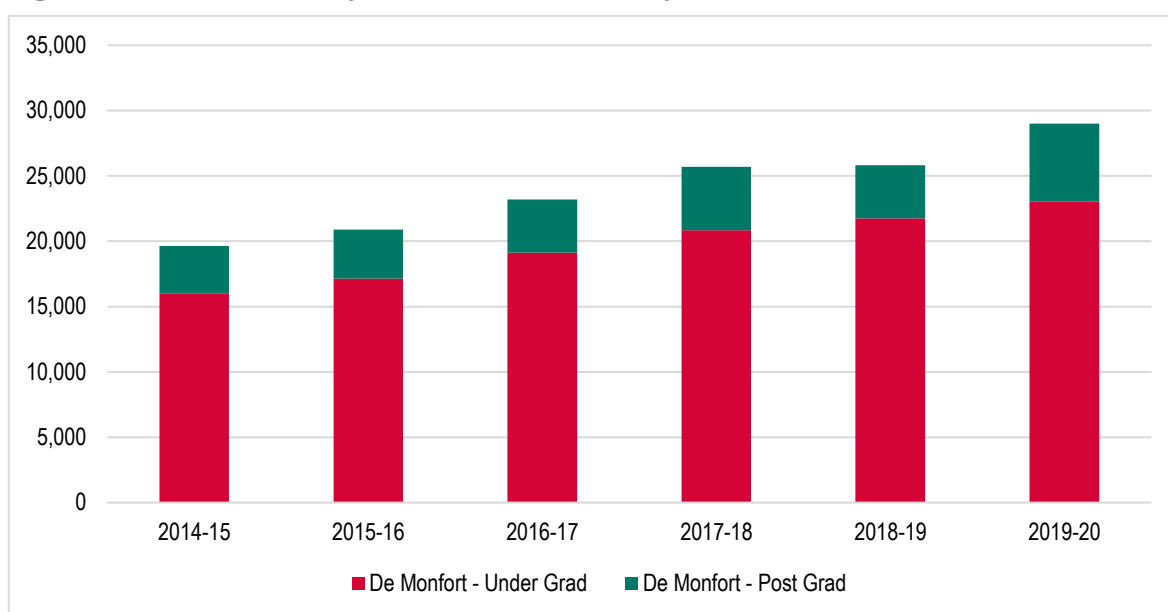


Source: Higher Education Statistics Authority, 2020

De Montfort University

- 12.65 As of the 2019-20 Academic Year De Montfort University had 29,000 students making it comfortably the largest higher education establishment in the study area. The University has undergone a strong period of growth equating to an annual growth of 8.1% between 2014-15 and 2019-20 when there were 19,650 students on the roll.
- 12.66 As illustrated in the figure below the University has increased both undergraduates and postgraduates. Of the 2019/2020 student intake 79.5% are Undergraduates and 20.5% are Postgraduates.

Figure 12.10: Level of Study – De Montfort University



Source: Higher Education Statistics Authority, 2020

- 12.67 Prior to 2019 there was a sustained period of significant growth at the University but that has now stabilised and indeed the number of students has contracted over the last two years. This is in part due to Brexit but also due to grade inflation meaning that students are gaining access to Russell Group Universities more readily. The student body for 20/21 was around 22,000 but not all were on campus with many, particularly international students, distance learning. This is not expected to be a permanent change, but remains in place for the start of 2021/22 and has impacted the take up of accommodation in the City.
- 12.68 The growth was driven by an ambition to expand and improve the consolidated campus within the City Centre. The University adopted a masterplan early in the noughties which included some key campus developments, which have been delivered gradually as part of the consolidation.
- 12.69 The University's accommodation offer is aimed primarily at first year students through a mixture of university owned and managed accommodation (of which there are c530 rooms) and PBSA for which they have nomination rights. At present there is a level of vacancy within this stock.
- 12.70 The scale of these nomination rights changes every year depending on demand i.e. the forecast first year intake and expected uptake levels from the first year population. It is acknowledged that not all first years will take up this offer and some will go to private accommodation. In addition, students with a Leicestershire postcode comprise around 28% of the student body and for many this will mean commuting to the campus. While no firm data is available, it is assumed by the University that the majority of these will live with their parents.

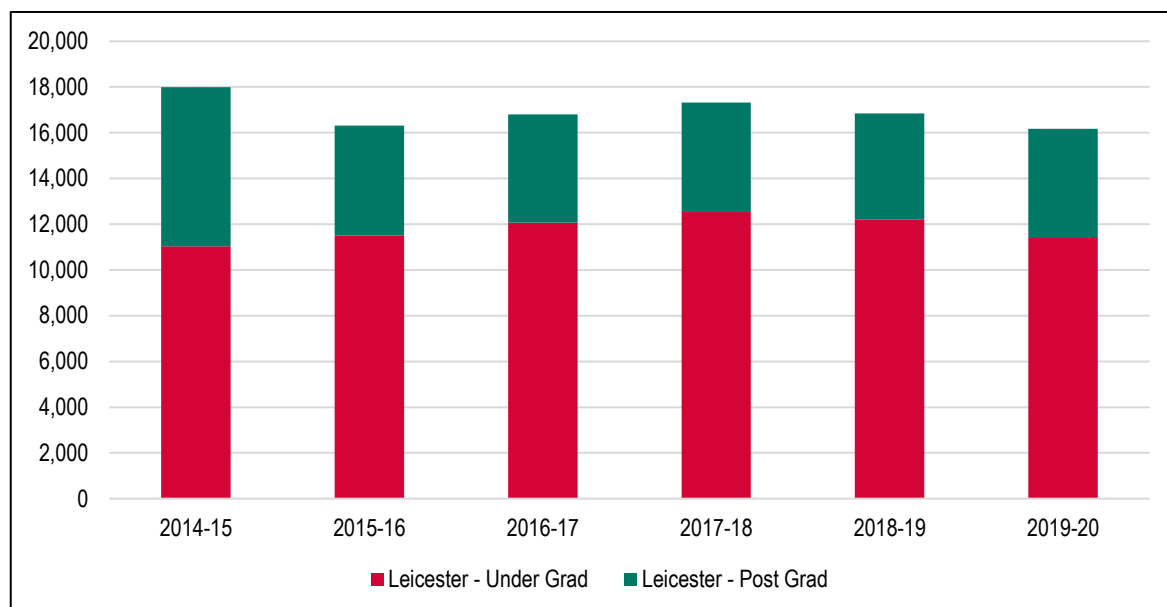
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- 12.71 The second and third year population are largely accommodated within PBSA and HMO. There appears to have been a notable shift over the last 10 years of students using more PBSA and less HMOs. The PBSA offer now seems to dominate most of the activity in the City. That said, the University believe there is a market for both as it provides for a range of specifications and living styles which is suitable to all budgets.
- 12.72 Most PBSA offers a range of services within their accommodation, the majority of which is situated in the City Centre. HMOs on the other hand have historically been concentrated around Jarrom Street and the West End of the City.
- 12.73 The University expect there to be a small dip in student numbers this year and next year but for these to then return to the 2020/21 level over the next 3-5 years, if not sooner; although this of course depends on the success of their recruitment activity. They have no immediate plans to directly deliver or increase the level of accommodation they own/manage.
- 12.74 Brexit has a had a major impact on the number of students they have attracted from the EU this academic year, although the overall number of international students has not fallen. China and India are the main markets where the University draw international students from. As mentioned earlier, many international students are distance learning due to travel restrictions. The University hope the return of distance learning students to on campus learning will absorb a large proportion of the vacancy in the existing stock.
- 12.75 Covid has also impacted on-campus learning although it is hoped that this will be a temporary impact as restrictions continue to be eased. At the height of the pandemic the lockdowns and other government-imposed restrictions had a marked impact on those staying in halls, particularly for those unable to travel to campus or to leave campus during lockdown. Rent rebates were offered to those students unable to travel to campus staying in DMU owned halls during this period and many private halls operators also offered refunds or discounts. It would appear however that students are content with the way this academic year is unfolding and the pandemic has not materially impacted recruitment.

The University of Leicester

- 12.76 As of the 2019-20 Academic Year, the University of Leicester had 16,180 students making it the smallest higher education establishment in the study area. Over the last five years the University's roll has contracted by around 2.1% per annum falling from 17,995 students in 2014/15.
- 12.77 As illustrated, in the figure below the University has particularly contracted the number of postgraduate students (-2185 students) while the number of undergraduates has increased marginally (+370 students).

12.78 Of the 2019/2020 student intake 70.5% are Undergraduates and 29.5% are Postgraduates. However, in 2014-15 the post-graduate students accounted for 39% of all students.

Figure 12.11: Level of Study –University Of Leicester



Source: Higher Education Statistics Authority, 2020

12.79 It should be recognised that not all students live in Leicester, with the University having a campus in Oadby.

12.80 In the current academic year (2021/22) the University has a student intake of around 7,250 -7,500 students across all student types. This is one of their smaller intakes and is linked to the national demographic decline in student age groups.

12.81 Due to grade inflation, Russell Group Universities have continued to have large student intakes despite declining demographics. However, the Government has given a clear steer that the rise in the numbers getting top marks will cease. Other research intensive universities such as Leicester have held their intakes at similar levels but have made more use of clearing in recent years.

12.82 The international market has also remained strong as they did not have a substantial number of EU students. There has been a switch of focus from Chinese to Indian students, brought about by the pandemic but also the offer of post study working visas to Indian students. The University also hope there will be a return to more normal levels of Chinese students.

12.83 The declining student age group domestically is expected to reverse in the coming years including in the areas where the student roll has historically been drawn from i.e. the Midlands and London (particularly North London). In response the University is planning to grow by around 6.1% per annum over the next four years and expects to have around and intake of c9,500 students by 2025. This will

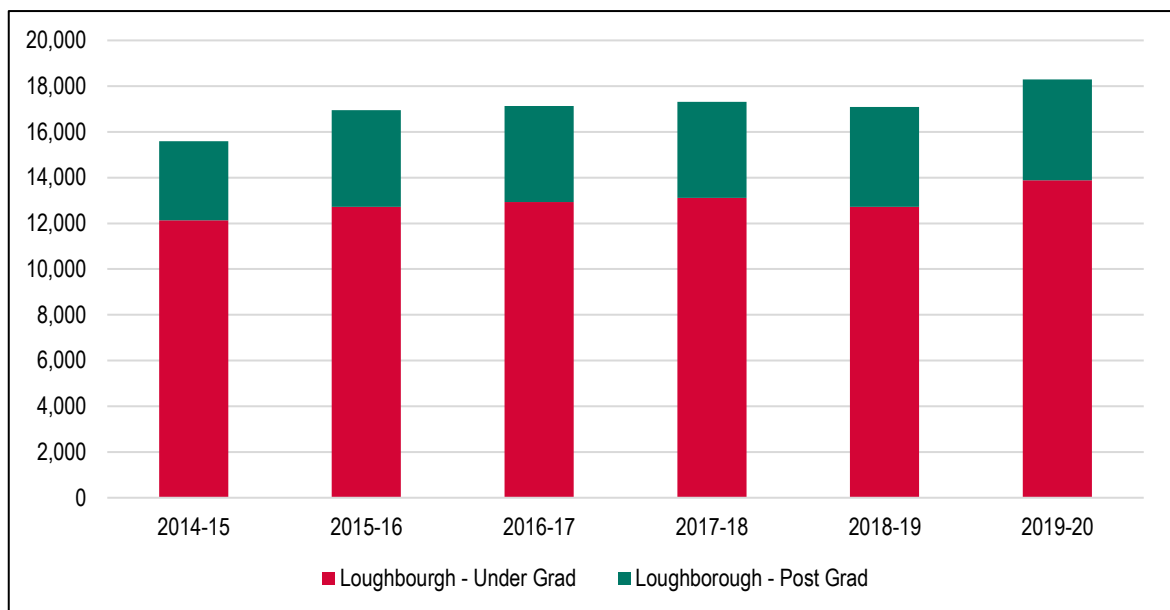
be a new peak for the University and is expected to be sustained. All of the growth in student accommodation is expected to occur in Leicester rather than Oadby & Wigston.

- 12.84 This growth is expected to be met through a combination of new accommodation and a reduction in vacancies within the existing stock. At present there is a 10-15% vacancy rate on university owned and managed accommodation and anecdotally some PBSA blocks are up to 30% vacant.
- 12.85 The University has a large accommodation project at Freeman's Student Village. This development will deliver 1,164 new bedrooms, replacing around five hundred older bedspaces across the campus. This will be a net increase of around 664 bedspaces.
- 12.86 The University currently has 2,152 rooms close to their City Centre campus and a further 1,833 rooms at their Oadby Student Village which is in Oadby and Wigston Borough. They also have nomination rights for 655 beds at Opal Court which is also close to campus.
- 12.87 The current accommodation is offered to first year students with the remainder of the students living in PBSA or student HMOs with some also living at home although this is typically lower than some other local Universities. With the additional accommodation and extended nomination rights the University hope to have accommodation for more than just their first year intake.
- 12.88 The growth in the supply of PBSA in the City alongside the temporary decline in student numbers at DMU has effected the equilibrium. Despite the growth in PBSA the HMO market remains strong with particular concentrations in Clarendon Park and Evington.
- 12.89 The University believe that some of the new accommodation at Freeman's will release some pressure on the wider housing stock. Specifically the development will include several six bedroom townhouses with shared facilities which are akin to HMOs.
- 12.90 As well as accommodation the University Accommodation Development Strategy delivered a multi-storey car park with over five hundred spaces. This, it is hoped, will assist staff with parking nearer to the University and relieve some tension from neighbouring streets in Clarendon Park which has now been re-zoned for permit holders only.
- 12.91 Finally, while the Government has also announced a greater focus on further education and apprenticeships, because they have a large Law, Medical, Business and Engineering schools, which tend not to go down the apprenticeship routes, the University does not think that they will be negatively impacted.

Loughborough University

- 12.92 As of the 2019-20 Academic Year Loughborough University had 18,295 students although this includes students at their campus in London. Over the last five years the University's roll has increased by around 3.3% per annum increasing from 15,590 students in 2014/15.
- 12.93 As illustrated, in the figure below the University has grown both the number of postgraduate students (960 students) and undergraduates has increased marginally (1,745 students) over the 2014/15 to 2019/20 period. Of the 2019/2020 student intake 75.9% are Undergraduates and 24.1% are Postgraduates.

Figure 12.12: Level of Study –Loughborough University



Source: Higher Education Statistics Authority, 2020

- 12.94 Although the HESA statistics had the number of students at around 18,000 the University have the Full Time Equivalent number of students in Loughborough as around 15,500. This excludes London based students and Post Graduate Researchers which they describe as being closer to staff than students.
- 12.95 Around half of all students live in University Accommodation this includes around 90% of first years and a third of other undergraduates. Around 7% of students still live at home which is lower than the equivalent of Leicester and De Montfort which have a higher local catchment.
- 12.96 The remainder (43%) live in a combination of private halls and general housing. Some private Halls are managed by UPP (all on campus) or Unite (mixture (just off campus) and the University have nominations rights for these. There are also other private halls providers (including Unite) where the University do not have nominations rights for.

-
- 12.97 Rents in University-owned accommodation range from around £5,000 up to £7,500 per year. Private Halls are little bit more expensive but they are also a little bit more flexible. As an example the Luxurio Apartments are around £8000 per annum.
- 12.98 Pre-pandemic the University had been planning only very modest growth of around five hundred additional students over the next five years. However, due to the issues with A-levels during the pandemic they unexpectedly took on an additional five hundred students.
- 12.99 The expectation is that the additional five hundred students will still occur and it is likely that these will be overseas students. Based on past trends it is likely that these will be non-EU students. Nationally this group has reduced in size by around 50% and where previously around 4% of the student roll.
- 12.100 Typically non-EU students have come from India and China. The Indian market has bounced back strongly as the Government has re-introduced post study work visas. In contrast, the Chinese market remains subdued due to Covid-related trepidation.
- 12.101 The University believe there is enough slack in the system to meet the needs of the additional students. Therefore the impact of their growth is unlikely to increase the need for housing. There is also significant investment activity (mainly from pension funds) that risk over-saturating the market if delivered, particularly as the University do not have the infrastructure to match the intended level of growth in accommodation.
- 12.102 They University recognise that there will be demographic growth in student age groups in the coming years; but envisage this will be offset by a government intended switch of focus to FE and other forms of training such as apprenticeships.
- 12.103 The danger of over-saturation is that there are not enough students to go round. This could result in providers struggling financially if they cannot fill their halls or a significant release of general housing stock in one go.
- 12.104 The University believe that the Council need to actively manage the delivery of additional student accommodation to ensure there is not an over-supply and also that additional delivery is located in the correct parts of town. This will ensure that tensions with other local residents are minimised.
- 12.105 The University are also conscious that some of their stock is aged and needs refurbishment and replacing. This might result in net additional units but at present the University does not have a construction plan. However, if they do build additional halls the University is likely to manage its own accommodation.

12.106 There is also still a demand for small houses for post-graduate researchers. There are normally for single people, couples or young families requiring one and two bedroom homes within walking distance to university. The University may seek to build such housing on their land.

12.107 The growth in student accommodation outside of the Campus has led to tensions with the local community. This includes issues with noise, parking and anti-social behaviour. This is more acutely felt in Loughborough as it is a small town while most other universities are found in cities. On occasions, campus security also respond to incidents (such as large house parties) in the town centre despite having no authority, nor being paid to do so. There are also minor issues with the accommodation, with some general housing stock being unfit for habitation.

12.108 The University was encouraging of a managed system for accommodation providers which would ensure a better quality of stock, give tenants greater rights and reduce anti-social behaviours. It would also ensure the burden for such behaviours is spread more evenly across the stakeholders including the police and council.

12.109 Since 2018/19 there have been four separate developments of student accommodation in Charnwood. In total these schemes delivered 708 rooms and 117 flats and one house and were comprised of:

- Forest Court, Forest Road - 49 bedrooms
- Loughborough University, Ashby Road - 612 bedspaces, five warden flats and one warden house
- 55 - 57 Forest Road - 47 self-contained units.
- Pennine House - 104 self-contained studio flats and eight shared flats.

Student Housing Need and Delivery

12.110 As per the Housing Delivery Test Measurement Rulebook³⁷ student housing development can contribute towards meeting the housing need in a given area. Paragraph 10 of the Rulebook states:

“The national average number of students in student only households is 2.5. This has been calculated by dividing the total number of students living in student only households by the total number of student only households in England.”

³⁷ <https://www.gov.uk/government/publications/housing-delivery-test-measurement-rule-book>

12.111 Therefore for every 2.5 bedspaces built in Purpose Built Student Accommodation then the housing supply figure can be increased by one unit. This ratio may change with the introduction of new data from the 2021 census.

12.112 Within Charnwood there is a pipeline supply (under construction or with detailed permission) of student accommodation which could meet future growth. This includes 433 rooms and 33 Flats I Loughborough (equivalent of 206 dwellings) and is comprised of the following developments:

- Land to the West of Aumberry Gap - 33 Flats and 407 Rooms; and
- 11 Pinfold Gate - 26 Rooms

12.113 There are 20 sites in the Leicester City housing pipeline that are delivering student housing. In total these sites have a capacity of around 2,347 bedspaces. However, some of these sites have already started and only 2,259 dwellings are outstanding, to be delivered. Using the above formula this equates to around 904 dwellings. The majority of the outstanding delivery is in the Castle Ward (1,500 spaces) with the remainder in the Abbey (462 bedspaces), Stoneygate (286 bedspaces) and Saffron Wards (11 bedspaces).

12.114 There are three significant developments in the pipeline the largest of which is the Freeman's Student accommodation mentioned above. The other developments are a 462 bedspaces development in All Saints Road/ Bath Lane and 435 bedspaces at the International Hotel in Rutland.

Self-build and Custom-build Housing

12.115 The Self-Build and Custom Housebuilding Act 2015 (as amended by the Housing and Planning Act 2016) provides a legal definition of 'self-build and custom housebuilding' where individuals or associations of individuals (or persons working with or for individuals or associations of individuals) build houses to be occupied as homes for those individuals.

12.116 The Housing and Planning Act 2016 formally introduced the 'Right to Build'. This 2016 Act under the 'duty to grant planning permissions etc' section placed a legal duty on the relevant authority to grant enough planning permissions to meet the demand for self-build housing as identified through its register in each base period³⁸.

³⁸ With the exception of the first base period which ran from 1st of April 2016 to the 30th of October 2016 each subsequent base period has lasted 1 year. There have therefore been 4.5 base periods since the 1st of April 2016.

12.117 Paragraph 62 of the NPPF sets out that within the context of the standard method, ‘the size, type, and tenure of housing needed for different groups in the community’ should be assessed and reflected in planning policies ‘including, but not limited to... people wishing to commission or build their homes²⁶’.

12.118 Footnote 28 states that

‘Under section 1 of the Self-Build and Custom Housebuilding Act 2015, local authorities are required to keep a register of those seeking to acquire serviced plots in the area for their own self-build and custom house building. They are also subject to duties under sections 2 and 2A of the Act to have regard to this and to give enough suitable development permissions to meet the identified demand. Self and custom-build properties could provide market or affordable housing.’

12.119 Paragraph 3 of the PPG concerning the housing need of different groups describes how the needs of those wanting to self-build and custom housebuilders can be assessed:

‘Most local planning authorities (including all district councils and National Park Authorities) are now required to keep a register of individuals and associations of individuals who are seeking to acquire serviced plots of land in their area to build their own home. The Self-build and Custom Housebuilding (Register) Regulations 2016 set out these requirements. For further details, see guidance on self-build and custom housebuilding registers.’

To obtain a robust assessment of demand for this type of housing in their area, local planning authorities should assess and review the data held on registers. This assessment can be supplemented with the use of existing secondary data sources such as building plot search websites, ‘Need-a-Plot’ information available from the Self-Build Portal and enquiries for building plots from local estate agents.’

12.120 At paragraph 23 to 33 and paragraph 14 in relation to self and custom build PPG sets out the two self-build and custom housebuilding land duties i.e. the ‘duty to grant planning permission etc’ and the ‘duty as regards registers’ (Reference ID: 57-023-201760728).

12.121 Paragraph 23 relates to the duty to grant planning permission etc. and states that all local planning authorities:

“must give suitable development permission to enough suitable serviced plots of land to meet the demand for self-build and custom housebuilding in their area. The level of demand is established by reference to the number of entries added to an authority’s register during a base period.

The first base period begins on the day on which the register (which meets the requirement of the 2015 Act) is established and ends on 30 October 2016. Each subsequent base period is the period of 12 months beginning immediately after the end of the previous base period. Subsequent base periods will therefore run from 31 October to 30 October each year.

At the end of each base period, relevant authorities have 3 years in which to permission an equivalent number of plots of land, which are suitable for self-build and custom housebuilding, as there are entries for that base period.”

Local Authority Custom and Self-Build Registers

12.122 In line with the PPG, the starting point for understanding demand for custom and self-build plots is the registers managed by the Councils. Entries have been divided across each of the base periods recorded since 2016 in order to project forward an estimation of future need.

Table 12.18 Self and Custom Build Register

Nos joining register	April - Oct 2016	Oct 16 - Oct 17	Oct 17 - Oct 18	Oct 18 - Oct 19	Oct 19 - Oct 20	Total	Average (4.5 periods)
Leicester	29	31	51	33	56	200	44
Blaby	5	15	25	10	14	69	15
Charnwood	4	35	38	46	38	161	36
Harborough	7	14	10	17	40	88	20
Hinckley and Bosworth	11	26	12	12	11	72	16
Melton	8	12	8	8	7	43	10
North West Leicestershire	6	10	8	14	20	58	13
Oadby and Wigston	2	6	8	2	4	22	5
Study Area	72	149	160	142	190	713	158

Source: Local Authority Registers

12.123 The table shows that on average 158 individuals enter the register per base period across the study area. This ranges from 5 per annum in Oadby and Wigston to 44 pa in Leicester.

12.124 It should also be noted that Hinckley and Bosworth reviewed their self-build register over the summer by holding a consultation asking if people wanted to remain on the register in order to renew their interest. This resulted in only three people renewing their interest. Melton BC has also reviewed its Register. In July 2019 the Council contacted people who were included in the register in order to confirm their interest. In March 2020 those that did not replied were contacted again. As consequence of this update, the register was reduced from 87 entries to 43.

12.125 The register gives an indication of the scale of future need. Moving forward, the Councils will need to ensure that the actual number of entries on the register at the end of each base period is equivalent to number of plots of land that are permitted within 3 years.

12.126 It should be noted that the overall level of need might be inflated by double counting as people can register in more than one local authority. Blaby for example ask entrants if they are on other registers and the current figure is that 41.9% are on at least one other register. However set against this, there is evidence to suggest that not all prospective self-builders will know about local authority registers (see below).

Data from Secondary Sources

12.127 It is important to highlight that when considering demand in the context of the local authority's self-build register; an Ipsos Mori poll³⁹ undertaken for the National Custom and Self-Build Association ("NaCSBA") in 2016 found that only one in eight people interested in self-build were aware of the introduction of Right to Build Registers in England. As a result, the number of expressions of interest on a local authority's self-build register may potentially substantially underestimate demand. However, there are limited publicly available sources of demand beyond the Councils' register.

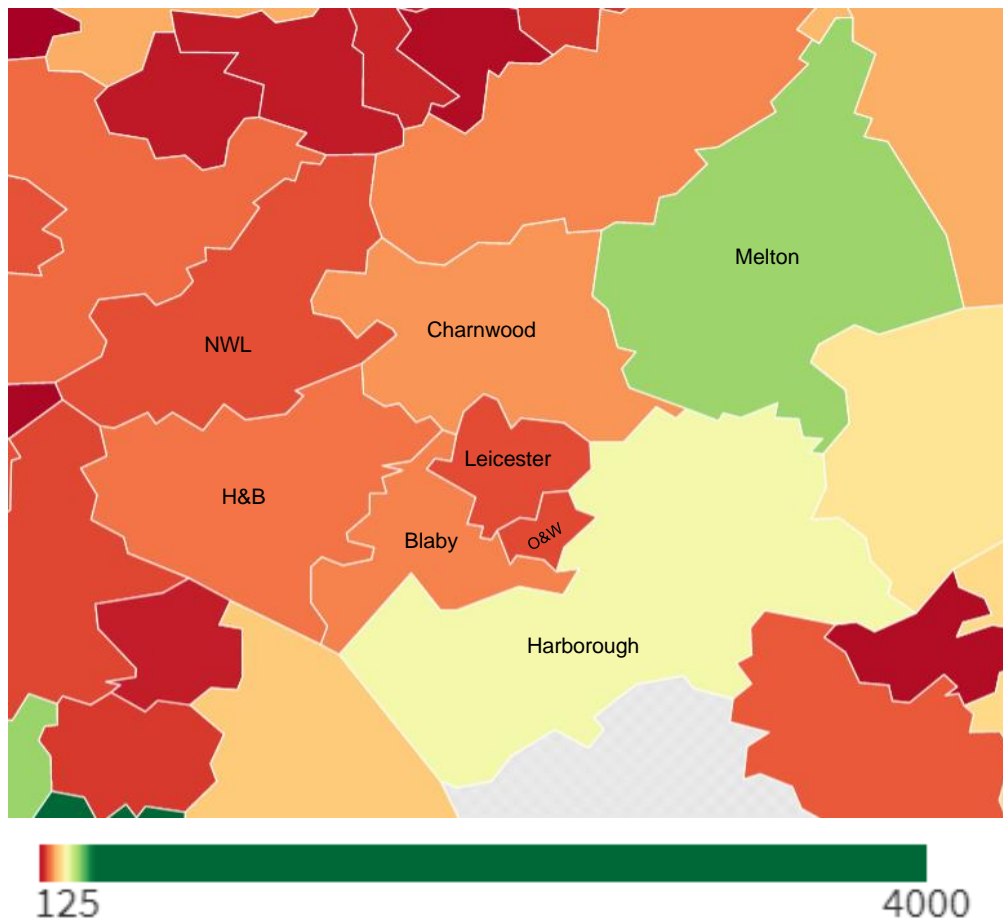
12.128 In order to better understand the data from the Councils' own register, we have looked to secondary source as recommended by the PPG, which is data from NaCSBA - the National Custom and Self-Build Association – so that we can understand how demand in Leicester and Leicestershire sits in context.

12.129 In November 2018, NaCSBA used a Freedom of Information request to 336 English councils that found that 40,000 people had signed up to Right to Build registers, but that 'there was a postcode lottery of activity'. The data was drawn from registers on 30th October 2018 and 310 Councils responded.

12.130 NaCSBA has recently published a series of maps with commentary titled "Mapping the Right to Build" in 2019 which allows us to better understand the demand for serviced plots as a proportion of total population relative to all other local authorities across England. One of the key maps within the report highlights the areas of strongest demand and this is shown in the Figure below.

³⁹ 'Survey of Self Build Intentions 2016' – this survey questioned nearly 2,000 people about their self-build ambition and activity

Figure 12.13: Overall Demand for Self-Build Plots per 100,000 of population



Source: NaCSBA “Mapping the Right to Build” (2019)

12.131 The map demonstrates a wide range within the study area with Melton having a relatively high overall demand of 178 per 100,000 of the population. At the other end of the scale the lowest demand is in Oadby and Wigston with 35 persons per 100,000 in the Borough. This information was however drawn prior to Melton MBC reviewing their Register, which saw numbers drop dramatically.

12.132 The table below compares the scale of demand against the 2020 population estimates to arrive at an indicative scale of demand for self and custom build homes in the study area. As shown the scale of demand is highest in Leicester, Charnwood and Harborough all of which have a similar scale of demand (c.125 plots) although on a per head basis the demand is notably different.

12.133 Despite having the highest demand per head Melton (based on the historic data) only has a scale of demand for 90 plots due to its smaller population size. This compares to around 20 people being on the self- and custom-build register.

Table 12.19 Potential Demand for Self and Custom Build Housing in Leicester & Leicestershire (2020)

	Scale of Demand per 100,000 population	2020 Population	Scale of Demand
Leicester	36	354,036	127
Blaby	58	101,950	59
Charnwood	66	188,416	124
Harborough	131	95,537	125
Hinckley & Bosworth	53	113,666	60
Melton	178	51,394	91
NWL	37	104,809	39
Oadby & Wigston	35	57,313	20

Source: Based NACSBA data and MYE

12.134 The combined indicative demand modelled is for 519 plots across Leicestershire (i.e. excluding Leicester) and 645 plots if the City is included. If this is to be addressed over a three year period (as the guidance allows for a three year period for need to be met) it would equate to a need for around 173 plots per annum. This is slightly higher than the numbers on the custom and self-build registers show (average of 158 per annum). However meeting the need shown over this timeframe is not necessarily realistic.

Local Authority Responses

12.135 Paragraph 25 of the PPG (Reference ID: 57-025-20210508) provides guidance on how Councils can help support self and custom build by increasing the number of suitable planning permissions. It encourages Councils to undertake several tasks including:

- developing policies in their Local Plan for self-build and custom housebuilding;
- using their own land if available and suitable for self-build and custom housebuilding and marketing it to those on the register;
- engaging with landowners who own sites that are suitable for housing and encouraging them to consider self-build and custom housebuilding and facilitating access to those on the register where the landowner is interested, and
- working with custom build developers to maximise opportunities for self-build and custom housebuilding.

12.136 Several local authorities have implemented a Local Plan policy, for example:

- South Cambridgeshire Council – On all sites of 20 or more dwellings, and in each phase of strategic sites, developers will supply dwelling plots for sale to self and custom builders. Where plots have been made available and appropriately marketed for at least 12 months

and have not been sold, the plot(s) may either remain on the market or be built out by the developer.

- Teignbridge District Council - 5% of plots on development sites of more than twenty dwellings with plots marketed for a minimum of 12 months.
- Mid Devon District Council - 5% of plots on development sites of more than twenty dwellings.
- Torbay Council - 5% of plots on development sites of more than thirty dwellings.
- Melton Borough Council - 5% of plots on development sites of more than one hundred dwellings.
- Stroud District Council - 2% of plots on strategic housing sites.

12.137 Other local authorities have developed a policy of encouragement without defining exact percentages of provision on different sites. For example, North Tyneside Council and Daventry District Council will 'encourage,' rather than require, a proportion of plots to be set aside on sites of over 200 and 500 units respectively.

12.138 As a first step, the local authorities should seek to adopt a general "encourage" policy for all sites but might also consider implementing a further policy on strategic sites. This should be determined in reference to the overall local need as identified on the register, the supply coming forward through small sites/ windfalls, and the number and capacity of strategic sites . This should also take into account the committed supply, need for other types of housing (including affordable housing need) and viability.

Role of Larger Sites

12.139 There is the potential for larger development schemes to provide serviced plots for custom-build development, and for these sites, with support, to help to drive forward delivery rates. The Independent Review of Build-Out⁴⁰ by Sir Oliver Letwin (2018) was undertaken to identify the cause of the significant gap between housing completions and the amount of land allocated or permitted on large sites in areas of high housing demand.

12.140 Section 3 of the Letwin Review looks at increasing diversity and a new planning framework for large sites (over 1,500 houses). Letwin recommends that the Government should adopt a new set of planning rules that apply to large sites in areas of high housing demand that would require their outline planning permission to include for 'housing diversification' to be a 'reserved matter' in line with new secondary legislation.

40 <https://www.gov.uk/government/publications/independent-review-of-build-out-final-report>

12.141 It is also possible for Custom and Self-Build schemes to be large sites in their own right. An example of this can be seen at the Graven Hill development in Bicester, Oxfordshire. This is the largest custom build scheme nationally with proposals for over 2,000 custom-built homes. The site has been acquired by Cherwell District Council from the MOD and a development company has been set up. There is a dedicated web site⁴¹ that provides all the information required for people that would like to build their own home in the area. Various formats of delivery are envisaged, from the construction of the shell through to the ability of occupants to tailor the finish.

⁴¹ <https://gravenhill.co.uk/>

13. CONCLUSIONS

- 13.1 This final section of the HENA sets out conclusions arising from the analysis drawing together the findings from previous sections of the report

Functional Geographies

- 13.2 The HENA has reviewed the housing and economic geographies. It finds that the main towns across Leicestershire all fall within the boundaries of a Leicester-focused Travel to Work Area. Whilst house prices vary spatially within the Study Area, with higher prices in Harborough District and lower values in Leicester, the price geography or dynamics have not substantively changed since 2017. It concludes that the Leicester and Leicestershire authorities are an appropriate 'best fit' for the functional HMA using local authority boundaries.
- 13.3 The FEMA geography has been reviewed through analysis of economic and commuting inter-relationships. It reinforces the 2017 HEDNA findings of a Leicester and Leicestershire FEMA with a central City and wider hinterland; with market towns – Coalville, Loughborough, Melton Mowbray, Hinckley and Market Harborough – sitting within this. Leicester and Leicestershire remains a good approximation for the Greater Leicester FEMA. Leicester's influence appears to also extend across the A5 to Nuneaton. However Lutterworth is shown as relating more strong towards Rugby; and Castle Donington/Kegworth towards Derby and Nottingham. The north-eastern part of Leicestershire, beyond Melton Mowbray and including settlements such as Bottesford, are less well integrated into the Leicester economy, with relationships towards Grantham and Nottingham.
- 13.4 The evidence however points to a wider sub-regional market for logistics/distribution development which extends to include 21 local authorities extending along the M1 from Milton Keynes to Nottingham and across to Birmingham. The prime location within this area – the core Golden Triangle – stretches from Leicester to Rugby and Coventry. This geography reflects the area's central location within England and strategic road and rail connectivity (with most major population centres within a 4.5 hour drivetime).

Leicester & Leicestershire's Economy

- 13.5 Leicester and Leicestershire is a £27 billion economy which accounts for 24% of East Midlands GVA. Between 2001-19 it slightly out-performed regional and national trends reflecting in particular stronger performance over the period since 2013.
- 13.6 Key sectors identified with growth potential in the sub-regional economy are:

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- Advanced manufacturing and engineering, with manufacturing accounting for 16.5% of GVA
 - Life sciences and biotechnology, particularly in Loughborough
 - Logistics and distribution, influenced by its location within the Golden Triangle
 - Sports science, with a world-class specialism at Loughborough University
 - Space science – a niche sector with growth potential, focused on Leicester.
- 13.7 In addition to the above, the HENA identifies growth potential in IT and Digital together with Professional and Financial Services, particularly in Leicester, but recognises challenges to the viable delivery of office floorspace. It recognises the need to shift towards a low carbon economy, the implications of which permeate across economic sectors. There is also a strength in education reflecting the three universities present in the sub-region; albeit that there are challenges associated with graduate retention.
- 13.8 Manufacturing is spread across a range of sub-sectors, with food and drink, textiles and metals the largest.
- 13.9 Leicester City is the largest economy in the sub-region accounting for a third of its GVA. The City, together with NW Leicestershire and Blaby have seen the strongest economic growth in recent years (in respect of both employment and GVA). GVA per job, as a measure of productivity, is 7% above the East Midlands average. However whilst the south of the county has a better skills profile, it has seen weaker comparative employment growth. This is partly influenced by out-commuting.
- 13.10 All parts of the sub-region have been influenced by recent economic challenges, related to both Brexit and Covid-19. Claimant unemployment rose across all areas, but is highest in Leicester. It has been falling since Spring 2021. There are jobs postings across a range of areas; with business surveys pointing to a range of businesses seeking to recruit and pointing to a relatively speedy recovery across a number of sectors.
- 13.11 The HENA however points to evidence of some changes to working practices, with over 40% of businesses expecting to offer greater flexibility to staff to work from home. Around a third of businesses have seen Brexit-related disruption to demand and supply chain. Nonetheless business confidence at the time of the assessment was relatively positive.

Market Dynamics

Office Market

- 13.12 Net absorption of office floorspace across the Study Area has outweighed net delivery by around 76,000 sqm over the last 11-year period leading to a decline in vacancy rates from 8% in 2009 to

2.5% in 2020. There is a relatively limited supply of Grade A space. Leicester has by far the most office floorspace in the Study Area (37% of total compared to 16% in Blaby which has the second most and contains major business parks such as Meridian Business Park and Grove Park). Accordingly, office floorspace absorption has been highest in Leicester over the last nine years.

- 13.13 The Leicester urban area is however the main office market in the sub-region; and pre-Covid there had been a growing shift in occupier demand towards City Centre space. Leicester has the most available office floorspace with stronger availability in the City Centre than the out-of-town market. Prime rents of around £18 psf however make the delivery of new development challenging; and there is a need for public sector support to bring forward modern commercial office space.
- 13.14 Prior to Covid, market demand was shifting more towards the City Centre office market (rather than out-of-town business parks) but the office market has been hit hard by the pandemic. There is significant uncertainty about future demand, influenced by growth in homeworking, and initial evidence points to a number of occupiers downsizing and seeking to reduce their office footprint by c. 30%. Across the sub-regional market, there is 2.2 years of available space, with 1.8 years' of Grade A. But availability is expected in the short-term, impacting the new-build market.

Industrial Market

- 13.15 Leicestershire benefits from a strong market for industrial space reflecting the strength of its manufacturing sector together with its locational advantages, which support its attractiveness for both manufacturing and warehousing/logistics. Net absorption of industrial floorspace across the Study Area has outweighed net delivery by around 288,000 sqm over the last 11-year period leading to a decline in vacancy rates from 9% in 2011 to just 2.3% in 2020. Very substantial levels of new development had been achieved, with the last 4 years seeing delivery of over 200,000 sq.m per annum absorbed within the sub-regional market.
- 13.16 Leicester supports a large proportion of the Study Area's industrial market (25% of floorspace). North West Leicestershire also supports a significant proportion (20% of floorspace) influenced in particular by strategic warehousing. However, absorption has been highest in North West Leicestershire over the last nine years making up 29% of absorption across the Study Area. . The main locations for industrial and distribution premises are those close to the M1, M42, M69 and A5 Corridors with industrial demand focused particularly towards the City. Levels of availability at the current time are relatively low, with the evidence pointing to just 1.3 years of available supply. New space/ sites which have been brought to the market, including at Magna Park, have performed strong with significant levels of market interest. There is therefore a need to bring forward additional space short-term to cater for strong demand.

Residential Market

- 13.17 The median house price across the L&L Housing Market Area was £222,300 considering sales over the year to Sept 2020. This was 11% below the national average. Values however vary within the HMA, with the highest prices in Harborough at £290,000; and the lowest in Hinckley and Bosworth at £205,000.
- 13.18 Within Leicestershire, long-term house price growth, looking over the last 20 years, has been strongest in Leicester, Charnwood and Oadby and Wigston (at 6.5%+ pa) and weakest in Melton (5.5% pa). Leicester and Oadby and Wigston saw particularly strong growth in values over the 2015-20 period (6.5%+ pa).
- 13.19 The profile of sales by type across the HMA is generally focused towards larger detached and semi-detached homes, which made up over 70% of sales over the year to Sept 2020. The sales profile in the City is however notably different to the County, focused much more towards terraced homes and semi-detached properties, with twice the proportion of flatted sales of other authorities within the HMA.
- 13.20 The Government's Help-to-Buy Equity Loan scheme has played an important role in supporting the housing market. Across the HMA it has supported 50% of new-build sales over the last 5 years (to Sept 2020). Icenis analysis indicates that 70% of those supported by the Help-to-Buy Scheme in the HMA have been First-time Buyers.
- 13.21 Covid-19 has resulted in a range of households re-evaluating their living circumstances. Relatively high current sales volumes is being driven by mortgaged home owners (particularly those looking to trade up who are looking for homes with more internal space, such as to work, and outside space) although there are signs that the market is beginning to slow as of Autumn 2021.

Overall Housing Need

- 13.22 The HENA has appraised demographic dynamics. Population growth is driven by both natural change and net migration; with declining households size meaning additional homes are also required to house the existing population (as average household size falls).
- 13.23 The HENA analysis shows higher migration in the 2018-based SNPP but find that there is unlikely to be a case to suggest therefore that the 2014-based figures (which drive the Standard Method) are too high. The higher levels of migration are however in part offset by lower levels of natural change so that population growth across the whole study area is broadly similar regardless of the projection chosen. Icenis therefore find no basis for moving below the standard method set out in Planning Practice Guidance.

13.24 Across the sub-region, the latest data points to a minimum local housing need for 5,713 dwellings per annum. This equates to a need for 91,400 homes to 2036 and 120,000 homes over the 2020-41 period.

Table 13.1 Standard Method Calculations – Minimum Local Housing Need

	Leicester	Blaby	Charnwood	Harborough	H & B	Melton	NWL	O & W	L & L
Total need (per annum)	2,464	341	1,111	534	472	231	372	188	5,713

13.25 Whilst there may be circumstances where it may be appropriate to plan for higher housing growth than the standard method, as set out in the PPG in Para 2a-010, it does not appear that these affect dynamics within this HMA when considered as a whole.

13.26 However there are potentially some distributional issues. The Economic Growth Scenario modelled provides an upside to the standard method baseline – in Blaby, NW Leicestershire and Melton in particular. This can be met through considering the distribution of housing across the sub-region. In particular there are supply side constraints in Leicester, and provision to meet unmet need in other areas will support workforce growth in the recipient authorities.

13.27 Icenis has had regard to the set of wider considerations identified in the Planning Practice Guidance, and would comment:

- The area is not identified as a growth area and it is not expected that there are strategic infrastructure improvements which will come forwards over the period to 2036 which will have an upward impact on overall housing need. Indeed infrastructure provision is needed to accommodate growth.
- There is no unmet need from areas outside of the L&L HMA which it is envisaged will need to be accommodated within the HMA. This will however need to be kept under review.
- The standard method LHN (5,713 dpa) is above the equivalent assessment of need from the L&L 2017 HEDNA (4,716 dpa, 2011-36). Indeed it is around 21% higher. It is also above past housing delivery which has averaged 4,133 dpa over the 2006-20 period or 5,255 dpa over the last 5 years (2015-20), noting that the latter does not cover a full economic cycle. There is therefore no upside associated with these issues.
- In respect of affordable housing need, there is not a basis for this specifically driving the assessment of overall housing need; but it is a consideration in setting a housing target. The affordability adjustment within the standard method represents in the aggregate across the HMA a 43% upward adjustment to the household projections. This will more than deal with the needs

of concealed/ overcrowded households and contribute to boosting both the delivery of market and affordable housing. The LHN represents a 38% boost on long-term delivery rates in the HMA which will also contribute to boosting affordable housing delivery.

- 13.28 However whilst the HENA does not find a case for upward adjustments to housing need across the HMA, there may be a case for considering some flexibility in planning assumptions not least as there is the prospect that the affordability ratio could worsen in the next year or so.

Employment Land Needs

- 13.29 The HENA provides analysis on the future employment land needs by type from 2020 to 2036, 2041 and 2050. It considers the labour demand (baseline and growth) scenarios provided by Cambridge Econometrics, as well as completions trends using LPA monitoring data. Consideration is also given to margins for flexibility, vacancy and replacement demand.
- 13.30 Recommendations are made regarding future needs for office, industrial and local warehousing / distribution units under 9,000 sqm. Large scale warehousing/ distribution unit needs are reported in the Strategic Warehousing Study prepared by GL Hearn and finalised in April 2021.
- 13.31 In order to determine future employment land needs, consideration has been given to labour demand models drawing on the Cambridge Econometric baseline and growth job forecasts, as well as authority monitoring on completions and VOA records, combined with market signals.
- 13.32 **Office:** Given that office requirements tend to be closely linked to employment levels, it is recommended that the labour demand models best represent future needs. Given uncertainty about future levels of occupancy and utilisation of offices post pandemic, standard model outputs are discounted by 30% to represent home working patterns. Historic delivery of space suggests that this is justified as a minimum.
- 13.33 **Industrial and local distribution:** needs are represented by gross completions, recognising that this builds in an allowance for ongoing losses (which are likely to continue to be significant for older industrial stock) and intensification of existing sites.
- 13.34 A margin for flexibility is built at 2 years gross completions for offices and 5 years for industrial. Furthermore, at the present time the current property markets are reporting levels of vacancy significantly below the preferred 7.5%. Given the limited vacancy, it is recommended that a further margin be included to increase provision in stock.
- 13.35 The overall needs are set out as follows to 2041, with figures to 2036 and 2050 included in the main body of this report. This excludes strategic warehousing / distribution needs relating to units of over

9000 sq.m the need for which is addressed in the Leicester and Leicestershire Strategic Distribution Study.⁴²

Table 13.2 Total employment needs 2021-2041, sqm

	Offices inc R&D	Industrial & Distribution Total (excl strategic B8)	Total
Blaby	40,000	138,800	178,800
Charnwood	33,500	172,600	206,100
Harborough	29,200	194,100	223,300
H&B	18,500	261,300	279,800
Leicester	45,500	339,600	385,100
Melton	8,600	189,200	197,800
NWL	39,700	152,900	192,600
O&W	4,500	12,200	16,700
Total	219,300	1,460,900	1,680,200

Table 13.3 Employment land needs 2021-2041, ha

	Offices inc R&D	Industrial & Distribution Total (excl strategic B8)	Total
Blaby	11.4	34.7	46.1
Charnwood	9.6	43.2	52.7
Harborough	8.3	48.5	56.9
H&B	5.3	65.3	70.6
Leicester	2.3	84.9	87.2
Melton	2.5	47.3	49.8
NWL	11.3	38.2	49.6
O&W	1.3	3.1	4.3
Total	52.0	365.2	417.2

Locational Approach to Meeting Needs

- 13.36 **Office Space:** The expectation is that in the short-term, office availability will rise and limit volumes of new-build development. In the medium term demand will give rise to new office requirements manifesting in historical growth locations including Leicester City Centre - although viability is not likely to improve and may require continued public funding assistance. Accessible out-of-town areas such as Grove Park and Meridian Business Park are also likely to be desirable. Beyond the Leicester urban area, smaller schemes should be encouraged in both town centre and business centre

⁴² <https://www.lstrategicgrowthplan.org.uk/latest-evidence/>

locations, giving way to office requirements later in the plan period(s) assuming employment growth achieves levels forecast.

- 13.37 The pandemic has generated some interest in provision of managed workspace schemes, focused at small businesses. There are schemes coming forward in Leicester and at Meridian Business Park. It is anticipated that there would be some demand for co-working spaces in the market towns in schemes of up to 10,000 sq.ft.. The potential to repurpose redundant retail space to deliver office floorspace in town centres should be supported.
- 13.38 **Research & Development:** R&D type space is expected to come forward in line with historic patterns of growth at MIRA and Loughborough University Science and Enterprise Park, although based on past trends and forecast job growth this is unlikely to exceed 10,000 sqm without substantial inward investment. The nature of future employment growth also suggests that higher end traditional business parks or distribution parks might see combined R&D with other types of commercial development, including manufacturing, given increasingly automated and technologically advanced processes across food manufacture, ICT and distribution of perishable goods.
- 13.39 **Industrial and Local Distribution:** The key locations of demand for industrial and local distribution from a market perspective are at accessible locations in proximity to the labour force ideally at Motorway or A-road junctions. There are numerous examples of recent and ongoing developments of mid-sized industrial stock around Leicester such as Optimus Point and Leicester Distribution Park which represent market preferences.
- 13.40 Mid sized and smaller stock opportunities should be considered as intensification or extensions of existing estates around the FEMA often in proximity to local settlements. Many of the authorities have a pipeline of proposals for mid sized units.
- 13.41 Urban extensions or other future growth locations such as Leicester south-eastern growth corridor present an opportunity to support the delivery of new employment spaces of smaller and midsized units where well connected to the road network. Smaller units tend to rely on closer proximity to the population centres due to the nature of occupiers.

Need for Affordable Housing

- 13.42 Analysis has been undertaken to estimate the need for affordable housing in the 2020-41 period. The analysis is split between a need for social/affordable rented accommodation and is based on households unable to buy or rent in the market and the need for affordable home ownership (AHO) – this includes housing for those who can afford to rent privately but cannot afford to buy a home and will include the potential market for First Homes.

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- 13.43 The analysis has taken account of local housing costs (to both buy and rent) along with estimates of household income. Additionally, when looking at rented needs, consideration is given to estimates of the supply of social/affordable rented housing. For AHO, consideration is given to the potential supply of resales of low-cost home ownership properties (such as shared ownership).
- 13.44 When looking at rented needs, the analysis suggests a need for 3,076 affordable homes per annum across the sub-region, with a need shown for all individual local authorities; the Councils are therefore justified in seeking to secure additional affordable housing.
- 13.45 The analysis suggests that there will be a need for both social and affordable rented housing – the latter will be suitable particularly for households who are close to being able to afford to rent privately and also for some households who claim full Housing Benefit. On this basis, it is not recommended that the Councils has a rigid policy for the split between social and affordable rented housing, although the analysis is clear that both tenures of homes are likely to be required.
- 13.46 When looking at the need for affordable home ownership products, the analysis also suggests a need across the study area, albeit (at 1,795 per annum) the need is lower than for rented housing. **In interpreting this figure, it should however be noted that there could be additional supply from resales of market homes (below a lower quartile price) which arguably would mean there is a much more limited need for AHO.**
- 13.47 The analysis does suggest that there are households in Leicester & Leicestershire who are being excluded from the owner-occupied sector (as evidenced by reductions in owners with a mortgage and increases in the size of the private rented sector). This suggests that a key issue in the study area is about access to capital (e.g. for deposits, stamp duty, legal costs) as well as potentially mortgage restrictions (e.g. where employment is temporary) rather than simply the cost of housing to buy.
- 13.48 The study also considers different types of affordable home ownership homes (notably First Homes and shared ownership) as each will have a role to play – shared ownership is likely to be suitable for households with more marginal affordability (those only just able to afford to privately rent) as it has the advantage of a lower deposit and subsidised rent.
- 13.49 Generally across the study area a discount of either 30% or 40% would make homes affordable (varying by both property size and location) although ideally to make AHO genuinely affordable it would be preferable to set a sale price rather than a discount (as a standard discount on a home with a high open market value may still give a price that exceeds the cost of homes currently available in the market). That said, specifically with First Homes it does not appear from guidance that such an approach is allowed.

13.50 In deciding what types of affordable housing to provide, including a split between rented and home ownership products, the Councils will need to consider the relative levels of need and also viability issues (recognising for example that providing AHO may be more viable and may therefore allow more units to be delivered, but at the same time noting that households with a need for rented housing are likely to have more acute needs and fewer housing options). **On the basis of the affordable needs analysis it is recommended that the Councils prioritise the delivery of rented products where possible.** The figures shown represent the highest possible requirement for Affordable Home Ownership. Individual Local Authorities may consider that a proportion of those captured may either choose to purchase lower quartile market homes, be unable able to obtain mortgages or may want the flexibility afforded by renting. Individual local authorities may look to discount a proportion of the identified Affordable Home Ownership numbers to reflect these scenarios.

Need for Different Types of Homes

13.51 There are a range of factors which will influence demand for different sizes of homes, including demographic changes; future growth in real earnings and households' ability to save; economic performance and housing affordability. The analysis linked to long-term demographic change (2020-41) concludes that the following represents an appropriate mix of affordable and market homes, this takes account of both household changes and the ageing of the population – the analysis also models for there to be a modest decrease in levels of under-occupancy (which are particularly high in the market sector and in areas outside of the City).

Table 13.4 Suggested Mix of Housing by Size and Tenure – Leicester

	1-bedroom	2-bedrooms	3-bedrooms	4+-bedrooms
Market	5%	30%	45%	20%
Affordable home ownership	20%	40%	30%	10%
Affordable housing (rented)	30%	35%	25%	10%

Table 13.5 Suggested Mix of Housing by Size and Tenure – Leicestershire

	1-bedroom	2-bedrooms	3-bedrooms	4+-bedrooms
Market	5%	35%	45%	15%
Affordable home ownership	15%	40%	35%	10%
Affordable housing (rented)	35%	35%	25%	5%

13.52 The strategic conclusions in the affordable sector recognise the role which delivery of larger family homes can play in releasing a supply of smaller properties for other households. Also recognised is the limited flexibility which 1-bed properties offer to changing household circumstances, which feed

through into higher turnover and management issues. The conclusions also take account of the current mix of housing by tenure and also the size requirements shown on the Housing Register.

- 13.53 The mix identified above could inform strategic policies although a flexible approach should be adopted. For example, in some areas Registered Providers find difficulties selling 1-bedroom affordable home ownership homes and therefore the 1-bedroom elements of AHO might be better provided as 2-bedroom accommodation. Additionally, in applying the mix to individual development sites, regard should be had to the nature of the site and character of the area, and to up-to-date evidence of need as well as the existing mix and turnover of properties at the local level. The Councils should also monitor the mix of housing delivered.
- 13.54 The analysis also suggests that the majority of units should be houses rather than flats, although consideration will need to be given to site specific circumstances (which may in some cases lend themselves to flatted development). Additionally, the Councils should consider the role of bungalows within the mix. Such housing can be particularly attractive to older person households downsizing and may help to release larger (family-sized) accommodation back into the market.
- 13.55 Based on the evidence, it is expected that the focus of new market housing provision will be on 2- and 3-bed properties. Continued demand for family housing can be expected from newly forming households. There may also be some demand for medium-sized properties (2- and 3-beds) from older households downsizing and looking to release equity in existing homes, but still retaining flexibility for friends and family to come and stay.

Older Persons Housing Needs

- 13.56 The older person population is projected to increase notably in the future and an ageing population means that the number of people with disabilities is likely to increase substantially. Over the 2020-41 period, the HENA analysis shows a 40% increase in the population aged 65+ in Leicester and 42% increase in Leicestershire.
- 13.57 The analysis points to:
- A 56%-66% increase in the number of people aged 65+ with dementia and a 50%-56% increase in those aged 65+ with mobility problems ;
 - A need for around 3,100 housing units with support (sheltered/retirement housing) in Leicester (2020-41) and 6,700 units in Leicestershire (mainly in the market sector in Leicestershire);
 - A need for around 1,500 additional housing units with care (e.g. extra-care) in Leicester and 4,400 in Leicestershire – focussed on market housing in Leicestershire and the affordable sector in Leicester, as well as a need for additional residential and nursing care bedspaces; and

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- a need for around 2,700 (Leicester) and 7,000 (Leicestershire) dwellings to be for wheelchair users (meeting technical standard M4(3)).
- 13.58 This would suggest that there is a clear need to increase the supply of accessible and adaptable dwellings and wheelchair user dwellings as well as providing specific provision of older persons housing. Given the evidence, the Councils could consider (as a start point) requiring all dwellings (in all tenures) to meet the M4(2) standards (which are similar to the Lifetime Homes Standards) and 10%-15% of homes meeting M4(3) – wheelchair user dwellings (a higher proportion in the affordable sector).
- 13.59 Where the authority has nomination rights M4(3) would be wheelchair accessible dwellings (constructed for immediate occupation) and in the market sector they should be wheelchair user adaptable dwellings (constructed to be adjustable for occupation by a wheelchair user). It should however be noted that there will be cases where this may not be possible (e.g. due to viability or site-specific circumstances) and so any policy should be applied flexibly.
- 13.60 The Councils should also consider if a different approach is prudent for market housing and affordable homes, recognising that Registered Providers may already build to higher standards, and that households in the affordable sector are more likely to have some form of disability.
- 13.61 In seeking M4(2) compliant homes, the Council should also be mindful that such homes could be considered as ‘homes for life’ and would be suitable for any occupant, regardless of whether or not they have a disability at the time of initial occupation.
- 13.62 In framing policies for the provision of specialist older persons accommodation, the Councils will need to consider a range of issues. This will include the different use classes of accommodation (i.e. C2 vs. C3) and requirements for affordable housing contributions (linked to this the viability of provision). There may also be some practical issues to consider, such as the ability of any individual development being mixed tenure given the way care and support services are paid for.

Dynamics in Different Market Segments

Private Rented Sector

- 13.63 The private rented sector accounted for 15% of households across Leicester and Leicestershire, with a particular concentration in Leicester (22.7%). Three quarters of tenants are aged under 50. The evidence points to a significant growth in benefit claimants in the sector since the onset of Covid-19 in Spring 2020.
- 13.64 Icenis consider that potential exists for build-to-rent development but this is focused in particular on Leicester which has a much greater density of younger persons and an larger overall rental market. Initial build-to-rent schemes are coming forwards and those schemes which have been delivered

appear to have been let well. Demand is for schemes in/close to the City Centre. However the scale of growth in this sector in Leicester can be expected to be modest, given the limited number of households with incomes which fall between those able to afford median rents and lower quartile house prices. Beyond the City, we see limited potential for Build-to-Rent development in the short-term given the lower density of younger potential tenants, and the scope for this could be potentially more strongly focused on suburban build-to-rent. Outside of Leicester, the greatest potential here is in Loughborough, and potentially Hinckley.

Student Housing

- 13.65 Pre-pandemic, student numbers had been growing at Loughborough and particularly De Montfort University, but falling at the University of Leicester. The impacts of Brexit and Covid-19 have created some uncertainties in terms of future student growth. Domestically some demographic growth is expected to be offset by issues around high tuition fees and a shift in the Government's emphasis towards FE/ apprenticeships. The impacts of these trends need to be monitored, with potential a greater emphasis on the management of student housing supply the demand for which may not grow as strongly as has been seen historically.

Self- and Custom-Build Development

- 13.66 Local authority housing registers point to quite modest levels of interest in self- and custom-build development in Leicestershire, with the greatest need in absolute terms in Charnwood and Leicester. Low numbers may in part reflect knowledge that such registers exist. The Government is however keen to encourage growth of the sector in particular as it can contribute to increasing overall housing delivery. Many self-builders may seek to acquire and bring forward plots for individual developments, however taking account of the contribution which these are making to meeting the need, there may be a case for seeking self- and custom-build provision on larger strategic sites.

Charnwood Five Year Housing Land Supply – 1 April 2023

Paragraph 74 of the National Planning Policy Framework 2021 states that local planning authorities should identify and update annually a supply of specific deliverable sites sufficient to provide a minimum of five years' worth of housing against their housing requirement set out in adopted strategic policies, or against their local housing need where the strategic policies are more than five years old (unless these strategic policies have been reviewed and found not to require updating).

As it is more than five years since the Charnwood Local Plan Core Strategy was adopted (November 2015), the Council is using the standard method to calculate the Borough's housing requirement. Details of how this has been calculated are set out in **Appendix 1**.

The Council applies a buffer of 5% to its five year housing land supply by reason that paragraph 74 of the National Planning Policy Framework 2021 states that the housing supply should include a buffer of 5% to ensure choice and competition in the market for land.

	Housing supply position as at 1 April 2023	Total
a	Annual housing requirement.	1,105
b	Number of dwellings required for five years 1 April 2023 to 31 March 2028 (1,105 x five years).	5,525
c	5% buffer (rounded up) to ensure choice and competition in the market for land (National Planning Policy Framework paragraph 74 a).	277
d	Total number of dwellings required for five years 1 April 2023 to 31 March 2028 (b + c).	5,802
e	Estimated supply of deliverable sites for five years 1 April 2023 to 31 March 2028.	4,963
f	Surplus over requirement (e - d).	-839
g	Annual housing target (d divided by five years) (rounded up).	1,161
h	Number of years supply (e divided by g).	4.27 years

Appendix 2 (see separate document) provides a list of sites that are expected to deliver homes during the five year period. In order to provide evidence of deliverability, the Council undertook the following actions:-

The developers of all major development sites with planning permission (i.e. permission for 10 or more homes) were contacted and asked to provide information about lead in times and build out rates. This information was supplemented by similar information collected in relation to proposed housing allocations for the Charnwood Local Plan 2021-2037 examination.

For major development sites with detailed permission and where no information was provided by developers the delivery rates were identified using past delivery performance on that particular site where construction had begun. For those where construction work had not started the general assumptions for lead in times and build out rates were applied for sites of that size.

Lead in times

(i.e. the period from when a site was granted permission to the start of construction of the first plot on site)

- One year on sites between 10 and 50 dwellings with detailed permission;
- Two years on sites of 50+ dwellings with detailed permission; and
- Three years on sites with outline permission.

Build out rates

- 25 homes per year on sites between 10 and 50 dwellings;
- 35 homes per year on sites between 51 and 200 homes; and
- 50 homes per year on sites of 201+ homes.

For major development sites with outline permission the same approach was used as for major development sites with detailed permission except that where no information was provided from developers the sites have not been considered to meet the definition of deliverable.

For sites with planning permission which do not involve major development (i.e. on sites less than 10 homes), the developers were not contacted and instead the general assumptions for lead in times and build out rates have been used which are three years from the decision date when a site was granted permission (two years for reserved matters) (this applied only for sites where construction work has not started) and 5 homes per year.

The Council has included accommodation for students and older people in the calculation of supply based on the approach outlined in the Housing Delivery Test Measurement Rule Book. The Housing Delivery Test Measurement Rule Book published in July 2018 explains how the net homes delivered calculated with adjustments for net student accommodation and net other adult communal accommodation (calculated by applying nationally set ratios to the bedroom data of 2.5 and 1.8 respectively, rounded down) for the Housing Delivery Test results.

APPENDIX 1 – LOCAL HOUSING NEED FOR CHARNWOOD

The minimum annual local housing need figure for Charnwood is calculated using the standard method as published in December 2020.

The standard method to calculate a minimum annual local housing need figure is set out in the national planning practice guidance which can be found at the following web page <https://www.gov.uk/guidance/housing-and-economic-development-needs-assessments#housing-need>.

Step 1 – baseline

Calculate the projected average annual household growth over a 10 year period (this should be 10 consecutive years, with the current year being used as the starting point from which to calculate growth over that period).

Latest household projections taken from Table 406 of the 2014 based household projections in England from the following web page <https://www.gov.uk/government/statistical-data-sets/live-tables-on-household-projections>.

Household projections for 2023 = 77,944.

Household projections for 2033 = 86,968.

Difference = 9,024

Divided by 10 years = 902.4

Average annual household growth = 902.4 (not rounded)

Step 2 – adjustment factor

Adjust the average annual projected household growth figure (as calculated in step 1) based on the affordability of the area.

No adjustment is applied where the ratio is 4 or below. For each 1% the ratio is above 4, the average household growth baseline should be increased by a quarter of a percent. An authority with a ratio of 8 will have a 25% increase on its annual average household growth baseline.

Latest ratio of median house price to median workplace-based earnings from Table 5C of the house price to workplace-based earnings ratio dataset (released on 22 March 2023) from the following web page <https://www.ons.gov.uk/peoplepopulationandcommunity/housing/datasets/ratioofhousepricetoworkplacebasedearningslowerquartileandmedian>.

Ratio of median house price to median workplace-based earnings for 2023 = 7.59

Adjustment = ([7.59 minus 4] divided by 4) = 0.8975

Multiply by 0.25 = 0.224375

Add 1 = 1.224375

Multiply average annual household growth (902.4) (from step 1) by adjustment factor (1.224375) = 1,104.876

Annual local housing need = 1,105 (rounded).

Step 3 – should the cap be applied?

Where the relevant strategic policies for housing were adopted more than 5 years ago (at the point of making the calculation), the local housing need figure is capped at 40% above whichever is the higher of:

- a. the projected household growth for the area over the 10 year period identified in step 1; or
- b. the average annual housing requirement figure set out in the most recently adopted strategic policies (if a figure exists).

The relevant strategic policies for housing are the housing requirement in the Charnwood Local Plan 2011 to 2028 Core Strategy which was adopted which is more than five years ago (i.e. adopted in November 2015).

a. 40% above projected household growth over the 10 year period identified in step 1 (above)

Projected household growth over 10 year period is 9,024

40% of 9,024 = 3,609.6

9,024 + 3,609.6 = 12,633.6 or 1,263.36 per annum

b) 40% above the average annual housing requirement figure set out in the most recently adopted strategic polices

Most recently adopted strategic polices = Charnwood Local Plan 2011 to 2028 Core Strategy (2015).

Housing requirement = 13,940 new homes between 2011 and 2028

40% of 13,940 = 5,576

13,940 + 5,576 = 19,516 or 1,951.6 per annum

The annual local housing need calculated according to the standard method in steps 1 and 2 is 1,105. This figure does not exceed the higher of the two caps calculated in step 3 (i.e. 1,263.36 and 1,951.6) and therefore the cap does not apply.

Step 4 – should the uplift be applied?

A 35% uplift is then applied for those urban local authorities in the top 20 cities and urban centres list.

As at December 2020, the list of urban local authorities does not include Charnwood and therefore the uplift does not apply.

The annual local housing need for Charnwood is 1,105.

Land North of Barkby Road, Syston (ref P/21/2639/2)

Draft Highways Obligations (for discussion) – Subject to Contract and Without Prejudice

Definitions (non-alphabetical order)

Notice of Intention to Commence	Means a notice in writing advising the County Council of the date of the Owner's intention to Commence the Development
HA1 Allocation	Means the land to the south east of Syston identified in the [emerging] Charnwood Local Plan as site HA1 shown indicatively on Plan []
HA2 Allocation	Means the land to the west of Queniborough Road, Syston identified in the [emerging] Charnwood Local Plan as site HA2 Shown indicatively on Plan []
HA2 Development	Means the development of the HA2 Allocation pursuant to planning application ref P/22/0354/2 or any subsequent planning permission
HA2 Development Notice of Intention to Commence	Means a notice in writing served on the County Council by the Owners and/or developer of the HA2 Development providing the County Council with [3] months' notice of their intention to Implement the HA2 Development
Joint Developments	Means the Development and the HA2 Development together.
Joint Developments Notice	Means a notice served on the Owners by the County Council confirming that they have received the HA2 Development Notice of Intention to Commence and confirming: i) whether the Joint Highway Works Contribution is required to be paid to the County Council, OR ii) whether the Joint Highway Works are required to be delivered by the Joint Developments, and which elements of the Joint Highway Works are to be delivered by the Owners are to be delivered by the Owners; iii) The amount of the HA2 Public Transport Contribution.
Joint Highway Works	Means the off-site highway improvements required to mitigate the cumulative impact of the Joint Developments comprising the Melton Road / Goodes Lane Junction Improvements and the High Street / Fosse Way Junction Improvements.
Melton Road / Goodes Lane Junction Improvements	Means the improvements to the Melton Road / Goodes Lane junction shown indicatively on drawing no 20060-08
High Street / Fosse Way Junction Improvements	Means the improvements to the High Street / Fosse Way junction shown indicatively on drawing no 20060-09
Joint Highway Works Contribution	Means the sum of up to [£250,000] which may be payable to the County Council towards the cost of the County Council delivering the Joint Highway Works or other improvements to the local highway network to mitigate the cumulative impact of the Joint Developments

Actual Cost	Means the actual costs incurred by the Owner in providing an element or elements of the Joint Highway Works.
Joint Highway Works Contribution Balance	Means the balance (if any) of the Joint Highway Works Contribution less the Actual Cost.
TRO Contribution	Means the sum of [£10,000] that may be payable to the County Council towards the cost of securing a Traffic Regulation Order to remove existing on street parking in the vicinity of the Melton Road / Goodes Land junction.
Public Transport Contribution	Means the sum of [£450,000] payable to the County Council towards the Bus Service Enhancement
HA2 Development Public Transport Contribution	Means any sum payable by the HA2 Development towards the Bus Service Enhancement
Adjusted Public Transport Contribution	Means the sum calculated by the below formula payable to the County Council towards the Bus Service Enhancement $A = B - (C + D)$ Where: A = Adjusted Public Transport Contribution B = Public Transport Contribution C = HA2 Development Public Transport Contribution D = the sum of any instalments of the Public Transport Contribution made before the Joint Development Notice has been received.
Enhanced Bus Service	Means the enhancement of the existing bus service 100 to 30 mins between 0700-0900 and 1600-1900, or such other bus service(s) that may be provided in the future to serve the Joint Developments and the HA1 Allocation.
Barkby Road Access	Means the site access junction shown indicatively on drawing no 20060-02 Rev F
Barkby Road Roundabout	Means a roundabout that may be constructed to replace the Barkby Road Access as part of development of the HA1 Allocation
Barkby Road Roundabout Notice	Means a notice served by the County Council on the Owners confirming that the Barkby Road Roundabout Deed of Dedication is required.
Barkby Road Roundabout Deed of Dedication	Means a Deed that may be entered into between the Owners and the County Council to dedicate the land shown coloured [] on Plan [] (or such other area as may be agreed between the Owners and the County Council) to the County Council as highway to enable the future construction of the Barkby Road Roundabout. NB Adoption of the dedicated land to occur following completion of the Barkby Road Access.

Obligations

General

1. The Owners covenant to serve the Notice of Intention to Commence on the County Council no later than 3 calendar months prior to the date of Commencement of Development.

Joint Highway Works

2. Subject to the County Council serving the Joint Developments Notice, the Owners covenant with the County Council to:
 - 2.1 In the event that the Joint Developments Notice confirms that the County Council require payment of the Joint Highway Works Contribution, to:
 - 2.1.1 Pay [50%] of the Joint Highway Works Contribution within [3] months of receipt of the Joint Developments Notice; and
 - 2.1.2 Pay [50%] of the Joint Highway Works Contribution on the first anniversary of the payment made pursuant paragraph 2.1.1 above.
 - 2.2 In the event that the Joint Developments Notice confirms that the County Council require elements of the Joint Highway Works to be delivered by the Owners, to:
 - 2.2.1 In the event that the Joint Developments Notice confirms that the Melton Road / Goodes Lane Junction Improvements are to be delivered by the Owners, to
 - 2.2.1.1 Pay the TRO Contribution to the County Council within [1] month of receipt of the Joint Developments Notice.
 - 2.2.1.2 Subject to approval of the TRO, to use reasonable endeavours to enter into a S278 Agreement for the Melton Road / Goodes Lane Junction Improvements within [6] months of approval of the TRO.
 - 2.2.1.3 Use reasonable endeavours to implement to Melton Road / Goodes Lane Junction Improvements within [6] months of entering into a S278 Agreement.
 - 2.2.2 In the event that the Joint Developments Notice confirms that the High Street / Fosse Way Junction Improvements are to be delivered by the Owners, to
 - 2.2.2.1 Use reasonable endeavours to enter into a S278 Agreement for the High Street / Fosse Way Junction Improvements within [6] months of receipt of the Joint Developments Notice.
 - 2.2.2.2 Use reasonable endeavours to implement the High Street / Fosse Way Junction Improvements within [12] months of entering into a S278 Agreement.
 - 2.2.3 Pay the Joint Highway Works Contribution Balance to the County Council prior to Occupation of 75% of the Dwellings or within [1] month of completion of the last of the Joint Highway Works to be implemented by the Owners.
 - 2.3 Provided always that the maximum liability to the Owners shall not exceed the sum of [£250,000].

Public Transport

3. Subject to the County Council serving the Joint Developments Notice prior to Occupation of the 25th Dwelling, the Owners covenant with the County Council to:
 - 3.1 pay the Adjusted Public Transport Contribution in the following instalments;
 - 3.1.1 16.67% prior to Occupation of the 50th Dwelling;
 - 3.1.2 16.67% prior to the first anniversary of the payment made pursuant to paragraph 3.1.1 above;
 - 3.1.3 16.67% prior to the second anniversary of the payment made pursuant to paragraph 3.1.1 above;
 - 3.1.4 16.67% prior to the third anniversary of the payment made pursuant to paragraph 3.1.1 above; and
 - 3.1.5 16.67% prior to the fourth anniversary of the payment made pursuant to paragraph 3.1.1 above; and
 - 3.1.6 16.65% prior to the fifth anniversary of the payment made pursuant to paragraph 3.1 above.
4. In the event that the County Council serve a Joint Developments Notice after Occupation of the 25th Dwelling, the Owners covenant with the County Council to:
 - 4.1 pay the Adjusted Public Transport Contribution in the following instalments;
 - 4.1.1 £75,000 prior to Occupation of the 50th Dwelling;
 - 4.1.2 £75,000 prior to each anniversary (up to and including the fifth anniversary) of the payment made pursuant to paragraph 4.1.1 above until the Joint Developments Notice has been received.
 - 4.1.3 Pay the balance (if any) of the Adjusted Public Transport Contribution in equal instalments on the anniversaries up to and including the fifth anniversary of the payment made pursuant to paragraph 4.1.1 above.

Barkby Road Access

5. The County Council may serve the Barkby Road Roundabout Notice within [6] months of the date of the Notice of Intention to Commence
6. The Owners covenant with the County Council to use reasonable endeavours to enter into the Barkby Road Roundabout Deed of Dedication within [6] months of receipt of the Barkby Road Roundabout Notice.

Charnwood Local Plan 2021 -2037 Housing Trajectory

HA55	Rear of The Maltings site High Street, Sileby					13												13	
HA56	Land off Kendal Road (South of Butler Way and Gray Lane), Sileby									5	19							24	
HA57	36 Charles Street, Sileby											11						11	
HA58	9 King Street, Sileby																	0	
	ALLOCATIONS Other Settlements				50	145	280	160	103	80	61	17	0	0	0	0	0	896	
HA59	Land to rear of Derry's Garden Centre, Cossington				25	40	40	25										130	
HA60	Land off Melton Road, East Goscote				25	40	40	40	40	40	31							256	
HA61	Land to the rear of 89 Loughborough Road, Hathern								18			11						29	
HA62	The Leys, Hathern											6						6	
HA63	Land off Zouch Road, Hathern					25	31											56	
HA64	Land at Threeways Farm, Queniborough						40	40	40	40								160	
HA65	Land off Melton Road, Queniborough						40	40	5									85	
HA66	Land off Gaddesby Lane, Rearsby					10	40	15										65	
HA67	44 Hoby Road, Thrusington										30							30	
HA68	Land off Old Gate Road, Thrusington					25	35											60	
HA69	The former Rectory & Land at Thurcaston					5	14											19	
N/A	Wymeswold NP housing requirement																	0	
	TOTAL ALL – Estimated completions from DRAFT ALLOCATIONS				25	95	433	1249	1415	1178	966	1024	834	700	446	287	178	60	8890
LUC2	Estimated completions from WEST OF LOUGHBOROUGH SUE	20	60	130	180	210	250	250	250	250	250	250	250	250	250	250	250	3100	
LUA2	Estimated completions from NORTH EAST OF LEICESTER SUE	30	125	150	150	200	200	200	200	200	200	200	200	200	250	250	250	2805	
LUA3	Estimated completions from DIRECTION OF GROWTH NORTH OF BIRSTALL			70	120	160	175	175	175	175	150	150	150	150	150	150	150	1950	
	TOTAL ALL – Estimated completions from SUE's	50	185	350	450	570	625	625	625	625	600	600	600	650	650	650	650	7855	
	Windfall Allowance				63	63	63	63	63	63	63	63	63	63	63	63	63	756	
	Estimated total completions	792	711	771	927	1213	1977	2339	2138	1725	1712	1497	1363	1109	1000	891	773	20938	
	Estimated cumulative completions	792	1503	2274	3201	4414	6391	8730	10868	12593	14305	15802	17165	18274	19274	20165	20938		
	Annualised housing requirement	1189	1189	1189	1189	1189	1189	1189	1189	1189	1189	1189	1189	1189	1189	1189	1189		
	Cumulative requirement	1189	2378	3567	4756	5945	7134	8323	9512	10701	11890	13079	14268	15457	16646	17835	19024	10.1	
	MONITOR - No. dwellings above or below cumulative requirement	-397	-875	-1293	-1555	-1531	-743	407	1356	1892	2415	2723	2897	2817	2628	2330	1914		
	MANAGE - Annual requirement taking account of past/projected completions	1189	1215	1252	1288	1319	1328	1263	1144	1020	919	787	644	465	250	-125	-1141		

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	Apr-21	Apr-22	Apr-23	Apr-24	Apr-25	Apr-26	Apr-27	Apr-28	Apr-29	Apr-30	Apr-31	Apr-32
	5 year supply	5 year supply	5 year supply	5 year supply	5 year supply	5 year supply	5 year supply	5 year supply	5 year supply	5 year supply	5 year supply	5 year supply
	3.53	4.48	5.79	6.88	7.52	7.92	7.53	6.75	5.93	5.35	4.69	4.11
5 YEAR REQUIREMENT	5945	5945	5945	5945	5945	5945	5945	5945	5945	5945	5945	5945
5 YEAR REQUIREMENT + 5%	6243	6243	6243	6243	6243	6243	6243	6243	6243	6243	6243	6243
5 YEAR COMPLETIONS	4414	5599	7227	8594	9392	9891	9411	8435	7406	6681	5860	5136
SURPLUS	-1829	-644	984	2351	3149	3648	3168	2192	1163	438	-383	-1107



1.0 INTRODUCTION

1.1 David Tucker Associates (DTA) has been commissioned by Taylor Wimpey to provide transportation advice on the viability and delivery of the proposed residential development of up to 195 dwellings on land north of Barkby Road, Syston. A Transport Assessment (DTA reference 20060-08b has been produced that has assessed the potential implications.

1.2 As part of the application process, Leicestershire County Council (LCC) as Local Highway Authority has reviewed the TA and have made a number of comments. The purpose of this note is to provide response to the following

- Site Access and Interaction with HA1
- Accessibility and Public Transport
- Trip Generation; and
- Traffic Base Flows and Junction Capacity Assessments.

1.3 The response note in full is contained within **Appendix A** of this note and should be read in conjunction with this note. For ease, a summary of LCC's comments are set out in *blue italics*, with DTA's response set out in black.

1.4 These clarifications confirm and support the findings of the original Transport Assessment.

2.0 LCC COMMENT & DTA RESPONSE

Site Access Proposals and interaction with Proposed Allocation HA1

2.1 LCC Comment: The County Council request that the site access visibility splays be reviewed on the basis of a more up to date speed survey.

2.2 **DTA Response:** It has been confirmed in correspondence that the survey obtained in June 2021 is acceptable for this purpose. The survey is attached at **Appendix B** and confirms the 85th percentile speeds to be 42.9mph eastbound and 39.9mph westbound. In Manual for Streets terms, this confirms a splay of 66m to the right and 59m to the left.

2.3 As shown on drawing **20060-02 Rev C (Appendix C)**, splays of 120m to the right and 75m to the left are available. In practice, visibility to the left exceeds 100m (to the junction with



Queniborough Road) and there are no constraints to achieving the appropriate splays.

- 2.4 It is noted that the swept path analysis assessment and RSA Stage 1 submitted with the TA has been accepted by LCC. Therefore, no further amendments are proposed or required.
- 2.5 In terms of interaction with potential access to the southern parcel of land (proposed allocation HA1-Land southeast of Syston), the promoters are the same (Taylor Wimpey). Given that this site is expected to proceed ahead of HA1, an independent access has been designed to ensure delivery. However, this has been designed to be capable of being upgraded to a roundabout in the future to serve both the northern and southern parcels. The indicative arrange of this is shown on **Drawing 19407-02 (Appendix C)**.
- 2.6 It is envisaged that the roundabout would be considered subsequently when the application for HA1 is under future consideration. However, it may be appropriate to allow either access to be constructed (secured through a planning condition) if timescales of HA1 delivery align with that for the current application. The applicant is supportive of this approach.

Accessibility

- 2.7 *LCC Comment: The LHA would require that the Applicant should to explore/develop options for a flexible form of transport provision, which whilst not necessarily adhering to the minimum hourly frequency, does cover the whole of the day 7-7pm (Monday-Friday) and 8-6pm Saturday. It could take the form of a demand based model. The Applicant should explore options and then submit proposals to the LHA for approval, after which they would then go and secure the service/provision.*
- 2.8 **DTA Response:** Clarification has been sought from LCC as to what is required in this respect. The applicant is willing to fund and deliver accessibility improvements in the form of improved bus services and welcomes the flexibility proposed by LCC in respect of potential demand responsive options for provision.
- 2.9 Clearly as a result of the overall allocations proposed within Syston, there is scope to provide an enhanced and regular bus service to the eastern side of Syston. Discussions have been held with Arriva who have confirmed in principle that an early phase of this strategy would be to extend the Service 6 into Syston, along Goodes Lane to then U-turn at the Saxby Drive / Barkby Lane junction. This could comprise a twice hourly service for the addition of one extra



vehicle.

2.10 Alternatively, options for a local "Arriva Click" type service within Syston could be provided. However, at present Arriva are not able to commit to a form of that service and therefore whilst the promotor continue to have those discussions, it cannot be fixed now.

2.11 It is therefore proposed that the condition which secures the provision of service and / or some reasonable alternative be placed on the consent. The following proposed by LCC as part of the previous application reflects an appropriate form of words.

"Provision of an hourly bus service or other flexible transport provision serving the development site and the centre of Syston as agreed with the Local Planning Authority. The bus services shall be scheduled to operate every hour between the hours of 7:00 - 19:00 Monday – Friday and 08:00 - 18:00 on Saturdays. The bus service or alternative provision shall be in operation at 25% occupation of the development, unless an alternative date is agreed to in writing by the Local Planning Authority, and until five years following 50% occupation. All details of the bus service or alternative provision and any amendments are to be submitted to and approved in writing by the Local Planning Authority. The bus service may be secured through area-wide initiatives provided that the minimum service level provision is met."

Trip Generation

2.12 **LCC Comment:** "...the LHA still consider these trip rates to be low. The LHA would therefore request for the TRICS analysis to be re-run with revised trip rates and applying the journey to work census mode share data to the person trips. The Applicant should then consider which trip generation assessment is more robust and these revised trip rates and trip generation should then submitted to the LHA for review.

2.13 **DTA Response:** DTA has considered three methods for estimating the predicted traffic associated with the proposals. Firstly, TRICS was interrogated to establish vehicular trip rates. As an alternative assessment, TRICS was again interrogated for person trip rates, mode share for car drivers in the local area recorded in the 2011 census applied to the person trip rates. The final method derived a local trip rate based on the ATC placed at the junction of St Paul's Drive (accessed from Goodes Lane, Syston) with this ATC capturing the trip movements in the local area.

2.14 All three sets of trip rates were compared and the highest set (AM census derived, PM locally



derived) for each peak period was selected. The trip rates selected, and subsequent trips are presented below.

Table 1: DTA Derived Trip rates and generations- 195 Dwellings

Housing- 195 Units	AM Peak			PM Peak		
	Arr	Dep	Total	Arr	Dep	Total
Trip Rate	0.132	0.387	0.520	0.418	0.215	0.633
Trip Generation	26	75	102	82	42	123

2.15 The above rates are higher than the trip rates proposed for proposed allocation HA2 (Barky Road, application reference P/22/0354) which were based on an updated person trip assessment (See **Appendix D**) and forecast trip rates of 0.519 and 0.567 in the AM and PM Peak.

2.16 However, in light of LCC’s comments above, DTA has reviewed trip rates previously provided by LCC for a proposed development at Oadby Grange, Oadby. Within their correspondence, LCC stated that the rates were comparable with the ‘Land at Cottage Farm, Phase II’ Transport Assessment; the scope of which is understood to have been agreed with the Highway Authority.

2.17 The trip rates previously received from LLC are presented below.

Table 2: LCC Vehicular Trip Rates

Housing - Private	AM Peak			PM Peak		
	Arr	Dep	Total	Arr	Dep	Total
Trip Rate	0.253	0.503	0.756	0.466	0.283	0.749

2.18 Given that the above trip rates are significantly higher than those presented within the TA, for robustness, these are adopted here as a sensitivity test.

2.19 Based upon the above trip rates, the proposed development would generate the following traffic in the peak hours.



Table 3: Traffic Generation- 195 Units

Housing - Private	AM Peak			PM Peak		
	Arrival	Dep	Total	Arrival	Dep	Total
Trip Rate	49	98	147	91	55	146

2.20 The above shows that a total of 195 dwellings is predicted to generate around 150 two way vehicle movements in the peak period. Across the peak, this equates to broadly three vehicles every minute.

2.21 When compared to the trips within Table 1, the higher trip rate generates an additional 45 two way vehicle movements in the AM peak and 23 two way vehicle movements in the PM peak. Spread across the peak, this would be the equivalent of 1-2 additional vehicles per minute.

Traffic Base Flows and Junction Capacity Assessments.

2.22 *LCC Comment: "Classified Turning Counts (CTC) and queue length surveys... were carried out at the following junctions:*

- *High Street/Melton Road/Barkby Road;*
- *Barkby Road/ Queniborough Road;*
- *Goodes Lane/ St Pauls' Drive;*
- *Barkby Road/ Pembroke Avenue; and*
- *Goodes Lane/ Melton Road*

2.23 *These surveys were carried out on 1st February 2018 during the hours of 07:00-10:00 and 16:00- 19:00 and recorded direction, volume and classification of traffic. Notwithstanding the above, the LHA would request for new surveys to be carried out the junctions listed above as the data is more than three years old. Covid adjustment factors should be applied to the flows and these can be obtained from the NDI team.*

2.24 *Once these surveys have been undertaken, the LHA would request for the junction capacity assessments to be re-run Assessments are also required include Fosse Way/ High Street and Barkby Road/ Pembroke Avenue junctions. The results should be submitted to the LHA for review, including the ARCADY and PICADY modelling files. The 2022 base flows should be factored up to a future year of 2027, with the TEMPro growth factors to also be revised. The LHA are aware of a number of committed developments within the vicinity of this application*



site and their traffic flows on the local network would have an effect. The Applicant should therefore contact Charnwood Borough Council for a definitive list and include these in their assessment.

- 2.25 DTA Response: A sensitivity test has been carried out using updated traffic counts. These include three junctions counted in 2021 (extracted from TA supporting allocated site HA2 application) and in June 2022 (commissioned by DTA and undertaken by LCC) survey data to examine the impact of the development.
- 2.26 Review of those surveys shows the 2021 / 2022 counts are comparable with the previous 2019 surveys. No further calibration or application of 'Covid' factors is therefore considered reasonable.
- 2.27 The 2021 and 2022 base flows have been factored up to a future year assessment of 2027 using rates obtained from TEMPro for the MSOA in which the junctions sit. The TEMPro factors include all known committed development not captured by the recently collected traffic count data. The resulting growth factors are shown below.

Table 4: TEMPro Growth Factors

Years	AM Growth Figure	PM Growth Figure
2021-2027	1.0516	1.0516
2022-2027	1.0426	1.0426

- 2.28 To establish if the 2021/2022 traffic survey data used within the sensitivity test is appropriate for use, DTA has compared the data to the 2018 traffic survey data that was used within the TA. The overriding objective of the exercise is to establish how peak hour traffic flows have changed between 2018 and 2021/2022. If overall traffic levels have fallen or remained constant, it is reasonable to conclude that the data on which the sensitivity is based is robust and appropriate for use.
- 2.29 A comparison of the historic and most recent data at the Barkby Road / Pembury Road and Barkby Road/ Melton Road/ High St junctions is presented below.



Barkby Road/ Pembroke Avenue

Comarison (All vehicles) 2018-2022								
2018 AM	Barkby Road	Pembroke Avenue	Barkby Road N	2022 AM	Barkby Road	Pembroke Avenue	Barkby Road N	
Barkby Road S	0	122	215	Barkby Road S	0	148	211	
Pembroke Avenue	98	0	47	Pembroke Avenue	62	0	33	
Barkby Road N	189	47	0	Barkby Road N	144	57	0	
2018 PM LGV	Barkby Road	Pembroke Avenue	Barkby Road N	2022 PM	Barkby Road	Pembroke Avenue	Barkby Road N	
Barkby Road S	0	80	183	Barkby Road S	0	59	226	
Pembroke Avenue	109	0	47	Pembroke Avenue	121	0	29	
Barkby Road N	205	48	0	Barkby Road N	201	46	0	
				Difference	Barkby Road	Pembroke Avenue	Barkby Road N	Total
				Barkby Road S	0	26	-4	22
				Pembroke Avenue	-36	0	-14	-50
				Barkby Road N	-45	10	0	-35
				Total	-81	36	-18	-63
				Difference	Barkby Road	Pembroke Avenue	Barkby Road N	Total
				Barkby Road S	0	-21	43	22
				Pembroke Avenue	12	0	-18	-6
				Barkby Road N	-4	-2	0	-6
				Total	8	-23	25	10

Barkby Rd / Melton Rd/ High St

Comparison (All Vehicles)- 2018-2022										
2018 AM	Melton Road N	Barkby Road	Melton Road S	High Street	2022 AM	Melton Road N	Barkby Road	Melton Road S	High Street	
Melton Road N	0	89	288	171	Melton Road N	1	79	350	141	
Barkby Road	103	0	85	180	Barkby Road	64	0	79	130	
Melton Road S	223	35	0	80	Melton Road S	290	35	2	72	
High Street	207	95	75	2	High Street	182	87	99	1	
2018 PM	Melton Road N	Barkby Road	Melton Road S	High Street	2022 PM	Melton Road N	Barkby Road	Melton Road S	High Street	
Melton Road N	2	95	244	177	Melton Road N	0	97	292	156	
Barkby Road	72	3	101	115	Barkby Road	69	1	80	112	
Melton Road S	292	66	0	90	Melton Road S	328	77	3	89	
High Street	271	167	85	0	High Street	273	157	71	0	
					Difference	Melton Road N	Barkby Road	Melton Road S	High Street	Total
					Melton Road N	1	-10	62	-30	23
					Barkby Road	-39	0	-6	-50	-95
					Melton Road S	67	0	2	-8	61
					High Street	-25	-8	24	-1	-10
					Total	4	-18	82	-89	-21
					Difference	Melton Road N	Barkby Road	Melton Road S	High Street	Total
					Melton Road N	-2	2	48	-21	27
					Barkby Road	-3	-2	-21	-3	-29
					Melton Road S	36	11	3	-1	49
					High Street	2	-10	-14	0	-22
					Total	33	1	16	-25	25

2.30 The tables indicate that peak hour traffic has decreased at both junctions in the AM between 2018 and 2022 and remains similar in the PM peak. This reinforces the robustness of the 2021/2022 surveyed flows and junction capacity assessments presented within this note and the application of a COVID adjustment factor would not be required.

2.31 The assessment results are summarised below, and the full assessment outputs are contained



within **Appendix E**.

Junction 1: High Street/Melton Road/Barkby Road

	AM			PM		
	Q (PCU)	Delay (s)	RFC	Q (PCU)	Delay (s)	RFC
2022						
1 - Melton Road N	1.5	8.38	0.59	1.5	8.77	0.59
2 - Barkby Road	1.1	19.24	0.53	2.1	27.17	0.69
3 - Melton Road S	1.3	10.39	0.55	2.1	13.73	0.67
4 - High Street	1.1	9.59	0.52	2.9	19.36	0.74
2027						
1 - Melton Road N	1.6	9.04	0.62	1.7	9.57	0.62
2 - Barkby Road	1.3	21.62	0.57	2.6	32.47	0.73
3 - Melton Road S	1.5	11.17	0.58	2.4	15.34	0.70
4 - High Street	1.2	10.34	0.55	3.7	23.52	0.79
2027 + Development						
1 - Melton Road N	1.7	9.24	0.62	1.7	10.10	0.63
2 - Barkby Road	1.7	24.86	0.64	3.3	39.12	0.78
3 - Melton Road S	1.5	11.61	0.59	2.5	15.96	0.71
4 - High Street	1.3	10.82	0.57	4.7	28.90	0.83

2.32 The results show that the junction currently operates within capacity and will continue to operate within capacity in the future year scenario following the inclusion of the development.

Junction 2: Barkby Road/ Queniborough Road

Arm	AM Peak		PM Peak	
	DoS (%)	Queue	DoS (%)	Queue
2021 Base				
Queniborough Road South	63.4	9	52.7	9
Barkby Road West	64.6	7	53.1	5
Queniborough Road North	64.3	11	51.7	7
Barkby Road West	2.6	0	6.9	0
2027				
Queniborough Road South	66.9	10	55.5	9
Barkby Road West	68.0	8	53.2	5
Queniborough Road North	67.6	12	55.8	8
Barkby Road West	2.6	0	6.9	0
2027 + Development				
Queniborough Road South	73.2	11	59.1	10
Barkby Road West	70.8	9	60.4	6
Queniborough Road North	71.6	12	58.7	8
Barkby Road West	2.6	0	6.9	0

2.33 The results indicate that the junction operates with reserve capacity in all scenarios., with the



proposed development having a negligible impact on the performance of the junction.

Junction 3: Goodes Lane/ St Pauls’ Drive

2.34 The Goodes Lane / St Pauls’ Drive was not assessed within the previous versions of the TA. A desktop review of the layout indicated St Pauls Drive is a cul-de-sac serving circa 85 dwellings. The development trip assignment, as shown on Figure 2 of the TA indicates that no development trips are forecast to travel to/from St Pauls Drive, with all development traffic expected to travel along Goodes Lane. This amounts to 39 two way trips in both peak periods. On this basis no further assessment has been considered.

Junction 4: Barkby Road/ Pembroke Avenue

	AM			PM		
	Q (PCU)	Delay (s)	RFC	Q (PCU)	Delay (s)	RFC
2022						
Stream B-C	0.1	6.65	0.06	0.1	7.29	0.06
Stream B-A	0.2	10.13	0.17	0.4	11.96	0.31
Stream C-AB	0.2	6.36	0.13	0.2	5.65	0.10
2027						
Stream B-C	0.1	6.73	0.07	0.1	7.42	0.06
Stream B-A	0.2	10.36	0.18	0.5	12.42	0.32
Stream C-AB	0.2	6.39	0.14	0.2	5.66	0.11
2027 + Dev						
Stream B-C	0.1	7.07	0.07	0.1	7.97	0.07
Stream B-A	0.3	11.24	0.22	0.6	14.23	0.40
Stream C-AB	0.2	6.44	0.14	0.2	5.57	0.11

2.35 The results indicate the junction is operating well within practical capacity and will continue to operate satisfactorily, even with the inclusion of the development.



Junction 5: Goodes Lane/ Melton Road

	AM			PM		
	Q (PCU)	Delay (s)	RFC	Q (PCU)	Delay (s)	RFC
2022						
Stream B-C	1.8	19.78	0.64	0.4	9.93	0.29
Stream B-A	0.2	19.08	0.17	0.1	16.76	0.08
Stream C-AB	1.1	7.50	0.39	5.3	19.67	0.77
2027						
Stream B-C	2.1	22.59	0.68	0.4	10.33	0.31
Stream B-A	0.3	21.92	0.20	0.1	18.14	0.09
Stream C-AB	1.3	7.79	0.42	7.4	26.32	0.83
2027 + Development						
Stream B-C	2.8	27.59	0.74	0.5	10.88	0.34
Stream B-A	0.3	26.44	0.23	0.1	19.58	0.10
Stream C-AB	1.5	8.38	0.46	13.0	47.79	0.92

- 2.36 The results show the junction operates within its theoretical capacity in a future year of 2027. A review of the trip generation and assignment shows that the development impact is an additional 39 two way flows in each peak. This is broadly 1-2 additional vehicles per minute through the junction during the peak hours. This level of increase is considered negligible.

Junction 6: Fosse Way/ High Street

Arm	AM Peak		PM Peak	
	DoS (%)	Queue	DoS (%)	Queue
2021 Base				
Fosse Way North	62.1	10	37.6	7
High Street	69.7	13	76.6	17
Fosse Way South	69.5	15	75.8	16
2027				
Fosse Way North	66.8	11	48.3	9
High Street	70.7	14	80.0	18
Fosse Way South	71.6	16	80.5	18
2027 + Development				
Fosse Way North	76.6	12	41.9	8
High Street	75.6	15	84.0	19
Fosse Way South	77.1	18	83.9	20

- 2.37 The results indicate the junction is operating within practical spare capacity in 2027, with the addition of development traffic resulting in an increase of a maximum of 2 PCU through the junction during the peak periods.



Junction 7: Queniborough Road/ Barkby Road/ Rearsby Road/ Syston Road

- 2.38 Development traffic flows through this junction are forecast to amount to 10 two-way trips in the peak periods. This equates to one additional vehicle every 6 minutes on the network. The Department for Transport's publication entitled "Guidance on Transport Assessment" (GTA) 2007 suggests that formal assessment of a junction may not be required for developments which would typically generate fewer than 30 two-way additional trips.
- 2.39 The 10 trips in each peak are below the 30 two way trip threshold and therefore, no further assessment is deemed necessary.

Appendix A
LCC Formal Response

**Substantive response of the Local Highway
Authority to a planning consultation received
under The Development Management Order.**

Response provided under the delegated authority of the Director of Environment & Transport.

APPLICATION DETAILS:

Planning Application Number: P/21/2639/2

Highway Reference Number: 2021/2639/02/H/R1

Application Address: Land North of Barkby Road Syston Leicestershire

Application Type: Outline (with access)

Description of Application:

Re-consultation. Outline application for up to 195 dwellings with all matters reserved except access.

GENERAL DETAILS

Planning Case Officer: Louise Winson

Applicant: Taylor Wimpey (UK) Ltd

County Councillor: Mr Tom Barkley

Parish: Syston

Road Classification: Class C

Substantive Response provided in accordance with article 22(5) of The Town and Country Planning (Development Management Procedure) (England) Order 2015:

The Local Highway Authority does not consider that the application as submitted fully assesses the highway impact of the proposed development and further information is required as set out in this response. Without this information the Local Highway Authority is unable to provide final highway advice on this application. Under the current Covid-19 situation we would ask that any such work is carried out in accordance with the latest Government guidance.

Advice to Local Planning Authority

Background

The Local Highway Authority (LHA) has been consulted on an outline with access planning application for up to 195 dwellings to be located on land north of Barkby Road, Syston.

The LHA provided an initial holding response on 18th March 2022 as, given the scale of development and due to the volume and complexity of technical evidence submitted, the the LHA required more time to provide formal comments.

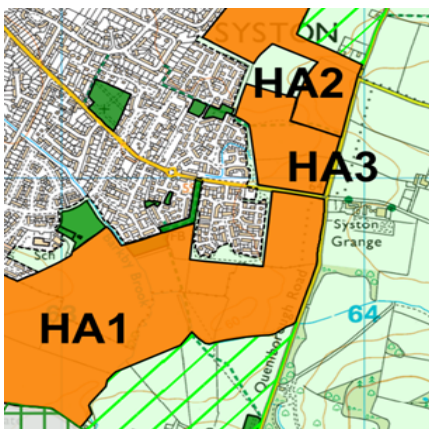
The LHA understand that a previous application for the same quantum of development was submitted in 2018 (Ref: P/18/1366/2). The application was subsequently withdrawn, however the LHA did not advise of an objection.

These highway comments are in response to the following documents which have been submitted via Charnwood Borough Council's planning website.

- Transport Assessment (TA) prepared by David Tucker Associates, dated 30th November 2021;
- Travel Plan prepared by David Tucker Associates, dated 23rd September 2021;
- Location Plan, drawing no. DRG: P20-3155 001;
- Proposed Site Access, drawing no. 20060-02 Rev C; and
- Concept Masterplan, drawing no. DRG: P20-3155 003 Rev F

The LHA note that the application site is site HA3 in the LPA's draft local plan, which is shortly to undergo the EIP stage. As shown in the extract from the LPA's draft local plan proposals map below (not to scale), site HA3 is opposite or adjacent to sites HA1 and HA2.

Whilst the LHA has reviewed the proposed site access below, it is concerned that the development proposals may not have been considered in light of emerging local plan sites HA1 and HA2. For example, could the proposed site access for HA3 have an adverse effect on any potential access strategy for site HA1? The LHA would consider it advisable that this considered at this stage, and would welcome the LPA's view on this matter.



Site Access

Barkby Road is a C classified road, subject to a 40mph speed limit in the vicinity of the site access.

Notwithstanding the LHA's comments with respect to the emerging local plan above, the LHA note that the site is proposed to be accessed via a new priority junction off Barkby Road, Syston, with a ghost right turn lane into the site. As shown on David Tucker drawing number 20060-02 Rev C, a 5.5m width is demonstrated with visibility spays of 2.4m by 75m to the east along Barkby Road and 2.4m by 120m to the west along Barkby Road. The visibility splays have been based on 85th percentile recorded speeds which have been obtained from an ATC survey between the 31/02/2018 – 06/02/2018.

Notwithstanding the above, as the recorded data is more than 3 years old, the LHA would request for a new speed survey to be undertaken at the point of the site access. The Applicant can commission the Network Data and Intelligence team at the LHA to undertake a survey on their behalf should they wish to do so. They can be contacted at ndi@leics.gov.uk. The Applicant is also required to contact the NDI team with respect to obtaining a Section 50 permit in advance of a survey being undertaken.

Vehicle swept path analysis has been provided (DTA drawing no. 20060-02b-1 which demonstrates that the access junction can cater satisfactorily for the swept paths of a large refuse vehicle for all movements. The LHA notes whilst the refuse wagon does encroach onto opposite carriageways, it should be noted that these movements will be infrequent and occur outside of the peak hour periods.

A Stage 1 Road Safety Audit (RSA1), prepared by Mott MacDonald dated 11 October 2018, has been submitted with the TA. The RSA1 did not raise any issues. As there have been no changes to the highway network in the vicinity of the site and there have been no PICs at the location of the site access, the LHA consider the 2018 RSA1 to be acceptable.

Highway Safety

Personal Injury Collision (PIC) data has been obtained from Leicestershire County Council for the most recent five-year period from 01/01/2016 to 28/02/2021.

A total of 18 PICs have been recorded over the most recent 5-year period of which 12 were classed as 'slight' in severity and six classed as 'serious' in severity.

Having reviewed the submitted PIC data, the LHA note on their records that an additional PIC occurred on 16/09/2021 on Queniborough Road and was recorded as 'serious'.

Notwithstanding the above, having reviewed the data, the LHA does not consider there any patterns of PICs which could be exacerbated by the development proposals.

Trip Generation

The Applicant has calculated the predicted vehicular and person trips likely to be generated by the site using the TRICS database and has provided the trip rates shown in Table 6 and associated trip generation in Table 7 below which has been extracted from the TA.

Table 6 – Vehicle and person TRICS trip rates per dwelling

	Vehicle Trips			Person Trips		
	Arrivals	Departur	Total	Arrivals	Departur	Total
08:00-09:00	0.155	0.309	0.464	0.185	0.541	0.726
17:00-18:00	0.288	0.15	0.438	0.412	0.206	0.618
Daily	2.04	2.227	4.267	2.978	3.15	6.128

Table 7 – Vehicle and person generation per 195 dwellings

	Vehicle Trips			Person Trips		
	Arrivals	Departur	Total	Arrivals	Departur	Total
08:00-09:00	30	60	90	36	105	142
17:00-18:00	56	29	85	80	40	121
Daily	398	434	832	581	614	1195

Table 7 demonstrates that the proposed development is predicted to generate 90 two-way vehicle movements in the AM peak and 85 in the PM peak. This would appear low, however as an alternative assessment, the mode share for car drivers in the local area recorded in the 2011 census (71.6%) has been applied to the person trip rates shown in Table 7.

The results of this are summarised in Table 8 below which has been extracted from the TA and compared with the TRICS results.

Table 8 – Census derived traffic generation

	TRICS			Census		
	Arrivals	Departur	Total	Arrivals	Departur	Total
08:00-09:00	30	60	90	26	75	102
17:00-18:00	56	29	85	57	29	87
Daily	398	434	832	416	440	856

Table 8 shows that by applying the journey to work mode share data to the person trips, and comparing the results to those derived from TRICS, the trip generation is slightly higher but comparable.

The Applicant also undertook a traffic count on 1st February 2018, which is more than 3 years old at the junction of St Paul's Drive (accessed from Goodes Lane, Syston) to derive a local trip rate for the area, resulting in the trip rates shown in Table 9 which has been extracted from the TA.

Table 9 – Local derived traffic generation (195 dwellings)

	Derived Trip Rate			Trip Generation		
	Arrivals	Departur	Total	Arrivals	Departur	Total
08:00-09:00	0.127	0.215	0.342	25	42	67
17:00-18:00	0.418	0.215	0.633	82	42	123

The Applicant then compared all three sets of trip generation figures and selected the highest set for each peak period, resulting in the trip generation figures shown in Table 10 below which has been extracted from the TA.

Table 10 – Trip Generation Used in the Assessment

	Trip Generation		
	Arrivals	Departur	Total
08:00-09:00	26	75	102
17:00-18:00	82	42	123

Table 10 demonstrates that the proposed development is predicted to generate 102 two-way vehicle movements in the AM peak and 123 in the PM peak. Notwithstanding, the LHA still consider these trip rates to be low. The LHA would therefore request for the TRICS analysis to be re-run with revised trip rates and applying the journey to work census mode share data to the person trips. The Applicant should then consider which trip generation assessment is more robust and these revised trip rates and trip generation should then submitted to the LHA for review.

The development trips have been assigned to the wider surrounding highway network on the basis of information extracted from the 2011 census using the Charnwood 018 Middle Super Output Area (MSOA). The LHA accepts the trip distribution outlined within the TA.

Traffic Base Flows and Junction Capacity Assessments.

Classified Turning Counts (CTC) and queue length surveys were also carried out at a number of local junctions on the road network to inform the assessment. The counts were carried out at the following junctions:

- High Street/Melton Road/Barkby Road;
- Barkby Road/ Queniborough Road;
- Goodes Lane/ St Pauls' Drive;
- Barkby Road/ Pembroke Avenue; and
- Goodes Lane/ Melton Road

These surveys were carried out on 1st February 2018 during the hours of 07:00-10:00 and 16:00-19:00 and recorded direction, volume and classification of traffic.

Notwithstanding the above, the LHA would request for new surveys to be carried out the junctions listed above as the data is more than three years old. Covid adjustment factors should be applied to the flows and these can be obtained from the NDI team by contacting ndi@leics.gov.uk. As mentioned early the Applicant should also contact the NDI team with respective to obtaining Section 50 permits for the surveys.

Once these surveys have been undertaken, the LHA would request for the junction capacity assessments to be re-run. Assessments are also required include Fosse Way/ High Street and Barkby Road/ Pembroke Avenue junctions. The results should be submitted to the LHA for review, including the ARCADY and PICADY modelling files. The 2022 base flows should be factored up to a future year of 2027, with the TEMPro growth factors to also be revised. The LHA are aware of a number of committed developments within the vicinity of this application site and their traffic flows on the local network would have an effect. The Applicant should therefore contact Charnwood Borough Council for a definitive list, and include these in their assessment.

Internal Layout

As the application is in outline, with only access to be determined at this stage, the submitted indicative site layout and matters such as the proposed numbers of parking spaces have not been reviewed or considered by the LHA in preparing this response. However, the TA suggests that the internal road network would be put forward for adoption and accordingly, the LHA advises that the proposals are required to be designed in accordance with the prevailing Leicestershire Highways Design Guide (LHDG) and local parking standards when a future reserved matters application is submitted.

Transport Sustainability

The LHA would require that the Applicant should to explore/develop options for a flexible form of transport provision, which whilst not necessarily adhering to the minimum hourly frequency, does cover the whole of the day 7-7pm (Monday-Friday) and 8-6pm Saturday. It could take the form of a demand based model. The Applicant should explore options and then submit proposals to the LHA for approval, after which they would then go and secure the service/provision.

Travel Plan

The Applicant has submitted a Travel Plan which has been reviewed by the LHA. Notwithstanding the above, the Travel Plan is considered to be comprehensive with many positive features including modal shift targets and clear reference to local sustainable travel where possible. When a Travel Plan Coordinator (TPC) has been appointed by the developer of the site, contact details of the TPC will be forwarded to LCC. The TPC's full responsibilities are listed in the Travel Plan and are acceptable.

Date Received
18 March 2022

Case Officer
Suraj Dave

Reviewer
AW

Date issued
13 May 2022

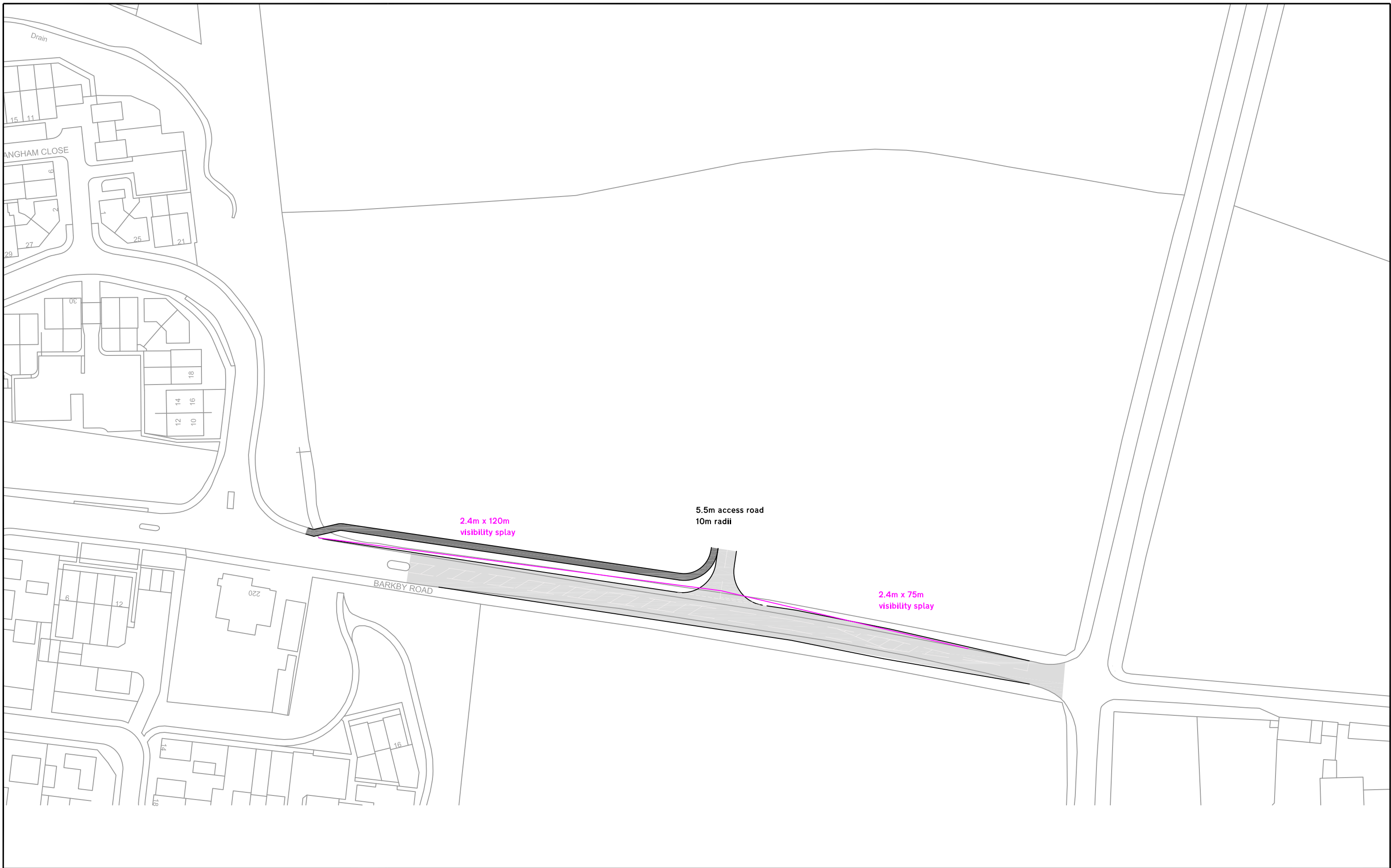
Appendix B
ATC Survey

10561 SYSTON										
JUNE 2021										
Site	Location	Direction	Start Date	End Date	Posted Speed Limit (PSL)	Total Vehicles	5 Day Ave.	7 Day Ave.	Average 85%ile Speed	Average Mean Speed
Site No: 10561004	Site 4 - Barkby Rd, Syston att to warning sign 52.69243, -1.05782	Channel: Eastbound	Sat 19-Jun-21	Fri 25-Jun-21	40	14103	2173	2015	42.9	36.4
		Channel: Westbound	Sat 19-Jun-21	Fri 25-Jun-21		14381	2204	2054	39.9	34.3

Direction	Recorded 85%ile speed		survey weather conditions	Wet weather design speed (with adjustment where appropriate)			Criteria	reaction time	deceleration rate	gradient	stopping sight distance	bonnet adjusted SSD
	mph	kph		mph	kph	m/s		s	m/s ²	%	m	m
Channel: Eastbound	42.9	69.0	dry	40.4	65.0	18.1	MfS	1.5	4.4	0.0	64.0	66.4
Channel: Westbound	39.9	64.2	dry	37.4	60.2	16.7	MfS	1.5	4.4	0.0	56.7	59.1

Appendix C

Site Access Plan / Visibility Splay



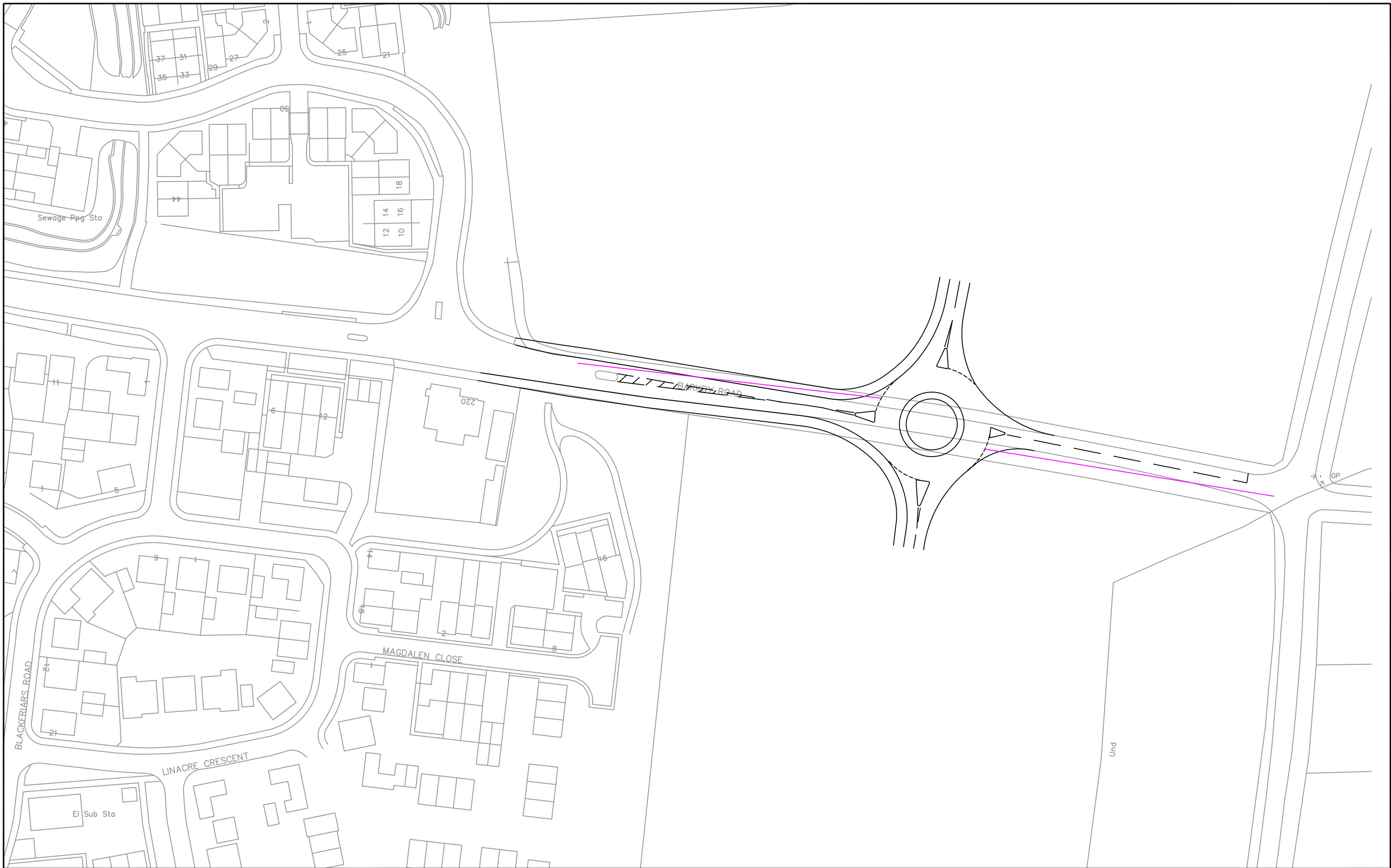
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REV	DESCRIPTION	DRAWN	INITIALS	DATE	DRAWING STATUS	CHECKED BY	DATE



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JOB TITLE		System		CLIENT		Taylor Wimpey	
DRAWING TITLE							
Proposed Site Access Right Turn Lane Northern Site							
SCALE	DRAWN BY	DATE	DRAWING No	REVISION			
1/1000@A3	RM	Nov21	20060-02	C			



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REV	DESCRIPTION	DRAWN	INITIALS	DATE	DRAWING STATUS	CHECKED BY	DATE



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JOB TITLE		System		CLIENT		Taylor Wimpey	
DRAWING TITLE							
Proposed Site Access							
SCALE	DRAWN BY	DATE	DRAWING No	REVISION			
1/1000@A3	BP	Oct 2017	19407-02				

Appendix D

Allocated Site HA2 Trip rates

**A114488 - Proposed Residential Development, Queniborough
Road, Syston
Trip Generation**

Proposed number of dwellings

251

Trip generation has been estimated using trip rates from the Residential (Privately Owned) Category in the TRICS database. Trip rates are shown in **Table 1**.

Table 1 - TRICS 'Residential (Houses Privately Owned)' Trip Rates

Mode	AM (08:00-09:00)			PM (17:00-18:00)		
	Arrivals	Departures	Total	Arrivals	Departures	Total
Vehicles	0.127	0.392	0.519	0.374	0.193	0.567
Taxis	0.003	0.003	0.006	0.002	0.001	0.003
OGVs	0.003	0.002	0.005	0.001	0.001	0.002
PSVs	0.003	0.003	0.006	0.000	0.000	0.000
Cyclists	0.003	0.011	0.014	0.006	0.004	0.010
Vehicle Occupants	0.163	0.645	0.808	0.580	0.281	0.861
Pedestrians	0.028	0.070	0.098	0.049	0.028	0.077
Public Transport Users	0.001	0.030	0.031	0.014	0.002	0.016
Total People	0.196	0.756	0.952	0.648	0.315	0.963

Using the trip rates in **Table 1**, trip generation for a residential development with 251 dwellings is shown in **Table 2**.

Table 2 - Trip Generation

Mode	AM (08:00-09:00)			PM (17:00-18:00)		
	Arrivals	Departures	Total	Arrivals	Departures	Total
Vehicles	32	98	130	94	48	142
Taxis	1	1	2	1	0	1
OGVs	1	1	1	0	0	1
PSVs	1	1	2	0	0	0
Cyclists	1	3	4	2	1	3
Vehicle Occupants	41	162	203	146	71	216
Pedestrians	7	18	25	12	7	19
Public Transport Users	0	8	8	4	1	4
Total People	49	190	239	163	79	242

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 03 - RESIDENTIAL
 Category : A - HOUSES PRIVATELY OWNED
 MULTI-MODAL TOTAL VEHICLES

Selected regions and areas:

02	SOUTH EAST	
	ES EAST SUSSEX	1 days
	HC HAMPSHIRE	1 days
	HF HERTFORDSHIRE	1 days
	KC KENT	4 days
	SC SURREY	1 days
	WS WEST SUSSEX	3 days
03	SOUTH WEST	
	DV DEVON	2 days
04	EAST ANGLIA	
	NF NORFOLK	2 days
06	WEST MIDLANDS	
	SH SHROPSHIRE	1 days
	ST STAFFORDSHIRE	1 days
07	YORKSHIRE & NORTH LINCOLNSHIRE	
	NE NORTH EAST LINCOLNSHIRE	1 days
	NY NORTH YORKSHIRE	1 days
09	NORTH	
	DH DURHAM	1 days
11	SCOTLAND	
	FA FALKIRK	1 days
12	CONNAUGHT	
	CS SLIGO	1 days
	LT LEITRIM	1 days
13	MUNSTER	
	WA WATERFORD	1 days
14	LEINSTER	
	WC WICKLOW	1 days
15	GREATER DUBLIN	
	DL DUBLIN	1 days
16	ULSTER (REPUBLIC OF IRELAND)	
	CV CAVAN	1 days
	DN DONEGAL	3 days
17	ULSTER (NORTHERN IRELAND)	
	AN ANTRIM	2 days
	DO DOWN	1 days

This section displays the number of survey days per TRICS® sub-region in the selected set

WYG Lakeview Drive Nottingham

Licence No: 705124

Primary Filtering selection:

This data displays the chosen trip rate parameter and its selected range. Only sites that fall within the parameter range are included in the trip rate calculation.

Parameter: No of Dwellings
 Actual Range: 50 to 432 (units:)
 Range Selected by User: 50 to 500 (units:)

Parking Spaces Range: All Surveys Included

Parking Spaces per Dwelling Range: Selected: 1 to 4 Actual: 0.23 to 8.75

Bedrooms per Dwelling Range: All Surveys Included

Percentage of dwellings privately owned: All Surveys Included

Public Transport Provision:

Selection by: Include all surveys

Date Range: 01/01/13 to 31/01/20

This data displays the range of survey dates selected. Only surveys that were conducted within this date range are included in the trip rate calculation.

Selected survey days:

Monday	8 days
Tuesday	5 days
Wednesday	10 days
Thursday	6 days
Friday	4 days

This data displays the number of selected surveys by day of the week.

Selected survey types:

Manual count	33 days
Directional ATC Count	0 days

This data displays the number of manual classified surveys and the number of unclassified ATC surveys, the total adding up to the overall number of surveys in the selected set. Manual surveys are undertaken using staff, whilst ATC surveys are undertaken using machines.

Selected Locations:

Suburban Area (PPS6 Out of Centre)	11
Edge of Town	19
Neighbourhood Centre (PPS6 Local Centre)	3

This data displays the number of surveys per main location category within the selected set. The main location categories consist of Free Standing, Edge of Town, Suburban Area, Neighbourhood Centre, Edge of Town Centre, Town Centre and Not Known.

Selected Location Sub Categories:

Residential Zone	26
Village	3
No Sub Category	4

This data displays the number of surveys per location sub-category within the selected set. The location sub-categories consist of Commercial Zone, Industrial Zone, Development Zone, Residential Zone, Retail Zone, Built-Up Zone, Village, Out of Town, High Street and No Sub Category.

Secondary Filtering selection:

Use Class:

C3 33 days

This data displays the number of surveys per Use Class classification within the selected set. The Use Classes Order 2005 has been used for this purpose, which can be found within the Library module of TRICS@.

Population within 500m Range:

All Surveys Included

WYG Lakeview Drive Nottingham

Licence No: 705124

Secondary Filtering selection (Cont.):

Population within 1 mile:

1,000 or Less	2 days
1,001 to 5,000	7 days
5,001 to 10,000	9 days
10,001 to 15,000	10 days
15,001 to 20,000	2 days
20,001 to 25,000	3 days

This data displays the number of selected surveys within stated 1-mile radii of population.

Population within 5 miles:

5,000 or Less	1 days
5,001 to 25,000	11 days
25,001 to 50,000	6 days
50,001 to 75,000	4 days
75,001 to 100,000	9 days
100,001 to 125,000	2 days

This data displays the number of selected surveys within stated 5-mile radii of population.

Car ownership within 5 miles:

0.6 to 1.0	6 days
1.1 to 1.5	23 days
1.6 to 2.0	4 days

This data displays the number of selected surveys within stated ranges of average cars owned per residential dwelling, within a radius of 5-miles of selected survey sites.

Travel Plan:

Yes	6 days
No	27 days

This data displays the number of surveys within the selected set that were undertaken at sites with Travel Plans in place, and the number of surveys that were undertaken at sites without Travel Plans.

PTAL Rating:

No PTAL Present	33 days
-----------------	---------

This data displays the number of selected surveys with PTAL Ratings.

LIST OF SITES relevant to selection parameters

1	AN-03-A-08 BALLINDERRY ROAD LISBURN	HOUSES & FLATS	ANTRIM
	Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings: 204 <i>Survey date: TUESDAY 29/10/13</i>		
	<i>Survey Type: MANUAL</i>		
2	AN-03-A-09 SLOEFIELD DRIVE CARRICKFERGUS	DETACHED & SEMI -DETACHED	ANTRIM
	Edge of Town No Sub Category Total No of Dwellings: 151 <i>Survey date: WEDNESDAY 12/10/16</i>		
	<i>Survey Type: MANUAL</i>		
3	CS-03-A-04 R292 STRANDHILL	DETACHED & SEMI -DETACHED	SLIGO
	Neighbourhood Centre (PPS6 Local Centre) Village Total No of Dwellings: 63 <i>Survey date: THURSDAY 27/10/16</i>		
	<i>Survey Type: MANUAL</i>		
4	CV-03-A-02 R212 DUBLIN ROAD CAVAN KILLYNEBBER	DETACHED & SEMI DETACHED	CAVAN
	Edge of Town No Sub Category Total No of Dwellings: 80 <i>Survey date: MONDAY 22/05/17</i>		
	<i>Survey Type: MANUAL</i>		
5	DH-03-A-01 GREENFIELDS ROAD BISHOP AUCKLAND	SEMI DETACHED	DURHAM
	Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings: 50 <i>Survey date: TUESDAY 28/03/17</i>		
	<i>Survey Type: MANUAL</i>		
6	DL-03-A-10 R124 MALAHIDE SAINT HELENS	SEMI DETACHED & DETACHED	DUBLIN
	Edge of Town Residential Zone Total No of Dwellings: 65 <i>Survey date: WEDNESDAY 20/06/18</i>		
	<i>Survey Type: MANUAL</i>		
7	DN-03-A-03 THE GRANGE LETTERKENNY GLENCAR IRISH	DETACHED/SEMI -DETACHED	DONEGAL
	Edge of Town Residential Zone Total No of Dwellings: 50 <i>Survey date: MONDAY 01/09/14</i>		
	<i>Survey Type: MANUAL</i>		

LIST OF SITES relevant to selection parameters (Cont.)

8	DN-03-A-04 GORTLEE ROAD LETTERKENNY GORTLEE Edge of Town Residential Zone Total No of Dwellings: 83 <i>Survey date: FRIDAY 26/09/14</i>	SEMI -DETACHED	DONEGAL	<i>Survey Type: MANUAL</i>
9	DN-03-A-05 GORTLEE ROAD LETTERKENNY GORTLEE Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings: 146 <i>Survey date: WEDNESDAY 03/09/14</i>	DETACHED/SEMI -DETACHED	DONEGAL	<i>Survey Type: MANUAL</i>
10	DO-03-A-03 OLD MILL HEIGHTS BELFAST DUNDONALD Edge of Town Residential Zone Total No of Dwellings: 79 <i>Survey date: WEDNESDAY 23/10/13</i>	DETACHED/SEMI DETACHED	DOWN	<i>Survey Type: MANUAL</i>
11	DV-03-A-02 MILLHEAD ROAD HONITON Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings: 116 <i>Survey date: FRIDAY 25/09/15</i>	HOUSES & BUNGALOWS	DEVON	<i>Survey Type: MANUAL</i>
12	DV-03-A-03 LOWER BRAND LANE HONITON Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings: 70 <i>Survey date: MONDAY 28/09/15</i>	TERRACED & SEMI DETACHED	DEVON	<i>Survey Type: MANUAL</i>
13	ES-03-A-04 NEW LYDD ROAD CAMBER Edge of Town Residential Zone Total No of Dwellings: 134 <i>Survey date: FRIDAY 15/07/16</i>	MIXED HOUSES & FLATS	EAST SUSSEX	<i>Survey Type: MANUAL</i>
14	FA-03-A-02 ROSEBANK AVENUE & SPRINGFIELD DRIVE FALKIRK Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings: 161 <i>Survey date: WEDNESDAY 29/05/13</i>	MIXED HOUSES	FALKIRK	<i>Survey Type: MANUAL</i>

LIST OF SITES relevant to selection parameters (Cont.)

15	HC-03-A-23 CANADA WAY LIPHOOK	HOUSES & FLATS	HAMPSHIRE
	Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings: 62 <i>Survey date: TUESDAY 19/11/19</i>		
	<i>Survey Type: MANUAL</i>		
16	HF-03-A-03 HARE STREET ROAD BUNTINGFORD	MIXED HOUSES	HERTFORDSHIRE
	Edge of Town Residential Zone Total No of Dwellings: 160 <i>Survey date: MONDAY 08/07/19</i>		
	<i>Survey Type: MANUAL</i>		
17	KC-03-A-03 HYTHE ROAD ASHFORD WILLESBOROUGH	MIXED HOUSES & FLATS	KENT
	Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings: 51 <i>Survey date: THURSDAY 14/07/16</i>		
	<i>Survey Type: MANUAL</i>		
18	KC-03-A-06 MARGATE ROAD HERNE BAY	MIXED HOUSES & FLATS	KENT
	Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings: 363 <i>Survey date: WEDNESDAY 27/09/17</i>		
	<i>Survey Type: MANUAL</i>		
19	KC-03-A-07 RECVLVER ROAD HERNE BAY	MIXED HOUSES	KENT
	Edge of Town Residential Zone Total No of Dwellings: 288 <i>Survey date: WEDNESDAY 27/09/17</i>		
	<i>Survey Type: MANUAL</i>		
20	KC-03-A-08 MAIDSTONE ROAD CHARING	MIXED HOUSES	KENT
	Neighbourhood Centre (PPS6 Local Centre) Village Total No of Dwellings: 159 <i>Survey date: TUESDAY 22/05/18</i>		
	<i>Survey Type: MANUAL</i>		
21	LT-03-A-01 ARDNA SI CARRICK-ON-SHANNON ATTIRORY	SEMI-DETACHED & DETACHED	LEITRIM
	Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings: 90 <i>Survey date: FRIDAY 24/04/15</i>		
	<i>Survey Type: MANUAL</i>		
22	NE-03-A-02 HANOVER WALK SCUNTHORPE	SEMI DETACHED & DETACHED	NORTH EAST LINCOLNSHIRE
	Edge of Town No Sub Category Total No of Dwellings: 432 <i>Survey date: MONDAY 12/05/14</i>		
	<i>Survey Type: MANUAL</i>		

LIST OF SITES relevant to selection parameters (Cont.)

23	NF-03-A-04	MIXED HOUSES		NORFOLK
	NORTH WALSHAM ROAD			
	NORTH WALSHAM			
	Edge of Town			
	Residential Zone			
	Total No of Dwellings:		70	
	Survey date: WEDNESDAY		18/09/19	Survey Type: MANUAL
24	NF-03-A-06	MIXED HOUSES		NORFOLK
	BEAUFORT WAY			
	GREAT YARMOUTH			
	BRADWELL			
	Edge of Town			
	Residential Zone			
	Total No of Dwellings:		275	
	Survey date: MONDAY		23/09/19	Survey Type: MANUAL
25	NY-03-A-09	MIXED HOUSING		NORTH YORKSHIRE
	GRAMMAR SCHOOL LANE			
	NORTHALLERTON			
	Suburban Area (PPS6 Out of Centre)			
	Residential Zone			
	Total No of Dwellings:		52	
	Survey date: MONDAY		16/09/13	Survey Type: MANUAL
26	SC-03-A-04	DETACHED & TERRACED		SURREY
	HIGH ROAD			
	BYFLEET			
	Edge of Town			
	Residential Zone			
	Total No of Dwellings:		71	
	Survey date: THURSDAY		23/01/14	Survey Type: MANUAL
27	SH-03-A-05	SEMI -DETACHED/TERRACED		SHROPSHIRE
	SANDCROFT			
	TELFORD			
	SUTTON HILL			
	Edge of Town			
	Residential Zone			
	Total No of Dwellings:		54	
	Survey date: THURSDAY		24/10/13	Survey Type: MANUAL
28	ST-03-A-07	DETACHED & SEMI -DETACHED		STAFFORDSHIRE
	BEACONSIDE			
	STAFFORD			
	MARSTON GATE			
	Edge of Town			
	Residential Zone			
	Total No of Dwellings:		248	
	Survey date: WEDNESDAY		22/11/17	Survey Type: MANUAL
29	WA-03-A-04	DETACHED		WATERFORD
	MAYPARK LANE			
	WATERFORD			
	Edge of Town			
	Residential Zone			
	Total No of Dwellings:		280	
	Survey date: TUESDAY		24/06/14	Survey Type: MANUAL
30	WC-03-A-01	DETACHED HOUSES		WICKLOW
	STATION ROAD			
	WICKLOW			
	CORPORATION MURRAGH			
	Edge of Town			
	No Sub Category			
	Total No of Dwellings:		50	
	Survey date: MONDAY		28/05/18	Survey Type: MANUAL

LIST OF SITES relevant to selection parameters (Cont.)

31	WS-03-A-04	MIXED HOUSES	WEST SUSSEX
	HILLS FARM LANE		
	HORSHAM		
	BROADBRIDGE HEATH		
	Edge of Town		
	Residential Zone		
	Total No of Dwellings:	151	
	Survey date: THURSDAY	11/12/14	Survey Type: MANUAL
32	WS-03-A-07	BUNGALOWS	WEST SUSSEX
	EMMS LANE		
	NEAR HORSHAM		
	BROOKS GREEN		
	Neighbourhood Centre (PPS6 Local Centre)		
	Village		
	Total No of Dwellings:	57	
	Survey date: THURSDAY	19/10/17	Survey Type: MANUAL
33	WS-03-A-10	MIXED HOUSES	WEST SUSSEX
	TODDINGTON LANE		
	LITTLEHAMPTON		
	WICK		
	Edge of Town		
	Residential Zone		
	Total No of Dwellings:	79	
	Survey date: WEDNESDAY	07/11/18	Survey Type: MANUAL

This section provides a list of all survey sites and days in the selected set. For each individual survey site, it displays a unique site reference code and site address, the selected trip rate calculation parameter and its value, the day of the week and date of each survey, and whether the survey was a manual classified count or an ATC count.

WYG Lakeview Drive Nottingham

Licence No: 705124

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED

MULTI-MODAL TOTAL VEHICLES

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	33	135	0.065	33	135	0.252	33	135	0.317
08:00 - 09:00	33	135	0.127	33	135	0.392	33	135	0.519
09:00 - 10:00	33	135	0.160	33	135	0.190	33	135	0.350
10:00 - 11:00	33	135	0.133	33	135	0.168	33	135	0.301
11:00 - 12:00	33	135	0.131	33	135	0.162	33	135	0.293
12:00 - 13:00	33	135	0.188	33	135	0.170	33	135	0.358
13:00 - 14:00	33	135	0.178	33	135	0.178	33	135	0.356
14:00 - 15:00	33	135	0.199	33	135	0.209	33	135	0.408
15:00 - 16:00	33	135	0.282	33	135	0.188	33	135	0.470
16:00 - 17:00	33	135	0.302	33	135	0.185	33	135	0.487
17:00 - 18:00	33	135	0.374	33	135	0.193	33	135	0.567
18:00 - 19:00	33	135	0.298	33	135	0.208	33	135	0.506
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			2.437			2.495			4.932

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: $COUNT/TRP*FACT$. Trip rates are then rounded to 3 decimal places.

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Parameter summary

Trip rate parameter range selected: 50 - 432 (units:)
 Survey date range: 01/01/13 - 31/01/20
 Number of weekdays (Monday-Friday): 33
 Number of Saturdays: 0
 Number of Sundays: 0
 Surveys automatically removed from selection: 3
 Surveys manually removed from selection: 0

This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are shown. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED

MULTI-MODAL TAXIS

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	33	135	0.002	33	135	0.002	33	135	0.004
08:00 - 09:00	33	135	0.003	33	135	0.003	33	135	0.006
09:00 - 10:00	33	135	0.003	33	135	0.002	33	135	0.005
10:00 - 11:00	33	135	0.002	33	135	0.002	33	135	0.004
11:00 - 12:00	33	135	0.004	33	135	0.004	33	135	0.008
12:00 - 13:00	33	135	0.003	33	135	0.002	33	135	0.005
13:00 - 14:00	33	135	0.003	33	135	0.002	33	135	0.005
14:00 - 15:00	33	135	0.002	33	135	0.003	33	135	0.005
15:00 - 16:00	33	135	0.005	33	135	0.004	33	135	0.009
16:00 - 17:00	33	135	0.004	33	135	0.004	33	135	0.008
17:00 - 18:00	33	135	0.002	33	135	0.001	33	135	0.003
18:00 - 19:00	33	135	0.002	33	135	0.003	33	135	0.005
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.035			0.032			0.067

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

WYG Lakeview Drive Nottingham

Licence No: 705124

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED

MULTI-MODAL OGVS

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	33	135	0.001	33	135	0.001	33	135	0.002
08:00 - 09:00	33	135	0.003	33	135	0.002	33	135	0.005
09:00 - 10:00	33	135	0.004	33	135	0.003	33	135	0.007
10:00 - 11:00	33	135	0.003	33	135	0.004	33	135	0.007
11:00 - 12:00	33	135	0.002	33	135	0.002	33	135	0.004
12:00 - 13:00	33	135	0.003	33	135	0.004	33	135	0.007
13:00 - 14:00	33	135	0.002	33	135	0.001	33	135	0.003
14:00 - 15:00	33	135	0.002	33	135	0.002	33	135	0.004
15:00 - 16:00	33	135	0.004	33	135	0.003	33	135	0.007
16:00 - 17:00	33	135	0.002	33	135	0.002	33	135	0.004
17:00 - 18:00	33	135	0.001	33	135	0.001	33	135	0.002
18:00 - 19:00	33	135	0.001	33	135	0.001	33	135	0.002
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.028			0.026			0.054

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: $COUNT/TRP*FACT$. Trip rates are then rounded to 3 decimal places.

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED

MULTI-MODAL PSVS

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	33	135	0.000	33	135	0.000	33	135	0.000
08:00 - 09:00	33	135	0.003	33	135	0.003	33	135	0.006
09:00 - 10:00	33	135	0.000	33	135	0.000	33	135	0.000
10:00 - 11:00	33	135	0.000	33	135	0.000	33	135	0.000
11:00 - 12:00	33	135	0.001	33	135	0.001	33	135	0.002
12:00 - 13:00	33	135	0.000	33	135	0.000	33	135	0.000
13:00 - 14:00	33	135	0.000	33	135	0.000	33	135	0.000
14:00 - 15:00	33	135	0.001	33	135	0.001	33	135	0.002
15:00 - 16:00	33	135	0.002	33	135	0.002	33	135	0.004
16:00 - 17:00	33	135	0.000	33	135	0.000	33	135	0.000
17:00 - 18:00	33	135	0.000	33	135	0.000	33	135	0.000
18:00 - 19:00	33	135	0.000	33	135	0.000	33	135	0.000
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.007			0.007			0.014

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: $COUNT/TRP*FACT$. Trip rates are then rounded to 3 decimal places.

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED

MULTI-MODAL CYCLISTS

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	33	135	0.003	33	135	0.006	33	135	0.009
08:00 - 09:00	33	135	0.003	33	135	0.011	33	135	0.014
09:00 - 10:00	33	135	0.001	33	135	0.003	33	135	0.004
10:00 - 11:00	33	135	0.002	33	135	0.003	33	135	0.005
11:00 - 12:00	33	135	0.002	33	135	0.002	33	135	0.004
12:00 - 13:00	33	135	0.003	33	135	0.003	33	135	0.006
13:00 - 14:00	33	135	0.003	33	135	0.002	33	135	0.005
14:00 - 15:00	33	135	0.003	33	135	0.002	33	135	0.005
15:00 - 16:00	33	135	0.005	33	135	0.003	33	135	0.008
16:00 - 17:00	33	135	0.006	33	135	0.005	33	135	0.011
17:00 - 18:00	33	135	0.006	33	135	0.004	33	135	0.010
18:00 - 19:00	33	135	0.004	33	135	0.003	33	135	0.007
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.041			0.047			0.088

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: $COUNT/TRP*FACT$. Trip rates are then rounded to 3 decimal places.

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED

MULTI-MODAL VEHICLE OCCUPANTS

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	33	135	0.079	33	135	0.374	33	135	0.453
08:00 - 09:00	33	135	0.163	33	135	0.645	33	135	0.808
09:00 - 10:00	33	135	0.201	33	135	0.281	33	135	0.482
10:00 - 11:00	33	135	0.169	33	135	0.239	33	135	0.408
11:00 - 12:00	33	135	0.174	33	135	0.232	33	135	0.406
12:00 - 13:00	33	135	0.251	33	135	0.233	33	135	0.484
13:00 - 14:00	33	135	0.248	33	135	0.249	33	135	0.497
14:00 - 15:00	33	135	0.280	33	135	0.291	33	135	0.571
15:00 - 16:00	33	135	0.464	33	135	0.270	33	135	0.734
16:00 - 17:00	33	135	0.488	33	135	0.270	33	135	0.758
17:00 - 18:00	33	135	0.580	33	135	0.281	33	135	0.861
18:00 - 19:00	33	135	0.465	33	135	0.313	33	135	0.778
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			3.562			3.678			7.240

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: $COUNT/TRP*FACT$. Trip rates are then rounded to 3 decimal places.

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED

MULTI-MODAL PEDESTRIANS

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	33	135	0.012	33	135	0.033	33	135	0.045
08:00 - 09:00	33	135	0.028	33	135	0.070	33	135	0.098
09:00 - 10:00	33	135	0.032	33	135	0.044	33	135	0.076
10:00 - 11:00	33	135	0.036	33	135	0.043	33	135	0.079
11:00 - 12:00	33	135	0.029	33	135	0.027	33	135	0.056
12:00 - 13:00	33	135	0.032	33	135	0.027	33	135	0.059
13:00 - 14:00	33	135	0.039	33	135	0.037	33	135	0.076
14:00 - 15:00	33	135	0.042	33	135	0.038	33	135	0.080
15:00 - 16:00	33	135	0.068	33	135	0.046	33	135	0.114
16:00 - 17:00	33	135	0.061	33	135	0.037	33	135	0.098
17:00 - 18:00	33	135	0.049	33	135	0.028	33	135	0.077
18:00 - 19:00	33	135	0.038	33	135	0.043	33	135	0.081
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.466			0.473			0.939

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED

MULTI-MODAL BUS/TRAM PASSENGERS

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	33	135	0.000	33	135	0.006	33	135	0.006
08:00 - 09:00	33	135	0.001	33	135	0.021	33	135	0.022
09:00 - 10:00	33	135	0.002	33	135	0.009	33	135	0.011
10:00 - 11:00	33	135	0.003	33	135	0.003	33	135	0.006
11:00 - 12:00	33	135	0.003	33	135	0.003	33	135	0.006
12:00 - 13:00	33	135	0.003	33	135	0.004	33	135	0.007
13:00 - 14:00	33	135	0.003	33	135	0.002	33	135	0.005
14:00 - 15:00	33	135	0.003	33	135	0.004	33	135	0.007
15:00 - 16:00	33	135	0.015	33	135	0.006	33	135	0.021
16:00 - 17:00	33	135	0.009	33	135	0.003	33	135	0.012
17:00 - 18:00	33	135	0.007	33	135	0.002	33	135	0.009
18:00 - 19:00	33	135	0.012	33	135	0.003	33	135	0.015
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.061			0.066			0.127

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED

MULTI-MODAL TOTAL RAIL PASSENGERS

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	33	135	0.000	33	135	0.007	33	135	0.007
08:00 - 09:00	33	135	0.000	33	135	0.008	33	135	0.008
09:00 - 10:00	33	135	0.000	33	135	0.002	33	135	0.002
10:00 - 11:00	33	135	0.000	33	135	0.000	33	135	0.000
11:00 - 12:00	33	135	0.000	33	135	0.001	33	135	0.001
12:00 - 13:00	33	135	0.000	33	135	0.001	33	135	0.001
13:00 - 14:00	33	135	0.000	33	135	0.000	33	135	0.000
14:00 - 15:00	33	135	0.000	33	135	0.000	33	135	0.000
15:00 - 16:00	33	135	0.002	33	135	0.000	33	135	0.002
16:00 - 17:00	33	135	0.003	33	135	0.000	33	135	0.003
17:00 - 18:00	33	135	0.007	33	135	0.000	33	135	0.007
18:00 - 19:00	33	135	0.006	33	135	0.001	33	135	0.007
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.018			0.020			0.038

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED

MULTI-MODAL COACH PASSENGERS

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	33	135	0.000	33	135	0.000	33	135	0.000
08:00 - 09:00	33	135	0.000	33	135	0.002	33	135	0.002
09:00 - 10:00	33	135	0.000	33	135	0.000	33	135	0.000
10:00 - 11:00	33	135	0.000	33	135	0.000	33	135	0.000
11:00 - 12:00	33	135	0.000	33	135	0.000	33	135	0.000
12:00 - 13:00	33	135	0.000	33	135	0.000	33	135	0.000
13:00 - 14:00	33	135	0.000	33	135	0.000	33	135	0.000
14:00 - 15:00	33	135	0.001	33	135	0.000	33	135	0.001
15:00 - 16:00	33	135	0.001	33	135	0.000	33	135	0.001
16:00 - 17:00	33	135	0.000	33	135	0.000	33	135	0.000
17:00 - 18:00	33	135	0.000	33	135	0.000	33	135	0.000
18:00 - 19:00	33	135	0.000	33	135	0.000	33	135	0.000
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.002			0.002			0.004

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: $COUNT/TRP*FACT$. Trip rates are then rounded to 3 decimal places.

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED

MULTI-MODAL PUBLIC TRANSPORT USERS

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	33	135	0.000	33	135	0.012	33	135	0.012
08:00 - 09:00	33	135	0.001	33	135	0.030	33	135	0.031
09:00 - 10:00	33	135	0.002	33	135	0.011	33	135	0.013
10:00 - 11:00	33	135	0.003	33	135	0.004	33	135	0.007
11:00 - 12:00	33	135	0.003	33	135	0.004	33	135	0.007
12:00 - 13:00	33	135	0.003	33	135	0.005	33	135	0.008
13:00 - 14:00	33	135	0.003	33	135	0.002	33	135	0.005
14:00 - 15:00	33	135	0.004	33	135	0.004	33	135	0.008
15:00 - 16:00	33	135	0.018	33	135	0.007	33	135	0.025
16:00 - 17:00	33	135	0.012	33	135	0.003	33	135	0.015
17:00 - 18:00	33	135	0.014	33	135	0.002	33	135	0.016
18:00 - 19:00	33	135	0.018	33	135	0.004	33	135	0.022
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.081			0.088			0.169

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: $COUNT/TRP*FACT$. Trip rates are then rounded to 3 decimal places.

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED

MULTI-MODAL TOTAL PEOPLE

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	33	135	0.094	33	135	0.426	33	135	0.520
08:00 - 09:00	33	135	0.196	33	135	0.756	33	135	0.952
09:00 - 10:00	33	135	0.235	33	135	0.339	33	135	0.574
10:00 - 11:00	33	135	0.210	33	135	0.288	33	135	0.498
11:00 - 12:00	33	135	0.209	33	135	0.264	33	135	0.473
12:00 - 13:00	33	135	0.289	33	135	0.268	33	135	0.557
13:00 - 14:00	33	135	0.293	33	135	0.290	33	135	0.583
14:00 - 15:00	33	135	0.329	33	135	0.334	33	135	0.663
15:00 - 16:00	33	135	0.555	33	135	0.326	33	135	0.881
16:00 - 17:00	33	135	0.566	33	135	0.315	33	135	0.881
17:00 - 18:00	33	135	0.648	33	135	0.315	33	135	0.963
18:00 - 19:00	33	135	0.524	33	135	0.363	33	135	0.887
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			4.148			4.284			8.432

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: $COUNT/TRP*FACT$. Trip rates are then rounded to 3 decimal places.

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED

MULTI-MODAL CARS

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	33	135	0.041	33	135	0.167	33	135	0.208
08:00 - 09:00	33	135	0.081	33	135	0.258	33	135	0.339
09:00 - 10:00	33	135	0.099	33	135	0.117	33	135	0.216
10:00 - 11:00	33	135	0.078	33	135	0.103	33	135	0.181
11:00 - 12:00	33	135	0.079	33	135	0.097	33	135	0.176
12:00 - 13:00	33	135	0.111	33	135	0.103	33	135	0.214
13:00 - 14:00	33	135	0.111	33	135	0.107	33	135	0.218
14:00 - 15:00	33	135	0.122	33	135	0.132	33	135	0.254
15:00 - 16:00	33	135	0.176	33	135	0.112	33	135	0.288
16:00 - 17:00	33	135	0.194	33	135	0.114	33	135	0.308
17:00 - 18:00	33	135	0.241	33	135	0.120	33	135	0.361
18:00 - 19:00	33	135	0.207	33	135	0.136	33	135	0.343
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			1.540			1.566			3.106

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: $COUNT/TRP*FACT$. Trip rates are then rounded to 3 decimal places.

WYG Lakeview Drive Nottingham

Licence No: 705124

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED

MULTI-MODAL LGVS

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	33	135	0.013	33	135	0.026	33	135	0.039
08:00 - 09:00	33	135	0.016	33	135	0.022	33	135	0.038
09:00 - 10:00	33	135	0.021	33	135	0.019	33	135	0.040
10:00 - 11:00	33	135	0.021	33	135	0.023	33	135	0.044
11:00 - 12:00	33	135	0.014	33	135	0.018	33	135	0.032
12:00 - 13:00	33	135	0.020	33	135	0.016	33	135	0.036
13:00 - 14:00	33	135	0.021	33	135	0.020	33	135	0.041
14:00 - 15:00	33	135	0.018	33	135	0.017	33	135	0.035
15:00 - 16:00	33	135	0.023	33	135	0.020	33	135	0.043
16:00 - 17:00	33	135	0.022	33	135	0.021	33	135	0.043
17:00 - 18:00	33	135	0.028	33	135	0.016	33	135	0.044
18:00 - 19:00	33	135	0.015	33	135	0.016	33	135	0.031
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.232			0.234			0.466

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED

MULTI-MODAL MOTOR CYCLES

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	33	135	0.000	33	135	0.001	33	135	0.001
08:00 - 09:00	33	135	0.000	33	135	0.002	33	135	0.002
09:00 - 10:00	33	135	0.001	33	135	0.002	33	135	0.003
10:00 - 11:00	33	135	0.001	33	135	0.000	33	135	0.001
11:00 - 12:00	33	135	0.000	33	135	0.001	33	135	0.001
12:00 - 13:00	33	135	0.000	33	135	0.001	33	135	0.001
13:00 - 14:00	33	135	0.001	33	135	0.001	33	135	0.002
14:00 - 15:00	33	135	0.001	33	135	0.001	33	135	0.002
15:00 - 16:00	33	135	0.001	33	135	0.000	33	135	0.001
16:00 - 17:00	33	135	0.003	33	135	0.001	33	135	0.004
17:00 - 18:00	33	135	0.002	33	135	0.000	33	135	0.002
18:00 - 19:00	33	135	0.001	33	135	0.001	33	135	0.002
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.011			0.011			0.022

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

Appendix E
Capacity Assessment Outputs

Junctions 10
ARCADY 10 - Roundabout Module
Version: 10.0.4.1693 © Copyright TRL Software Limited, 2021
For sales and distribution information, program advice and maintenance, contact TRL Software: +44 (0)1344 379777 software@trl.co.uk trlsoftware.com
The users of this computer program for the solution of an engineering problem are in no way relieved of their responsibility for the correctness of the solution

Filename: Melton- High Street roundabout - REV C.j10
Path: P:\20000's\20060\Technical\Junction Modelling\2022 Junction Assessments
Report generation date: 17/06/2022 13:42:44

- »2022, AM
- »2022, PM
- »2027, AM
- »2027, PM
- »2027 + Development, AM
- »2027 + Development, PM

Summary of junction performance

	AM			PM		
	Q (PCU)	Delay (s)	RFC	Q (PCU)	Delay (s)	RFC
2022						
1 - Melton Road N	1.5	8.38	0.59	1.5	8.77	0.59
2 - Barkby Road	1.1	19.24	0.53	2.1	27.17	0.69
3 - Melton Road S	1.3	10.39	0.55	2.1	13.73	0.67
4 - High Street	1.1	9.59	0.52	2.9	19.36	0.74
2027						
1 - Melton Road N	1.6	9.04	0.62	1.7	9.57	0.62
2 - Barkby Road	1.3	21.62	0.57	2.6	32.47	0.73
3 - Melton Road S	1.5	11.17	0.58	2.4	15.34	0.70
4 - High Street	1.2	10.34	0.55	3.7	23.52	0.79
2027 + Development						
1 - Melton Road N	1.7	9.24	0.62	1.7	10.10	0.63
2 - Barkby Road	1.7	24.86	0.64	3.3	39.12	0.78
3 - Melton Road S	1.5	11.61	0.59	2.5	15.96	0.71
4 - High Street	1.3	10.82	0.57	4.7	28.90	0.83

There are warnings associated with one or more model runs - see the 'Data Errors and Warnings' tables for each Analysis or Demand Set.

Values shown are the highest values encountered over all time segments. Delay is the maximum value of Av. delay per arriving vehicle.

File summary

File Description

Title	(untitled)
Location	
Site number	
Date	01/03/2018
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	DTA\arcady
Description	

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Av. delay units	Total delay units	Rate of delay units
m	kph	PCU	PCU	perHour	s	-Min	perMin

Analysis Options

Vehicle length (m)	Calculate Q Percentiles	Calculate detailed queueing delay	Show lane queues in feet / metres	Show all PICADY stream intercepts	Calculate residual capacity	RFC Threshold	Av. Delay threshold (s)	Q threshold (PCU)	Use iterations with HCM roundabouts	Max number of iterations for roundabouts
5.75						0.85	36.00	20.00		500

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2022	AM	ONE HOUR	07:45	09:15	15	✓
D2	2022	PM	ONE HOUR	16:45	18:15	15	✓
D5	2027	AM	ONE HOUR	07:45	09:15	15	✓
D6	2027	PM	ONE HOUR	16:45	18:15	15	✓
D7	2027 + Development	AM	ONE HOUR	07:45	09:15	15	✓
D8	2027 + Development	PM	ONE HOUR	16:45	18:15	15	✓

Analysis Set Details

ID	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	✓	100.000	100.000

2022, AM

Data Errors and Warnings

Severity	Area	Item	Description
Last Run	Last Run	2 - Barkby Road - Capacity	Ped Crossing causes blocking on previous arm due to traffic queuing to leave the junction in 2 timesegment(s).

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	10.56	B

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	10.56	B

Arms

Arms

Arm	Name	Description	No give-way line
1	Melton Road N		
2	Barkby Road		
3	Melton Road S		
4	High Street		

Roundabout Geometry

Arm	V (m)	E (m)	I' (m)	R (m)	D (m)	PHI (deg)	Entry only	Exit only
1 - Melton Road N	3.54	4.22	9.2	8.6	17.7	14.5		
2 - Barkby Road	3.76	4.33	2.0	3.0	17.7	80.0		
3 - Melton Road S	3.75	4.26	3.8	5.0	17.7	12.0		
4 - High Street	2.41	4.35	7.2	12.9	17.7	26.0		

Zebra Crossings

Arm	VGAP (PCU)	Vehs queueing on exit (PCU)	Central Refuge	Crossing data type	Crossing length (m)	Crossing time (s)
2 - Barkby Road	1.00	3.00		Distance	8.00	5.71
3 - Melton Road S	1.00	1.00		Distance	7.00	5.00

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1 - Melton Road N	0.564	1225
2 - Barkby Road	0.312	675
3 - Melton Road S	0.523	1139
4 - High Street	0.523	1032

The slope and intercept shown above include any corrections and adjustments.

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2022	AM	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Av. Demand (PCU/hr)	Scaling Factor (%)
1 - Melton Road N		ONE HOUR	✓	579	100.000
2 - Barkby Road		ONE HOUR	✓	196	100.000
3 - Melton Road S		ONE HOUR	✓	415	100.000
4 - High Street		ONE HOUR	✓	377	100.000

Demand overview (Pedestrians)

Arm	Profile type	Av. Ped flow (Ped/hr)
1 - Melton Road N		
2 - Barkby Road	[ONEHOUR]	500.00
3 - Melton Road S	[ONEHOUR]	500.00
4 - High Street		

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - Melton Road N	2 - Barkby Road	3 - Melton Road S	4 - High Street
From	1 - Melton Road N	1	81	353	144
	2 - Barkby Road	64	0	0	132
	3 - Melton Road S	299	37	2	77
	4 - High Street	183	89	104	1

Vehicle Mix

HV %s

		To			
		1 - Melton Road N	2 - Barkby Road	3 - Melton Road S	4 - High Street
From	1 - Melton Road N	0	3	4	1
	2 - Barkby Road	1	0	1	1
	3 - Melton Road S	6	5	0	8
	4 - High Street	2	2	4	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Melton Road N	0.59	8.38	1.5	A	531	797
2 - Barkby Road	0.53	19.24	1.1	C	180	270
3 - Melton Road S	0.55	10.39	1.3	B	381	571
4 - High Street	0.52	9.59	1.1	A	346	519

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Ped demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Melton Road N	436	109	174		1127	0.387	433	409	0.0	0.6	5.331	A
2 - Barkby Road	148	37	453	376.43	501	0.295	146	155	0.0	0.4	10.202	B
3 - Melton Road S	312	78	255	376.43	922	0.339	310	343	0.0	0.5	6.235	A
4 - High Street	284	71	301		874	0.325	282	264	0.0	0.5	6.210	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Ped demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Melton Road N	521	130	209		1107	0.470	519	490	0.6	0.9	6.300	A
2 - Barkby Road	176	44	543	449.49	461	0.382	175	186	0.4	0.6	12.685	B
3 - Melton Road S	373	93	306	449.49	879	0.424	372	412	0.5	0.8	7.529	A
4 - High Street	339	85	361		843	0.402	338	317	0.5	0.7	7.302	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Ped demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Melton Road N	637	159	256		1081	0.590	635	599	0.9	1.5	8.287	A
2 - Barkby Road	216	54	664	550.51	405	0.533	214	227	0.6	1.1	18.801	C
3 - Melton Road S	457	114	374	550.51	826	0.553	455	504	0.8	1.3	10.260	B
4 - High Street	415	104	441		801	0.518	413	388	0.7	1.1	9.485	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Ped demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Melton Road N	637	159	257		1080	0.590	637	602	1.5	1.5	8.376	A
2 - Barkby Road	216	54	666	550.51	404	0.534	216	228	1.1	1.1	19.245	C
3 - Melton Road S	457	114	376	550.51	825	0.554	457	505	1.3	1.3	10.392	B
4 - High Street	415	104	444		800	0.519	415	390	1.1	1.1	9.589	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Ped demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Melton Road N	521	130	210		1107	0.470	523	495	1.5	0.9	6.381	A
2 - Barkby Road	176	44	546	449.49	460	0.383	178	187	1.1	0.6	12.990	B
3 - Melton Road S	373	93	310	449.49	878	0.425	375	414	1.3	0.8	7.640	A
4 - High Street	339	85	365		841	0.403	340	320	1.1	0.7	7.397	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Ped demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Melton Road N	436	109	176		1126	0.387	437	413	0.9	0.7	5.393	A
2 - Barkby Road	148	37	457	376.43	499	0.296	148	156	0.6	0.4	10.386	B
3 - Melton Road S	312	78	259	376.43	920	0.340	313	346	0.8	0.6	6.314	A
4 - High Street	284	71	304		873	0.325	285	268	0.7	0.5	6.285	A

2022, PM

Data Errors and Warnings

Severity	Area	Item	Description
Last Run	Last Run	2 - Barkby Road - Capacity	Ped Crossing causes blocking on previous arm due to traffic queuing to leave the junction in 1 timesegment(s).

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	15.75	C

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	15.75	C

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D2	2022	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Av. Demand (PCU/hr)	Scaling Factor (%)
1 - Melton Road N		ONE HOUR	✓	551	100.000
2 - Barkby Road		ONE HOUR	✓	265	100.000
3 - Melton Road S		ONE HOUR	✓	503	100.000
4 - High Street		ONE HOUR	✓	509	100.000

Demand overview (Pedestrians)

Arm	Profile type	Av. Ped flow (Ped/hr)
1 - Melton Road N		
2 - Barkby Road	[ONEHOUR]	500.00
3 - Melton Road S	[ONEHOUR]	500.00
4 - High Street		

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - Melton Road N	2 - Barkby Road	3 - Melton Road S	4 - High Street
From	1 - Melton Road N	0	97	297	157
	2 - Barkby Road	70	1	80	114
	3 - Melton Road S	331	78	3	91
	4 - High Street	275	157	77	0

Vehicle Mix

HV %s

		To			
		1 - Melton Road N	2 - Barkby Road	3 - Melton Road S	4 - High Street
From	1 - Melton Road N	0	2	3	1
	2 - Barkby Road	0	0	0	2
	3 - Melton Road S	6	2	0	1
	4 - High Street	2	11	4	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Melton Road N	0.59	8.77	1.5	A	506	758
2 - Barkby Road	0.69	27.17	2.1	D	243	365
3 - Melton Road S	0.67	13.73	2.1	B	462	692
4 - High Street	0.74	19.36	2.9	C	467	701

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Ped demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Melton Road N	415	104	236		1092	0.380	412	505	0.0	0.6	5.397	A
2 - Barkby Road	200	50	399	376.43	515	0.387	197	249	0.0	0.6	11.315	B
3 - Melton Road S	379	95	255	376.43	924	0.410	376	341	0.0	0.7	6.825	A
4 - High Street	383	96	361		843	0.454	380	270	0.0	0.9	8.091	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Ped demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Melton Road N	495	124	283		1065	0.465	494	605	0.6	0.9	6.442	A
2 - Barkby Road	238	60	479	449.49	478	0.498	237	298	0.6	1.0	14.946	B
3 - Melton Road S	452	113	306	449.49	881	0.513	451	410	0.7	1.1	8.697	A
4 - High Street	458	114	433		806	0.568	456	324	0.9	1.3	10.732	B

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Ped demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Melton Road N	607	152	345		1028	0.590	604	738	0.9	1.4	8.650	A
2 - Barkby Road	292	73	585	550.51	425	0.686	288	364	1.0	2.0	25.578	D
3 - Melton Road S	554	138	373	550.51	828	0.669	550	500	1.1	2.0	13.336	B
4 - High Street	560	140	528		756	0.741	555	395	1.3	2.8	18.245	C

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Ped demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Melton Road N	607	152	348		1026	0.591	607	744	1.4	1.5	8.775	A
2 - Barkby Road	292	73	588	550.51	424	0.688	291	366	2.0	2.1	27.168	D
3 - Melton Road S	554	138	376	550.51	827	0.670	554	503	2.0	2.1	13.728	B
4 - High Street	560	140	532		754	0.743	560	398	2.8	2.9	19.357	C

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Ped demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Melton Road N	495	124	287		1062	0.466	498	615	1.5	0.9	6.547	A
2 - Barkby Road	238	60	483	449.49	477	0.500	243	302	2.1	1.0	15.783	C
3 - Melton Road S	452	113	311	449.49	879	0.514	456	414	2.1	1.1	8.952	A
4 - High Street	458	114	438		803	0.570	464	329	2.9	1.4	11.328	B

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Ped demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Melton Road N	415	104	239		1090	0.381	416	512	0.9	0.6	5.470	A
2 - Barkby Road	200	50	403	376.43	514	0.388	201	252	1.0	0.7	11.659	B
3 - Melton Road S	379	95	259	376.43	922	0.411	380	345	1.1	0.7	6.955	A
4 - High Street	383	96	365		841	0.456	385	274	1.4	0.9	8.333	A

2027, AM

Data Errors and Warnings

Severity	Area	Item	Description
Last Run	Last Run	2 - Barkby Road - Capacity	Ped Crossing causes blocking on previous arm due to traffic queuing to leave the junction in 2 timesegment(s).

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	11.50	B

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	11.50	B

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D5	2027	AM	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Av. Demand (PCU/hr)	Scaling Factor (%)
1 - Melton Road N		ONE HOUR	✓	603	100.000
2 - Barkby Road		ONE HOUR	✓	205	100.000
3 - Melton Road S		ONE HOUR	✓	433	100.000
4 - High Street		ONE HOUR	✓	393	100.000

Demand overview (Pedestrians)

Arm	Profile type	Av. Ped flow (Ped/hr)
1 - Melton Road N		
2 - Barkby Road	[ONEHOUR]	500.00
3 - Melton Road S	[ONEHOUR]	500.00
4 - High Street		

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - Melton Road N	2 - Barkby Road	3 - Melton Road S	4 - High Street
From	1 - Melton Road N	1	84	368	150
	2 - Barkby Road	67	0	0	138
	3 - Melton Road S	312	39	2	80
	4 - High Street	191	93	108	1

Vehicle Mix

HV %s

		To			
		1 - Melton Road N	2 - Barkby Road	3 - Melton Road S	4 - High Street
From	1 - Melton Road N	0	3	4	1
	2 - Barkby Road	1	0	1	1
	3 - Melton Road S	6	5	0	8
	4 - High Street	2	2	4	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Melton Road N	0.62	9.04	1.6	A	553	830
2 - Barkby Road	0.57	21.62	1.3	C	188	282
3 - Melton Road S	0.58	11.17	1.5	B	397	596
4 - High Street	0.55	10.34	1.2	B	361	541

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Ped demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Melton Road N	454	113	182		1123	0.404	451	427	0.0	0.7	5.504	A
2 - Barkby Road	154	39	471	376.43	494	0.312	153	162	0.0	0.5	10.595	B
3 - Melton Road S	326	81	266	376.43	917	0.355	324	358	0.0	0.6	6.421	A
4 - High Street	296	74	314		867	0.341	294	275	0.0	0.5	6.412	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Ped demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Melton Road N	542	136	218		1102	0.492	541	512	0.7	1.0	6.597	A
2 - Barkby Road	184	46	565	449.49	453	0.407	183	194	0.5	0.7	13.447	B
3 - Melton Road S	389	97	320	449.49	874	0.445	388	429	0.6	0.8	7.856	A
4 - High Street	353	88	377		835	0.423	352	331	0.5	0.7	7.642	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Ped demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Melton Road N	664	166	266		1075	0.618	661	625	1.0	1.6	8.922	A
2 - Barkby Road	226	56	691	550.51	394	0.572	223	237	0.7	1.3	20.946	C
3 - Melton Road S	477	119	390	550.51	820	0.582	474	524	0.8	1.4	10.996	B
4 - High Street	433	108	461		791	0.547	431	404	0.7	1.2	10.198	B

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Ped demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Melton Road N	664	166	268		1074	0.618	664	629	1.6	1.6	9.040	A
2 - Barkby Road	226	56	694	550.51	393	0.574	226	238	1.3	1.3	21.617	C
3 - Melton Road S	477	119	393	550.51	819	0.582	477	526	1.4	1.5	11.172	B
4 - High Street	433	108	463		790	0.548	433	406	1.2	1.2	10.338	B

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Ped demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Melton Road N	542	136	220		1101	0.492	545	517	1.6	1.0	6.695	A
2 - Barkby Road	184	46	569	449.49	451	0.408	187	195	1.3	0.7	13.862	B
3 - Melton Road S	389	97	324	449.49	872	0.446	392	432	1.5	0.9	7.996	A
4 - High Street	353	88	381		833	0.424	355	334	1.2	0.8	7.761	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Ped demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Melton Road N	454	113	184		1122	0.405	455	431	1.0	0.7	5.579	A
2 - Barkby Road	154	39	476	376.43	492	0.313	155	163	0.7	0.5	10.818	B
3 - Melton Road S	326	81	270	376.43	916	0.356	327	361	0.9	0.6	6.513	A
4 - High Street	296	74	318		865	0.342	297	279	0.8	0.5	6.500	A

2027, PM

Data Errors and Warnings

Severity	Area	Item	Description
Last Run	Last Run	2 - Barkby Road - Capacity	Ped Crossing causes blocking on previous arm due to traffic queuing to leave the junction in 2 timesegment(s).

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	18.36	C

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	18.36	C

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D6	2027	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Av. Demand (PCU/hr)	Scaling Factor (%)
1 - Melton Road N		ONE HOUR	✓	575	100.000
2 - Barkby Road		ONE HOUR	✓	276	100.000
3 - Melton Road S		ONE HOUR	✓	524	100.000
4 - High Street		ONE HOUR	✓	531	100.000

Demand overview (Pedestrians)

Arm	Profile type	Av. Ped flow (Ped/hr)
1 - Melton Road N		
2 - Barkby Road	[ONEHOUR]	500.00
3 - Melton Road S	[ONEHOUR]	500.00
4 - High Street		

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - Melton Road N	2 - Barkby Road	3 - Melton Road S	4 - High Street
From	1 - Melton Road N	0	101	310	164
	2 - Barkby Road	73	1	83	119
	3 - Melton Road S	345	81	3	95
	4 - High Street	287	164	80	0

Vehicle Mix

HV %s

		To			
		1 - Melton Road N	2 - Barkby Road	3 - Melton Road S	4 - High Street
From	1 - Melton Road N	0	2	3	1
	2 - Barkby Road	0	0	0	2
	3 - Melton Road S	6	2	0	1
	4 - High Street	2	11	4	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Melton Road N	0.62	9.57	1.7	A	528	791
2 - Barkby Road	0.73	32.47	2.6	D	253	380
3 - Melton Road S	0.70	15.34	2.4	C	481	721
4 - High Street	0.79	23.52	3.7	C	487	731

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Ped demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Melton Road N	433	108	245		1086	0.398	430	526	0.0	0.7	5.587	A
2 - Barkby Road	208	52	417	376.43	509	0.408	205	259	0.0	0.7	11.839	B
3 - Melton Road S	394	99	266	376.43	919	0.429	391	356	0.0	0.8	7.082	A
4 - High Street	400	100	375		836	0.478	396	282	0.0	0.9	8.524	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Ped demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Melton Road N	517	129	294		1058	0.489	516	631	0.7	1.0	6.773	A
2 - Barkby Road	248	62	499	449.49	470	0.527	246	311	0.7	1.1	16.095	C
3 - Melton Road S	471	118	319	449.49	876	0.538	469	426	0.8	1.2	9.202	A
4 - High Street	477	119	450		796	0.599	475	338	0.9	1.5	11.671	B

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Ped demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Melton Road N	633	158	358		1020	0.621	630	768	1.0	1.6	9.392	A
2 - Barkby Road	304	76	610	550.51	415	0.732	298	378	1.1	2.5	29.760	D
3 - Melton Road S	577	144	388	550.51	822	0.702	572	520	1.2	2.3	14.763	B
4 - High Street	585	146	549		745	0.785	577	412	1.5	3.5	21.518	C

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Ped demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Melton Road N	633	158	362		1017	0.622	633	775	1.6	1.7	9.571	A
2 - Barkby Road	304	76	613	550.51	414	0.735	303	382	2.5	2.6	32.474	D
3 - Melton Road S	577	144	393	550.51	821	0.703	577	524	2.3	2.4	15.345	C
4 - High Street	585	146	553		742	0.787	584	416	3.5	3.7	23.523	C

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Ped demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Melton Road N	517	129	300		1055	0.490	520	643	1.7	1.0	6.915	A
2 - Barkby Road	248	62	504	449.49	468	0.530	254	316	2.6	1.2	17.356	C
3 - Melton Road S	471	118	326	449.49	874	0.539	476	432	2.4	1.2	9.550	A
4 - High Street	477	119	457		793	0.602	485	344	3.7	1.6	12.602	B

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Ped demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Melton Road N	433	108	249		1084	0.399	434	534	1.0	0.7	5.674	A
2 - Barkby Road	208	52	421	376.43	507	0.409	210	263	1.2	0.7	12.267	B
3 - Melton Road S	394	99	270	376.43	917	0.430	396	360	1.2	0.8	7.240	A
4 - High Street	400	100	381		833	0.480	402	286	1.6	1.0	8.828	A

2027 + Development, AM

Data Errors and Warnings

Severity	Area	Item	Description
Last Run	Last Run	2 - Barkby Road - Capacity	Ped Crossing causes blocking on previous arm due to traffic queuing to leave the junction in 2 timesegment(s).

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	12.44	B

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	12.44	B

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D7	2027 + Development	AM	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Av. Demand (PCU/hr)	Scaling Factor (%)
1 - Melton Road N		ONE HOUR	✓	603	100.000
2 - Barkby Road		ONE HOUR	✓	237	100.000
3 - Melton Road S		ONE HOUR	✓	434	100.000
4 - High Street		ONE HOUR	✓	407	100.000

Demand overview (Pedestrians)

Arm	Profile type	Av. Ped flow (Ped/hr)
1 - Melton Road N		
2 - Barkby Road	[ONEHOUR]	100.00
3 - Melton Road S	[ONEHOUR]	500.00
4 - High Street		

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - Melton Road N	2 - Barkby Road	3 - Melton Road S	4 - High Street
From	1 - Melton Road N	1	84	368	150
	2 - Barkby Road	67	0	3	167
	3 - Melton Road S	312	40	2	80
	4 - High Street	191	107	108	1

Vehicle Mix

HV %s

		To			
		1 - Melton Road N	2 - Barkby Road	3 - Melton Road S	4 - High Street
From	1 - Melton Road N	0	3	4	1
	2 - Barkby Road	1	0	1	1
	3 - Melton Road S	6	5	0	8
	4 - High Street	2	2	4	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Melton Road N	0.62	9.24	1.7	A	553	830
2 - Barkby Road	0.64	24.86	1.7	C	217	326
3 - Melton Road S	0.59	11.61	1.5	B	398	597
4 - High Street	0.57	10.82	1.3	B	373	560

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Ped demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Melton Road N	454	113	193		1117	0.407	451	427	0.0	0.7	5.554	A
2 - Barkby Road	178	45	471	75.29	508	0.351	176	173	0.0	0.5	10.905	B
3 - Melton Road S	327	82	288	376.43	908	0.360	324	360	0.0	0.6	6.525	A
4 - High Street	306	77	315		867	0.353	304	297	0.0	0.6	6.533	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Ped demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Melton Road N	542	136	231		1095	0.495	541	512	0.7	1.0	6.684	A
2 - Barkby Road	213	53	565	89.90	467	0.456	212	207	0.5	0.8	14.185	B
3 - Melton Road S	390	98	346	449.49	864	0.452	389	431	0.6	0.9	8.037	A
4 - High Street	366	91	378		834	0.439	365	356	0.6	0.8	7.851	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Ped demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Melton Road N	664	166	283		1066	0.623	661	625	1.0	1.7	9.113	A
2 - Barkby Road	261	65	691	110.10	408	0.640	258	253	0.8	1.7	23.707	C
3 - Melton Road S	478	119	421	550.51	808	0.591	475	527	0.9	1.5	11.394	B
4 - High Street	448	112	462		790	0.567	446	435	0.8	1.3	10.651	B

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Ped demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Melton Road N	664	166	284		1065	0.623	664	628	1.7	1.7	9.243	A
2 - Barkby Road	261	65	694	110.10	406	0.642	261	254	1.7	1.7	24.858	C
3 - Melton Road S	478	119	425	550.51	807	0.592	478	530	1.5	1.5	11.607	B
4 - High Street	448	112	464		789	0.568	448	438	1.3	1.3	10.818	B

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Ped demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Melton Road N	542	136	233		1094	0.496	545	517	1.7	1.0	6.793	A
2 - Barkby Road	213	53	569	89.90	465	0.458	217	209	1.7	0.9	14.808	B
3 - Melton Road S	390	98	351	449.49	862	0.453	393	435	1.5	0.9	8.198	A
4 - High Street	366	91	382		832	0.440	368	361	1.3	0.8	7.990	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Ped demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Melton Road N	454	113	195		1115	0.407	455	432	1.0	0.7	5.631	A
2 - Barkby Road	178	45	476	75.29	506	0.353	180	174	0.9	0.6	11.189	B
3 - Melton Road S	327	82	292	376.43	906	0.360	328	363	0.9	0.6	6.626	A
4 - High Street	306	77	319		865	0.354	307	301	0.8	0.6	6.629	A

2027 + Development, PM

Data Errors and Warnings

Severity	Area	Item	Description
Last Run	Last Run	2 - Barkby Road - Capacity	Ped Crossing causes blocking on previous arm due to traffic queuing to leave the junction in 2 timesegment(s).

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	21.42	C

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	21.42	C

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D8	2027 + Development	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Av. Demand (PCU/hr)	Scaling Factor (%)
1 - Melton Road N		ONE HOUR	✓	575	100.000
2 - Barkby Road		ONE HOUR	✓	294	100.000
3 - Melton Road S		ONE HOUR	✓	527	100.000
4 - High Street		ONE HOUR	✓	558	100.000

Demand overview (Pedestrians)

Arm	Profile type	Av. Ped flow (Ped/hr)
1 - Melton Road N		
2 - Barkby Road	[ONEHOUR]	500.00
3 - Melton Road S	[ONEHOUR]	500.00
4 - High Street		

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - Melton Road N	2 - Barkby Road	3 - Melton Road S	4 - High Street
From	1 - Melton Road N	0	101	310	164
	2 - Barkby Road	73	1	85	135
	3 - Melton Road S	345	84	3	95
	4 - High Street	287	191	80	0

Vehicle Mix

HV %s

		To			
		1 - Melton Road N	2 - Barkby Road	3 - Melton Road S	4 - High Street
From	1 - Melton Road N	0	2	3	1
	2 - Barkby Road	0	0	0	2
	3 - Melton Road S	6	2	0	1
	4 - High Street	2	11	4	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Melton Road N	0.63	10.10	1.7	B	528	791
2 - Barkby Road	0.78	39.12	3.3	E	270	405
3 - Melton Road S	0.71	15.96	2.5	C	484	725
4 - High Street	0.83	28.90	4.7	D	512	768

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Ped demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Melton Road N	433	108	268		1074	0.403	430	526	0.0	0.7	5.697	A
2 - Barkby Road	221	55	416	376.43	509	0.435	218	281	0.0	0.8	12.373	B
3 - Melton Road S	397	99	278	376.43	914	0.434	394	357	0.0	0.8	7.175	A
4 - High Street	420	105	378		834	0.503	416	294	0.0	1.0	8.964	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Ped demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Melton Road N	517	129	321		1042	0.496	516	631	0.7	1.0	6.971	A
2 - Barkby Road	264	66	499	449.49	470	0.562	262	337	0.8	1.2	17.315	C
3 - Melton Road S	474	118	334	449.49	871	0.544	472	428	0.8	1.2	9.388	A
4 - High Street	502	125	453		795	0.631	499	353	1.0	1.7	12.671	B

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Ped demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Melton Road N	633	158	389		1000	0.633	630	766	1.0	1.7	9.884	A
2 - Barkby Road	324	81	609	550.51	415	0.780	316	410	1.2	3.1	34.547	D
3 - Melton Road S	580	145	405	550.51	816	0.711	575	521	1.2	2.4	15.286	C
4 - High Street	614	154	551		744	0.826	604	429	1.7	4.3	25.437	D

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Ped demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Melton Road N	633	158	395		997	0.635	633	775	1.7	1.7	10.098	B
2 - Barkby Road	324	81	613	550.51	413	0.783	323	415	3.1	3.3	39.120	E
3 - Melton Road S	580	145	410	550.51	815	0.712	580	526	2.4	2.5	15.963	C
4 - High Street	614	154	557		741	0.829	613	433	4.3	4.7	28.902	D

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Ped demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Melton Road N	517	129	329		1038	0.498	520	645	1.7	1.0	7.144	A
2 - Barkby Road	264	66	505	449.49	468	0.565	272	344	3.3	1.4	19.252	C
3 - Melton Road S	474	118	342	449.49	867	0.546	479	435	2.5	1.3	9.785	A
4 - High Street	502	125	461		791	0.634	513	359	4.7	1.9	14.118	B

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Ped demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Melton Road N	433	108	272		1071	0.404	434	534	1.0	0.7	5.793	A
2 - Barkby Road	221	55	421	376.43	507	0.436	224	285	1.4	0.8	12.908	B
3 - Melton Road S	397	99	283	376.43	912	0.435	399	362	1.3	0.8	7.343	A
4 - High Street	420	105	383		832	0.505	423	298	1.9	1.1	9.350	A

User and Project Details

Project:	Syston
Title:	
Location:	Queniborough Road/ Barkby Road
Additional detail:	
File name:	Queniborough Road_Barkby Road_RevB.lsg3x
Author:	
Company:	David Tucker Associates
Address:	

Phase Input Data

Phase Name	Phase Type	Assoc. Phase	Street Min	Cont Min
A	Traffic		7	7
B	Traffic		7	7
C	Traffic		7	7
D	Traffic		7	7

Phase Intergreens Matrix

		Starting Phase				
		A	B	C	D	
Terminating Phase	A		6	6	6	
	B	6		6	6	
	C	6	6		6	
	D	6	6	6		
		6	6	6	6	

Phase Delays

Term. Stage	Start Stage	Phase	Type	Value	Cont value
There are no Phase Delays defined					

Prohibited Stage Change

		To Stage			
		1	2	3	4
From Stage	1		6	6	6
	2	6		6	6
	3	6	6		6
	4	6	6	6	
		6	6	6	6

Phases in Stage

Stage No.	Phases in Stage
1	A
2	B
3	C
4	D

LinSig V1 style report

Give-Way Lane Input Data

Junction: Queniborough Road_Barkby Road

There are no Opposed Lanes in this Junction

Lane Input Data

Junction: Queniborough Road_Barkby Road												
Lane	Lane Type	Phases	Start Disp.	End Disp.	Physical Length (PCU)	Sat Flow Type	Def User Saturation Flow (PCU/Hr)	Lane Width (m)	Gradient	Nearside Lane	Turns	Turning Radius (m)
1/1 (Queniborough Road N)	U	A	2	3	60.0	Geom	-	3.21	0.00	Y	Arm 5 Left	Inf
											Arm 6 Ahead	5.11
											Arm 7 Right	Inf
											Arm 6 Left	5.52
2/1 (Barkby Road E)	U	D	2	3	60.0	Geom	-	2.19	0.00	Y	Arm 7 Ahead	Inf
											Arm 8 Right	9.38
3/1 (Queniborough Road S)	U	B	2	3	60.0	Geom	-	2.95	0.00	Y	Arm 5 Right	Inf
											Arm 7 Left	12.79
											Arm 8 Ahead	Inf
4/1 (Barkby Road W)	U	C	2	3	60.0	Geom	-	3.38	0.00	Y	Arm 5 Ahead	Inf
											Arm 6 Right	13.42
											Arm 8 Left	8.39
5/1	U		2	3	60.0	Inf	-	-	-	-	-	-
6/1	U		2	3	60.0	Inf	-	-	-	-	-	-
7/1	U		2	3	60.0	Inf	-	-	-	-	-	-
8/1	U		2	3	60.0	Inf	-	-	-	-	-	-

Lane Saturation Flows

Scenario 1: '2021 AM' (FG1: '2021 Base AM', Plan 1: 'Network Control Plan 1')

Junction: Queniborough Road_Barkby Road								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (Queniborough Road N)	3.21	0.00	Y	Arm 5 Left	Inf	22.9 %	1647	1647
				Arm 6 Ahead	5.11	59.8 %		
				Arm 7 Right	Inf	17.3 %		
2/1 (Barkby Road E)	2.19	0.00	Y	Arm 6 Left	5.52	0.0 %	1741	1741
				Arm 7 Ahead	Inf	66.7 %		
				Arm 8 Right	9.38	33.3 %		
3/1 (Queniborough Road S)	2.95	0.00	Y	Arm 5 Right	Inf	0.4 %	1814	1814
				Arm 7 Left	12.79	45.3 %		
				Arm 8 Ahead	Inf	54.3 %		
4/1 (Barkby Road W)	3.38	0.00	Y	Arm 5 Ahead	Inf	0.9 %	1719	1719
				Arm 6 Right	13.42	61.0 %		
				Arm 8 Left	8.39	38.0 %		
5/1	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf
7/1	Infinite Saturation Flow						Inf	Inf
8/1	Infinite Saturation Flow						Inf	Inf

Scenario 2: '2021 PM' (FG2: '2021 Base PM', Plan 1: 'Network Control Plan 1')

Junction: Queniborough Road_Barkby Road								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (Queniborough Road N)	3.21	0.00	Y	Arm 5 Left	Inf	24.7 %	1687	1687
				Arm 6 Ahead	5.11	50.2 %		
				Arm 7 Right	Inf	25.1 %		
2/1 (Barkby Road E)	2.19	0.00	Y	Arm 6 Left	5.52	0.0 %	1730	1730
				Arm 7 Ahead	Inf	62.5 %		
				Arm 8 Right	9.38	37.5 %		
3/1 (Queniborough Road S)	2.95	0.00	Y	Arm 5 Right	Inf	0.7 %	1821	1821
				Arm 7 Left	12.79	41.4 %		
				Arm 8 Ahead	Inf	57.9 %		
4/1 (Barkby Road W)	3.38	0.00	Y	Arm 5 Ahead	Inf	2.0 %	1718	1718
				Arm 6 Right	13.42	57.9 %		
				Arm 8 Left	8.39	40.1 %		
5/1	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf
7/1	Infinite Saturation Flow						Inf	Inf
8/1	Infinite Saturation Flow						Inf	Inf

Scenario 3: '2027 AM' (FG3: '2027 Base AM', Plan 1: 'Network Control Plan 1')

Junction: Queniborough Road_Barkby Road								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (Queniborough Road N)	3.21	0.00	Y	Arm 5 Left	Inf	22.9 %	1647	1647
				Arm 6 Ahead	5.11	59.8 %		
				Arm 7 Right	Inf	17.3 %		
2/1 (Barkby Road E)	2.19	0.00	Y	Arm 6 Left	5.52	0.0 %	1741	1741
				Arm 7 Ahead	Inf	66.7 %		
				Arm 8 Right	9.38	33.3 %		
3/1 (Queniborough Road S)	2.95	0.00	Y	Arm 5 Right	Inf	0.3 %	1813	1813
				Arm 7 Left	12.79	45.4 %		
				Arm 8 Ahead	Inf	54.3 %		
4/1 (Barkby Road W)	3.38	0.00	Y	Arm 5 Ahead	Inf	0.9 %	1719	1719
				Arm 6 Right	13.42	61.2 %		
				Arm 8 Left	8.39	37.9 %		
5/1	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf
7/1	Infinite Saturation Flow						Inf	Inf
8/1	Infinite Saturation Flow						Inf	Inf

Scenario 4: '2027 PM' (FG4: '2027 Base PM', Plan 1: 'Network Control Plan 1')

Junction: Queniborough Road_Barkby Road								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (Queniborough Road N)	3.21	0.00	Y	Arm 5 Left	Inf	24.7 %	1687	1687
				Arm 6 Ahead	5.11	50.2 %		
				Arm 7 Right	Inf	25.1 %		
2/1 (Barkby Road E)	2.19	0.00	Y	Arm 6 Left	5.52	0.0 %	1730	1730
				Arm 7 Ahead	Inf	62.5 %		
				Arm 8 Right	9.38	37.5 %		
3/1 (Queniborough Road S)	2.95	0.00	Y	Arm 5 Right	Inf	0.6 %	1821	1821
				Arm 7 Left	12.79	41.6 %		
				Arm 8 Ahead	Inf	57.8 %		
4/1 (Barkby Road W)	3.38	0.00	Y	Arm 5 Ahead	Inf	1.9 %	1718	1718
				Arm 6 Right	13.42	58.1 %		
				Arm 8 Left	8.39	40.0 %		
5/1	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf
7/1	Infinite Saturation Flow						Inf	Inf
8/1	Infinite Saturation Flow						Inf	Inf

Scenario 5: '2027 + Dev AM' (FG5: '2027 Base+Dev AM', Plan 1: 'Network Control Plan 1')

Junction: Queniborough Road_Barkby Road								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (Queniborough Road N)	3.21	0.00	Y	Arm 5 Left	Inf	22.7 %	1649	1649
				Arm 6 Ahead	5.11	59.4 %		
				Arm 7 Right	Inf	17.9 %		
2/1 (Barkby Road E)	2.19	0.00	Y	Arm 6 Left	5.52	0.0 %	1741	1741
				Arm 7 Ahead	Inf	66.7 %		
				Arm 8 Right	9.38	33.3 %		
3/1 (Queniborough Road S)	2.95	0.00	Y	Arm 5 Right	Inf	0.3 %	1808	1808
				Arm 7 Left	12.79	48.2 %		
				Arm 8 Ahead	Inf	51.5 %		
4/1 (Barkby Road W)	3.38	0.00	Y	Arm 5 Ahead	Inf	0.8 %	1722	1722
				Arm 6 Right	13.42	64.4 %		
				Arm 8 Left	8.39	34.8 %		
5/1	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf
7/1	Infinite Saturation Flow						Inf	Inf
8/1	Infinite Saturation Flow						Inf	Inf

Scenario 6: '2027 + Dev PM' (FG6: '2027 Base+Dev PM', Plan 1: 'Network Control Plan 1')

Junction: Queniborough Road_Barkby Road								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (Queniborough Road N)	3.21	0.00	Y	Arm 5 Left	Inf	24.2 %	1692	1692
				Arm 6 Ahead	5.11	49.1 %		
				Arm 7 Right	Inf	26.8 %		
2/1 (Barkby Road E)	2.19	0.00	Y	Arm 6 Left	5.52	0.0 %	1730	1730
				Arm 7 Ahead	Inf	62.5 %		
				Arm 8 Right	9.38	37.5 %		
3/1 (Queniborough Road S)	2.95	0.00	Y	Arm 5 Right	Inf	0.0 %	1811	1811
				Arm 7 Left	12.79	46.8 %		
				Arm 8 Ahead	Inf	53.2 %		
4/1 (Barkby Road W)	3.38	0.00	Y	Arm 5 Ahead	Inf	1.6 %	1721	1721
				Arm 6 Right	13.42	61.0 %		
				Arm 8 Left	8.39	37.4 %		
5/1	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf
7/1	Infinite Saturation Flow						Inf	Inf
8/1	Infinite Saturation Flow						Inf	Inf

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
1: '2021 Base AM'	08:00	09:00	01:00	
2: '2021 Base PM'	17:00	18:00	01:00	
3: '2027 Base AM'	08:00	09:00	01:00	
4: '2027 Base PM'	17:00	18:00	01:00	
5: '2027 Base+Dev AM'	08:00	09:00	01:00	
6: '2027 Base+Dev PM'	17:00	18:00	01:00	

Traffic Flows, Desired

FG1: '2021 Base AM'

Desired Flow :

	Destination					
		A	B	C	D	Tot.
Origin	A	0	126	151	1	278
	B	130	0	81	2	213
	C	211	61	0	81	353
	D	0	2	1	0	3
	Tot.	341	189	233	84	847

FG2: '2021 Base PM'

Desired Flow :

	Destination					
		A	B	C	D	Tot.
Origin	A	0	126	176	2	304
	B	88	0	61	3	152
	C	124	62	0	61	247
	D	0	5	3	0	8
	Tot.	212	193	240	66	711

FG3: '2027 Base AM'

Desired Flow :

	Destination					
		A	B	C	D	Tot.
Origin	A	0	133	159	1	293
	B	137	0	85	2	224
	C	222	64	0	85	371
	D	0	2	1	0	3
	Tot.	359	199	245	88	891

FG4: '2027 Base PM'

Desired Flow :

	Destination					
		A	B	C	D	Tot.
Origin	A	0	133	185	2	320
	B	93	0	64	3	160
	C	130	65	0	64	259
	D	0	5	3	0	8
	Tot.	223	203	252	69	747

FG5: '2027 Base+Dev AM'

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	149	159	1	309
	B	170	0	92	2	264
	C	222	67	0	85	374
	D	0	2	1	0	3
	Tot.	392	218	252	88	950

FG6: '2027 Base+Dev PM'

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	163	185	0	348
	B	111	0	68	3	182
	C	130	71	0	64	265
	D	0	5	3	0	8
	Tot.	241	239	256	67	803

Stage Timings

Scenario 1: '2021 AM' (FG1: '2021 Base AM', Plan 1: 'Network Control Plan 1')

Stage	1	2	3	4
Duration	39	28	22	7
Change Point	0	45	79	107

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	N/A	-	-		-	-	-	-	-	-	64.6%
Queniborough Road_Barkby Road	-	-	N/A	-	-		-	-	-	-	-	-	64.6%
1/1	Queniborough Road N Left Ahead Right	U	N/A	N/A	A		1	39	-	353	1647	549	64.3%
2/1	Barkby Road E Left Ahead Right	U	N/A	N/A	D		1	7	-	3	1741	116	2.6%
3/1	Queniborough Road S Right Left Ahead	U	N/A	N/A	B		1	28	-	278	1814	438	63.4%
4/1	Barbky Road W Ahead Right Left	U	N/A	N/A	C		1	22	-	213	1719	329	64.6%
5/1		U	N/A	N/A	-		-	-	-	84	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	341	Inf	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	189	Inf	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	233	Inf	Inf	0.0%

LinSig V1 style report

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)														
Network	-	-	0	0	0	9.2	2.7	0.0	11.8	-	-	-	-														
Queniborough Road_Barkby Road	-	-	0	0	0	9.2	2.7	0.0	11.8	-	-	-	-														
1/1	353	353	-	-	-	3.3	0.9	-	4.2	43.0	9.9	0.9	10.8														
2/1	3	3	-	-	-	0.0	0.0	-	0.1	68.6	0.1	0.0	0.1														
3/1	278	278	-	-	-	3.1	0.9	-	4.0	51.9	8.3	0.9	9.1														
4/1	213	213	-	-	-	2.6	0.9	-	3.5	60.0	6.5	0.9	7.4														
5/1	84	84	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0														
6/1	341	341	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0														
7/1	189	189	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0														
8/1	233	233	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0														
<table style="width:100%; border:none;"> <tr> <td style="width:25%;">C1</td> <td style="width:25%;">PRC for Signalled Lanes (%):</td> <td style="width:10%;">39.2</td> <td style="width:25%;">Total Delay for Signalled Lanes (pcuHr):</td> <td style="width:15%;">11.83</td> <td style="width:20%;">Cycle Time (s):</td> <td>120</td> </tr> <tr> <td></td> <td>PRC Over All Lanes (%):</td> <td>39.2</td> <td>Total Delay Over All Lanes(pcuHr):</td> <td>11.83</td> <td></td> <td></td> </tr> </table>														C1	PRC for Signalled Lanes (%):	39.2	Total Delay for Signalled Lanes (pcuHr):	11.83	Cycle Time (s):	120		PRC Over All Lanes (%):	39.2	Total Delay Over All Lanes(pcuHr):	11.83		
C1	PRC for Signalled Lanes (%):	39.2	Total Delay for Signalled Lanes (pcuHr):	11.83	Cycle Time (s):	120																					
	PRC Over All Lanes (%):	39.2	Total Delay Over All Lanes(pcuHr):	11.83																							

LinSig V1 style report

Stage Timings

Scenario 2: '2021 PM' (FG2: '2021 Base PM', Plan 1: 'Network Control Plan 1')

Stage	1	2	3	4
Duration	33	37	19	7
Change Point	0	39	82	107

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	N/A	-	-		-	-	-	-	-	-	53.1%
Queniborough Road_Barkby Road	-	-	N/A	-	-		-	-	-	-	-	-	53.1%
1/1	Queniborough Road N Left Ahead Right	U	N/A	N/A	A		1	33	-	247	1687	478	51.7%
2/1	Barkby Road E Left Ahead Right	U	N/A	N/A	D		1	7	-	8	1730	115	6.9%
3/1	Queniborough Road S Right Left Ahead	U	N/A	N/A	B		1	37	-	304	1821	577	52.7%
4/1	Barbky Road W Ahead Right Left	U	N/A	N/A	C		1	19	-	152	1718	286	53.1%
5/1		U	N/A	N/A	-		-	-	-	66	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	212	Inf	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	193	Inf	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	240	Inf	Inf	0.0%

LinSig V1 style report

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)														
Network	-	-	0	0	0	7.4	1.7	0.0	9.1	-	-	-	-														
Queniborough Road_Barkby Road	-	-	0	0	0	7.4	1.7	0.0	9.1	-	-	-	-														
1/1	247	247	-	-	-	2.5	0.5	-	3.0	43.9	6.9	0.5	7.4														
2/1	8	8	-	-	-	0.1	0.0	-	0.2	69.5	0.2	0.0	0.3														
3/1	304	304	-	-	-	2.8	0.6	-	3.4	40.2	8.3	0.6	8.8														
4/1	152	152	-	-	-	1.9	0.6	-	2.5	59.0	4.6	0.6	5.2														
5/1	66	66	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0														
6/1	212	212	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0														
7/1	193	193	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0														
8/1	240	240	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0														
<table style="width:100%; border:none;"> <tr> <td style="width:20%;">C1</td> <td style="width:20%;">PRC for Signalled Lanes (%):</td> <td style="width:10%;">69.5</td> <td style="width:20%;">Total Delay for Signalled Lanes (pcuHr):</td> <td style="width:10%;">9.05</td> <td style="width:20%;">Cycle Time (s):</td> <td>120</td> </tr> <tr> <td></td> <td>PRC Over All Lanes (%):</td> <td>69.5</td> <td>Total Delay Over All Lanes(pcuHr):</td> <td>9.05</td> <td></td> <td></td> </tr> </table>														C1	PRC for Signalled Lanes (%):	69.5	Total Delay for Signalled Lanes (pcuHr):	9.05	Cycle Time (s):	120		PRC Over All Lanes (%):	69.5	Total Delay Over All Lanes(pcuHr):	9.05		
C1	PRC for Signalled Lanes (%):	69.5	Total Delay for Signalled Lanes (pcuHr):	9.05	Cycle Time (s):	120																					
	PRC Over All Lanes (%):	69.5	Total Delay Over All Lanes(pcuHr):	9.05																							

Stage Timings

Scenario 3: '2027 AM' (FG3: '2027 Base AM', Plan 1: 'Network Control Plan 1')

Stage	1	2	3	4
Duration	39	28	22	7
Change Point	0	45	79	107

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	N/A	-	-		-	-	-	-	-	-	68.0%
Queniborough Road_Barkby Road	-	-	N/A	-	-		-	-	-	-	-	-	68.0%
1/1	Queniborough Road N Left Ahead Right	U	N/A	N/A	A		1	39	-	371	1647	549	67.6%
2/1	Barkby Road E Left Ahead Right	U	N/A	N/A	D		1	7	-	3	1741	116	2.6%
3/1	Queniborough Road S Right Left Ahead	U	N/A	N/A	B		1	28	-	293	1813	438	66.9%
4/1	Barbky Road W Ahead Right Left	U	N/A	N/A	C		1	22	-	224	1719	329	68.0%
5/1		U	N/A	N/A	-		-	-	-	88	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	359	Inf	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	199	Inf	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	245	Inf	Inf	0.0%

LinSig V1 style report

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)														
Network	-	-	0	0	0	9.7	3.1	0.0	12.8	-	-	-	-														
Queniborough Road_Barkby Road	-	-	0	0	0	9.7	3.1	0.0	12.8	-	-	-	-														
1/1	371	371	-	-	-	3.5	1.0	-	4.6	44.4	10.6	1.0	11.6														
2/1	3	3	-	-	-	0.0	0.0	-	0.1	68.6	0.1	0.0	0.1														
3/1	293	293	-	-	-	3.4	1.0	-	4.3	53.4	8.8	1.0	9.8														
4/1	224	224	-	-	-	2.8	1.0	-	3.8	61.8	6.9	1.0	7.9														
5/1	88	88	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0														
6/1	359	359	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0														
7/1	199	199	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0														
8/1	245	245	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0														
<table style="width:100%; border:none;"> <tr> <td style="width:25%;">C1</td> <td style="width:25%;">PRC for Signalled Lanes (%):</td> <td style="width:10%;">32.4</td> <td style="width:25%;">Total Delay for Signalled Lanes (pcuHr):</td> <td style="width:15%;">12.83</td> <td style="width:20%;">Cycle Time (s):</td> <td>120</td> </tr> <tr> <td></td> <td>PRC Over All Lanes (%):</td> <td>32.4</td> <td>Total Delay Over All Lanes(pcuHr):</td> <td>12.83</td> <td></td> <td></td> </tr> </table>														C1	PRC for Signalled Lanes (%):	32.4	Total Delay for Signalled Lanes (pcuHr):	12.83	Cycle Time (s):	120		PRC Over All Lanes (%):	32.4	Total Delay Over All Lanes(pcuHr):	12.83		
C1	PRC for Signalled Lanes (%):	32.4	Total Delay for Signalled Lanes (pcuHr):	12.83	Cycle Time (s):	120																					
	PRC Over All Lanes (%):	32.4	Total Delay Over All Lanes(pcuHr):	12.83																							

Stage Timings

Scenario 4: '2027 PM' (FG4: '2027 Base PM', Plan 1: 'Network Control Plan 1')

Stage	1	2	3	4
Duration	32	37	20	7
Change Point	0	38	81	107

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	N/A	-	-		-	-	-	-	-	-	55.8%
Queniborough Road_Barkby Road	-	-	N/A	-	-		-	-	-	-	-	-	55.8%
1/1	Queniborough Road N Left Ahead Right	U	N/A	N/A	A		1	32	-	259	1687	464	55.8%
2/1	Barkby Road E Left Ahead Right	U	N/A	N/A	D		1	7	-	8	1730	115	6.9%
3/1	Queniborough Road S Right Left Ahead	U	N/A	N/A	B		1	37	-	320	1821	577	55.5%
4/1	Barbky Road W Ahead Right Left	U	N/A	N/A	C		1	20	-	160	1718	301	53.2%
5/1		U	N/A	N/A	-		-	-	-	69	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	223	Inf	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	203	Inf	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	252	Inf	Inf	0.0%

LinSig V1 style report

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)														
Network	-	-	0	0	0	7.8	1.9	0.0	9.7	-	-	-	-														
Queniborough Road_Barkby Road	-	-	0	0	0	7.8	1.9	0.0	9.7	-	-	-	-														
1/1	259	259	-	-	-	2.7	0.6	-	3.3	46.0	7.3	0.6	8.0														
2/1	8	8	-	-	-	0.1	0.0	-	0.2	69.5	0.2	0.0	0.3														
3/1	320	320	-	-	-	3.0	0.6	-	3.6	41.0	8.8	0.6	9.4														
4/1	160	160	-	-	-	2.0	0.6	-	2.6	57.7	4.8	0.6	5.4														
5/1	69	69	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0														
6/1	223	223	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0														
7/1	203	203	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0														
8/1	252	252	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0														
<table style="width:100%; border:none;"> <tr> <td style="width:20%;">C1</td> <td style="width:20%;">PRC for Signalled Lanes (%):</td> <td style="width:10%;">61.2</td> <td style="width:20%;">Total Delay for Signalled Lanes (pcuHr):</td> <td style="width:10%;">9.67</td> <td style="width:20%;">Cycle Time (s):</td> <td>120</td> </tr> <tr> <td></td> <td>PRC Over All Lanes (%):</td> <td>61.2</td> <td>Total Delay Over All Lanes(pcuHr):</td> <td>9.67</td> <td></td> <td></td> </tr> </table>														C1	PRC for Signalled Lanes (%):	61.2	Total Delay for Signalled Lanes (pcuHr):	9.67	Cycle Time (s):	120		PRC Over All Lanes (%):	61.2	Total Delay Over All Lanes(pcuHr):	9.67		
C1	PRC for Signalled Lanes (%):	61.2	Total Delay for Signalled Lanes (pcuHr):	9.67	Cycle Time (s):	120																					
	PRC Over All Lanes (%):	61.2	Total Delay Over All Lanes(pcuHr):	9.67																							

Stage Timings

Scenario 5: '2027 + Dev AM' (FG5: '2027 Base+Dev AM', Plan 1: 'Network Control Plan 1')

Stage	1	2	3	4
Duration	37	27	25	7
Change Point	0	43	76	107

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	N/A	-	-		-	-	-	-	-	-	73.2%
Queniborough Road_Barkby Road	-	-	N/A	-	-		-	-	-	-	-	-	73.2%
1/1	Queniborough Road N Left Ahead Right	U	N/A	N/A	A		1	37	-	374	1649	522	71.6%
2/1	Barkby Road E Left Ahead Right	U	N/A	N/A	D		1	7	-	3	1741	116	2.6%
3/1	Queniborough Road S Right Left Ahead	U	N/A	N/A	B		1	27	-	309	1808	422	73.2%
4/1	Barbky Road W Ahead Right Left	U	N/A	N/A	C		1	25	-	264	1722	373	70.8%
5/1		U	N/A	N/A	-		-	-	-	88	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	392	Inf	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	218	Inf	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	252	Inf	Inf	0.0%

LinSig V1 style report

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)														
Network	-	-	0	0	0	10.6	3.8	0.0	14.4	-	-	-	-														
Queniborough Road_Barkby Road	-	-	0	0	0	10.6	3.8	0.0	14.4	-	-	-	-														
1/1	374	374	-	-	-	3.8	1.2	-	5.0	48.2	11.0	1.2	12.3														
2/1	3	3	-	-	-	0.0	0.0	-	0.1	68.6	0.1	0.0	0.1														
3/1	309	309	-	-	-	3.7	1.3	-	5.0	58.1	9.4	1.3	10.8														
4/1	264	264	-	-	-	3.2	1.2	-	4.4	59.6	8.1	1.2	9.3														
5/1	88	88	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0														
6/1	392	392	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0														
7/1	218	218	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0														
8/1	252	252	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0														
<table style="width:100%; border:none;"> <tr> <td style="width:25%;">C1</td> <td style="width:25%;">PRC for Signalled Lanes (%):</td> <td style="width:10%;">22.9</td> <td style="width:25%;">Total Delay for Signalled Lanes (pcuHr):</td> <td style="width:15%;">14.42</td> <td style="width:20%;">Cycle Time (s):</td> <td>120</td> </tr> <tr> <td></td> <td>PRC Over All Lanes (%):</td> <td>22.9</td> <td>Total Delay Over All Lanes(pcuHr):</td> <td>14.42</td> <td></td> <td></td> </tr> </table>														C1	PRC for Signalled Lanes (%):	22.9	Total Delay for Signalled Lanes (pcuHr):	14.42	Cycle Time (s):	120		PRC Over All Lanes (%):	22.9	Total Delay Over All Lanes(pcuHr):	14.42		
C1	PRC for Signalled Lanes (%):	22.9	Total Delay for Signalled Lanes (pcuHr):	14.42	Cycle Time (s):	120																					
	PRC Over All Lanes (%):	22.9	Total Delay Over All Lanes(pcuHr):	14.42																							

Stage Timings

Scenario 6: '2027 + Dev PM' (FG6: '2027 Base+Dev PM', Plan 1: 'Network Control Plan 1')

Stage	1	2	3	4
Duration	31	38	20	7
Change Point	0	37	81	107

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	N/A	-	-		-	-	-	-	-	-	60.4%
Queniborough Road_Barkby Road	-	-	N/A	-	-		-	-	-	-	-	-	60.4%
1/1	Queniborough Road N Left Ahead Right	U	N/A	N/A	A		1	31	-	265	1692	451	58.7%
2/1	Barkby Road E Left Ahead Right	U	N/A	N/A	D		1	7	-	8	1730	115	6.9%
3/1	Queniborough Road S Right Left Ahead	U	N/A	N/A	B		1	38	-	348	1811	589	59.1%
4/1	Barbky Road W Ahead Right Left	U	N/A	N/A	C		1	20	-	182	1721	301	60.4%
5/1		U	N/A	N/A	-		-	-	-	67	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	241	Inf	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	239	Inf	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	256	Inf	Inf	0.0%

LinSig V1 style report

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	-	-	0	0	0	8.5	2.2	0.0	10.7	-	-	-	-
Queniborough Road_Barkby Road	-	-	0	0	0	8.5	2.2	0.0	10.7	-	-	-	-
1/1	265	265	-	-	-	2.8	0.7	-	3.5	47.9	7.7	0.7	8.4
2/1	8	8	-	-	-	0.1	0.0	-	0.2	69.5	0.2	0.0	0.3
3/1	348	348	-	-	-	3.3	0.7	-	4.0	41.3	9.7	0.7	10.4
4/1	182	182	-	-	-	2.3	0.8	-	3.1	60.6	5.6	0.8	6.3
5/1	67	67	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	241	241	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	239	239	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	256	256	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
<p>C1 PRC for Signalled Lanes (%): 48.9 Total Delay for Signalled Lanes (pcuHr): 10.73 Cycle Time (s): 120 PRC Over All Lanes (%): 48.9 Total Delay Over All Lanes(pcuHr): 10.73</p>													

Junctions 10
PICADY 10 - Priority Intersection Module
Version: 10.0.4.1693 © Copyright TRL Software Limited, 2021
For sales and distribution information, program advice and maintenance, contact TRL Software: +44 (0)1344 379777 software@trl.co.uk trlsoftware.com
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Filename: Barkby Road - Pembroke Avenue T Junction Assessment.j10
Path: P:\20000's\20060\Technical\Junction Modelling\2022 Junction Assessments
Report generation date: 17/06/2022 13:39:14

- »2022, AM
- »2022, PM
- »2027, AM
- »2027, PM
- »2027 + Dev, AM
- »2027 + Dev, PM

Summary of junction performance

	AM			PM		
	Q (PCU)	Delay (s)	RFC	Q (PCU)	Delay (s)	RFC
2022						
Stream B-C	0.1	6.65	0.06	0.1	7.29	0.06
Stream B-A	0.2	10.13	0.17	0.4	11.96	0.31
Stream C-AB	0.2	6.36	0.13	0.2	5.65	0.10
2027						
Stream B-C	0.1	6.73	0.07	0.1	7.42	0.06
Stream B-A	0.2	10.36	0.18	0.5	12.42	0.32
Stream C-AB	0.2	6.39	0.14	0.2	5.66	0.11
2027 + Dev						
Stream B-C	0.1	7.07	0.07	0.1	7.97	0.07
Stream B-A	0.3	11.24	0.22	0.6	14.23	0.40
Stream C-AB	0.2	6.44	0.14	0.2	5.57	0.11

There are warnings associated with one or more model runs - see the 'Data Errors and Warnings' tables for each Analysis or Demand Set.

Values shown are the highest values encountered over all time segments. Delay is the maximum value of Av. delay per arriving vehicle.

File summary

File Description

Title	(untitled)
Location	
Site number	
Date	04/10/2018
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	DTA\Arcady
Description	

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Av. delay units	Total delay units	Rate of delay units
m	kph	PCU	PCU	perHour	s	-Min	perMin

Analysis Options

Vehicle length (m)	Calculate Q Percentiles	Calculate detailed queueing delay	Show lane queues in feet / metres	Show all PICADY stream intercepts	Calculate residual capacity	RFC Threshold	Av. Delay threshold (s)	Q threshold (PCU)	Use iterations with HCM roundabouts	Max number of iterations for roundabouts
5.75						0.85	36.00	20.00		500

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2022	AM	ONE HOUR	07:45	09:15	15	✓
D2	2022	PM	ONE HOUR	16:45	18:15	15	✓
D3	2027	AM	ONE HOUR	07:45	09:15	15	✓
D4	2027	PM	ONE HOUR	16:45	18:15	15	✓
D5	2027 + Dev	AM	ONE HOUR	07:45	09:15	15	✓
D6	2027 + Dev	PM	ONE HOUR	16:45	18:15	15	✓

Analysis Set Details

ID	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	✓	100.000	100.000

2022, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Minor arm visibility to right	B - Pembroke Avenue - Minor arm geometry	Visibility to right expected to have two components if the arm has two lanes, or two lanes in a flared section.
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	Two-way	Two-way		2.00	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	2.00	A

Arms

Arms

Arm	Name	Description	Arm type
A	Barkby Road (S)		Major
B	Pembroke Avenue		Minor
C	Barkby Road (N)		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right-turn storage	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C - Barkby Road (N)	6.60			99.0	✓	0.00

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relevant) are measured opposite Arm D.

Minor Arm Geometry

Arm	Minor arm type	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate flare length	Flare length (PCU)	Visibility to left (m)	Visibility to right (m)
B - Pembroke Avenue	One lane plus flare	10.00	6.00	3.10	3.10	3.10	✓	1.00	54	41

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
B-A	549	0.097	0.246	0.155	0.352
B-C	684	0.102	0.258	-	-
C-B	631	0.238	0.238	-	-

The slopes and intercepts shown above include custom intercept adjustments only.

Streams may be combined, in which case capacity will be adjusted.

Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2022	AM	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Av. Demand (PCU/hr)	Scaling Factor (%)
A - Barkby Road (S)		ONE HOUR	✓	364	100.000
B - Pembroke Avenue		ONE HOUR	✓	97	100.000
C - Barkby Road (N)		ONE HOUR	✓	209	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A - Barkby Road (S)	B - Pembroke Avenue	C - Barkby Road (N)
From	A - Barkby Road (S)	0	148	216
	B - Pembroke Avenue	64	0	33
	C - Barkby Road (N)	151	58	0

Vehicle Mix

HV %s

		To		
		A - Barkby Road (S)	B - Pembroke Avenue	C - Barkby Road (N)
From	A - Barkby Road (S)	0	0	0
	B - Pembroke Avenue	0	0	0
	C - Barkby Road (N)	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.06	6.65	0.1	A	30	45
B-A	0.17	10.13	0.2	B	59	88
C-AB	0.13	6.36	0.2	A	68	103
C-A					123	185
A-B					136	204
A-C					198	297

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	25	6	613	0.041	25	0.0	0.0	6.113	A
B-A	48	12	465	0.104	48	0.0	0.1	8.616	A
C-AB	53	13	644	0.082	53	0.0	0.1	6.084	A
C-A	104	26			104				
A-B	111	28			111				
A-C	163	41			163				

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	30	7	599	0.050	30	0.0	0.1	6.325	A
B-A	58	14	449	0.128	57	0.1	0.1	9.199	A
C-AB	66	17	647	0.102	66	0.1	0.1	6.191	A
C-A	122	30			122				
A-B	133	33			133				
A-C	194	49			194				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	36	9	578	0.063	36	0.1	0.1	6.646	A
B-A	70	18	426	0.165	70	0.1	0.2	10.117	B
C-AB	86	21	653	0.132	86	0.1	0.2	6.350	A
C-A	144	36			144				
A-B	163	41			163				
A-C	238	59			238				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	36	9	578	0.063	36	0.1	0.1	6.647	A
B-A	70	18	426	0.165	70	0.2	0.2	10.127	B
C-AB	86	21	653	0.132	86	0.2	0.2	6.357	A
C-A	144	36			144				
A-B	163	41			163				
A-C	238	59			238				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	30	7	598	0.050	30	0.1	0.1	6.332	A
B-A	58	14	449	0.128	58	0.2	0.1	9.217	A
C-AB	66	17	648	0.102	66	0.2	0.1	6.201	A
C-A	122	30			122				
A-B	133	33			133				
A-C	194	49			194				

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	25	6	613	0.041	25	0.1	0.0	6.123	A
B-A	48	12	465	0.104	48	0.1	0.1	8.645	A
C-AB	53	13	644	0.082	53	0.1	0.1	6.098	A
C-A	104	26			104				
A-B	111	28			111				
A-C	163	41			163				

2022, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Minor arm visibility to right	B - Pembroke Avenue - Minor arm geometry	Visibility to right expected to have two components if the arm has two lanes, or two lanes in a flared section.
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	Two-way	Two-way		2.93	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	2.93	A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D2	2022	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Av. Demand (PCU/hr)	Scaling Factor (%)
A - Barkby Road (S)		ONE HOUR	✓	289	100.000
B - Pembroke Avenue		ONE HOUR	✓	150	100.000
C - Barkby Road (N)		ONE HOUR	✓	251	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A - Barkby Road (S)	B - Pembroke Avenue	C - Barkby Road (N)
From	A - Barkby Road (S)	0	59	230
	B - Pembroke Avenue	121	0	29
	C - Barkby Road (N)	205	46	0

Vehicle Mix

HV %s

		To		
		A - Barkby Road (S)	B - Pembroke Avenue	C - Barkby Road (N)
From	A - Barkby Road (S)	0	0	0
	B - Pembroke Avenue	0	0	0
	C - Barkby Road (N)	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.06	7.29	0.1	A	27	40
B-A	0.31	11.96	0.4	B	111	167
C-AB	0.10	5.65	0.2	A	59	88
C-A					172	258
A-B					54	81
A-C					211	317

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	22	5	575	0.038	22	0.0	0.0	6.505	A
B-A	91	23	474	0.192	90	0.0	0.2	9.368	A
C-AB	45	11	684	0.065	44	0.0	0.1	5.625	A
C-A	144	36			144				
A-B	44	11			44				
A-C	173	43			173				

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	26	7	556	0.047	26	0.0	0.0	6.795	A
B-A	109	27	457	0.238	108	0.2	0.3	10.322	B
C-AB	56	14	695	0.081	56	0.1	0.1	5.633	A
C-A	169	42			169				
A-B	53	13			53				
A-C	207	52			207				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	32	8	526	0.061	32	0.0	0.1	7.280	A
B-A	133	33	434	0.307	133	0.3	0.4	11.925	B
C-AB	74	19	712	0.104	74	0.1	0.2	5.651	A
C-A	202	51			202				
A-B	65	16			65				
A-C	253	63			253				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	32	8	526	0.061	32	0.1	0.1	7.286	A
B-A	133	33	434	0.307	133	0.4	0.4	11.964	B
C-AB	74	19	712	0.105	74	0.2	0.2	5.654	A
C-A	202	50			202				
A-B	65	16			65				
A-C	253	63			253				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	26	7	555	0.047	26	0.1	0.0	6.806	A
B-A	109	27	457	0.238	109	0.4	0.3	10.371	B
C-AB	56	14	696	0.081	57	0.2	0.1	5.640	A
C-A	169	42			169				
A-B	53	13			53				
A-C	207	52			207				

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	22	5	574	0.038	22	0.0	0.0	6.517	A
B-A	91	23	473	0.192	91	0.3	0.2	9.430	A
C-AB	45	11	684	0.066	45	0.1	0.1	5.633	A
C-A	144	36			144				
A-B	44	11			44				
A-C	173	43			173				

2027, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Minor arm visibility to right	B - Pembroke Avenue - Minor arm geometry	Visibility to right expected to have two components if the arm has two lanes, or two lanes in a flared section.
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	Two-way	Two-way		2.04	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	2.04	A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D3	2027	AM	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Av. Demand (PCU/hr)	Scaling Factor (%)
A - Barkby Road (S)		ONE HOUR	✓	379	100.000
B - Pembroke Avenue		ONE HOUR	✓	101	100.000
C - Barkby Road (N)		ONE HOUR	✓	217	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A - Barkby Road (S)	B - Pembroke Avenue	C - Barkby Road (N)
From	A - Barkby Road (S)	0	154	225
	B - Pembroke Avenue	67	0	34
	C - Barkby Road (N)	157	60	0

Vehicle Mix

HV %s

		To		
		A - Barkby Road (S)	B - Pembroke Avenue	C - Barkby Road (N)
From	A - Barkby Road (S)	0	0	0
	B - Pembroke Avenue	0	0	0
	C - Barkby Road (N)	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.07	6.73	0.1	A	31	47
B-A	0.18	10.36	0.2	B	61	92
C-AB	0.14	6.39	0.2	A	71	107
C-A					128	191
A-B					141	212
A-C					206	310

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	26	6	610	0.042	25	0.0	0.0	6.161	A
B-A	50	13	462	0.109	50	0.0	0.1	8.732	A
C-AB	55	14	645	0.086	55	0.0	0.1	6.101	A
C-A	108	27			108				
A-B	116	29			116				
A-C	169	42			169				

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	31	8	594	0.051	31	0.0	0.1	6.386	A
B-A	60	15	445	0.135	60	0.1	0.2	9.355	A
C-AB	69	17	648	0.107	69	0.1	0.2	6.215	A
C-A	126	32			126				
A-B	138	35			138				
A-C	202	51			202				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	37	9	572	0.065	37	0.1	0.1	6.729	A
B-A	74	18	421	0.175	74	0.2	0.2	10.348	B
C-AB	90	22	654	0.138	90	0.2	0.2	6.384	A
C-A	149	37			149				
A-B	170	42			170				
A-C	248	62			248				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	37	9	572	0.065	37	0.1	0.1	6.731	A
B-A	74	18	421	0.175	74	0.2	0.2	10.362	B
C-AB	90	23	654	0.138	90	0.2	0.2	6.389	A
C-A	149	37			149				
A-B	170	42			170				
A-C	248	62			248				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	31	8	594	0.051	31	0.1	0.1	6.390	A
B-A	60	15	445	0.135	60	0.2	0.2	9.373	A
C-AB	69	17	648	0.107	69	0.2	0.2	6.223	A
C-A	126	31			126				
A-B	138	35			138				
A-C	202	51			202				

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	26	6	609	0.042	26	0.1	0.0	6.168	A
B-A	50	13	462	0.109	51	0.2	0.1	8.758	A
C-AB	55	14	645	0.086	56	0.2	0.1	6.116	A
C-A	108	27			108				
A-B	116	29			116				
A-C	169	42			169				

2027, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Minor arm visibility to right	B - Pembroke Avenue - Minor arm geometry	Visibility to right expected to have two components if the arm has two lanes, or two lanes in a flared section.
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	Two-way	Two-way		3.01	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	3.01	A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D4	2027	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Av. Demand (PCU/hr)	Scaling Factor (%)
A - Barkby Road (S)		ONE HOUR	✓	302	100.000
B - Pembroke Avenue		ONE HOUR	✓	156	100.000
C - Barkby Road (N)		ONE HOUR	✓	262	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A - Barkby Road (S)	B - Pembroke Avenue	C - Barkby Road (N)
From	A - Barkby Road (S)	0	62	240
	B - Pembroke Avenue	126	0	30
	C - Barkby Road (N)	214	48	0

Vehicle Mix

HV %s

		To		
		A - Barkby Road (S)	B - Pembroke Avenue	C - Barkby Road (N)
From	A - Barkby Road (S)	0	0	0
	B - Pembroke Avenue	0	0	0
	C - Barkby Road (N)	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.06	7.42	0.1	A	28	41
B-A	0.32	12.42	0.5	B	116	173
C-AB	0.11	5.66	0.2	A	62	93
C-A					178	268
A-B					57	85
A-C					220	330

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	23	6	571	0.040	22	0.0	0.0	6.563	A
B-A	95	24	470	0.202	94	0.0	0.2	9.550	A
C-AB	47	12	687	0.069	47	0.0	0.1	5.625	A
C-A	150	38			150				
A-B	47	12			47				
A-C	181	45			181				

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	27	7	550	0.049	27	0.0	0.1	6.877	A
B-A	113	28	453	0.250	113	0.2	0.3	10.591	B
C-AB	60	15	699	0.085	60	0.1	0.1	5.637	A
C-A	176	44			176				
A-B	56	14			56				
A-C	216	54			216				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	33	8	519	0.064	33	0.1	0.1	7.413	A
B-A	139	35	429	0.324	138	0.3	0.5	12.368	B
C-AB	79	20	716	0.110	79	0.1	0.2	5.657	A
C-A	209	52			209				
A-B	68	17			68				
A-C	264	66			264				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	33	8	518	0.064	33	0.1	0.1	7.420	A
B-A	139	35	429	0.324	139	0.5	0.5	12.416	B
C-AB	79	20	716	0.110	79	0.2	0.2	5.659	A
C-A	209	52			209				
A-B	68	17			68				
A-C	264	66			264				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	27	7	550	0.049	27	0.1	0.1	6.889	A
B-A	113	28	452	0.250	114	0.5	0.3	10.648	B
C-AB	60	15	699	0.086	60	0.2	0.1	5.643	A
C-A	176	44			176				
A-B	56	14			56				
A-C	216	54			216				

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	23	6	570	0.040	23	0.1	0.0	6.578	A
B-A	95	24	470	0.202	95	0.3	0.3	9.621	A
C-AB	47	12	687	0.069	47	0.1	0.1	5.634	A
C-A	150	37			150				
A-B	47	12			47				
A-C	181	45			181				

2027 + Dev, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Minor arm visibility to right	B - Pembroke Avenue - Minor arm geometry	Visibility to right expected to have two components if the arm has two lanes, or two lanes in a flared section.
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	Two-way	Two-way		2.11	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	2.11	A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D5	2027 + Dev	AM	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Av. Demand (PCU/hr)	Scaling Factor (%)
A - Barkby Road (S)		ONE HOUR	✓	437	100.000
B - Pembroke Avenue		ONE HOUR	✓	114	100.000
C - Barkby Road (N)		ONE HOUR	✓	234	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A - Barkby Road (S)	B - Pembroke Avenue	C - Barkby Road (N)
From	A - Barkby Road (S)	0	180	257
	B - Pembroke Avenue	80	0	34
	C - Barkby Road (N)	174	60	0

Vehicle Mix

HV %s

		To		
		A - Barkby Road (S)	B - Pembroke Avenue	C - Barkby Road (N)
From	A - Barkby Road (S)	0	0	0
	B - Pembroke Avenue	0	0	0
	C - Barkby Road (N)	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.07	7.07	0.1	A	31	47
B-A	0.22	11.24	0.3	B	73	110
C-AB	0.14	6.44	0.2	A	74	111
C-A					141	211
A-B					165	248
A-C					236	354

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	26	6	591	0.043	25	0.0	0.0	6.364	A
B-A	60	15	454	0.133	60	0.0	0.2	9.114	A
C-AB	57	14	644	0.088	56	0.0	0.1	6.125	A
C-A	119	30			119				
A-B	136	34			136				
A-C	193	48			193				

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	31	8	573	0.053	31	0.0	0.1	6.638	A
B-A	72	18	435	0.165	72	0.2	0.2	9.907	A
C-AB	71	18	647	0.110	71	0.1	0.2	6.246	A
C-A	139	35			139				
A-B	162	40			162				
A-C	231	58			231				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	37	9	547	0.068	37	0.1	0.1	7.070	A
B-A	88	22	409	0.216	88	0.2	0.3	11.214	B
C-AB	94	23	653	0.143	93	0.2	0.2	6.431	A
C-A	164	41			164				
A-B	198	50			198				
A-C	283	71			283				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	37	9	546	0.069	37	0.1	0.1	7.073	A
B-A	88	22	408	0.216	88	0.3	0.3	11.236	B
C-AB	94	23	653	0.143	94	0.2	0.2	6.439	A
C-A	164	41			164				
A-B	198	50			198				
A-C	283	71			283				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	31	8	572	0.053	31	0.1	0.1	6.646	A
B-A	72	18	435	0.165	72	0.3	0.2	9.936	A
C-AB	71	18	648	0.110	72	0.2	0.2	6.255	A
C-A	139	35			139				
A-B	162	40			162				
A-C	231	58			231				

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	26	6	590	0.043	26	0.1	0.0	6.373	A
B-A	60	15	454	0.133	60	0.2	0.2	9.153	A
C-AB	57	14	644	0.088	57	0.2	0.1	6.141	A
C-A	119	30			119				
A-B	136	34			136				
A-C	193	48			193				

2027 + Dev, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Minor arm visibility to right	B - Pembroke Avenue - Minor arm geometry	Visibility to right expected to have two components if the arm has two lanes, or two lanes in a flared section.
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	Two-way	Two-way		3.44	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	3.44	A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D6	2027 + Dev	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Av. Demand (PCU/hr)	Scaling Factor (%)
A - Barkby Road (S)		ONE HOUR	✓	334	100.000
B - Pembroke Avenue		ONE HOUR	✓	180	100.000
C - Barkby Road (N)		ONE HOUR	✓	291	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A - Barkby Road (S)	B - Pembroke Avenue	C - Barkby Road (N)
From	A - Barkby Road (S)	0	76	258
	B - Pembroke Avenue	150	0	30
	C - Barkby Road (N)	243	48	0

Vehicle Mix

HV %s

		To		
		A - Barkby Road (S)	B - Pembroke Avenue	C - Barkby Road (N)
From	A - Barkby Road (S)	0	0	0
	B - Pembroke Avenue	0	0	0
	C - Barkby Road (N)	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.07	7.97	0.1	A	28	41
B-A	0.40	14.23	0.6	B	138	206
C-AB	0.11	5.57	0.2	A	65	98
C-A					202	303
A-B					70	105
A-C					237	355

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	23	6	553	0.041	22	0.0	0.0	6.784	A
B-A	113	28	463	0.244	112	0.0	0.3	10.202	B
C-AB	49	12	696	0.070	49	0.0	0.1	5.557	A
C-A	170	43			170				
A-B	57	14			57				
A-C	194	49			194				

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	27	7	527	0.051	27	0.0	0.1	7.192	A
B-A	135	34	444	0.303	134	0.3	0.4	11.597	B
C-AB	62	16	710	0.088	62	0.1	0.1	5.556	A
C-A	199	50			199				
A-B	68	17			68				
A-C	232	58			232				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	33	8	486	0.068	33	0.1	0.1	7.951	A
B-A	165	41	418	0.395	164	0.4	0.6	14.135	B
C-AB	84	21	731	0.114	83	0.1	0.2	5.567	A
C-A	237	59			237				
A-B	84	21			84				
A-C	284	71			284				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	33	8	485	0.068	33	0.1	0.1	7.965	A
B-A	165	41	418	0.395	165	0.6	0.6	14.227	B
C-AB	84	21	731	0.115	84	0.2	0.2	5.571	A
C-A	237	59			237				
A-B	84	21			84				
A-C	284	71			284				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	27	7	527	0.051	27	0.1	0.1	7.207	A
B-A	135	34	444	0.304	136	0.6	0.4	11.699	B
C-AB	63	16	710	0.088	63	0.2	0.1	5.565	A
C-A	199	50			199				
A-B	68	17			68				
A-C	232	58			232				

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	23	6	552	0.041	23	0.1	0.0	6.802	A
B-A	113	28	463	0.244	113	0.4	0.3	10.307	B
C-AB	49	12	696	0.071	49	0.1	0.1	5.566	A
C-A	170	42			170				
A-B	57	14			57				
A-C	194	49			194				

Junctions 10
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Filename: Melton - Goodes Assessment RevA.j10
Path: P:\20000's\20060\Technical\Junction Modelling\2022 Junction Assessments
Report generation date: 17/06/2022 13:40:57

- »2022, AM
- »2022, PM
- »2027, AM
- »2027, PM
- »2027 + Development, AM
- »2027 + Development, PM

Summary of junction performance

	AM			PM		
	Q (PCU)	Delay (s)	RFC	Q (PCU)	Delay (s)	RFC
2022						
Stream B-C	1.8	19.78	0.64	0.4	9.93	0.29
Stream B-A	0.2	19.08	0.17	0.1	16.76	0.08
Stream C-AB	1.1	7.50	0.39	5.3	19.67	0.77
2027						
Stream B-C	2.1	22.59	0.68	0.4	10.33	0.31
Stream B-A	0.3	21.92	0.20	0.1	18.14	0.09
Stream C-AB	1.3	7.79	0.42	7.4	26.32	0.83
2027 + Development						
Stream B-C	2.8	27.59	0.74	0.5	10.88	0.34
Stream B-A	0.3	26.44	0.23	0.1	19.58	0.10
Stream C-AB	1.5	8.38	0.46	13.0	47.79	0.92

Values shown are the highest values encountered over all time segments. Delay is the maximum value of Av. delay per arriving vehicle.

File summary

File Description

Title	(untitled)
Location	
Site number	
Date	11/04/2018
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	DTA\Arcady
Description	

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Av. delay units	Total delay units	Rate of delay units
m	kph	PCU	PCU	perHour	s	-Min	perMin

Analysis Options

Vehicle length (m)	Calculate Q Percentiles	Calculate detailed queueing delay	Show lane queues in feet / metres	Show all PICADY stream intercepts	Calculate residual capacity	RFC Threshold	Av. Delay threshold (s)	Q threshold (PCU)	Use iterations with HCM roundabouts	Max number of iterations for roundabouts
5.75						0.85	36.00	20.00		500

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2022	AM	ONE HOUR	07:45	09:15	15	✓
D2	2022	PM	ONE HOUR	16:45	18:15	15	✓
D5	2027	AM	ONE HOUR	07:45	09:15	15	✓
D6	2027	PM	ONE HOUR	16:45	18:15	15	✓
D7	2027 + Development	AM	ONE HOUR	07:45	09:15	15	✓
D8	2027 + Development	PM	ONE HOUR	16:45	18:15	15	✓

Analysis Set Details

ID	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	✓	100.000	100.000

2022, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	Two-way	Two-way		6.09	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	6.09	A

Arms

Arms

Arm	Name	Description	Arm type
A	Melton Road N		Major
B	Goodes Lane		Minor
C	Melton Road S		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right-turn storage	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C	7.43			114.0	✓	0.00

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relevant) are measured opposite Arm D.

Minor Arm Geometry

Arm	Minor arm type	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate flare length	Flare length (PCU)	Visibility to left (m)	Visibility to right (m)
B	One lane plus flare	10.00	4.26	2.98	2.94	2.89		1.00	53	23

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
B-A	607	0.104	0.262	0.165	0.375
B-C	678	0.097	0.246	-	-
C-B	640	0.233	0.233	-	-

The slopes and intercepts shown above include custom intercept adjustments only.

Streams may be combined, in which case capacity will be adjusted.

Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2022	AM	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Av. Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	532	100.000
B		ONE HOUR	✓	339	100.000
C		ONE HOUR	✓	551	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
	A	B	C	
From	A	0	24	508
	B	38	0	301
	C	418	133	0

Vehicle Mix

HV %s

	To			
	A	B	C	
From	A	0	3	4
	B	8	0	1
	C	6	4	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.64	19.78	1.8	C	276	414
B-A	0.17	19.08	0.2	C	35	52
C-AB	0.39	7.50	1.1	A	242	364
C-A					263	395
A-B					22	33
A-C					466	699

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	227	57	571	0.397	224	0.0	0.7	10.410	B
B-A	29	7	392	0.073	28	0.0	0.1	10.670	B
C-AB	170	42	766	0.222	168	0.0	0.5	6.305	A
C-A	245	61			245				
A-B	18	5			18				
A-C	382	96			382				

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	271	68	548	0.494	269	0.7	1.0	12.983	B
B-A	34	9	336	0.102	34	0.1	0.1	12.851	B
C-AB	228	57	795	0.287	227	0.5	0.7	6.666	A
C-A	267	67			267				
A-B	22	5			22				
A-C	457	114			457				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	331	83	515	0.644	328	1.0	1.7	19.176	C
B-A	42	10	248	0.169	41	0.1	0.2	18.776	C
C-AB	328	82	836	0.392	326	0.7	1.1	7.438	A
C-A	279	70			279				
A-B	26	7			26				
A-C	559	140			559				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	331	83	515	0.644	331	1.7	1.8	19.780	C
B-A	42	10	246	0.170	42	0.2	0.2	19.076	C
C-AB	329	82	837	0.393	329	1.1	1.1	7.501	A
C-A	278	69			278				
A-B	26	7			26				
A-C	559	140			559				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	271	68	548	0.494	274	1.8	1.0	13.401	B
B-A	34	9	334	0.102	35	0.2	0.1	13.015	B
C-AB	229	57	796	0.288	231	1.1	0.7	6.740	A
C-A	266	67			266				
A-B	22	5			22				
A-C	457	114			457				

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	227	57	570	0.397	228	1.0	0.7	10.657	B
B-A	29	7	390	0.073	29	0.1	0.1	10.760	B
C-AB	171	43	767	0.223	172	0.7	0.5	6.371	A
C-A	244	61			244				
A-B	18	5			18				
A-C	382	96			382				

2022, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	Two-way	Two-way		8.34	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	8.34	A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D2	2022	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Av. Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	582	100.000
B		ONE HOUR	✓	156	100.000
C		ONE HOUR	✓	713	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	54	528
	B	19	0	137
	C	472	241	0

Vehicle Mix

HV %s

		To		
		A	B	C
From	A	0	3	4
	B	8	0	1
	C	6	4	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.29	9.93	0.4	A	126	189
B-A	0.08	16.76	0.1	C	17	26
C-AB	0.77	19.67	5.3	C	487	730
C-A					168	252
A-B					50	74
A-C					485	727

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	103	26	570	0.181	102	0.0	0.2	7.756	A
B-A	14	4	370	0.039	14	0.0	0.0	10.911	B
C-AB	331	83	787	0.420	326	0.0	1.1	8.166	A
C-A	206	52			206				
A-B	41	10			41				
A-C	398	99			398				

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	123	31	548	0.225	123	0.2	0.3	8.540	A
B-A	17	4	322	0.053	17	0.0	0.1	12.741	B
C-AB	452	113	822	0.550	448	1.1	1.9	10.164	B
C-A	189	47			189				
A-B	49	12			49				
A-C	475	119			475				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	151	38	517	0.292	150	0.3	0.4	9.900	A
B-A	21	5	256	0.082	21	0.1	0.1	16.539	C
C-AB	667	167	872	0.765	655	1.9	4.9	17.548	C
C-A	118	30			118				
A-B	59	15			59				
A-C	581	145			581				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	151	38	517	0.292	151	0.4	0.4	9.931	A
B-A	21	5	253	0.083	21	0.1	0.1	16.761	C
C-AB	676	169	878	0.770	674	4.9	5.3	19.666	C
C-A	109	27			109				
A-B	59	15			59				
A-C	581	145			581				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	123	31	548	0.225	124	0.4	0.3	8.575	A
B-A	17	4	318	0.054	17	0.1	0.1	12.928	B
C-AB	460	115	830	0.554	473	5.3	2.1	11.164	B
C-A	181	45			181				
A-B	49	12			49				
A-C	475	119			475				

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	103	26	570	0.181	103	0.3	0.2	7.797	A
B-A	14	4	368	0.039	14	0.1	0.0	10.994	B
C-AB	334	84	790	0.423	338	2.1	1.2	8.488	A
C-A	202	51			202				
A-B	41	10			41				
A-C	398	99			398				

2027, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	Two-way	Two-way		6.87	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	6.87	A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D5	2027	AM	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Av. Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	555	100.000
B		ONE HOUR	✓	354	100.000
C		ONE HOUR	✓	575	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
	A	B	C	
From	A	0	25	530
	B	40	0	314
	C	436	139	0

Vehicle Mix

HV %s

	To			
	A	B	C	
From	A	0	3	4
	B	8	0	1
	C	6	4	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.68	22.59	2.1	C	288	432
B-A	0.20	21.92	0.3	C	37	55
C-AB	0.42	7.79	1.3	A	262	393
C-A					266	398
A-B					23	34
A-C					486	730

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	236	59	566	0.418	234	0.0	0.7	10.856	B
B-A	30	8	381	0.079	30	0.0	0.1	11.067	B
C-AB	182	46	772	0.236	180	0.0	0.5	6.370	A
C-A	251	63			251				
A-B	19	5			19				
A-C	399	100			399				

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	282	71	542	0.521	281	0.7	1.1	13.854	B
B-A	36	9	320	0.112	36	0.1	0.1	13.647	B
C-AB	246	61	802	0.306	245	0.5	0.7	6.786	A
C-A	271	68			271				
A-B	22	6			22				
A-C	476	119			476				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	346	86	506	0.683	342	1.1	2.0	21.635	C
B-A	44	11	225	0.196	44	0.1	0.3	21.395	C
C-AB	356	89	846	0.421	354	0.7	1.3	7.718	A
C-A	277	69			277				
A-B	28	7			28				
A-C	584	146			584				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	346	86	506	0.684	345	2.0	2.1	22.594	C
B-A	44	11	221	0.199	44	0.3	0.3	21.917	C
C-AB	358	89	847	0.422	358	1.3	1.3	7.793	A
C-A	275	69			275				
A-B	28	7			28				
A-C	584	146			584				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	282	71	541	0.521	286	2.1	1.1	14.453	B
B-A	36	9	317	0.113	36	0.3	0.1	13.887	B
C-AB	247	62	804	0.307	249	1.3	0.8	6.875	A
C-A	270	68			270				
A-B	22	6			22				
A-C	476	119			476				

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	236	59	565	0.418	238	1.1	0.7	11.158	B
B-A	30	8	378	0.080	30	0.1	0.1	11.178	B
C-AB	183	46	773	0.237	184	0.8	0.5	6.445	A
C-A	250	62			250				
A-B	19	5			19				
A-C	399	100			399				

2027, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	Two-way	Two-way		11.23	B

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	11.23	B

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D6	2027	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Av. Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	606	100.000
B		ONE HOUR	✓	163	100.000
C		ONE HOUR	✓	743	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	56	550
	B	20	0	143
	C	492	251	0

Vehicle Mix

HV %s

		To		
		A	B	C
From	A	0	3	4
	B	8	0	1
	C	6	4	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.31	10.33	0.4	B	131	197
B-A	0.09	18.14	0.1	C	18	28
C-AB	0.83	26.32	7.4	D	528	791
C-A					154	231
A-B					51	77
A-C					505	757

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	108	27	565	0.190	107	0.0	0.2	7.910	A
B-A	15	4	360	0.042	15	0.0	0.0	11.251	B
C-AB	354	89	794	0.446	349	0.0	1.2	8.452	A
C-A	205	51			205				
A-B	42	11			42				
A-C	414	104			414				

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	129	32	543	0.237	128	0.2	0.3	8.768	A
B-A	18	4	310	0.058	18	0.0	0.1	13.316	B
C-AB	487	122	831	0.586	483	1.2	2.2	10.916	B
C-A	181	45			181				
A-B	50	13			50				
A-C	494	124			494				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	157	39	510	0.309	157	0.3	0.4	10.294	B
B-A	22	6	240	0.092	22	0.1	0.1	17.780	C
C-AB	726	182	884	0.822	709	2.2	6.6	21.674	C
C-A	92	23			92				
A-B	62	15			62				
A-C	606	151			606				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	157	39	509	0.309	157	0.4	0.4	10.334	B
B-A	22	6	236	0.093	22	0.1	0.1	18.142	C
C-AB	740	185	892	0.829	737	6.6	7.4	26.325	D
C-A	78	20			78				
A-B	62	15			62				
A-C	606	151			606				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	129	32	542	0.237	129	0.4	0.3	8.808	A
B-A	18	4	304	0.059	18	0.1	0.1	13.610	B
C-AB	500	125	843	0.593	519	7.4	2.5	12.670	B
C-A	168	42			168				
A-B	50	13			50				
A-C	494	124			494				

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	108	27	565	0.190	108	0.3	0.2	7.956	A
B-A	15	4	358	0.042	15	0.1	0.0	11.355	B
C-AB	359	90	798	0.449	363	2.5	1.3	8.863	A
C-A	201	50			201				
A-B	42	11			42				
A-C	414	104			414				

2027 + Development, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	Two-way	Two-way		8.57	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	8.57	A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D7	2027 + Development	AM	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Av. Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	555	100.000
B		ONE HOUR	✓	380	100.000
C		ONE HOUR	✓	588	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	25	530
	B	40	0	340
	C	436	152	0

Vehicle Mix

HV %s

		To		
		A	B	C
From	A	0	3	4
	B	8	0	1
	C	6	4	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.74	27.59	2.8	D	312	468
B-A	0.23	26.44	0.3	D	37	55
C-AB	0.46	8.38	1.5	A	287	430
C-A					253	379
A-B					23	34
A-C					486	730

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	256	64	565	0.453	253	0.0	0.8	11.510	B
B-A	30	8	370	0.081	30	0.0	0.1	11.412	B
C-AB	199	50	772	0.258	197	0.0	0.6	6.555	A
C-A	244	61			244				
A-B	19	5			19				
A-C	399	100			399				

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	306	76	541	0.565	304	0.8	1.3	15.189	C
B-A	36	9	304	0.118	36	0.1	0.1	14.504	B
C-AB	269	67	802	0.335	268	0.6	0.8	7.074	A
C-A	260	65			260				
A-B	22	6			22				
A-C	476	119			476				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	374	94	505	0.741	369	1.3	2.6	25.742	D
B-A	44	11	196	0.224	43	0.1	0.3	25.312	D
C-AB	390	97	846	0.461	387	0.8	1.5	8.274	A
C-A	258	64			258				
A-B	28	7			28				
A-C	584	146			584				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	374	94	504	0.742	374	2.6	2.8	27.591	D
B-A	44	11	191	0.231	44	0.3	0.3	26.441	D
C-AB	391	98	848	0.462	391	1.5	1.5	8.376	A
C-A	256	64			256				
A-B	28	7			28				
A-C	584	146			584				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	306	76	541	0.565	311	2.8	1.4	16.197	C
B-A	36	9	298	0.121	37	0.3	0.2	14.904	B
C-AB	270	68	804	0.336	273	1.5	0.9	7.186	A
C-A	258	65			258				
A-B	22	6			22				
A-C	476	119			476				

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	256	64	565	0.453	258	1.4	0.9	11.915	B
B-A	30	8	367	0.082	30	0.2	0.1	11.557	B
C-AB	200	50	773	0.259	202	0.9	0.6	6.643	A
C-A	242	61			242				
A-B	19	5			19				
A-C	399	100			399				

2027 + Development, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	Two-way	Two-way		20.97	C

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	20.97	C

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D8	2027 + Development	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Av. Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	606	100.000
B		ONE HOUR	✓	178	100.000
C		ONE HOUR	✓	768	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	56	550
	B	20	0	158
	C	492	276	0

Vehicle Mix

HV %s

		To		
		A	B	C
From	A	0	3	4
	B	8	0	1
	C	6	4	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.34	10.88	0.5	B	145	217
B-A	0.10	19.58	0.1	C	18	28
C-AB	0.92	47.79	13.0	E	584	877
C-A					120	180
A-B					51	77
A-C					505	757

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	119	30	565	0.210	118	0.0	0.3	8.101	A
B-A	15	4	352	0.043	15	0.0	0.0	11.510	B
C-AB	389	97	794	0.490	384	0.0	1.4	9.148	A
C-A	189	47			189				
A-B	42	11			42				
A-C	414	104			414				

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	142	36	542	0.262	142	0.3	0.4	9.066	A
B-A	18	4	300	0.060	18	0.0	0.1	13.782	B
C-AB	536	134	831	0.644	530	1.4	2.8	12.626	B
C-A	155	39			155				
A-B	50	13			50				
A-C	494	124			494				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	174	43	509	0.342	173	0.4	0.5	10.815	B
B-A	22	6	228	0.097	22	0.1	0.1	18.883	C
C-AB	800	200	885	0.904	770	2.8	10.3	32.088	D
C-A	46	11			46				
A-B	62	15			62				
A-C	606	151			606				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	174	43	508	0.342	174	0.5	0.5	10.875	B
B-A	22	6	221	0.100	22	0.1	0.1	19.580	C
C-AB	825	206	899	0.918	814	10.3	13.0	47.790	E
C-A	21	5			21				
A-B	62	15			62				
A-C	606	151			606				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	142	36	542	0.262	143	0.5	0.4	9.124	A
B-A	18	4	289	0.062	18	0.1	0.1	14.360	B
C-AB	561	140	853	0.658	600	13.0	3.3	17.776	C
C-A	129	32			129				
A-B	50	13			50				
A-C	494	124			494				

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	119	30	565	0.210	119	0.4	0.3	8.161	A
B-A	15	4	349	0.043	15	0.1	0.0	11.649	B
C-AB	395	99	800	0.494	402	3.3	1.6	9.790	A
C-A	183	46			183				
A-B	42	11			42				
A-C	414	104			414				

User and Project Details

Project:	
Title:	
Location:	Fosse Way_High Street, Syston
Additional detail:	
File name:	Fosse Way_High Street_RevB.lsg3x
Author:	
Company:	David Tucker Associates
Address:	

Phase Input Data

Phase Name	Phase Type	Assoc. Phase	Street Min	Cont Min
A	Traffic		7	7
B	Traffic		7	7
C	Ind. Arrow	B	4	4
D	Traffic		7	7

Phase Intergreens Matrix

		Starting Phase				
		A	B	C	D	
Terminating Phase	A					
	B					
	C					
	D					

Phase Delays

Term. Stage	Start Stage	Phase	Type	Value	Cont value
There are no Phase Delays defined					

Prohibited Stage Change

		To Stage		
		1	2	3
From Stage	1			
	2			
	3			

Phases in Stage

Stage No.	Phases in Stage
1	A B
2	B C
3	D

Give-Way Lane Input Data

Junction: Unnamed Junction											
Lane	Movement	Max Flow when Giving Way (PCU/Hr)	Min Flow when Giving Way (PCU/Hr)	Opposing Lane	Opp. Lane Coeff.	Opp. Mvmnts.	Right Turn Storage (PCU)	Non-Blocking Storage (PCU)	RTF	Right Turn Move up (s)	Max Turns in Intergreen (PCU)
1/1 (Fosse Way (south))	6/1 (Right)	1439	0	2/1	1.09	All	2.00	2.00	0.50	2	2.00

Lane Input Data

Junction: Unnamed Junction												
Lane	Lane Type	Phases	Start Disp.	End Disp.	Physical Length (PCU)	Sat Flow Type	Def User Saturation Flow (PCU/Hr)	Lane Width (m)	Gradient	Nearside Lane	Turns	Turning Radius (m)
1/1 (Fosse Way (south))	O	B C	2	3	60.0	Geom	-	3.30	0.00	Y	Arm 5 Ahead	Inf
											Arm 6 Right	16.00
2/1 (Fosse Way (north))	U	A	2	3	60.0	Geom	-	3.70	0.00	Y	Arm 4 Ahead	Inf
											Arm 6 Left	17.00
3/1 (High Street)	U	D	2	3	60.0	Geom	-	3.20	0.00	Y	Arm 4 Left	15.00
											Arm 5 Right	21.00
4/1 (Fosse Way (south))	U		2	3	60.0	Inf	-	-	-	-	-	-
5/1 (Fosse Way (north))	U		2	3	60.0	Inf	-	-	-	-	-	-
6/1 (High Street)	U		2	3	60.0	Inf	-	-	-	-	-	-

Lane Saturation Flows

Scenario 1: '2018 Base AM Peak' (FG1: '2018 Base AM Peak', Plan 1: 'Network Control Plan 1')

Junction: Unnamed Junction									
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)	
1/1 (Fosse Way (south))	3.30	0.00	Y	Arm 5 Ahead	Inf	24.6 %	1817	1817	
				Arm 6 Right	16.00	75.4 %			
2/1 (Fosse Way (north))	3.70	0.00	Y	Arm 4 Ahead	Inf	54.1 %	1908	1908	
				Arm 6 Left	17.00	45.9 %			
3/1 (High Street)	3.20	0.00	Y	Arm 4 Left	15.00	66.9 %	1774	1774	
				Arm 5 Right	21.00	33.1 %			
4/1 (Fosse Way (south) Lane 1)				Infinite Saturation Flow			Inf	Inf	
5/1 (Fosse Way (north) Lane 1)				Infinite Saturation Flow			Inf	Inf	
6/1 (High Street Lane 1)				Infinite Saturation Flow			Inf	Inf	

Scenario 2: '2018 Base PM Peak' (FG2: '2018 Base PM Peak', Plan 1: 'Network Control Plan 1')

Junction: Unnamed Junction								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (Fosse Way (south))	3.30	0.00	Y	Arm 5 Ahead	Inf	33.5 %	1831	1831
				Arm 6 Right	16.00	66.5 %		
2/1 (Fosse Way (north))	3.70	0.00	Y	Arm 4 Ahead	Inf	61.3 %	1919	1919
				Arm 6 Left	17.00	38.7 %		
3/1 (High Street)	3.20	0.00	Y	Arm 4 Left	15.00	66.4 %	1775	1775
				Arm 5 Right	21.00	33.6 %		
4/1 (Fosse Way (south) Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (Fosse Way (north) Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (High Street Lane 1)	Infinite Saturation Flow						Inf	Inf

Scenario 3: '2026 Base AM Peak' (FG3: '2026 Base AM Peak', Plan 1: 'Network Control Plan 1')

Junction: Unnamed Junction								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (Fosse Way (south))	3.30	0.00	Y	Arm 5 Ahead	Inf	24.7 %	1817	1817
				Arm 6 Right	16.00	75.3 %		
2/1 (Fosse Way (north))	3.70	0.00	Y	Arm 4 Ahead	Inf	54.2 %	1908	1908
				Arm 6 Left	17.00	45.8 %		
3/1 (High Street)	3.20	0.00	Y	Arm 4 Left	15.00	66.9 %	1774	1774
				Arm 5 Right	21.00	33.1 %		
4/1 (Fosse Way (south) Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (Fosse Way (north) Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (High Street Lane 1)	Infinite Saturation Flow						Inf	Inf

Scenario 4: '2026 Base PM Peak' (FG4: '2026 Base PM Peak', Plan 1: 'Network Control Plan 1')

Junction: Unnamed Junction								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (Fosse Way (south))	3.30	0.00	Y	Arm 5 Ahead	Inf	33.5 %	1831	1831
				Arm 6 Right	16.00	66.5 %		
2/1 (Fosse Way (north))	3.70	0.00	Y	Arm 4 Ahead	Inf	61.3 %	1920	1920
				Arm 6 Left	17.00	38.7 %		
3/1 (High Street)	3.20	0.00	Y	Arm 4 Left	15.00	66.3 %	1775	1775
				Arm 5 Right	21.00	33.7 %		
4/1 (Fosse Way (south) Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (Fosse Way (north) Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (High Street Lane 1)	Infinite Saturation Flow						Inf	Inf

Scenario 5: '2026 Base + Dev AM Peak' (FG5: '2026 Base + Dev AM Peak', Plan 1: 'Network Control Plan 1')

Junction: Unnamed Junction								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (Fosse Way (south))	3.30	0.00	Y	Arm 5 Ahead	Inf	24.3 %	1816	1816
				Arm 6 Right	16.00	75.7 %		
2/1 (Fosse Way (north))	3.70	0.00	Y	Arm 4 Ahead	Inf	54.1 %	1908	1908
				Arm 6 Left	17.00	45.9 %		
3/1 (High Street)	3.20	0.00	Y	Arm 4 Left	15.00	68.0 %	1774	1774
				Arm 5 Right	21.00	32.0 %		
4/1 (Fosse Way (south) Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (Fosse Way (north) Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (High Street Lane 1)	Infinite Saturation Flow						Inf	Inf

Scenario 6: '2026 Base + Dev PM Peak' (FG6: '2026 Base + Dev PM Peak', Plan 1: 'Network Control Plan 1')

Junction: Unnamed Junction								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (Fosse Way (south))	3.30	0.00	Y	Arm 5 Ahead	Inf	32.2 %	1829	1829
				Arm 6 Right	16.00	67.8 %		
2/1 (Fosse Way (north))	3.70	0.00	Y	Arm 4 Ahead	Inf	60.8 %	1919	1919
				Arm 6 Left	17.00	39.2 %		
3/1 (High Street)	3.20	0.00	Y	Arm 4 Left	15.00	67.0 %	1774	1774
				Arm 5 Right	21.00	33.0 %		
4/1 (Fosse Way (south) Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (Fosse Way (north) Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (High Street Lane 1)	Infinite Saturation Flow						Inf	Inf

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
1: '2018 Base AM Peak'	08:00	09:00	01:00	
2: '2018 Base PM Peak'	17:00	18:00	01:00	
3: '2026 Base AM Peak'	08:00	09:00	01:00	
4: '2026 Base PM Peak'	17:00	18:00	01:00	
5: '2026 Base + Dev AM Peak'	08:00	09:00	01:00	
6: '2026 Base + Dev PM Peak'	17:00	18:00	01:00	

Traffic Flows, Desired

FG1: '2018 Base AM Peak'

Desired Flow :

	Destination				
		A	B	C	Tot.
Origin	A	0	212	250	462
	B	142	0	287	429
	C	116	356	0	472
	Tot.	258	568	537	1363

FG2: '2018 Base PM Peak'

Desired Flow :

		Destination			
		A	B	C	Tot.
Origin	A	0	117	185	302
	B	147	0	290	437
	C	161	319	0	480
	Tot.	308	436	475	1219

FG3: '2026 Base AM Peak'

Desired Flow :

		Destination			
		A	B	C	Tot.
Origin	A	0	229	271	500
	B	154	0	311	465
	C	126	385	0	511
	Tot.	280	614	582	1476

FG4: '2026 Base PM Peak'

Desired Flow :

		Destination			
		A	B	C	Tot.
Origin	A	0	126	200	326
	B	159	0	313	472
	C	174	345	0	519
	Tot.	333	471	513	1317

FG5: '2026 Base + Dev AM Peak'

Desired Flow :

		Destination			
		A	B	C	Tot.
Origin	A	0	230	271	501
	B	156	0	331	487
	C	126	392	0	518
	Tot.	282	622	602	1506

FG6: '2026 Base + Dev PM Peak'

Desired Flow :

		Destination			
		A	B	C	Tot.
Origin	A	0	129	200	329
	B	160	0	325	485
	C	174	367	0	541
	Tot.	334	496	525	1355

Stage Timings

Scenario 1: '2018 Base AM Peak' (FG1: '2018 Base AM Peak', Plan 1: 'Network Control Plan 1')

Stage	1	2	3
Duration	38	25	38
Change Point	0	45	75

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	N/A	-	-		-	-	-	-	-	-	74.5%
Unnamed Junction	-	-	N/A	-	-		-	-	-	-	-	-	74.5%
1/1	Fosse Way (south) Ahead Right	O	N/A	N/A	B	C	1	68	25	472	1817	636	74.2%
2/1	Fosse Way (north) Ahead Left	U	N/A	N/A	A		1	38	-	462	1908	620	74.5%
3/1	High Street Left Right	U	N/A	N/A	D		1	38	-	429	1774	577	74.4%
4/1	Fosse Way (south)	U	N/A	N/A	-		-	-	-	537	Inf	Inf	0.0%
5/1	Fosse Way (north)	U	N/A	N/A	-		-	-	-	258	Inf	Inf	0.0%
6/1	High Street	U	N/A	N/A	-		-	-	-	568	Inf	Inf	0.0%
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	-	-	101	249	6	12.8	4.3	0.6	17.6	-	-	-	-
Unnamed Junction	-	-	101	249	6	12.8	4.3	0.6	17.6	-	-	-	-
1/1	472	472	101	249	6	3.8	1.4	0.6	5.8	44.5	13.8	1.4	15.2
2/1	462	462	-	-	-	4.6	1.4	-	6.1	47.3	13.6	1.4	15.0
3/1	429	429	-	-	-	4.3	1.4	-	5.7	48.0	12.6	1.4	14.1
4/1	537	537	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	258	258	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	568	568	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1			PRC for Signalled Lanes (%): 20.8		20.8		Total Delay for Signalled Lanes (pcuHr): 17.63		17.63		Cycle Time (s): 120		
			PRC Over All Lanes (%):		20.8		Total Delay Over All Lanes (pcuHr):		17.63				

Stage Timings

Scenario 2: '2018 Base PM Peak' (FG2: '2018 Base PM Peak', Plan 1: 'Network Control Plan 1')

Stage	1	2	3
Duration	52	4	45
Change Point	0	59	68

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	N/A	-	-		-	-	-	-	-	-	64.2%
Unnamed Junction	-	-	N/A	-	-		-	-	-	-	-	-	64.2%
1/1	Fosse Way (south) Ahead Right	O	N/A	N/A	B	C	1	61	4	480	1831	750	64.0%
2/1	Fosse Way (north) Ahead Left	U	N/A	N/A	A		1	52	-	302	1919	848	35.6%
3/1	High Street Left Right	U	N/A	N/A	D		1	45	-	437	1775	680	64.2%
4/1	Fosse Way (south)	U	N/A	N/A	-		-	-	-	475	Inf	Inf	0.0%
5/1	Fosse Way (north)	U	N/A	N/A	-		-	-	-	308	Inf	Inf	0.0%
6/1	High Street	U	N/A	N/A	-		-	-	-	436	Inf	Inf	0.0%
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	-	-	295	19	5	8.8	2.1	0.4	11.3	-	-	-	-
Unnamed Junction	-	-	295	19	5	8.8	2.1	0.4	11.3	-	-	-	-
1/1	480	480	295	19	5	3.3	0.9	0.4	4.6	34.3	12.4	0.9	13.3
2/1	302	302	-	-	-	1.9	0.3	-	2.1	25.5	6.6	0.3	6.9
3/1	437	437	-	-	-	3.7	0.9	-	4.6	37.6	11.9	0.9	12.8
4/1	475	475	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	308	308	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	436	436	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1			PRC for Signalled Lanes (%):	40.1	Total Delay for Signalled Lanes (pcuHr):			11.28	Cycle Time (s): 120				
			PRC Over All Lanes (%):	40.1	Total Delay Over All Lanes (pcuHr):			11.28					

Stage Timings

Scenario 3: '2026 Base AM Peak' (FG3: '2026 Base AM Peak', Plan 1: 'Network Control Plan 1')

Stage	1	2	3
Duration	54	11	36
Change Point	0	61	77

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	N/A	-	-		-	-	-	-	-	-	85.0%
Unnamed Junction	-	-	N/A	-	-		-	-	-	-	-	-	85.0%
1/1	Fosse Way (south) Ahead Right	O	N/A	N/A	B	C	1	70	11	511	1817	605	84.5%
2/1	Fosse Way (north) Ahead Left	U	N/A	N/A	A		1	54	-	500	1908	875	57.2%
3/1	High Street Left Right	U	N/A	N/A	D		1	36	-	465	1774	547	85.0%
4/1	Fosse Way (south)	U	N/A	N/A	-		-	-	-	582	Inf	Inf	0.0%
5/1	Fosse Way (north)	U	N/A	N/A	-		-	-	-	280	Inf	Inf	0.0%
6/1	High Street	U	N/A	N/A	-		-	-	-	614	Inf	Inf	0.0%
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	-	-	237	141	6	12.5	5.9	0.8	19.1	-	-	-	-
Unnamed Junction	-	-	237	141	6	12.5	5.9	0.8	19.1	-	-	-	-
1/1	511	511	237	141	6	4.1	2.6	0.8	7.5	52.7	15.8	2.6	18.3
2/1	500	500	-	-	-	3.3	0.7	-	4.0	28.6	12.2	0.7	12.9
3/1	465	465	-	-	-	5.0	2.7	-	7.7	59.5	14.5	2.7	17.1
4/1	582	582	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	280	280	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	614	614	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1			PRC for Signalled Lanes (%):	5.9	Total Delay for Signalled Lanes (pcuHr):			19.14	Cycle Time (s): 120				
			PRC Over All Lanes (%):	5.9	Total Delay Over All Lanes (pcuHr):			19.14					

Stage Timings

Scenario 4: '2026 Base PM Peak' (FG4: '2026 Base PM Peak', Plan 1: 'Network Control Plan 1')

Stage	1	2	3
Duration	53	4	44
Change Point	0	60	69

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	N/A	-	-		-	-	-	-	-	-	70.9%
Unnamed Junction	-	-	N/A	-	-		-	-	-	-	-	-	70.9%
1/1	Fosse Way (south) Ahead Right	O	N/A	N/A	B	C	1	62	4	519	1831	737	70.4%
2/1	Fosse Way (north) Ahead Left	U	N/A	N/A	A		1	53	-	326	1920	864	37.7%
3/1	High Street Left Right	U	N/A	N/A	D		1	44	-	472	1775	666	70.9%
4/1	Fosse Way (south)	U	N/A	N/A	-		-	-	-	513	Inf	Inf	0.0%
5/1	Fosse Way (north)	U	N/A	N/A	-		-	-	-	333	Inf	Inf	0.0%
6/1	High Street	U	N/A	N/A	-		-	-	-	471	Inf	Inf	0.0%
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	-	-	319	20	6	9.8	2.7	0.5	13.0	-	-	-	-
Unnamed Junction	-	-	319	20	6	9.8	2.7	0.5	13.0	-	-	-	-
1/1	519	519	319	20	6	3.7	1.2	0.5	5.3	37.1	14.0	1.2	15.2
2/1	326	326	-	-	-	2.0	0.3	-	2.3	25.2	7.2	0.3	7.5
3/1	472	472	-	-	-	4.2	1.2	-	5.4	41.1	13.4	1.2	14.6
4/1	513	513	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	333	333	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	471	471	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1			PRC for Signalled Lanes (%): 26.9		26.9		Total Delay for Signalled Lanes (pcuHr): 13.02		13.02		Cycle Time (s): 120		
			PRC Over All Lanes (%): 26.9		26.9		Total Delay Over All Lanes(pcuHr): 13.02		13.02				

Stage Timings

Scenario 5: '2026 Base + Dev AM Peak' (FG5: '2026 Base + Dev AM Peak', Plan 1: 'Network Control Plan 1')

Stage	1	2	3
Duration	60	5	36
Change Point	0	67	77

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	N/A	-	-		-	-	-	-	-	-	89.0%
Unnamed Junction	-	-	N/A	-	-		-	-	-	-	-	-	89.0%
1/1	Fosse Way (south) Ahead Right	O	N/A	N/A	B	C	1	70	5	518	1816	592	87.6%
2/1	Fosse Way (north) Ahead Left	U	N/A	N/A	A		1	60	-	501	1908	970	51.7%
3/1	High Street Left Right	U	N/A	N/A	D		1	36	-	487	1774	547	89.0%
4/1	Fosse Way (south)	U	N/A	N/A	-		-	-	-	602	Inf	Inf	0.0%
5/1	Fosse Way (north)	U	N/A	N/A	-		-	-	-	282	Inf	Inf	0.0%
6/1	High Street	U	N/A	N/A	-		-	-	-	622	Inf	Inf	0.0%
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	-	-	298	88	7	12.1	7.4	0.8	20.3	-	-	-	-
Unnamed Junction	-	-	298	88	7	12.1	7.4	0.8	20.3	-	-	-	-
1/1	518	518	298	88	7	4.0	3.2	0.8	8.1	56.3	16.3	3.2	19.5
2/1	501	501	-	-	-	2.7	0.5	-	3.3	23.5	11.1	0.5	11.7
3/1	487	487	-	-	-	5.4	3.6	-	9.0	66.3	15.4	3.6	19.0
4/1	602	602	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	282	282	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	622	622	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1			PRC for Signalled Lanes (%):	1.1	Total Delay for Signalled Lanes (pcuHr):			20.34	Cycle Time (s): 120				
			PRC Over All Lanes (%):	1.1	Total Delay Over All Lanes(pcuHr):			20.34					

Stage Timings

Scenario 6: '2026 Base + Dev PM Peak' (FG6: '2026 Base + Dev PM Peak', Plan 1: 'Network Control Plan 1')

Stage	1	2	3
Duration	54	4	43
Change Point	0	61	70

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	N/A	-	-		-	-	-	-	-	-	74.6%
Unnamed Junction	-	-	N/A	-	-		-	-	-	-	-	-	74.6%
1/1	Fosse Way (south) Ahead Right	O	N/A	N/A	B	C	1	63	4	541	1829	738	73.3%
2/1	Fosse Way (north) Ahead Left	U	N/A	N/A	A		1	54	-	329	1919	880	37.4%
3/1	High Street Left Right	U	N/A	N/A	D		1	43	-	485	1774	650	74.6%
4/1	Fosse Way (south)	U	N/A	N/A	-		-	-	-	525	Inf	Inf	0.0%
5/1	Fosse Way (north)	U	N/A	N/A	-		-	-	-	334	Inf	Inf	0.0%
6/1	High Street	U	N/A	N/A	-		-	-	-	496	Inf	Inf	0.0%
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	-	-	339	21	6	10.2	3.1	0.5	13.9	-	-	-	-
Unnamed Junction	-	-	339	21	6	10.2	3.1	0.5	13.9	-	-	-	-
1/1	541	541	339	21	6	3.8	1.4	0.5	5.7	38.0	14.9	1.4	16.2
2/1	329	329	-	-	-	1.9	0.3	-	2.2	24.5	7.1	0.3	7.4
3/1	485	485	-	-	-	4.5	1.4	-	5.9	43.8	14.0	1.4	15.5
4/1	525	525	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	334	334	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	496	496	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1			PRC for Signalled Lanes (%): 20.7		20.7		Total Delay for Signalled Lanes (pcuHr): 13.86		13.86		Cycle Time (s): 120		
			PRC Over All Lanes (%):		20.7		Total Delay Over All Lanes(pcuHr):		13.86				

***Land North of Barkby Road, Syston
Response to Leicester County Council Highways
Comments***

Land North of Barkby Road, Syston

Response to Leicester County Council Highways Comments

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SJT/SC 20060_10 Transport Note
13th December 2022

Prepared For:

Taylor Wimpey

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1.0 INTRODUCTION

1.1 Overview

1.1.1 David Tucker Associates (DTA) has been commissioned by Taylor Wimpey to provide transportation advice on the viability and delivery of the proposed residential development of up to 195 dwellings on land north of Barkby Road, Syston. A Transport Assessment (DTA reference 20060-08b has been produced that has assessed the potential implications.

1.1.2 As part of the application process, Leicestershire County Council (LCC) as Local Highway Authority has reviewed the TA and previously made a number of comments (dated 13th May 2022). DTA responded to the comments via a response noted dated June 2022.

1.2 Report Purpose and Structure

1.1.3 This note has been produced in response to additional comments raised by LCC dated 3rd October 2022. The additional comments raised by LCC are summarised below individually with a response from DTA.

1.1.4 The comments from LCC in full is contained within **Appendix A** of this note and should be read in conjunction with this note. For ease, the summary of LCC's comments are set out in *blue italics*, with DTA's response set out in black.

1.1.5 These clarifications confirm and support the findings of the original Transport Assessment.

2.0 LCC COMMENTS AND DTA RESPONSES

2.1 Site Access

1.1.6 Swept-path

Revised swept path analysis should be undertaken using a Phoenix 2-23 W 6x4 refuse vehicle.

DTA response: A revised swept-path analysis showing a Phoenix 2-23 W 6x4 refuse vehicle suitably negotiating the site access junction is shown in **Drawing 20060-02-2**.



1.1.7 Site Access Plan

LCC has commented that the proposed ghost island major-minor priority junction is considered acceptable for the quantum of development, however it is noted that no design layout dimensions, and lane widths have been shown for the proposed ghost island and right turn lane provision. These need to be advised. LCC also stated that DTA Drawing 20060-02 Rev C which is part of the application shows a wide verge provision between the footway and the carriageway edge. LCC requires that this be amended so that the proposed footway runs adjacent to the kerb line.

DTA response: The site access plan, (**Drawing 20060-02 Rev D**) has been revised to include layout dimensions for the proposed ghost island and right turn lane provision, along with the proposed footway running adjacent to the kerb line.

1.1.8 Stage 1 Road Safety Audit

A revised dimensioned plan should be submitted in addition to a Stage 1 RSA and Designer's Response

DTA response: A Stage 1 Road Safety Audit of the access arrangements was carried out by Road Safety Consulting Ltd on 18th October 2022. The audit report is contained within **Appendix B** of this note. It raises four problems. Problems 4.1 and 4.2 relate to drainage issues. The applicant can confirm that the intention is to pipe the roadside ditch and provide positive drainage for the new highway works. These are points which should and can be picked up in the detailed (S278) design. Problem 4.3 relates the need to replace a service cover which again is a detailed design point. Problem 4.4 relates to visibility splays and as shown on the site access plan this can be achieved in full. The applicant can accept a planning condition which secures the provision of the visibility and relocation of any obstructions.

It can be concluded from the report that there are no fundamental safety concerns regarding the site access that cannot be fully resolved at the detailed design stage.

1.1.9 Site Access Roundabout Option

The TA includes an alternate site access scheme in the form of a four arm roundabout, to serve both the proposed development and allocated site HA1 to the south in the future. LCC has requested more detailed scheme, fully dimensioned including



roundabout design criteria, be submitted for review.

DTA response: The proposed roundabout access plan has been revised to incorporate the layout dimensions, as requested by LCC. This is shown on drawings 20060-06 and 20060-06-2.

The junction has also been modelled using the ARCADY module of Junctions 10. As part of the wider allocation, the southern parcel is forecast to deliver around 200 homes served from the southern arm of this proposed roundabout. However, given that the assignment of trips to/from the site is yet to be determined, an estimation of the number of trips from the southern arm has been estimated by applying a factor of two of the proposed development trips (i.e., a total of c 400 houses from the south). The trips have also been assigned using the same distribution percentages as the proposed development traffic. A summary of the assessment is below, with the full ARCADY output is contained within **Appendix E** of this note.

2.2 **Accessibility**

The Applicant should explore the provision of peak time passenger transport from the site to the local centre. The LHA will also require the Applicant to install or fund the installation of two new bus stops at a suitable, but yet to be determined location on Barkby Road to better serve the site frontage.

DTA response: The applicant welcome's LCC's position that an hourly bus service is not necessarily suitable for the scale / location of the site and that Town Centre is within walking distance for some residents.

The applicant has recently been made aware of the Main Street, Woodthorpe, Loughborough (ref APP/X2410/W/21/3289048) where they are of the view that the conclusions on bus service provision are particularly pertinent to the circumstances at Barkby Road. The applicant has written separately to the LPA on this matter, requesting further clarification with regards to the implications for this application and their response is awaited.



2.3 Trip Generation

The LHA requests that the 'Oadby' trip rates be used as the actual predicted trip rates in the assignment.

DTA response: It is confirmed that The 'Oadby' trip rates have been used as actual predicted trip rates in the assignment.

2.4 Junction Capacity Assessments

The LHA requested for classified turning counts to be undertaken with covid factors applied. The LHA also requested that once the new surveys have been undertaken to re-run the capacity assessments and also include the Fosse Way/ High Street and Barkby Road/ Pembroke Avenue junctions. The LHA also requested that the 2022 base flows should be factored up to a future year of 2027 following application of Covid factors, with the TEMPro growth factor to also be revised and committed developments added.

DTA response: As requested, junction capacity assessment have been re-run following the application of Covid factors provided by LCC to the base year traffic flows.

The adopted rates and flow matrices are provided at Appendix C.

LCC have queried the extent to which other committed developments have been included in the assessment. A plan showing the recent applications in the area is attached at **Appendix D**. There are only two sites in the area which could be considered committed as follows, but neither have a direct impact / material on the junctions within the scope of the TA:

1. P/20/2349/2 (50 units). Impact is 30 trips so wider assessment was scoped out and
2. P/20/2383/2 (270 units) There is minimal trips through the potential overlapping junctions (less than 10 trips so this has been scoped out. It is likely that those numbers could dissipate through the network before reaching our junctions, but even as a worst case, they're minimal.
3. Hallam and DWH were both recently refused and all other applications north of Syston are either built out or expired (P/13/1696/2 Queniborough Lodge for 125 dwells was granted in Jan 2015 and no RMs).



The growth assumptions adopted are therefore robust.

The assessment results are summarised below. The full outputs are contained **Appendix E** of this note.

Table 1: Junction Capacity Assessment Summary

Junction	Base Year (2021/2022)	2027	2027 + Development
Site Access Roundabout	-		Within capacity (highest RFC of 0.29 and Q of 0) Development flows (excluding HA1) through junction: 147 AM, 146, PM
1. High Street/Melton Road/Barkby Road	Within capacity (highest RFC of 0.84 and Q of 5)	Approaching capacity (highest RFC of 0.89 and Q of 7)	Approaching capacity (highest RFC of 0.93 and Q of 10) Development flows through junction: 48 AM, 48, PM
2. Barkby Road/ Queniborough Road	Within capacity (highest DoS of 71.6% and Q of 9)	Within capacity (highest DoS of 75.6% and Q of 9)	Within capacity (highest DoS of 80.3% and Q of 11) Development flows through junction: 60 AM, 60, PM
4. Barkby Road/ Pembroke Avenue	Within capacity (highest RFC of 0.34 and Q of 1)	Within capacity (highest RFC of 0.36 and Q of 1)	Within capacity (highest RFC of 0.44 and Q of 1) Development flows through junction: 87 AM, 87, PM
5. Goodes Lane/ Melton Road;	Within capacity (highest RFC of 0.82 and Q of 7)	Approaching capacity (highest RFC of 0.89 and Q of 11)	Nearing capacity (highest RFC of 0.97 and Q of 20) Development flows through junction: 40 AM, 39, PM
6. Fosse Way/ High Street	Within capacity (highest DoS of 78.2% and Q of 18)	Within capacity (highest DoS of 89.2% and Q of 22)	Approaching capacity (highest DoS of 92.9% and Q of 25) Development flows through junction: 44 AM, 44, PM

The result of the assessment indicates that J1,J5 and J6 will be approaching the theoretical capacity threshold. A review of the number of development trips shows that around 40-50 two way vehicles are forecasted to route through each junction. This is the equivalent of 1 vehicle per minute.

NPPF identifies that development should only be prevented or refused on transport grounds where the residual cumulative impacts of development are severe. The maximum increase of around one vehicle per minute cannot be judged as being severe. Therefore, it suggested the delivery of the highway intervention based on the



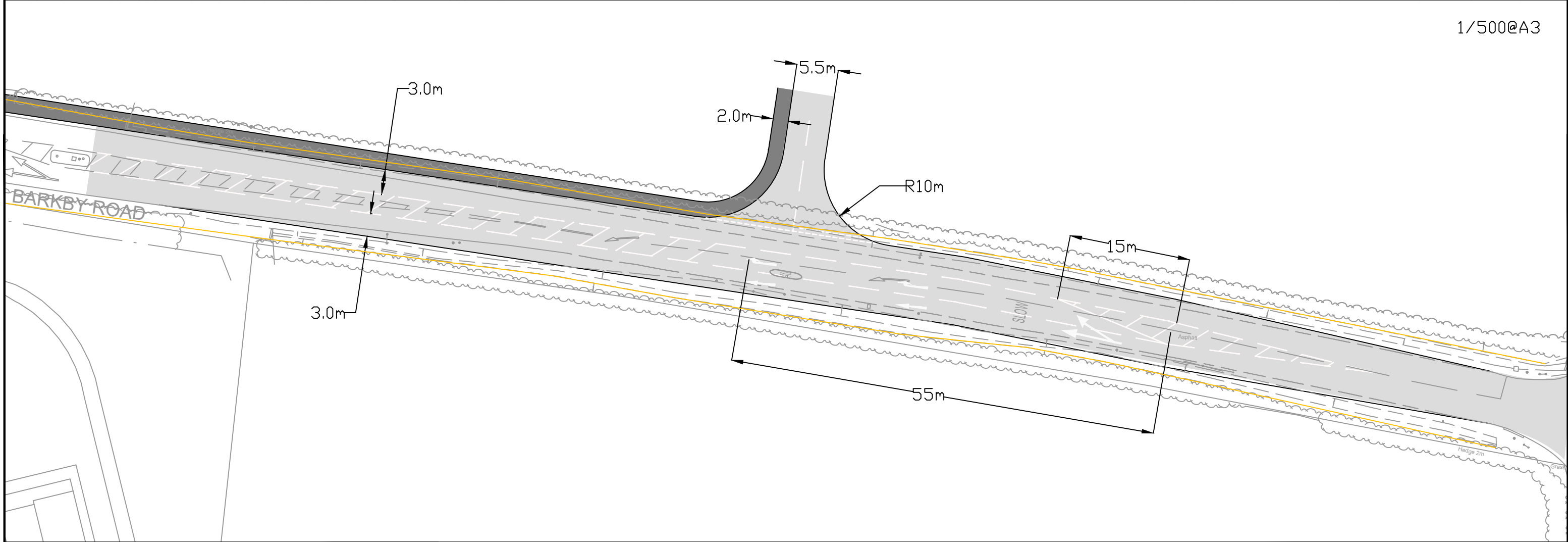
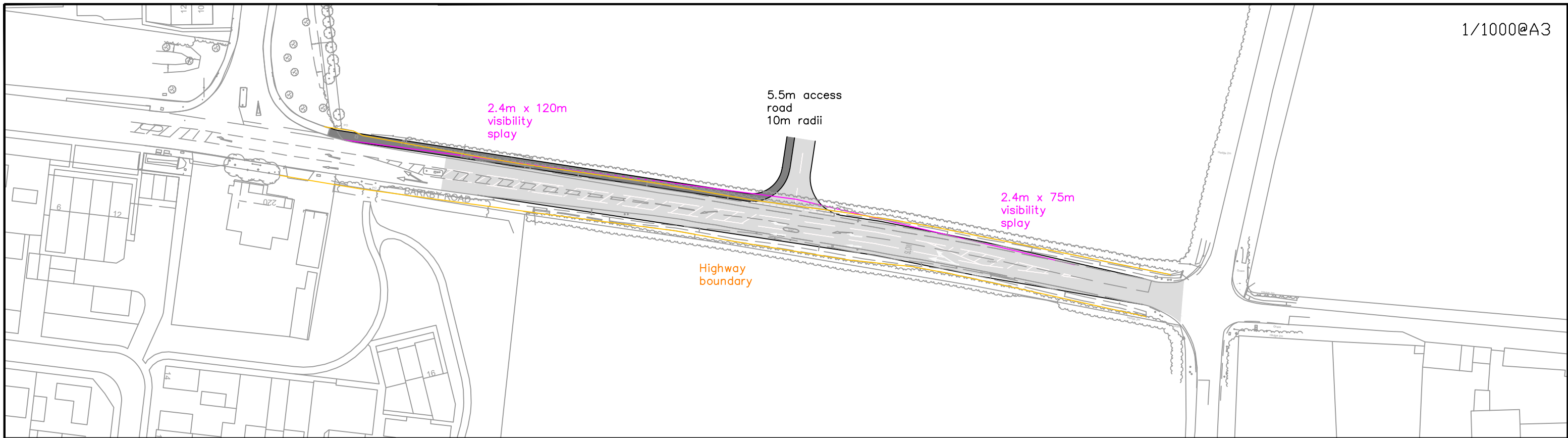
development impact is not justified.

A residential Travel Plan will also be implemented as part of the mitigation strategy, further reducing dependency of car trips to/ from the site.

3.0 SUMMARY

- 3.1 The purpose of this note is to address the additional comments raised by Leicester County Council on the Transport Assessment produced in support of the planning application for the proposed residential development on land north of Barkby Road, Syston.
- 3.2 The details requested have been provided which further confirms that the development will not have a severe impact, and, on this basis, the development should be supported from a transportation standpoint.

Drawings



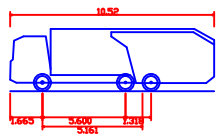
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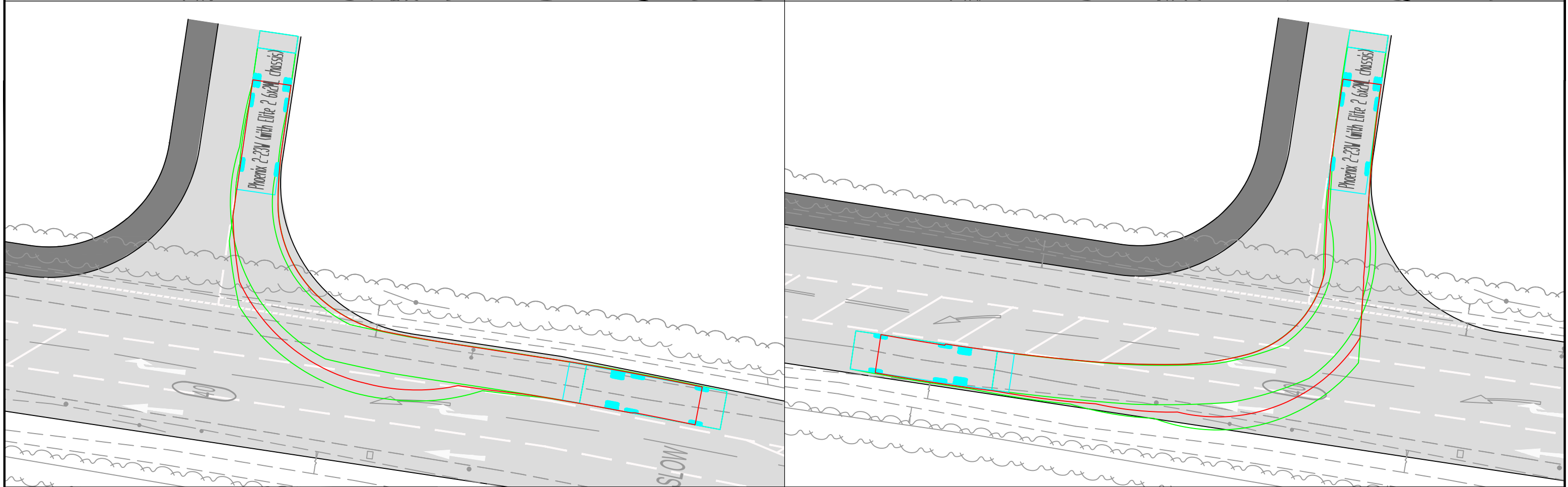
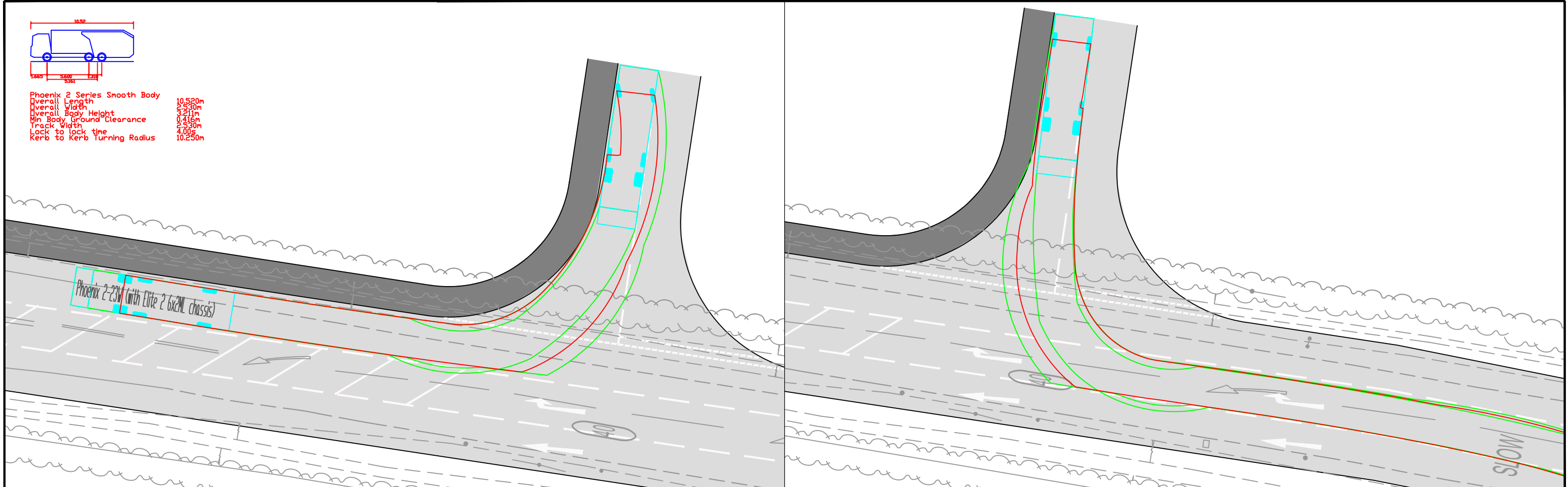


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JOB TITLE		CLIENT	
Syston		Taylor Wimpey	
DRAWING TITLE			
Proposed Site Access Right Turn Lane Northern Site			
SCALE	DRAWN BY	DATE	DRAWING No
See Plan	BP	12-10-22	20060-02
REVISION			D



Phoenix 2 Series Smooth Body
 Overall Length 10.520m
 Overall Width 2.530m
 Overall Body Height 3.211m
 Min Body Ground Clearance 0.216m
 Track Width 2.530m
 Lock to lock time 4.00s
 Kerb to Kerb Turning Radius 10.250m

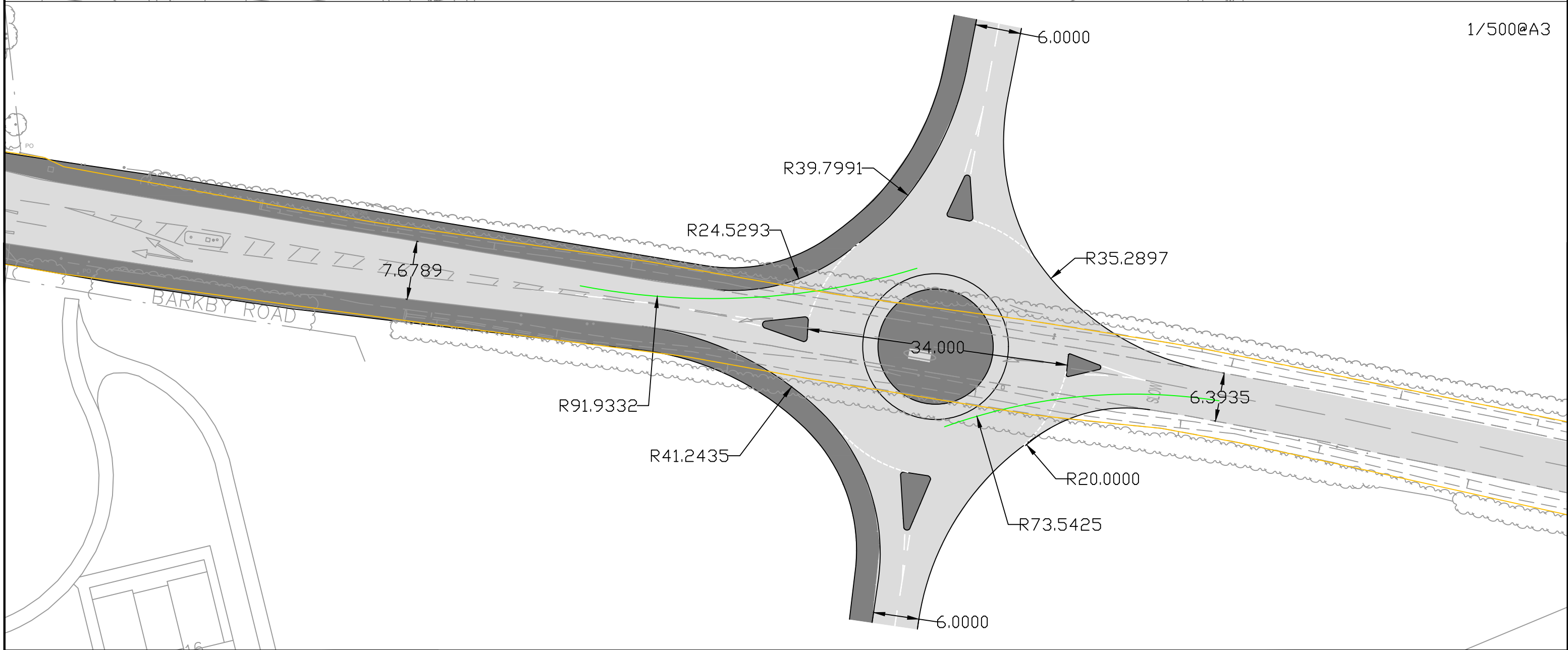
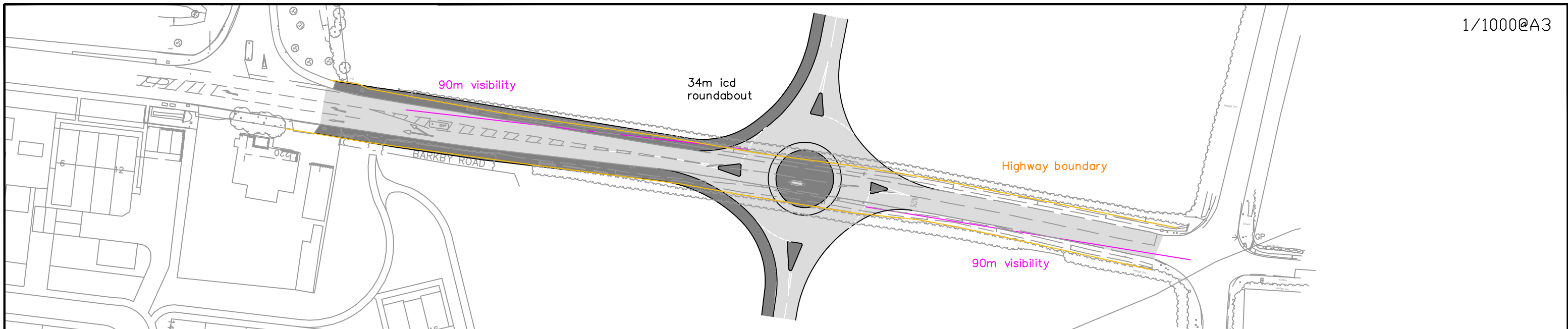


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JOB TITLE	System	CLIENT	Taylor Wimpey
DRAWING TITLE	Vehicle Tracking Plan		
SCALE	DRAWN BY	DATE	DRAWING No
1:250@A3	BP	12-10-22	20060-02-2
REVISION	D		



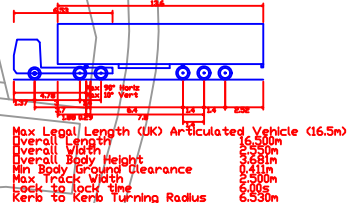
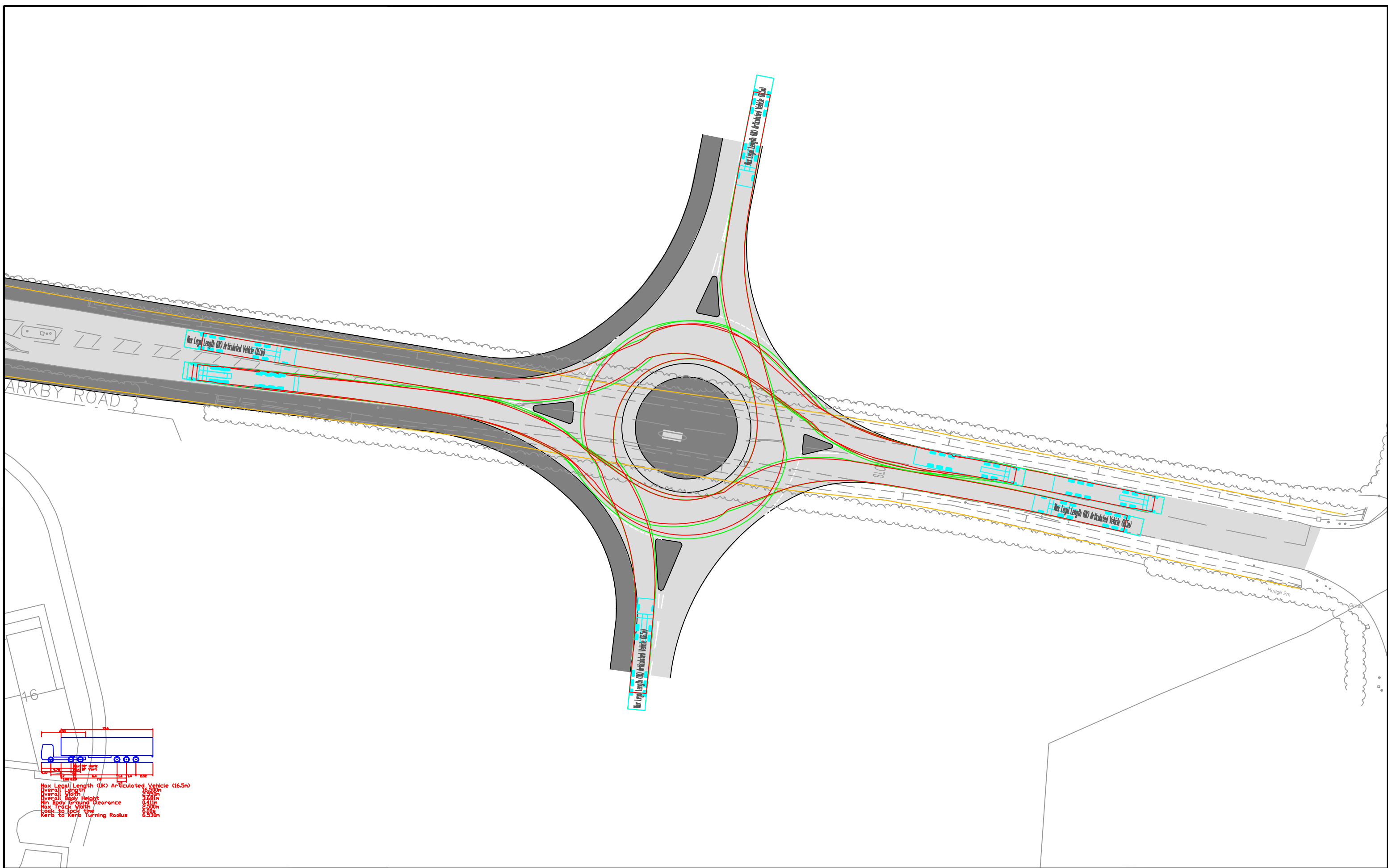
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JOB TITLE		System		CLIENT		Taylor Wimpey	
DRAWING TITLE							
Proposed Site Access							
SCALE	DRAWN BY	DATE	DRAWING No	REVISION			
1/1000@A3	BP	12-10-22	20060-06				



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JOB TITLE		System		CLIENT		Taylor Wimpey	
DRAWING TITLE							
Proposed Site Access Tracking							
SCALE	DRAWN BY	DATE	DRAWING No	REVISION			
1/1000@A3	BP	12-10-22	20060-06-2				

Appendix A
LCC Comments

**Substantive response of the Local Highway
Authority to a planning consultation received
under The Development Management Order.**

Response provided under the delegated authority of the Director of Environment & Transport.

APPLICATION DETAILS:

Planning Application Number: P/21/2639/2

Highway Reference Number: 2021/2639/02/H/R2

Application Address: Land North of Barkby Road Syston Leicestershire

Application Type: Outline (with access)

Description of Application:

Re-consultation. Outline application for up to 195 dwellings with all matters reserved except access.

GENERAL DETAILS

Planning Case Officer: Louise Winson

Applicant: Taylor Wimpey (UK) Ltd

County Councillor: Mr Tom Barkley

Parish: Syston

Road Classification: Class C

Substantive Response provided in accordance with article 22(5) of The Town and Country Planning (Development Management Procedure) (England) Order 2015:

The Local Highway Authority does not consider that the application as submitted fully assesses the highway impact of the proposed development and further information is required as set out in this response. Without this information the Local Highway Authority is unable to provide final highway advice on this application. Under the current Covid-19 situation we would ask that any such work is carried out in accordance with the latest Government guidance.

Advice to Local Planning Authority

Background

The Local Highway Authority (LHA) has been re-consulted on an outline with access planning application for up to 195 dwellings to be located on land north of Barkby Road, Syston.

In its previous response dated 13th May 2022, the LHA requested further information to be submitted with regard to a number of elements.

These highway observations are in response to the following document which has now been submitted to Charnwood Borough Council in support of the planning application.

- Highways Response Note (HRN) prepared by David Tucker Associates dated 16th June 2022.

Site Access

As set out in the LHA's previous observations, it is proposed to access the site via a new priority junction off Barkby Road, Syston, with a ghost right turn lane into the site.

The LHA previously requested visibility splays to be calculated from recorded 85th percentile speeds.

The Applicant has obtained the results of a speed survey which was undertaken in the vicinity of the proposed site access on Barkby Road in June 2021. The survey confirms the 85th percentile speeds to be 42.9mph eastbound and 39.9mph westbound.

Visibility splays of 120m to the right (eastbound approach) and 75m to the left (westbound approach) are achievable and demonstrated on drawing 20060-02 Rev C (Appendix C) of the HRN. The LHA are satisfied that the required visibility splays are achievable and in accordance with the LHA's guidance as set out in Table DG4 in Part 3 of the Leicestershire Highway Design Guide (LHDG), which is available at:

<https://resources.leicestershire.gov.uk/sites/resource/files/field/pdf/faq/2022/3/18/Part-3-design-guidance-interim.pdf>

Whilst the Applicant has submitted swept path analysis for a large refuse vehicle, the LHA has noted that the correct vehicle used by Charnwood Borough Council has not been adopted for the analysis. Therefore revised swept path analysis should be undertaken using a Phoenix 2-23 W 6x4 as shown on the attached specification.

A ghost island major-minor priority junction is considered acceptable for the quantum of development, however it is noted that no design layout dimensions have been shown for the proposed ghost island and right turn lane provision. These need to be advised at this stage so as to ensure that adequate distance is available to accommodate requirements for the deceleration length, ghost island tapers, direct tapers and turning length requirements. The adjacent signalised crossroads junction with Queniborough Road is located less than 100m away from the proposed

access. No information has been provided for proposed lane widths and these will also need to be provided for review.

Drawing 20060-02 Rev C which is part of the Transport Assessment (TA) submitted in support of this application indicates a footway to the west of the access that links with the existing footway at Empingham Drive. A wide verge provision is shown between the footway and the carriageway edge. The LHA requires that this be amended so that the proposed footway runs adjacent to the kerbline. No information has been shown for the proposed footway width which would need to be 2.0m to comply with requirements listed in Part 3 of the Leicestershire Highway Design Guide (LHDG) available at.

<https://resources.leicestershire.gov.uk/sites/resource/files/field/pdf/faq/2022/3/18/Part-3-design-guide-interim.pdf>.

A revised dimensioned plan should be submitted in addition to a Stage 1 RSA and Designer's Response

In its previous comments, the LHA had concerns that the development proposals may not have been considered in light of emerging local plan sites HA1 and HA2. For example, the LHA was concerned that the proposed site access for HA3 could have an adverse effect on any potential access strategy for site HA1.

In Response, the Applicant has stated that:

'In terms of interaction with potential access to the southern parcel of land (proposed allocation HA1-Land southeast of Syston), the promoters are the same (Taylor Wimpey). Given that this site is expected to proceed ahead of HA1, an independent access has been designed to ensure delivery. However, this has been designed to be capable of being upgraded to a roundabout in the future to serve both the northern and southern parcels.'

The indicative arrangement of a roundabout is shown on Drawing 19407-02 (Appendix C) of the HRN. The LHA welcome the Applicant's proposal that the proposed access has been designed to be capable of being upgraded to a roundabout in the future to serve both parcels of land. Notwithstanding this, as there is insufficient design layout information the LHA are unable to comment on the suitability of the roundabout design. The LHA request that a more detailed scheme, fully dimensioned including roundabout design criteria, be submitted for review at this stage.

No information has been shown for the highway boundary, and a topographical survey would also be required to confirm areas of land that would need to be transferred into the publicly maintained highway.

The LHA would also request for the roundabout to be modelled using the ACRADY module of Junctions software at this stage so it can be demonstrated, at least indicatively, whether it will be likely operate within capacity.

The LHA would also require some comfort at this stage over how the further roundabout could be built at the location of the proposed site access, whilst still maintaining access to the site, given that it is likely to be at least partially occupied at the time of construction of the roundabout. Has consideration been given to bringing the roundabout forward at the outset?

Accessibility

In its previous comments, the LHA stated that it:

'...would require that the Applicant should to [sic] explore/develop options for a flexible form of transport provision, which whilst not necessarily adhering to the minimum hourly frequency, does cover the whole of the day 7-7pm (Monday-Friday) and 8-6pm Saturday. It could take the form of a demand based model. The Applicant should explore options and then submit proposals to the LHA for approval, after which they would then go and secure the service/provision.'

The HRN indicates that the Applicant has held discussions with the bus operator Arriva. The LHA understands that Arriva have confirmed in principle that an early phase of a strategy would be to extend the Service 6 into Syston, along Goodes Lane to then U-turn at the Saxby Drive / Barkby Lane junction. The LHA understands that this could comprise a twice hourly service for the addition of one extra Bus.

The HRN goes on to indicate that options for a local 'Arriva Click' type service within Syston could be provided as an alternative. However, the HRN also states that Arriva are currently unable to commit to a form of 'Arriva Click', so it could not be confirmed as a proposal at the current time.

Further to reviewing the HRN, the LHA has given consideration to the fact that the bus service 100 passes the site frontage. While this does not offer an hourly service, it does provide four return journeys a day Monday to Saturday to Syston centre and back. It is noted however, that these trips do not offer peak-time journeys to and from the local centre. It is also further acknowledged that some residents may at times choose to undertake journeys into the local centre on foot due to its relative proximity. Whilst it is a walk of over 800 metres, this is nevertheless still within a reasonable walking distance and an option for some residents. Service 100 is subsidised by LCC and the contract has recently been re-tendered for a period of two years, through to the end of July 2024. This service is therefore not guaranteed beyond that period and it is most likely the build out of this development and occupation would extend beyond that timeframe.

The LHA also recognise that an hourly bus service may not be suitable for this development taking in to consideration its size and location.

Based on the above, the LHA therefore advise that rather than the proposals set out in the HRN, the Applicant should explore the provision of peak time passenger transport from the site to the local centre (to discourage residents from making car journeys at those times and to encourage more sustainable modes of travel generally). In addition, should service 100 cease to operate or the service level reduce beyond its current level within five years of first occupation, the LHA would require the Applicant to secure alternative provision providing a commensurate service level. The LHA will also require the Applicant to install or fund the installation of two new bus stops at a

suitable, but yet to be determined location on Barkby Road to better serve the site frontage. This step would provide closer access for residents to any passenger transport provision.

The LHA note that the Applicant has suggested that a public transport strategy could be secured by a condition should planning consent be granted. Subject to a response from the Applicant regarding the suggestions set out above, the LHA consider a suitably worded condition could be imposed if and when the LHA is in a position to advise a positive recommendation to the planning application.

Trip Generation

The LHA considered the previously submitted trip rates, which are demonstrated in Table 1 which has been extracted from the HRN below, to be low. The LHA therefore requested for the TRICS analysis to be re-run with revised trip rates and applying the journey to work census mode share data to the person trips.

Table 1: DTA Derived Trip rates and generations- 195 Dwellings

Housing- 195 Units	AM Peak			PM Peak		
	Arr	Dep	Total	Arr	Dep	Total
Trip Rate	0.132	0.387	0.520	0.418	0.215	0.633
Trip Generation	26	75	102	82	42	123

The Applicant has reviewed trip rates previously provided by the LHA for a proposed development at Oadby Grange, Oadby. The trip rates previously received from the LHA are demonstrated in Table 2 which has been extracted from the HRN.

Table 2: LCC Vehicular Trip Rates

Housing - Private	AM Peak			PM Peak		
	Arr	Dep	Total	Arr	Dep	Total
Trip Rate	0.253	0.503	0.756	0.466	0.283	0.749

The Applicant notes that, given the above trip rates are significantly higher than those presented within the TA, and that for robustness, ‘these are adopted here as a sensitivity test’. It is unclear whether these have been adopted in the modelling included in the HRN and which is considered later in this response.

The Applicant goes onto to set out in Table 3 below extracted from the HRN that the proposed development would generate the following traffic in the peak hours using the ‘sensitivity test’ trip rates.

Table 3: Traffic Generation- 195 Units

Housing - Private	AM Peak			PM Peak		
	Arrival	Dep	Total	Arrival	Dep	Total
Trip Rate	49	98	147	91	55	146

Table 3 which has been extracted from the HRN shows that a total of 195 dwellings would be predicted to generate around 150 two way vehicle movements in the peak periods when using the 'sensitivity test' rates. The LHA notes that, across the peak, this equates to broadly three vehicles every minute, an increase of a vehicle every 1-2 minutes when compared to the rates from the TA.

Noting the above, the LHA requests that the 'Oadby' trip rates be used as the actual predicted trip rates in the assignment.

Junction Capacity Assessments

Traffic Flow Scenarios and Junction Capacity Assessments

The LHA previously requested for classified turning counts to be undertaken at the following junctions, with covid factors applied, as the previous surveys were more than three years old:

- High Street/Melton Road/Barkby Road;
- Barkby Road/ Queniborough Road;
- Goodes Lane/ St Pauls' Drive;
- Barkby Road/ Pembroke Avenue; and
- Goodes Lane/ Melton Road

The LHA also requested that once the new surveys have been undertaken to re-run the capacity assessments and also include the Fosse Way/ High Street and Barkby Road/ Pembroke Avenue junctions. The LHA also requested that the 2022 base flows should be factored up to a future year of 2027 following application of Covid factors, with the TEMPro growth factors to also be revised and committed developments added.

The HRN sets out that a 'sensitivity test' has been carried out using updated traffic counts. These include three junctions counted in 2021 (extracted from TA supporting allocated site HA2 application) and in June 2022 (commissioned by DTA and undertaken by LCC) survey data to examine the impact of the development. For the HA2 flows, the Applicant is requested to confirm that these had a survey permit by contacting ndi@leics.gov.uk. Further, the LHA does not consider the use of the more recent surveys to be a sensitivity test given that the data is within date (if undertaken under a permit).

The Applicant states that a review of those surveys shows the 2021 / 2022 counts are comparable with the previous 2019 surveys. No further calibration or application of 'Covid' factors is therefore considered reasonable. This is unacceptable to the LHA, which requires Covid factors to be applied consistently for surveys undertaken prior to 2nd September 2022 as for all other applications using data during the affected time periods. The Applicant is therefore required to contact ndi@leics.gov.uk for the appropriate factors and adjust their traffic flow scenarios accordingly,

The Applicant has factored the 2021 and 2022 base flows to a future assessment year assessment of 2027 using rates obtained from TEMPro for the local area. The applicant has stated that the TEMPro factors include all known committed development not captured by the recently collected traffic count data, however the LHA seeks further confirmation of this given that TEMPro is not updated frequently. The resulting growth factors are shown in Table 4 below which has been extracted from the HRN.

Table 4: TEMPro Growth Factors

Years	AM Growth Figure	PM Growth Figure
2021-2027	1.0516	1.0516
2022-2027	1.0426	1.0426

To establish if the 2021/2022 traffic survey data used within the sensitivity test is appropriate for use, the Applicant has compared the data to the 2018 traffic survey data that was used within the TA. This was undertaken to establish how peak hour traffic flows have changed between 2018 and 2021/2022. The Applicant's analysis presented in the HRN suggests that peak hour traffic decreased at both junctions in the AM between 2018 and 2022 and remains similar in the PM peak. The Applicant believes that this reinforces the robustness of the 2021/2022 surveyed flows and junction capacity assessments presented within the HRN. However, as set out above, the LHA requires 'within date' survey data to be used, with Covid factors applied, so as to be robust and consistent with other planning applications. If the Applicant does not wish to apply Covid factors, then they are able to commission new surveys which would no longer be applicable to a Covid factor.

The assessment results which have been extracted from the HRN are summarised below and the full outputs are contained within Appendix E of the HRN. It should be noted that, whilst the LHA comments on the results, the analysis is required to be repeated with acceptable traffic flow scenarios.

High Street/Melton Road/Barkby Road

Junction 1: High Street/Melton Road/Barkby Road

	AM			PM		
	Q (PCU)	Delay (s)	RFC	Q (PCU)	Delay (s)	RFC
2022						
1 - Melton Road N	1.5	8.38	0.59	1.5	8.77	0.59
2 - Barkby Road	1.1	19.24	0.53	2.1	27.17	0.69
3 - Melton Road S	1.3	10.39	0.55	2.1	13.73	0.67
4 - High Street	1.1	9.59	0.52	2.9	19.36	0.74
2027						
1 - Melton Road N	1.6	9.04	0.62	1.7	9.57	0.62
2 - Barkby Road	1.3	21.62	0.57	2.6	32.47	0.73
3 - Melton Road S	1.5	11.17	0.58	2.4	15.34	0.70
4 - High Street	1.2	10.34	0.55	3.7	23.52	0.79
2027 + Development						
1 - Melton Road N	1.7	9.24	0.62	1.7	10.10	0.63
2 - Barkby Road	1.7	24.86	0.64	3.3	39.12	0.78
3 - Melton Road S	1.5	11.61	0.59	2.5	15.96	0.71
4 - High Street	1.3	10.82	0.57	4.7	28.90	0.83

The LHA are satisfied based on the traffic flows currently adopted that the results show that the junction currently operates within capacity and will continue to operate within capacity in the future year scenario following proposed development. However, the analysis is required to be revisited with traffic flows which are acceptable to the LHA.

Barkby Road/Queniborough Road

Junction 2: Barkby Road/ Queniborough Road

Arm	AM Peak		PM Peak	
	DoS (%)	Queue	DoS (%)	Queue
2021 Base				
Queniborough Road South	63.4	9	52.7	9
Barkby Road West	64.6	7	53.1	5
Queniborough Road North	64.3	11	51.7	7
Barkby Road West	2.6	0	6.9	0
2027				
Queniborough Road South	66.9	10	55.5	9
Barkby Road West	68.0	8	53.2	5
Queniborough Road North	67.6	12	55.8	8
Barkby Road West	2.6	0	6.9	0
2027 + Development				
Queniborough Road South	73.2	11	59.1	10
Barkby Road West	70.8	9	60.4	6
Queniborough Road North	71.6	12	58.7	8
Barkby Road West	2.6	0	6.9	0

The LHA are satisfied based on the traffic flows currently adopted that the results demonstrate that the junction operates with reserve capacity in all scenarios. However, the analysis is required to be revisited with traffic flows which are acceptable to the LHA.

Goodes Lane/St Pauls' Drive

The HRN notes that the Goodes Lane / St Pauls' Drive was not assessed within the previous versions of the TA and that a desktop review of the layout indicated St Pauls Drive is a cul-de-sac serving circa 85 dwellings.

The HRN states that:

'The development trip assignment, as shown on Figure 2 of the TA indicates that no development trips are forecast to travel to/from St Pauls Drive, with all development traffic expected to travel

along Goodes Lane. This amounts to 39 two way trips in both peak periods. On this basis no further assessment has been considered.'

On the basis of the above, the LHA are satisfied no assessment is required for the Goodes Lane/St Pauls' Drive junction.

Barkby Road/Pembroke Avenue

Junction 4: Barkby Road/ Pembroke Avenue

	AM			PM		
	Q (PCU)	Delay (s)	RFC	Q (PCU)	Delay (s)	RFC
2022						
Stream B-C	0.1	6.65	0.06	0.1	7.29	0.06
Stream B-A	0.2	10.13	0.17	0.4	11.96	0.31
Stream C-AB	0.2	6.36	0.13	0.2	5.65	0.10
2027						
Stream B-C	0.1	6.73	0.07	0.1	7.42	0.06
Stream B-A	0.2	10.36	0.18	0.5	12.42	0.32
Stream C-AB	0.2	6.39	0.14	0.2	5.66	0.11
2027 + Dev						
Stream B-C	0.1	7.07	0.07	0.1	7.97	0.07
Stream B-A	0.3	11.24	0.22	0.6	14.23	0.40
Stream C-AB	0.2	6.44	0.14	0.2	5.57	0.11

The LHA consider that based on the traffic flows currently adopted the results demonstrate the junction is operating well within practical capacity and will continue to operate satisfactorily, with the inclusion of the proposed development. However, the analysis is required to be revisited with traffic flows which are acceptable to the LHA.

Goodes Lane/Melton Road

Junction 5: Goodes Lane/ Melton Road

	AM			PM		
	Q (PCU)	Delay (s)	RFC	Q (PCU)	Delay (s)	RFC
2022						
Stream B-C	1.8	19.78	0.64	0.4	9.93	0.29
Stream B-A	0.2	19.08	0.17	0.1	16.76	0.08
Stream C-AB	1.1	7.50	0.39	5.3	19.67	0.77
2027						
Stream B-C	2.1	22.59	0.68	0.4	10.33	0.31
Stream B-A	0.3	21.92	0.20	0.1	18.14	0.09
Stream C-AB	1.3	7.79	0.42	7.4	26.32	0.83
2027 + Development						
Stream B-C	2.8	27.59	0.74	0.5	10.88	0.34
Stream B-A	0.3	26.44	0.23	0.1	19.58	0.10
Stream C-AB	1.5	8.38	0.46	13.0	47.79	0.92

The LHA has reviewed the model and would advise that the main road carriageway width should be reduced so that it does not include the on-street parking bays. This will reduce the width of the main road to approximately 5.8m. The modelling should be corrected and undertaken with traffic flow scenarios which are acceptable to the LHA.

Fosse Way/High Street

Junction 6: Fosse Way/ High Street

Arm	AM Peak		PM Peak	
	DoS (%)	Queue	DoS (%)	Queue
2021 Base				
Fosse Way North	62.1	10	37.6	7
High Street	69.7	13	76.6	17
Fosse Way South	69.5	15	75.8	16
2027				
Fosse Way North	66.8	11	48.3	9
High Street	70.7	14	80.0	18
Fosse Way South	71.6	16	80.5	18
2027 + Development				
Fosse Way North	76.6	12	41.9	8
High Street	75.6	15	84.0	19
Fosse Way South	77.1	18	83.9	20

The LHA are satisfied the table above demonstrates that the junction is operating within practical capacity in 2027 based on the traffic flows currently adopted, with the addition of development traffic resulting in an increase of a maximum of 2 PCU through the junction during the peak periods. However, the analysis is required to be revisited with traffic flows which are acceptable to the LHA.

Queniborough Road/ Barkby Road/ Rearsby Road/ Syston Road

The Applicant has stated that there are 10 two-way development trips forecasted to go through the junction in the peak periods. The LHA note that the base (2021) flows show a total of 847 vehicles going through the junction in the AM peak and 711 vehicles in the PM peak. The LHA have checked their own traffic count database and note that there is a count from 2007 which shows 869 vehicles (AM) and 809 vehicles (PM) which is higher than the 2021 flows. The LHA would ask the Applicant to investigate why there is a reduction in traffic when compared to the flows which are 15 years old.

Date Received
20 July 2022

Case Officer
Suraj Dave

Reviewer
AW

Date issued
3 October 2022

Appendix B
Road Safety Audit



Stage 1 Road Safety Audit

Barkby Road, Syston

Proposed Residential Access

Date: 19/10/2022

Report produced for: Taylor Wimpey

Report requested by: DTA Transport Planning Consultants

On behalf of: Leicestershire County Council

Report prepared by: Elaine Bingham, Road Safety Consulting Ltd

Reference: RSC/EB/DL/22014

Document Control Sheet

Project Title Barkby Road, Syston
 Proposed Residential Access

Report Title Stage 1 Road Safety Audit
 Reference: RSC/EB/DL/22014

Revision -

Status Final

Control Date 19/10/2022

Record of Issue

Issue	Author	Date	Check	Date	Authorised	Date
Final	EB	19/10/22	DL	19/10/22	EB	19/10/22

Distribution

Organisation	Contact	Copies
DTA Transport Planning Consultants	Simon Tucker	Ecopy

Road Safety Consulting Ltd
4 Paramore Close
Whetstone
Leicestershire
LE8 6EY
Registered in England and Wales
Company Number 5225549

1. Introduction

- 1.1. This report results from a Stage 1 Road Safety Audit carried out on the proposed access for a residential development on land north of Barkby Road in Syston. The Audit was carried out during October 2022.
- 1.2. This Road Safety Audit was produced for (client organisation): Taylor Wimpey, requested by (design organisation): DTA Transport Planning Consultants, on behalf of (overseeing organisation): Leicestershire County Council.
- 1.3. The Audit Team membership was as follows:
 - Audit Team Leader
Elaine Bingham
B Eng (Hons), MCIHT, MSoRSA
Certificate of Competence (Road Safety Audit)
 - Audit Team Member
Duncan Lord,
IEng, FIHE, Certificate of Competence (Road Safety Audit)
- 1.4. The audit took place at the offices of Road Safety Consulting Ltd between 18th and 19th October 2022. The audit was undertaken in accordance with the email instruction from Simon Tucker at DTA Transport Planning Consultants. The report has been prepared with reference to DMRB – GG 119 – Road Safety Audit.
- 1.5. The Audit Team visited the site together on the 18th October 2022 at 2pm. Weather at the time of the audit was fine. The road surface was dry. Traffic flows were low. No pedestrians or cyclists were observed.
- 1.6. The audit comprised an examination of the information provided by the Design Organisation and listed in Appendix 1.
- 1.7. The Audit Team has examined and reported only on the road safety implications of the scheme as presented and has not examined or verified the compliance of the designs to any other criteria.
- 1.8. All comments and recommendations are referenced to the design drawing and the locations have been indicated on plans in Appendix 2.

2. Items Considered

2.1. Scheme Proposals

- 2.1.1. The proposed residential development consists of up to 196 dwellings on land on the northern side of Barkby Lane to the east of Empingham Drive.
- 2.1.2. The proposed access consists of a new priority junction with a ghost island right turn lane into the site and is shown on DTA drawing 20060-02-2 Rev D.
- 2.1.3. Visibility splays of 2.4m by 75m to the east along Barkby Road and 2.4m by 120m to the west along Barkby Road are to be provided based on 85th percentile recorded speeds.
- 2.1.4. A footway is proposed along the western side of the access onto Barkby Road which continues along Barkby Road to be link into the existing footway at Empingham Drive.

2.2. Information Provided to the Audit Team

- 2.2.1. Information that has been provided to the Audit Team, for the purpose of this audit, is as outlined within Appendix 1 of this report.

2.3. Departures from Standards (Design)

- 2.3.1. The Audit Team has not been advised of any Departures from Standard

3. Items Raised at Previous Road Safety Audits

- 3.1. The Audit Team is aware that a previous Stage 1 Road Safety Audit was carried on these proposals by Mott MacDonalds in October 2018. This Road Safety Audit raised no road safety issues. Since the issue of this Road Safety Audit, the proposed footway has been relocated to the kerb edge.

4. Items Raised by this Stage 1 Road Safety Audit

4.1. Problem

Location: Proposed Footway

Summary: Ditch at back of footway
potential hazard for pedestrians

The proposed footway runs adjacent to an open ditch. During hours of darkness or in poor weather some pedestrians may be vulnerable to fall and injury, should they fail to appreciate the edge of the facility.

Recommendation:

It is recommended that the ditch is piped to remove the hazard or provide a suitable height fence to protect against falls.

4.2. Problem

Location: General

Summary: Surface water ponding may lead
to skidding type incidents.

The existing drainage provision along Barkby Road in the vicinity of the site appears to be that water runs off into the grass verge and via drainage grips into the ditch. The installation of the new kerb line could result in excessive water ponding along the new kerb line or within the junction bell mouth during inclement weather. This could result skidding type collisions particularly during freezing conditions.

Recommendation:

It is recommended that suitable drainage provision is provided.

4.3. Problem

Location: Western end of footway near tie
in with Empingham Drive.

Summary: Large Service cover may be a
slip hazard for pedestrians



There is a large service cover which will fall within the proposed footway. The metal service cover may pose as a slip hazard for pedestrians particularly during wet conditions.

Recommendation:

It is recommended that the service cover should be replaced with an infill cover containing the same material as the surrounding footway.

4.4. Problem

Location: Proposed site access

Summary: Restricted visibility may lead to
vehicle to vehicle collisions

The existing hedge line and telegraph pole to the left of the proposed access falls within the required visibility splay. Restricted visibility to and from the access may lead to vehicles pulling out of the access into an approaching vehicle leading to vehicle to vehicle collisions.

Recommendation:

It is recommended that adequate side road visibility is provided, consistent with measured free flow 85th percentile speeds; this may require the removal of the existing hedge line within the visibility splay and any new hedge/boundary treatment should be set back from the visibility splay.

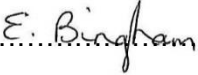
End of Safety Comments

5. Audit Team Statement

We certify that this Stage 1 Road Safety Audit has been carried with reference to GG 119.

Audit Team Leader


Elaine Bingham,
B Eng (Hons), MCIHT, MSoRSA
Certificate of Competence (Road Safety Audit)

Signed:  Dated 19th October 2022

Director of Road Safety Consulting Ltd

Audit Team Member

Duncan Lord,
IEng, FIHE
Certificate of Competence (Road Safety Audit)

Signed:  Dated 19th October 2022

Consultant working on behalf of Road Safety Consulting Ltd

Road Safety Consulting Ltd
4 Paramore Close
Whetstone
Leicestershire
LE8 6EY

APPENDIX 1: Information Provided

List of Information Provided

Document Reference Number	Revision	Title
Report 20060-08b	-	Transport Assessment 30 th November 2021
Drawing 20060-02-2	D	Proposed Site Access Right Turn Lane Northern Site – Vehicle Tracking Plan
Response from Leicestershire County Council	-	Dated 3 rd October 2022

Appendix C
Traffic Flow Matrices

Junction ID	Location	Survey Type	Traffic Flow Source	Survey Date	Covid Factor	
					AM	PM
1	High Street/Melton Road/Barkby Road;	CTC	LCC	Wed 25th May 2022	2%	8%
2	Barkby Road/ Queniborough Road;	CTC	HA2 TA	Tues 26th Oct 2021	10%	9%
3	Goodes Lane/ St Pauls' Drive;	CTC	No assessment agreed			
4	Barkby Road/ Pembroke Avenue; and	CTC	LCC	Wed 25th May 2022	2%	8%
5	Goodes Lane/ Melton Road	CTC	LCC	Wed 25th May 2022	2%	8%
6	Fosse way/ High Street	CTC	LCC	Wed 25th May 2022	2%	8%
	Site Access	7day ATC	DTA	Sat 21st May 22		

Melton/Barkby/High Street Roundabout																			
2022 AM LGV	Melton Road N	Barkby Road	Melton Road S	High Street	2022 AM OGV	Melton Road N	Barkby Road	Melton Road S	High Street	2022 AM PCU	Melton Road N	Barkby Road	Melton Road S	High Street	2027 AM PCU	Melton Road N	Barkby Road	Melton Road S	High Street
Melton Road N	1	77	347	138	Melton Road N	0	2	3	3	Melton Road N	1	81	353	144	Melton Road N	1	84	368	150
Barkby Road	64	0	79	128	Barkby Road	0	0	0	2	Barkby Road	64	0	0	132	Barkby Road	67	0	0	138
Melton Road S	281	33	2	67	Melton Road S	9	2	0	5	Melton Road S	299	37	2	77	Melton Road S	312	39	2	80
High Street	181	85	94	1	High Street	1	2	5	0	High Street	183	89	104	1	High Street	191	93	108	1
2022 PM LGV	Melton Road N	Barkby Road	Melton Road S	High Street	2022 PM OGV	Melton Road N	Barkby Road	Melton Road S	High Street	2022 PM PCU	Melton Road N	Barkby Road	Melton Road S	High Street	2027 PM PCU	Melton Road N	Barkby Road	Melton Road S	High Street
Melton Road N	0	97	287	155	Melton Road N	0	0	5	1	Melton Road N	0	97	297	157	Melton Road N	0	101	310	164
Barkby Road	68	1	80	110	Barkby Road	1	0	0	2	Barkby Road	70	1	80	114	Barkby Road	73	1	83	119
Melton Road S	325	76	3	87	Melton Road S	3	1	0	2	Melton Road S	331	78	3	91	Melton Road S	345	81	3	95
High Street	271	157	65	0	High Street	2	0	6	0	High Street	275	157	77	0	High Street	287	164	80	0
DEV AM	Melton Road N	Barkby Road	Melton Road S	High Street	Tempo	2022-2027				2022 AM PCU + COMMITTED	Melton Road N	Barkby Road	Melton Road S	High Street	2027 AM PCU + COMMITTED	Melton Road N	Barkby Road	Melton Road S	High Street
Melton Road N	0	0	0	0	AM	1.0426				Melton Road N	1	81	353	144	Melton Road N	1	84	368	150
Barkby Road	0	0	3	29	PM	1.0426				Barkby Road	64	0	3	161	Barkby Road	67	0	3	167
Melton Road S	0	1	0	0				Melton Road S	299	38	2	77	Melton Road S	312	40	2	80		
High Street	0	15	0	0				High Street	183	104	104	1	High Street	191	107	108	1		
DEV PM	Melton Road N	Barkby Road	Melton Road S	High Street				2022 PM PCU + COMMITTED	Melton Road N	Barkby Road	Melton Road S	High Street	2027 PM PCU + COMMITTED	Melton Road N	Barkby Road	Melton Road S	High Street		
Melton Road N	0	0	0	0				Melton Road N	0	97	297	157	Melton Road N	0	101	310	164		
Barkby Road	0	0	2	16				Barkby Road	70	1	82	130	Barkby Road	73	1	85	135		
Melton Road S	0	3	0	0				Melton Road S	331	81	3	91	Melton Road S	345	84	3	95		
High Street	0	27	0	0				High Street	275	184	77	0	High Street	287	191	80	0		

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98 Melton/Barkby/High Street Roundabout																			
100 2022 AM LGV	Melton Road N	Barkby Road	Melton Road S	High Street	2022 AM OGV	Melton Road N	Barkby Road	Melton Road S	High Street	2022 AM PCU	Melton Road N	Barkby Road	Melton Road S	High Street	2027 AM PCU	Melton Road N	Barkby Road	Melton Road S	High Street
Melton Road N	1	79	354	141	Melton Road N	0	2	3	3	Melton Road N	1	83	360	147	Melton Road N	1	86	376	153
Barkby Road	65	0	81	131	Barkby Road	0	0	0	2	Barkby Road	65	0	0	135	Barkby Road	68	0	0	140
Melton Road S	287	34	2	68	Melton Road S	9	2	0	5	Melton Road S	305	38	2	79	Melton Road S	318	39	2	82
High Street	185	87	96	1	High Street	1	2	5	0	High Street	187	91	106	1	High Street	195	95	111	1
92 2022 PM LGV	Melton Road N	Barkby Road	Melton Road S	High Street	2022 PM OGV	Melton Road N	Barkby Road	Melton Road S	High Street	2022 PM PCU	Melton Road N	Barkby Road	Melton Road S	High Street	2027 PM PCU	Melton Road N	Barkby Road	Melton Road S	High Street
100 Melton Road N	0	105	312	168	Melton Road N	0	0	5	1	Melton Road N	0	105	323	171	Melton Road N	0	110	337	178
Barkby Road	74	1	87	120	Barkby Road	1	0	0	2	Barkby Road	76	1	87	124	Barkby Road	79	1	91	129
Melton Road S	353	83	3	95	Melton Road S	3	1	0	2	Melton Road S	360	85	3	99	Melton Road S	375	88	3	103
High Street	295	171	71	0	High Street	2	0	7	0	High Street	299	171	84	0	High Street	312	178	87	0
DEV AM	Melton Road N	Barkby Road	Melton Road S	High Street	Tempo	2022-2027				2022 AM PCU + COMMITTED	Melton Road N	Barkby Road	Melton Road S	High Street	2027 AM PCU + COMMITTED	Melton Road N	Barkby Road	Melton Road S	High Street
Melton Road N	0	0	0	0	AM	1.0426				Melton Road N	1	83	360	147	Melton Road N	1	86	376	153
Barkby Road	0	0	3	29	PM	1.0426				Barkby Road	65	0	3	164	Barkby Road	68	0	3	170
Melton Road S	0	1	0	0				Melton Road S	305	39	2	79	Melton Road S	318	41	2	82		
High Street	0	15	0	0				High Street	187	106	106	1	High Street	195	109	111	1		
DEV PM	Melton Road N	Barkby Road	Melton Road S	High Street				2022 PM PCU + COMMITTED	Melton Road N	Barkby Road	Melton Road S	High Street	2027 PM PCU + COMMITTED	Melton Road N	Barkby Road	Melton Road S	High Street		
Melton Road N	0	0	0	0				Melton Road N	0	105	323	171	Melton Road N	0	110	337	178		
Barkby Road	0	0	2	16				Barkby Road	76	1	89	140	Barkby Road	79	1	92	146		
Melton Road S	0	3	0	0				Melton Road S	360	87	3	99	Melton Road S	375	91	3	103		
High Street	0	27	0	0				High Street	299	198	84	0	High Street	312	205	87	0		

Queniborough/Barkby/Unamed Road					2021 AM OGV					2021 AM PCU					2027 AM PCU				
2021 AM LGV	Queniborough Road S	Barkby Road	Queniborough Road N	Unamed Road	Queniborough Road S	Barkby Road	Queniborough Road N	Unamed Road	Queniborough Road S	Barkby Road	Queniborough Road N	Unamed Road	Queniborough Road S	Barkby Road	Queniborough Road N	Unamed Road			
Queniborough Road S					Queniborough Road S				Queniborough Road S	0	126	151	1	Queniborough Road S	0	133	159	1	
Barkby Road					Barkby Road				Barkby Road	130	0	81	2	Barkby Road	137	0	85	2	
Queniborough Road N					Queniborough Road N				Queniborough Road N	211	61	0	81	Queniborough Road N	222	64	0	85	
Unamed Road					Unamed Road				Unamed Road	0	2	1	0	Unamed Road	0	2	1	0	

2021 PM LGV					2021 PM OGV					2021 PM PCU					2027 PM PCU				
Queniborough Road S	Queniborough Road S	Barkby Road	Queniborough Road N	Unamed Road	Queniborough Road S	Barkby Road	Queniborough Road N	Unamed Road	Queniborough Road S	Barkby Road	Queniborough Road N	Unamed Road	Queniborough Road S	Barkby Road	Queniborough Road N	Unamed Road			
Queniborough Road S					Queniborough Road S				Queniborough Road S	0	126	176	2	Queniborough Road S	0	133	185	2	
Barkby Road					Barkby Road				Barkby Road	88	0	61	3	Barkby Road	93	0	64	3	
Queniborough Road N					Queniborough Road N				Queniborough Road N	124	62	0	61	Queniborough Road N	130	65	0	64	
Unamed Road					Unamed Road				Unamed Road	0	5	3	0	Unamed Road	0	5	3	0	

DEV AM					Tempo		2021 AM PCU + DEVELOPMENT					2027 AM PCU + DEVELOPMENT				
Queniborough Road S	Queniborough Road S	Barkby Road	Queniborough Road N	Unamed Road	AM	2021-2027	Queniborough Road S	Barkby Road	Queniborough Road N	Unamed Road	Queniborough Road S	Barkby Road	Queniborough Road N	Unamed Road		
Queniborough Road S	0	17	0	0	1.0516	Queniborough Road S	0	143	151	1	Queniborough Road S	0	149	159	1	
Barkby Road	33	0	7	0	PM	1.0516	Barkby Road	163	0	88	2	Barkby Road	170	0	92	2
Queniborough Road N	0	3	0	0		Queniborough Road N	211	64	0	81	Queniborough Road N	222	67	0	85	
Unamed Road	0	0	0	0		Unamed Road	0	2	1	0	Unamed Road	0	2	1	0	

DEV PM					2021 PM PCU + DEVELOPMENT					2027 PM PCU + DEVELOPMENT				
Queniborough Road S	Queniborough Road S	Barkby Road	Queniborough Road N	Unamed Road	Queniborough Road S	Barkby Road	Queniborough Road N	Unamed Road	Queniborough Road S	Barkby Road	Queniborough Road N	Unamed Road		
Queniborough Road S	0	31	0	0	Queniborough Road S	0	157	176	2	Queniborough Road S	0	163	185	2
Barkby Road	19	0	4	0	Barkby Road	107	0	65	3	Barkby Road	111	0	68	3
Queniborough Road N	0	6	0	0	Queniborough Road N	124	68	0	61	Queniborough Road N	130	71	0	64
Unamed Road	0	0	0	0	Unamed Road	0	5	3	0	Unamed Road	0	5	3	0

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90 Queniborough/Barkby/Unamed Road					90 2021 AM OGV					90 2021 AM PCU					90 2027 AM PCU				
2021 AM LGV	Queniborough Road S	Barkby Road	Queniborough Road N	Unamed Road	Queniborough Road S	Barkby Road	Queniborough Road N	Unamed Road	Queniborough Road S	Barkby Road	Queniborough Road N	Unamed Road	Queniborough Road S	Barkby Road	Queniborough Road N	Unamed Road			
Queniborough Road S					Queniborough Road S				Queniborough Road S	0	140	168	1	Queniborough Road S	0	147	176	1	
Barkby Road					Barkby Road				Barkby Road	144	0	90	2	Barkby Road	152	0	95	2	
Queniborough Road N					Queniborough Road N				Queniborough Road N	234	68	0	90	Queniborough Road N	247	71	0	95	
Unamed Road					Unamed Road				Unamed Road	0	2	1	0	Unamed Road	0	2	1	0	

91 2021 PM LGV					91 2021 PM OGV					91 2021 PM PCU					91 2027 PM PCU				
Queniborough Road S	Queniborough Road S	Barkby Road	Queniborough Road N	Unamed Road	Queniborough Road S	Barkby Road	Queniborough Road N	Unamed Road	Queniborough Road S	Barkby Road	Queniborough Road N	Unamed Road	Queniborough Road S	Barkby Road	Queniborough Road N	Unamed Road			
Queniborough Road S					Queniborough Road S				Queniborough Road S	0	138	193	2	Queniborough Road S	0	146	203	2	
Barkby Road					Barkby Road				Barkby Road	97	0	67	3	Barkby Road	102	0	70	3	
Queniborough Road N					Queniborough Road N				Queniborough Road N	136	68	0	67	Queniborough Road N	143	72	0	70	
Unamed Road					Unamed Road				Unamed Road	0	5	3	0	Unamed Road	0	6	3	0	

DEV AM					Tempo		2021 AM PCU + DEVELOPMENT					2027 AM PCU + DEVELOPMENT				
Queniborough Road S	Queniborough Road S	Barkby Road	Queniborough Road N	Unamed Road	AM	2021-2027	Queniborough Road S	Barkby Road	Queniborough Road N	Unamed Road	Queniborough Road S	Barkby Road	Queniborough Road N	Unamed Road		
Queniborough Road S	0	17	0	0	1.0516	Queniborough Road S	0	157	168	1	Queniborough Road S	0	164	176	1	
Barkby Road	33	0	7	0	PM	1.0516	Barkby Road	178	0	97	2	Barkby Road	185	0	101	2
Queniborough Road N	0	3	0	0		Queniborough Road N	234	71	0	90	Queniborough Road N	247	75	0	95	
Unamed Road	0	0	0	0		Unamed Road	0	2	1	0	Unamed Road	0	2	1	0	

DEV PM					2021 PM PCU + DEVELOPMENT					2027 PM PCU + DEVELOPMENT				
Queniborough Road S	Queniborough Road S	Barkby Road	Queniborough Road N	Unamed Road	Queniborough Road S	Barkby Road	Queniborough Road N	Unamed Road	Queniborough Road S	Barkby Road	Queniborough Road N	Unamed Road		
Queniborough Road S	0	31	0	0	Queniborough Road S	0	169	193	2	Queniborough Road S	0	177	203	2
Barkby Road	19	0	4	0	Barkby Road	115	0	71	3	Barkby Road	120	0	74	3
Queniborough Road N	0	6	0	0	Queniborough Road N	136	74	0	67	Queniborough Road N	143	78	0	70
Unamed Road	0	0	0	0	Unamed Road	0	5	3	0	Unamed Road	0	6	3	0

2022 AM LGV	Barkby Road S	Pembroke Avenue	Barkby Road N	2022 AM OGV	Barkby Road S	Pembroke Avenue	Barkby Road N	2022 AM PCU	Barkby Road S	Pembroke Avenue	Barkby Road N	2027 AM PCU	Barkby Road S	Pembroke Avenue	Barkby Road N
Barkby Road S	0	148	206	Barkby Road S	0	0	5	Barkby Road S	0	148	216	Barkby Road S	0	154	225
Pembroke Avenue	60	0	32	Pembroke Avenue	2	0	0	Pembroke Avenue	64	0	33	Pembroke Avenue	67	0	34
Barkby Road N	137	56	0	Barkby Road N	7	1	0	Barkby Road N	151	58	0	Barkby Road N	157	60	0
2022 PM LGV	Barkby Road S	Pembroke Avenue	Barkby Road N	2022 PM OGV	Barkby Road S	Pembroke Avenue	Barkby Road N	2022 PM PCU	Barkby Road S	Pembroke Avenue	Barkby Road N	2027 PM PCU	Barkby Road S	Pembroke Avenue	Barkby Road N
Barkby Road S	0	59	222	Barkby Road S	0	0	4	Barkby Road S	0	59	220	Barkby Road S	0	62	240
Pembroke Avenue	121	0	29	Pembroke Avenue	0	0	0	Pembroke Avenue	121	0	29	Pembroke Avenue	126	0	30
Barkby Road N	197	46	0	Barkby Road N	4	0	0	Barkby Road N	205	46	0	Barkby Road N	214	48	0
DEV AM	Barkby Road S	Pembroke Avenue	Barkby Road N	Tempo	2022-2027			2022 AM PCU + DEVELOPMENT	Barkby Road S	Pembroke Avenue	Barkby Road N	2027 AM PCU + DEVELOPMENT	Barkby Road S	Pembroke Avenue	Barkby Road N
Barkby Road S	0	26	32	AM	1.0426			Barkby Road S	0	174	248	Barkby Road S	0	180	257
Pembroke Avenue	13	0	0	PM	1.0426			Pembroke Avenue	77	0	33	Pembroke Avenue	80	0	34
Barkby Road N	16	0	0					Barkby Road N	167	58	0	Barkby Road N	174	60	0
DEV PM	Barkby Road S	Pembroke Avenue	Barkby Road N					2022 PM PCU + DEVELOPMENT	Barkby Road S	Pembroke Avenue	Barkby Road N	2027 PM PCU + DEVELOPMENT	Barkby Road S	Pembroke Avenue	Barkby Road N
Barkby Road S	0	15	18					Barkby Road S	0	74	248	Barkby Road S	0	76	258
Pembroke Avenue	24	0	0					Pembroke Avenue	145	0	29	Pembroke Avenue	150	0	30
Barkby Road N	30	0	0					Barkby Road N	235	46	0	Barkby Road N	243	48	0

COVID Factor Application

98	2022 AM LGV	Barkby Road S	Pembroke Avenue	Barkby Road N	2022 AM OGV	Barkby Road S	Pembroke Avenue	Barkby Road N	2022 AM PCU	Barkby Road S	Pembroke Avenue	Barkby Road N	2027 AM PCU	Barkby Road S	Pembroke Avenue	Barkby Road N
100	Barkby Road S	0	151	210	Barkby Road S	0	0	5	Barkby Road S	0	151	220	Barkby Road S	0	157	230
	Pembroke Avenue	61	0	34	Pembroke Avenue	2	0	0	Pembroke Avenue	65	0	34	Pembroke Avenue	68	0	35
	Barkby Road N	140	57	0	Barkby Road N	7	1	0	Barkby Road N	154	59	0	Barkby Road N	161	62	0
92	2022 PM LGV	Barkby Road S	Pembroke Avenue	Barkby Road N	2022 PM OGV	Barkby Road S	Pembroke Avenue	Barkby Road N	2022 PM PCU	Barkby Road S	Pembroke Avenue	Barkby Road N	2027 PM PCU	Barkby Road S	Pembroke Avenue	Barkby Road N
100	Barkby Road S	0	64	241	Barkby Road S	0	0	4	Barkby Road S	0	64	250	Barkby Road S	0	67	261
	Pembroke Avenue	132	0	32	Pembroke Avenue	0	0	0	Pembroke Avenue	132	0	32	Pembroke Avenue	137	0	33
	Barkby Road N	214	50	0	Barkby Road N	4	0	0	Barkby Road N	223	50	0	Barkby Road N	232	52	0
	DEV AM	Barkby Road S	Pembroke Avenue	Barkby Road N	Tempo	2022-2027			2022 AM PCU + DEVELOPMENT	Barkby Road S	Pembroke Avenue	Barkby Road N	2027 AM PCU + DEVELOPMENT	Barkby Road S	Pembroke Avenue	Barkby Road N
	Barkby Road S	0	26	32	AM	1.0426			Barkby Road S	0	177	252	Barkby Road S	0	184	262
	Pembroke Avenue	13	0	0	PM	1.0426			Pembroke Avenue	78	0	34	Pembroke Avenue	81	0	35
	Barkby Road N	16	0	0					Barkby Road N	170	59	0	Barkby Road N	177	62	0
	DEV PM	Barkby Road S	Pembroke Avenue	Barkby Road N					2022 PM PCU + DEVELOPMENT	Barkby Road S	Pembroke Avenue	Barkby Road N	2027 PM PCU + DEVELOPMENT	Barkby Road S	Pembroke Avenue	Barkby Road N
	Barkby Road S	0	15	18					Barkby Road S	0	79	268	Barkby Road S	0	82	279
	Pembroke Avenue	24	0	0					Pembroke Avenue	156	0	32	Pembroke Avenue	161	0	33
	Barkby Road N	30	0	0					Barkby Road N	252	50	0	Barkby Road N	262	52	0

Melton Road/Goodes Lane															
2022 AM LGV	Melton Road N	Goodes Lanes	Melton Road S	2022 AM OGV	Melton Road N	Goodes Lanes	Melton Road S	2022 AM PCU	Melton Road N	Goodes Lanes	Melton Road S	2027 AM PCU	Melton Road N	Goodes Lanes	Melton Road S
Melton Road N	0	24	478	Melton Road N	0	0	15	Melton Road N	0	24	508	Melton Road N	0	25	530
Goodes Lanes	38	0	301	Goodes Lanes	0	0	0	Goodes Lanes	38	0	301	Goodes Lanes	40	0	314
Melton Road S	384	129	0	Melton Road S	17	2	0	Melton Road S	418	133	0	Melton Road S	436	139	0
2022 PM LGV	Melton Road N	Goodes Lanes	Melton Road S	2022 PM OGV	Melton Road N	Goodes Lanes	Melton Road S	2022 PM PCU	Melton Road N	Goodes Lanes	Melton Road S	2027 PM PCU	Melton Road N	Goodes Lanes	Melton Road S
Melton Road N	0	54	490	Melton Road N	0	0	19	Melton Road N	0	54	528	Melton Road N	0	56	550
Goodes Lanes	19	0	137	Goodes Lanes	0	0	0	Goodes Lanes	19	0	137	Goodes Lanes	20	0	143
Melton Road S	456	241	0	Melton Road S	8	0	0	Melton Road S	472	241	0	Melton Road S	492	251	0
DEV AM	Melton Road N	Goodes Lanes	Melton Road S	Tempo	2022-2027			2022 AM PCU + DEVELOPMENT	Melton Road N	Goodes Lanes	Melton Road S	2027 AM PCU + DEVELOPMENT	Melton Road N	Goodes Lanes	Melton Road S
Melton Road N	0	0	0	AM	1.0426			Melton Road N	0	24	508	Melton Road N	0	25	530
Goodes Lanes	0	0	26	PM	1.0426			Goodes Lanes	38	0	327	Goodes Lanes	40	0	340
Melton Road S	0	13	0					Melton Road S	418	146	0	Melton Road S	436	152	0
DEV PM	Melton Road N	Goodes Lanes	Melton Road S					2022 PM PCU + DEVELOPMENT	Melton Road N	Goodes Lanes	Melton Road S	2027 PM PCU + DEVELOPMENT	Melton Road N	Goodes Lanes	Melton Road S
Melton Road N	0	0	0					Melton Road N	0	54	528	Melton Road N	0	56	550
Goodes Lanes	0	0	15					Goodes Lanes	19	0	152	Goodes Lanes	20	0	158
Melton Road S	0	24	0					Melton Road S	472	265	0	Melton Road S	492	276	0

COVID Factor Application

Melton Road/Goodes Lane																
98	2022 AM LGV	Melton Road N	Goodes Lanes	Melton Road S	2022 AM OGV	Melton Road N	Goodes Lanes	Melton Road S	2022 AM PCU	Melton Road N	Goodes Lanes	Melton Road S	2027 AM PCU	Melton Road N	Goodes Lanes	Melton Road S
100	Melton Road N	0	24	488	Melton Road N	0	0	15	Melton Road N	0	24	518	Melton Road N	0	26	540
	Goodes Lanes	39	0	307	Goodes Lanes	0	0	0	Goodes Lanes	39	0	307	Goodes Lanes	40	0	320
	Melton Road S	392	132	0	Melton Road S	17	2	0	Melton Road S	427	136	0	Melton Road S	445	141	0
92	2022 PM LGV	Melton Road N	Goodes Lanes	Melton Road S	2022 PM OGV	Melton Road N	Goodes Lanes	Melton Road S	2022 PM PCU	Melton Road N	Goodes Lanes	Melton Road S	2027 PM PCU	Melton Road N	Goodes Lanes	Melton Road S
100	Melton Road N	0	55	500	Melton Road N	0	0	21	Melton Road N	0	55	541	Melton Road N	0	57	564
	Goodes Lanes	19	0	140	Goodes Lanes	0	0	0	Goodes Lanes	19	0	140	Goodes Lanes	20	0	146
	Melton Road S	465	246	0	Melton Road S	9	0	0	Melton Road S	483	246	0	Melton Road S	503	256	0
	DEV AM	Melton Road N	Goodes Lanes	Melton Road S	Tempo	2022-2027			2022 AM PCU + DEVELOPMENT	Melton Road N	Goodes Lanes	Melton Road S	2027 AM PCU + DEVELOPMENT	Melton Road N	Goodes Lanes	Melton Road S
	Melton Road N	0	0	0	AM	1.0426			Melton Road N	0	24	518	Melton Road N	0	26	540
	Goodes Lanes	0	0	26	PM	1.0426			Goodes Lanes	39	0	333	Goodes Lanes	40	0	346
	Melton Road S	0	13	0					Melton Road S	427	149	0	Melton Road S	445	155	0
	DEV PM	Melton Road N	Goodes Lanes	Melton Road S					2022 PM PCU + DEVELOPMENT	Melton Road N	Goodes Lanes	Melton Road S	2027 PM PCU + DEVELOPMENT	Melton Road N	Goodes Lanes	Melton Road S
	Melton Road N	0	0	0					Melton Road N	0	55	541	Melton Road N	0	57	564
	Goodes Lanes	0	0	15					Goodes Lanes	19	0	155	Goodes Lanes	20	0	160
	Melton Road S	0	24	0					Melton Road S	483	270	0	Melton Road S	503	281	0

2022 AM LGV	Fosse Way N	High Street	Fosse Way S
Fosse Way N	0	141	156
High Street	105	0	253
Fosse Way S	123	336	0

2022 AM GGV	Fosse Way N	High Street	Fosse Way S
Fosse Way N	0	19	4
High Street	12	0	20
Fosse Way S	2	26	0

2022 AM PCU	Fosse Way N	High Street	Fosse Way S
Fosse Way N	0	161	164
High Street	129	0	293
Fosse Way S	127	388	0

2027 AM PCU	Fosse Way N	High Street	Fosse Way S
Fosse Way N	0	166	174
High Street	134	0	305
Fosse Way S	132	405	0

2022 PM LGV	Fosse Way N	High Street	Fosse Way S
Fosse Way N	0	126	169
High Street	149	0	308
Fosse Way S	143	350	0

2022 PM GGV	Fosse Way N	High Street	Fosse Way S
Fosse Way N	0	9	2
High Street	15	0	7
Fosse Way S	1	12	0

2022 PM PCU	Fosse Way N	High Street	Fosse Way S
Fosse Way N	0	144	173
High Street	179	0	342
Fosse Way S	145	374	0

2027 PM PCU	Fosse Way N	High Street	Fosse Way S
Fosse Way N	0	150	180
High Street	187	0	357
Fosse Way S	151	390	0

COMMITTED AM	Fosse Way N	High Street	Fosse Way S
Fosse Way N	0		
High Street		0	
Fosse Way S			0

Tempo	2022-2027
AM	1.0426
PM	1.0426

2022 AM PCU + Committed	Fosse Way N	High Street	Fosse Way S
Fosse Way N	0	161	164
High Street	129	0	293
Fosse Way S	127	388	0

2027 AM PCU + Committed	Fosse Way N	High Street	Fosse Way S
Fosse Way N	0	168	174
High Street	134	0	305
Fosse Way S	132	405	0

COMMITTED PM	Fosse Way N	High Street	Fosse Way S
Fosse Way N	0		
High Street		0	
Fosse Way S			0

2022 PM PCU + Committed	Fosse Way N	High Street	Fosse Way S
Fosse Way N	0	144	173
High Street	179	0	342
Fosse Way S	145	374	0

2027 PM PCU + Committed	Fosse Way N	High Street	Fosse Way S
Fosse Way N	0	150	180
High Street	187	0	357
Fosse Way S	151	390	0

DEV AM	Fosse Way N	High Street	Fosse Way S
Fosse Way N	0	1	0
High Street	3	0	26
Fosse Way S	0	13	0

2022 AM PCU + Committed + Dev	Fosse Way N	High Street	Fosse Way S
Fosse Way N	0	162	164
High Street	132	0	319
Fosse Way S	127	401	0

2027 AM PCU + Committed + Dev	Fosse Way N	High Street	Fosse Way S
Fosse Way N	0	169	171
High Street	137	0	332
Fosse Way S	132	418	0

DEV PM	Fosse Way N	High Street	Fosse Way S
Fosse Way N	0	3	0
High Street	2	0	15
Fosse Way S	0	24	0

2022 PM PCU + Committed + Dev	Fosse Way N	High Street	Fosse Way S
Fosse Way N	0	147	173
High Street	181	0	357
Fosse Way S	145	398	0

2027 PM PCU + Committed + Dev	Fosse Way N	High Street	Fosse Way S
Fosse Way N	0	153	180
High Street	188	0	371
Fosse Way S	151	414	0

COVID Factor Application

98 2022 AM LGV	Fosse Way N	High Street	Fosse Way S
Fosse Way N	0	146	159
High Street	107	0	258
Fosse Way S	126	343	0

2022 AM GGV	Fosse Way N	High Street	Fosse Way S
Fosse Way N	0	10	4
High Street	12	0	20
Fosse Way S	2	27	0

2022 AM PCU	Fosse Way N	High Street	Fosse Way S
Fosse Way N	0	164	167
High Street	132	0	299
Fosse Way S	130	396	0

2027 AM PCU	Fosse Way N	High Street	Fosse Way S
Fosse Way N	0	171	174
High Street	137	0	312
Fosse Way S	135	413	0

92 2022 PM LGV	Fosse Way N	High Street	Fosse Way S
Fosse Way N	0	137	184
High Street	162	0	357
Fosse Way S	155	380	0

2022 PM GGV	Fosse Way N	High Street	Fosse Way S
Fosse Way N	0	10	2
High Street	16	0	8
Fosse Way S	1	13	0

2022 PM PCU	Fosse Way N	High Street	Fosse Way S
Fosse Way N	0	157	188
High Street	195	0	372
Fosse Way S	158	407	0

2027 PM PCU	Fosse Way N	High Street	Fosse Way S
Fosse Way N	0	163	196
High Street	203	0	388
Fosse Way S	164	424	0

COMMITTED AM	Fosse Way N	High Street	Fosse Way S
Fosse Way N	0		
High Street		0	
Fosse Way S			0

Tempo	2022-2027
AM	1.0426
PM	1.0426

2022 AM PCU + Committed	Fosse Way N	High Street	Fosse Way S
Fosse Way N	0	164	167
High Street	132	0	299
Fosse Way S	130	396	0

2027 AM PCU + Committed	Fosse Way N	High Street	Fosse Way S
Fosse Way N	0	171	174
High Street	137	0	312
Fosse Way S	135	413	0

COMMITTED PM	Fosse Way N	High Street	Fosse Way S
Fosse Way N	0		
High Street		0	
Fosse Way S			0

2022 PM PCU + Committed	Fosse Way N	High Street	Fosse Way S
Fosse Way N	0	157	188
High Street	195	0	372
Fosse Way S	158	407	0

2027 PM PCU + Committed	Fosse Way N	High Street	Fosse Way S
Fosse Way N	0	163	196
High Street	203	0	388
Fosse Way S	164	424	0

DEV AM	Fosse Way N	High Street	Fosse Way S
Fosse Way N	0	1	0
High Street	3	0	26
Fosse Way S	0	13	0

2022 AM PCU + Committed + Dev	Fosse Way N	High Street	Fosse Way S
Fosse Way N	0	166	167
High Street	135	0	325
Fosse Way S	130	409	0

2027 AM PCU + Committed + Dev	Fosse Way N	High Street	Fosse Way S
Fosse Way N	0	173	174
High Street	140	0	338
Fosse Way S	135	426	0

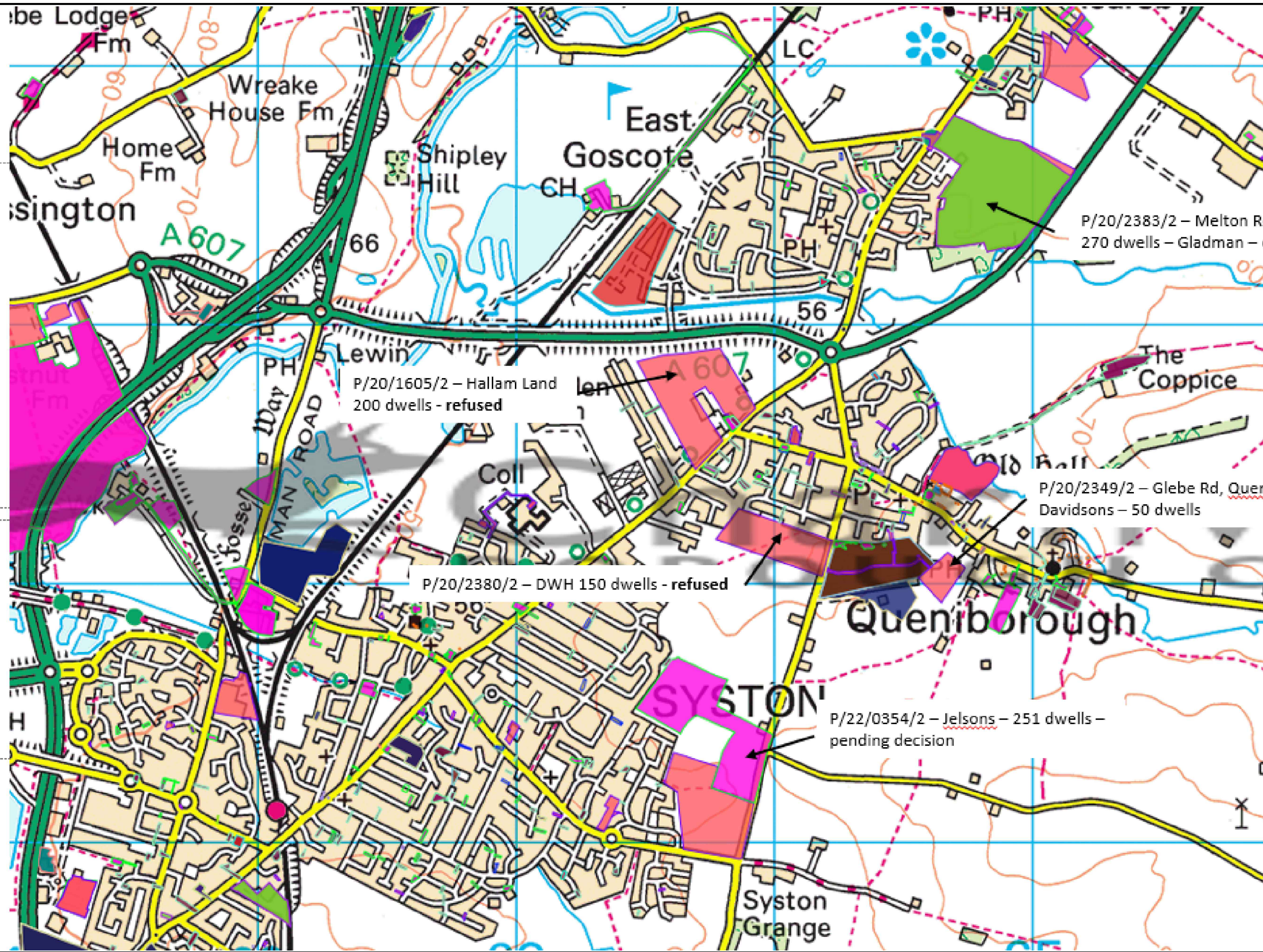
DEV PM	Fosse Way N	High Street	Fosse Way S
Fosse Way N	0	3	0
High Street	2	0	15
Fosse Way S	0	24	0

2022 PM PCU + Committed + Dev	Fosse Way N	High Street	Fosse Way S
Fosse Way N	0	159	188
High Street	196	0	387
Fosse Way S	158	431	0

2027 PM PCU + Committed + Dev	Fosse Way N	High Street	Fosse Way S
Fosse Way N	0	166	196
High Street	205	0	402
Fosse Way S	164	448	0

Site Access															
2018 AM LGV	Barkby Road W	Site Access	Barkby Road E	2018 AM OGV	Barkby Road W	Site Access	Barkby Road E	2018 AM PCU	Barkby Road W	Site Access	Barkby Road E	2026 AM PCU	Barkby Road W	Site Access	Barkby Road E
Barkby Road W	0	0	288	Barkby Road W	0	0	2	Barkby Road W	0	0	292	Barkby Road W	0	0	316
Site Access	0	0	0	Site Access	0	0	0	Site Access	0	0	0	Site Access	0	0	0
Barkby Road E	145	0	0	Barkby Road E	1	0	0	Barkby Road E	147	0	0	Barkby Road E	159	0	0
2018 PM LGV	Barkby Road W	Site Access	Barkby Road E	2018 PM OGV	Barkby Road W	Site Access	Barkby Road E	2018 PM PCU	Barkby Road W	Site Access	Barkby Road E	2026 PM PCU	Barkby Road W	Site Access	Barkby Road E
Barkby Road W	0	0	145	Barkby Road W	0	0	1	Barkby Road W	0	0	147	Barkby Road W	0	0	159
Site Access	0	0	0	Site Access	0	0	0	Site Access	0	0	0	Site Access	0	0	0
Barkby Road E	250	0	0	Barkby Road E	1	0	0	Barkby Road E	252	0	0	Barkby Road E	272	0	0
DEV AM	Barkby Road W	Site Access	Barkby Road E	Tempo	2018-2026			2018 AM PCU + DEVELOPMENT	Barkby Road W	Site Access	Barkby Road E	2026 AM PCU + DEVELOPMENT	Barkby Road W	Site Access	Barkby Road E
Barkby Road W	0	29	0	AM	1.0822			Barkby Road W	0	29	292	Barkby Road W	0	29	316
Site Access	58	0	40	PM	1.0807			Site Access	58	0	40	Site Access	58	0	40
Barkby Road E	0	20	0					Barkby Road E	147	20	0	Barkby Road E	159	20	0
DEV PM	Barkby Road W	Site Access	Barkby Road E					2018 PM PCU + DEVELOPMENT	Barkby Road W	Site Access	Barkby Road E	2026 PM PCU + DEVELOPMENT	Barkby Road W	Site Access	Barkby Road E
Barkby Road W	0	54	0					Barkby Road W	0	54	147	Barkby Road W	0	54	159
Site Access	33	0	22					Site Access	33	0	22	Site Access	33	0	22
Barkby Road E	0	37	0					Barkby Road E	252	37	0	Barkby Road E	272	37	0

Appendix D
Recent Applications Plan



P/20/2383/2 – Melton Road East Goscote
270 dwells – Gladman – decision issued 1st Nov 22

P/20/1605/2 – Hallam Land
200 dwells - refused

P/20/2349/2 – Glebe Rd, Queniboro
Davidsons – 50 dwells

P/20/2380/2 – DWH 150 dwells - refused

P/22/0354/2 – Jelsons – 251 dwells –
pending decision

Based upon the ORDNANCE SURVEY MAPS with the permission of
THE CONTROLLER OF HER MAJESTY'S STATIONERY OFFICE
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REV	DESCRIPTION	DRAWN	INITIALS	DATE

DTA
Transport Planning Consultants

Forester House, Doctors Lane,
Henley in Arden,
Warwickshire B95 5AW
Tel: +44(0)1564 793598
Fax: +44(0)1564 793983
www.dtatransportation.co.uk

JOB TITLE		20060		CLIENT		Taylor Wimpey	
DRAWING TITLE							
Land North of Rarkby Road Recent Applications Plan							
SCALE	DRAWN BY	DATE	DRAWING No	REVISION			
NTS	SC	Dec 2022	20060-10 TN App D				

Appendix E

Junction Capacity Assessment Outputs

Junctions 10
ARCADY 10 - Roundabout Module
Version: 10.0.4.1693 © Copyright TRL Software Limited, 2021
For sales and distribution information, program advice and maintenance, contact TRL Software: +44 (0)1344 379777 software@trl.co.uk trlsoftware.com
The users of this computer program for the solution of an engineering problem are in no way relieved of their responsibility for the correctness of the solution

Filename: J1 Melton- High Street roundabout - REV C.j10
Path: P:\20000's\20060\Technical\Junction Modelling\2022 Junction Assessments\Oct 2022
Report generation date: 13/12/2022 15:08:29

- »2022 CF, AM
- »2022 CF, PM
- »2027 CF, AM
- »2027 CF, PM
- »2027 + Development CF, AM
- »2027 + Development CF, PM

Summary of junction performance

	AM			PM		
	Q (PCU)	Delay (s)	RFC	Q (PCU)	Delay (s)	RFC
2022 CF						
1 - Melton Road N	1.6	8.69	0.60	1.9	10.42	0.65
2 - Barkby Road	0.9	14.94	0.48	1.9	22.80	0.67
3 - Melton Road S	1.0	8.11	0.50	1.9	11.63	0.65
4 - High Street	1.2	9.94	0.53	4.9	30.32	0.84
2027 CF						
1 - Melton Road N	1.8	9.43	0.63	2.2	11.60	0.68
2 - Barkby Road	1.0	16.13	0.50	2.3	26.15	0.71
3 - Melton Road S	1.1	8.60	0.52	2.2	12.93	0.68
4 - High Street	1.3	10.76	0.56	6.8	41.19	0.89
2027 + Development CF						
1 - Melton Road N	1.8	9.67	0.64	2.3	12.28	0.70
2 - Barkby Road	1.4	19.21	0.58	2.8	30.29	0.75
3 - Melton Road S	1.2	8.99	0.53	2.3	13.53	0.69
4 - High Street	1.4	11.30	0.58	9.7	55.97	0.93

There are warnings associated with one or more model runs - see the 'Data Errors and Warnings' tables for each Analysis or Demand Set.

Values shown are the highest values encountered over all time segments. Delay is the maximum value of Av. delay per arriving vehicle.

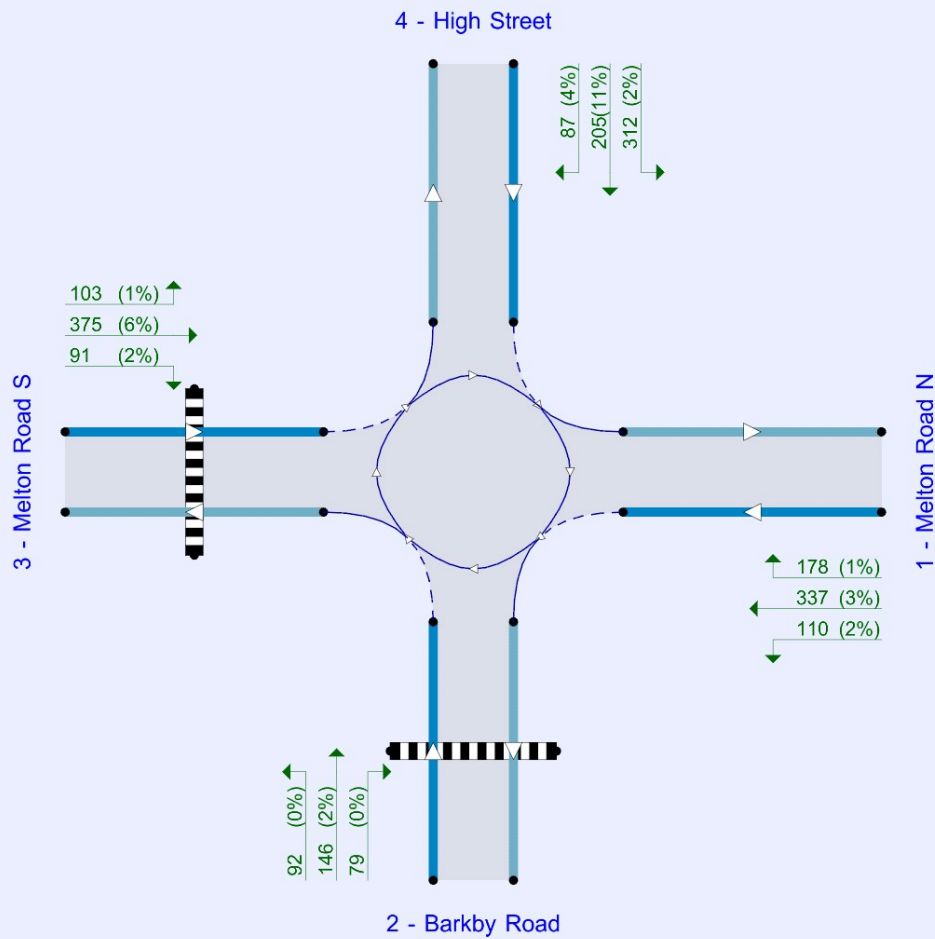
File summary

File Description

Title	(untitled)
Location	
Site number	
Date	01/03/2018
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	DTA\arcady
Description	

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Av. delay units	Total delay units	Rate of delay units
m	kph	PCU	PCU	perHour	s	-Min	perMin



Flows show original traffic demand (PCU/hr).

The junction diagram reflects the last run of Junctions.

Analysis Options

Vehicle length (m)	Calculate Q Percentiles	Calculate detailed queueing delay	Show lane queues in feet / metres	Show all PICADY stream intercepts	Calculate residual capacity	RFC Threshold	Av. Delay threshold (s)	Q threshold (PCU)	Use iterations with HCM roundabouts	Max number of iterations for roundabouts
5.75						0.85	36.00	20.00		500

Demand Set Summary

ID	Scenario name	Time Period name	Description	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2022	AM		ONE HOUR	07:45	09:15	15	✓
D2	2022	PM		ONE HOUR	16:45	18:15	15	✓
D5	2027	AM		ONE HOUR	07:45	09:15	15	✓
D6	2027	PM		ONE HOUR	16:45	18:15	15	✓
D7	2027 + Development	AM		ONE HOUR	07:45	09:15	15	✓
D8	2027 + Development	PM		ONE HOUR	16:45	18:15	15	✓
D9	2022 CF	AM	Covid Factor	ONE HOUR	07:45	09:15	15	✓
D10	2022 CF	PM	Covid Factor	ONE HOUR	16:45	18:15	15	✓
D11	2027 CF	AM	Covid Factor	ONE HOUR	07:45	09:15	15	✓
D12	2027 CF	PM	Covid Factor	ONE HOUR	16:45	18:15	15	✓
D13	2027 + Development CF	AM	Covid Factor	ONE HOUR	07:45	09:15	15	✓
D14	2027 + Development CF	PM	Covid Factor	ONE HOUR	16:45	18:15	15	✓

Analysis Set Details

ID	Include in report	Use specific Demand Set(s)	Specific Demand Set(s)	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	✓	✓	D9,D10,D11,D12,D13,D14	100.000	100.000

2022 CF, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Pedestrian Crossing	2 - Barkby Road - Ped crossing	Ped crossing uses default flow of 0. Is this correct?
Warning	Pedestrian Crossing	3 - Melton Road S - Ped crossing	Ped crossing uses default flow of 0. Is this correct?

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	9.62	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	9.62	A

Arms

Arms

Arm	Name	Description	No give-way line
1	Melton Road N		
2	Barkby Road		
3	Melton Road S		
4	High Street		

Roundabout Geometry

Arm	V (m)	E (m)	I' (m)	R (m)	D (m)	PHI (deg)	Entry only	Exit only
1 - Melton Road N	3.54	4.22	9.2	8.6	17.7	14.5		
2 - Barkby Road	3.76	4.33	2.0	3.0	17.7	80.0		
3 - Melton Road S	3.75	4.26	3.8	5.0	17.7	12.0		
4 - High Street	2.41	4.35	7.2	12.9	17.7	26.0		

Zebra Crossings

Arm	VGAP (PCU)	Vehs queueing on exit (PCU)	Central Refuge	Crossing data type	Crossing length (m)	Crossing time (s)
2 - Barkby Road	1.00	3.00		Distance	8.00	5.71
3 - Melton Road S	1.00	1.00		Distance	7.00	5.00

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1 - Melton Road N	0.564	1225
2 - Barkby Road	0.312	675
3 - Melton Road S	0.523	1139
4 - High Street	0.523	1032

The slope and intercept shown above include any corrections and adjustments.

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Description	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D9	2022 CF	AM	Covid Factor	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Av. Demand (PCU/hr)	Scaling Factor (%)
1 - Melton Road N		ONE HOUR	✓	591	100.000
2 - Barkby Road		ONE HOUR	✓	200	100.000
3 - Melton Road S		ONE HOUR	✓	424	100.000
4 - High Street		ONE HOUR	✓	385	100.000

Demand overview (Pedestrians)

Arm	Profile type	Av. Ped flow (Ped/hr)
1 - Melton Road N		
2 - Barkby Road	[ONEHOUR]	0.00
3 - Melton Road S	[ONEHOUR]	0.00
4 - High Street		

Origin-Destination Data

Demand (PCU/hr)

	To			
	1 - Melton Road N	2 - Barkby Road	3 - Melton Road S	4 - High Street
From				
1 - Melton Road N	1	83	360	147
2 - Barkby Road	65	0	0	135
3 - Melton Road S	305	38	2	79
4 - High Street	187	91	106	1

Vehicle Mix

HV %s

	To			
	1 - Melton Road N	2 - Barkby Road	3 - Melton Road S	4 - High Street
From				
1 - Melton Road N	0	3	4	1
2 - Barkby Road	1	0	1	1
3 - Melton Road S	6	5	0	8
4 - High Street	2	2	4	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Melton Road N	0.60	8.69	1.6	A	542	813
2 - Barkby Road	0.48	14.94	0.9	B	184	275
3 - Melton Road S	0.50	8.11	1.0	A	389	584
4 - High Street	0.53	9.94	1.2	A	353	530

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Ped demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Melton Road N	445	111	178		1125	0.395	442	417	0.0	0.7	5.415	A
2 - Barkby Road	151	38	462	0.00	531	0.283	149	159	0.0	0.4	9.474	A
3 - Melton Road S	319	80	260	0.00	1003	0.318	317	350	0.0	0.5	5.564	A
4 - High Street	290	72	307		871	0.333	288	270	0.0	0.5	6.307	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Ped demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Melton Road N	531	133	213		1105	0.481	530	501	0.7	0.9	6.445	A
2 - Barkby Road	180	45	553	0.00	503	0.358	179	190	0.4	0.6	11.218	B
3 - Melton Road S	381	95	313	0.00	975	0.391	380	420	0.5	0.7	6.420	A
4 - High Street	346	87	369		839	0.412	345	325	0.5	0.7	7.463	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Ped demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Melton Road N	651	163	261		1078	0.604	648	612	0.9	1.5	8.585	A
2 - Barkby Road	220	55	677	0.00	464	0.474	219	233	0.6	0.9	14.741	B
3 - Melton Road S	467	117	382	0.00	939	0.497	465	513	0.7	1.0	8.049	A
4 - High Street	424	106	451		796	0.532	422	397	0.7	1.1	9.827	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Ped demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Melton Road N	651	163	262		1078	0.604	651	614	1.5	1.6	8.687	A
2 - Barkby Road	220	55	679	0.00	463	0.475	220	233	0.9	0.9	14.939	B
3 - Melton Road S	467	117	384	0.00	938	0.498	467	515	1.0	1.0	8.113	A
4 - High Street	424	106	452		795	0.533	424	399	1.1	1.2	9.935	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Ped demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Melton Road N	531	133	215		1104	0.481	534	504	1.6	1.0	6.530	A
2 - Barkby Road	180	45	557	0.00	501	0.359	181	191	0.9	0.6	11.396	B
3 - Melton Road S	381	95	316	0.00	974	0.391	383	423	1.0	0.7	6.482	A
4 - High Street	346	87	371		838	0.413	348	327	1.2	0.7	7.558	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Ped demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Melton Road N	445	111	180		1124	0.396	446	421	1.0	0.7	5.485	A
2 - Barkby Road	151	38	466	0.00	530	0.284	151	160	0.6	0.4	9.618	A
3 - Melton Road S	319	80	264	0.00	1001	0.319	320	353	0.7	0.5	5.621	A
4 - High Street	290	72	310		870	0.333	291	273	0.7	0.5	6.385	A

2022 CF, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Pedestrian Crossing	2 - Barkby Road - Ped crossing	Ped crossing uses default flow of 0. Is this correct?
Warning	Pedestrian Crossing	3 - Melton Road S - Ped crossing	Ped crossing uses default flow of 0. Is this correct?

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	18.09	C

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	18.09	C

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Description	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D10	2022 CF	PM	Covid Factor	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Av. Demand (PCU/hr)	Scaling Factor (%)
1 - Melton Road N		ONE HOUR	✓	599	100.000
2 - Barkby Road		ONE HOUR	✓	288	100.000
3 - Melton Road S		ONE HOUR	✓	547	100.000
4 - High Street		ONE HOUR	✓	554	100.000

Demand overview (Pedestrians)

Arm	Profile type	Av. Ped flow (Ped/hr)
1 - Melton Road N		
2 - Barkby Road	[ONEHOUR]	0.00
3 - Melton Road S	[ONEHOUR]	0.00
4 - High Street		

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - Melton Road N	2 - Barkby Road	3 - Melton Road S	4 - High Street
From	1 - Melton Road N	0	105	323	171
	2 - Barkby Road	76	1	87	124
	3 - Melton Road S	360	85	3	99
	4 - High Street	299	171	84	0

Vehicle Mix

HV %s

		To			
		1 - Melton Road N	2 - Barkby Road	3 - Melton Road S	4 - High Street
From	1 - Melton Road N	0	2	3	1
	2 - Barkby Road	0	0	0	2
	3 - Melton Road S	6	2	0	1
	4 - High Street	2	11	4	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Melton Road N	0.65	10.42	1.9	B	550	824
2 - Barkby Road	0.67	22.80	1.9	C	264	396
3 - Melton Road S	0.65	11.63	1.9	B	502	753
4 - High Street	0.84	30.32	4.9	D	508	763

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Ped demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Melton Road N	451	113	257		1081	0.417	448	548	0.0	0.7	5.791	A
2 - Barkby Road	217	54	434	0.00	540	0.402	214	270	0.0	0.7	11.063	B
3 - Melton Road S	412	103	277	0.00	994	0.414	409	371	0.0	0.7	6.391	A
4 - High Street	417	104	392		827	0.504	413	294	0.0	1.0	9.039	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Ped demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Melton Road N	538	135	308		1052	0.512	537	658	0.7	1.1	7.132	A
2 - Barkby Road	259	65	521	0.00	513	0.505	258	324	0.7	1.0	14.147	B
3 - Melton Road S	492	123	333	0.00	965	0.510	490	445	0.7	1.1	7.898	A
4 - High Street	498	125	471		786	0.634	495	353	1.0	1.8	12.872	B

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Ped demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Melton Road N	660	165	373		1015	0.650	656	800	1.1	1.8	10.174	B
2 - Barkby Road	317	79	635	0.00	477	0.665	314	394	1.0	1.9	21.746	C
3 - Melton Road S	602	151	406	0.00	927	0.650	599	543	1.1	1.9	11.360	B
4 - High Street	610	152	574		731	0.834	599	431	1.8	4.5	26.556	D

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Ped demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Melton Road N	660	165	378		1012	0.652	659	808	1.8	1.9	10.420	B
2 - Barkby Road	317	79	639	0.00	476	0.666	317	398	1.9	1.9	22.801	C
3 - Melton Road S	602	151	409	0.00	925	0.651	602	547	1.9	1.9	11.626	B
4 - High Street	610	152	578		730	0.836	608	434	4.5	4.9	30.319	D

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Ped demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Melton Road N	538	135	315		1048	0.514	542	670	1.9	1.1	7.319	A
2 - Barkby Road	259	65	527	0.00	511	0.507	262	330	1.9	1.1	14.801	B
3 - Melton Road S	492	123	338	0.00	962	0.511	495	451	1.9	1.1	8.095	A
4 - High Street	498	125	476		783	0.636	510	357	4.9	1.9	14.367	B

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Ped demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Melton Road N	451	113	261		1078	0.418	452	556	1.1	0.7	5.895	A
2 - Barkby Road	217	54	439	0.00	538	0.403	218	274	1.1	0.7	11.398	B
3 - Melton Road S	412	103	282	0.00	992	0.415	413	376	1.1	0.8	6.513	A
4 - High Street	417	104	397		824	0.506	420	298	1.9	1.1	9.422	A

2027 CF, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Pedestrian Crossing	2 - Barkby Road - Ped crossing	Ped crossing uses default flow of 0. Is this correct?
Warning	Pedestrian Crossing	3 - Melton Road S - Ped crossing	Ped crossing uses default flow of 0. Is this correct?

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	10.37	B

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	10.37	B

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Description	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D11	2027 CF	AM	Covid Factor	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Av. Demand (PCU/hr)	Scaling Factor (%)
1 - Melton Road N		ONE HOUR	✓	616	100.000
2 - Barkby Road		ONE HOUR	✓	208	100.000
3 - Melton Road S		ONE HOUR	✓	441	100.000
4 - High Street		ONE HOUR	✓	402	100.000

Demand overview (Pedestrians)

Arm	Profile type	Av. Ped flow (Ped/hr)
1 - Melton Road N		
2 - Barkby Road	[ONEHOUR]	0.00
3 - Melton Road S	[ONEHOUR]	0.00
4 - High Street		

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - Melton Road N	2 - Barkby Road	3 - Melton Road S	4 - High Street
From	1 - Melton Road N	1	86	376	153
	2 - Barkby Road	68	0	0	140
	3 - Melton Road S	318	39	2	82
	4 - High Street	195	95	111	1

Vehicle Mix

HV %s

		To			
		1 - Melton Road N	2 - Barkby Road	3 - Melton Road S	4 - High Street
From	1 - Melton Road N	0	3	4	1
	2 - Barkby Road	1	0	1	1
	3 - Melton Road S	6	5	0	8
	4 - High Street	2	2	4	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Melton Road N	0.63	9.43	1.8	A	565	848
2 - Barkby Road	0.50	16.13	1.0	C	191	286
3 - Melton Road S	0.52	8.60	1.1	A	405	607
4 - High Street	0.56	10.76	1.3	B	369	553

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Ped demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Melton Road N	464	116	185		1121	0.414	461	435	0.0	0.7	5.598	A
2 - Barkby Road	157	39	482	0.00	525	0.298	155	165	0.0	0.4	9.782	A
3 - Melton Road S	332	83	271	0.00	997	0.333	330	366	0.0	0.5	5.714	A
4 - High Street	303	76	320		865	0.350	300	281	0.0	0.5	6.520	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Ped demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Melton Road N	554	138	222		1100	0.503	553	522	0.7	1.0	6.764	A
2 - Barkby Road	187	47	578	0.00	495	0.378	186	197	0.4	0.6	11.745	B
3 - Melton Road S	396	99	325	0.00	969	0.409	396	439	0.5	0.7	6.662	A
4 - High Street	361	90	384		831	0.435	360	337	0.5	0.8	7.827	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Ped demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Melton Road N	678	170	272		1072	0.633	675	638	1.0	1.7	9.289	A
2 - Barkby Road	229	57	706	0.00	455	0.503	227	241	0.6	1.0	15.867	C
3 - Melton Road S	486	121	397	0.00	931	0.521	484	536	0.7	1.1	8.520	A
4 - High Street	443	111	469		786	0.563	441	412	0.8	1.3	10.611	B

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Ped demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Melton Road N	678	170	273		1071	0.633	678	641	1.7	1.8	9.430	A
2 - Barkby Road	229	57	709	0.00	454	0.504	229	242	1.0	1.0	16.133	C
3 - Melton Road S	486	121	400	0.00	930	0.522	485	538	1.1	1.1	8.600	A
4 - High Street	443	111	471		785	0.564	443	414	1.3	1.3	10.757	B

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Ped demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Melton Road N	554	138	224		1099	0.504	557	526	1.8	1.1	6.877	A
2 - Barkby Road	187	47	582	0.00	494	0.379	189	199	1.0	0.6	11.969	B
3 - Melton Road S	396	99	329	0.00	967	0.410	398	442	1.1	0.7	6.738	A
4 - High Street	361	90	387		830	0.436	363	340	1.3	0.8	7.949	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Ped demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Melton Road N	464	116	187		1120	0.414	465	439	1.1	0.7	5.679	A
2 - Barkby Road	157	39	486	0.00	524	0.299	157	166	0.6	0.4	9.948	A
3 - Melton Road S	332	83	274	0.00	996	0.334	333	369	0.7	0.5	5.778	A
4 - High Street	303	76	323		863	0.351	304	284	0.8	0.6	6.614	A

2027 CF, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Pedestrian Crossing	2 - Barkby Road - Ped crossing	Ped crossing uses default flow of 0. Is this correct?
Warning	Pedestrian Crossing	3 - Melton Road S - Ped crossing	Ped crossing uses default flow of 0. Is this correct?

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	22.32	C

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	22.32	C

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Description	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D12	2027 CF	PM	Covid Factor	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Av. Demand (PCU/hr)	Scaling Factor (%)
1 - Melton Road N		ONE HOUR	✓	625	100.000
2 - Barkby Road		ONE HOUR	✓	300	100.000
3 - Melton Road S		ONE HOUR	✓	569	100.000
4 - High Street		ONE HOUR	✓	577	100.000

Demand overview (Pedestrians)

Arm	Profile type	Av. Ped flow (Ped/hr)
1 - Melton Road N		
2 - Barkby Road	[ONEHOUR]	0.00
3 - Melton Road S	[ONEHOUR]	0.00
4 - High Street		

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - Melton Road N	2 - Barkby Road	3 - Melton Road S	4 - High Street
From	1 - Melton Road N	0	110	337	178
	2 - Barkby Road	79	1	91	129
	3 - Melton Road S	375	88	3	103
	4 - High Street	312	178	87	0

Vehicle Mix

HV %s

		To			
		1 - Melton Road N	2 - Barkby Road	3 - Melton Road S	4 - High Street
From	1 - Melton Road N	0	2	3	1
	2 - Barkby Road	0	0	0	2
	3 - Melton Road S	6	2	0	1
	4 - High Street	2	11	4	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Melton Road N	0.68	11.60	2.2	B	574	860
2 - Barkby Road	0.71	26.15	2.3	D	275	413
3 - Melton Road S	0.68	12.93	2.2	B	522	783
4 - High Street	0.89	41.19	6.8	E	529	794

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Ped demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Melton Road N	471	118	266		1075	0.438	467	571	0.0	0.8	6.023	A
2 - Barkby Road	226	56	452	0.00	534	0.423	223	281	0.0	0.7	11.561	B
3 - Melton Road S	428	107	288	0.00	988	0.434	425	387	0.0	0.8	6.639	A
4 - High Street	434	109	408		819	0.531	430	306	0.0	1.2	9.603	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Ped demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Melton Road N	562	140	319		1045	0.537	560	685	0.8	1.2	7.562	A
2 - Barkby Road	270	67	542	0.00	506	0.533	268	337	0.7	1.1	15.148	C
3 - Melton Road S	512	128	346	0.00	958	0.534	510	464	0.8	1.2	8.362	A
4 - High Street	519	130	489		776	0.668	515	367	1.2	2.0	14.290	B

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Ped demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Melton Road N	688	172	385		1008	0.683	684	831	1.2	2.1	11.230	B
2 - Barkby Road	330	83	661	0.00	469	0.704	326	409	1.1	2.2	24.601	C
3 - Melton Road S	626	157	422	0.00	918	0.682	623	565	1.2	2.1	12.538	B
4 - High Street	635	159	597		720	0.883	619	448	2.0	6.0	33.353	D

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Ped demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Melton Road N	688	172	392		1005	0.685	688	841	2.1	2.2	11.602	B
2 - Barkby Road	330	83	665	0.00	468	0.706	330	414	2.2	2.3	26.148	D
3 - Melton Road S	626	157	426	0.00	916	0.684	626	570	2.1	2.2	12.929	B
4 - High Street	635	159	601		718	0.885	632	451	6.0	6.8	41.186	E

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Ped demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Melton Road N	562	140	330		1039	0.541	566	702	2.2	1.2	7.830	A
2 - Barkby Road	270	67	550	0.00	504	0.535	274	346	2.3	1.2	16.097	C
3 - Melton Road S	512	128	352	0.00	955	0.536	515	472	2.2	1.2	8.625	A
4 - High Street	519	130	495		773	0.671	537	372	6.8	2.2	17.103	C

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Ped demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Melton Road N	471	118	271		1073	0.439	472	580	1.2	0.8	6.149	A
2 - Barkby Road	226	56	457	0.00	533	0.424	228	286	1.2	0.8	11.976	B
3 - Melton Road S	428	107	293	0.00	986	0.435	430	392	1.2	0.8	6.785	A
4 - High Street	434	109	413		816	0.532	438	310	2.2	1.2	10.114	B

2027 + Development CF, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Pedestrian Crossing	2 - Barkby Road - Ped crossing	Ped crossing uses default flow of 0. Is this correct?
Warning	Pedestrian Crossing	3 - Melton Road S - Ped crossing	Ped crossing uses default flow of 0. Is this correct?

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	11.23	B

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	11.23	B

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Description	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D13	2027 + Development CF	AM	Covid Factor	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Av. Demand (PCU/hr)	Scaling Factor (%)
1 - Melton Road N		ONE HOUR	✓	616	100.000
2 - Barkby Road		ONE HOUR	✓	241	100.000
3 - Melton Road S		ONE HOUR	✓	443	100.000
4 - High Street		ONE HOUR	✓	416	100.000

Demand overview (Pedestrians)

Arm	Profile type	Av. Ped flow (Ped/hr)
1 - Melton Road N		
2 - Barkby Road	[ONEHOUR]	0.00
3 - Melton Road S	[ONEHOUR]	0.00
4 - High Street		

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - Melton Road N	2 - Barkby Road	3 - Melton Road S	4 - High Street
From	1 - Melton Road N	1	86	376	153
	2 - Barkby Road	68	0	3	170
	3 - Melton Road S	318	41	2	82
	4 - High Street	195	109	111	1

Vehicle Mix

HV %s

		To			
		1 - Melton Road N	2 - Barkby Road	3 - Melton Road S	4 - High Street
From	1 - Melton Road N	0	3	4	1
	2 - Barkby Road	1	0	1	1
	3 - Melton Road S	6	5	0	8
	4 - High Street	2	2	4	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Melton Road N	0.64	9.67	1.8	A	565	848
2 - Barkby Road	0.58	19.21	1.4	C	221	332
3 - Melton Road S	0.53	8.99	1.2	A	407	610
4 - High Street	0.58	11.30	1.4	B	382	573

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Ped demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Melton Road N	464	116	197		1114	0.416	461	435	0.0	0.7	5.657	A
2 - Barkby Road	181	45	482	0.00	525	0.346	179	176	0.0	0.5	10.458	B
3 - Melton Road S	334	83	293	0.00	986	0.338	331	368	0.0	0.5	5.826	A
4 - High Street	313	78	321		864	0.363	311	303	0.0	0.6	6.647	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Ped demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Melton Road N	554	138	237		1092	0.507	552	522	0.7	1.0	6.863	A
2 - Barkby Road	217	54	578	0.00	495	0.438	216	212	0.5	0.8	12.965	B
3 - Melton Road S	398	100	352	0.00	955	0.417	397	441	0.5	0.8	6.850	A
4 - High Street	374	93	386		830	0.450	373	364	0.6	0.8	8.054	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Ped demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Melton Road N	678	170	289		1062	0.638	675	638	1.0	1.8	9.519	A
2 - Barkby Road	265	66	706	0.00	455	0.583	263	259	0.8	1.3	18.704	C
3 - Melton Road S	488	122	430	0.00	914	0.533	486	539	0.8	1.2	8.891	A
4 - High Street	458	115	471		785	0.583	456	444	0.8	1.4	11.120	B

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Ped demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Melton Road N	678	170	291		1062	0.639	678	641	1.8	1.8	9.672	A
2 - Barkby Road	265	66	709	0.00	454	0.584	265	260	1.3	1.4	19.213	C
3 - Melton Road S	488	122	433	0.00	913	0.534	488	542	1.2	1.2	8.993	A
4 - High Street	458	115	473		784	0.584	458	447	1.4	1.4	11.299	B

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Ped demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Melton Road N	554	138	239		1091	0.508	557	526	1.8	1.1	6.986	A
2 - Barkby Road	217	54	582	0.00	494	0.439	219	213	1.4	0.8	13.340	B
3 - Melton Road S	398	100	356	0.00	953	0.418	400	445	1.2	0.8	6.943	A
4 - High Street	374	93	389		829	0.451	376	368	1.4	0.9	8.199	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Ped demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Melton Road N	464	116	199		1113	0.417	465	440	1.1	0.7	5.742	A
2 - Barkby Road	181	45	486	0.00	524	0.347	182	178	0.8	0.5	10.692	B
3 - Melton Road S	334	83	297	0.00	984	0.339	334	372	0.8	0.6	5.901	A
4 - High Street	313	78	325		862	0.363	314	307	0.9	0.6	6.752	A

2027 + Development CF, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Pedestrian Crossing	2 - Barkby Road - Ped crossing	Ped crossing uses default flow of 0. Is this correct?
Warning	Pedestrian Crossing	3 - Melton Road S - Ped crossing	Ped crossing uses default flow of 0. Is this correct?

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	27.77	D

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	27.77	D

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Description	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D14	2027 + Development CF	PM	Covid Factor	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Av. Demand (PCU/hr)	Scaling Factor (%)
1 - Melton Road N		ONE HOUR	✓	625	100.000
2 - Barkby Road		ONE HOUR	✓	318	100.000
3 - Melton Road S		ONE HOUR	✓	572	100.000
4 - High Street		ONE HOUR	✓	604	100.000

Demand overview (Pedestrians)

Arm	Profile type	Av. Ped flow (Ped/hr)
1 - Melton Road N		
2 - Barkby Road	[ONEHOUR]	0.00
3 - Melton Road S	[ONEHOUR]	0.00
4 - High Street		

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - Melton Road N	2 - Barkby Road	3 - Melton Road S	4 - High Street
From	1 - Melton Road N	0	110	337	178
	2 - Barkby Road	79	1	92	146
	3 - Melton Road S	375	91	3	103
	4 - High Street	312	205	87	0

Vehicle Mix

HV %s

		To			
		1 - Melton Road N	2 - Barkby Road	3 - Melton Road S	4 - High Street
From	1 - Melton Road N	0	2	3	1
	2 - Barkby Road	0	0	0	2
	3 - Melton Road S	6	2	0	1
	4 - High Street	2	11	4	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Melton Road N	0.70	12.28	2.3	B	574	860
2 - Barkby Road	0.75	30.29	2.8	D	292	438
3 - Melton Road S	0.69	13.53	2.3	B	525	787
4 - High Street	0.93	55.97	9.7	F	554	831

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Ped demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Melton Road N	471	118	288		1063	0.443	467	571	0.0	0.8	6.148	A
2 - Barkby Road	239	60	452	0.00	534	0.448	236	304	0.0	0.8	12.065	B
3 - Melton Road S	431	108	301	0.00	982	0.439	427	387	0.0	0.8	6.742	A
4 - High Street	455	114	410		818	0.556	450	319	0.0	1.3	10.157	B

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Ped demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Melton Road N	562	140	346		1031	0.545	560	685	0.8	1.2	7.799	A
2 - Barkby Road	286	71	542	0.00	506	0.565	284	364	0.8	1.3	16.207	C
3 - Melton Road S	514	129	361	0.00	950	0.541	513	465	0.8	1.2	8.558	A
4 - High Street	543	136	492		775	0.701	539	382	1.3	2.3	15.767	C

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Ped demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Melton Road N	688	172	414		992	0.694	684	828	1.2	2.2	11.806	B
2 - Barkby Road	350	88	659	0.00	470	0.746	345	439	1.3	2.7	27.869	D
3 - Melton Road S	630	157	440	0.00	909	0.693	626	564	1.2	2.3	13.061	B
4 - High Street	665	166	600		718	0.926	642	466	2.3	8.0	41.192	E

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Ped demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Melton Road N	688	172	423		987	0.697	688	840	2.2	2.3	12.276	B
2 - Barkby Road	350	88	665	0.00	468	0.748	349	446	2.7	2.8	30.290	D
3 - Melton Road S	630	157	444	0.00	907	0.695	630	570	2.3	2.3	13.526	B
4 - High Street	665	166	604		716	0.929	658	470	8.0	9.7	55.971	F

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Ped demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Melton Road N	562	140	362		1021	0.550	566	707	2.3	1.3	8.155	A
2 - Barkby Road	286	71	551	0.00	503	0.568	292	377	2.8	1.4	17.591	C
3 - Melton Road S	514	129	368	0.00	946	0.543	518	474	2.3	1.3	8.864	A
4 - High Street	543	136	498		771	0.704	571	388	9.7	2.7	21.169	C

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Ped demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Melton Road N	471	118	294		1060	0.444	472	581	1.3	0.8	6.289	A
2 - Barkby Road	239	60	458	0.00	532	0.450	242	309	1.4	0.8	12.578	B
3 - Melton Road S	431	108	306	0.00	979	0.440	432	393	1.3	0.8	6.899	A
4 - High Street	455	114	415		815	0.558	460	323	2.7	1.4	10.823	B

User and Project Details

Project:	Syston
Title:	
Location:	Queniborough Road/ Barkby Road
Additional detail:	
File name:	Queniborough Road_Barkby Road_RevB.lsg3x
Author:	
Company:	David Tucker Associates
Address:	

Phase Input Data

Phase Name	Phase Type	Assoc. Phase	Street Min	Cont Min
A	Traffic		7	7
B	Traffic		7	7
C	Traffic		7	7
D	Traffic		7	7

Phase Intergreens Matrix

		Starting Phase				
		A	B	C	D	
Terminating Phase	A		6	6	6	
	B	6		6	6	
	C	6	6		6	
	D	6	6	6		
		6	6	6	6	

Phase Delays

Term. Stage	Start Stage	Phase	Type	Value	Cont value
There are no Phase Delays defined					

Prohibited Stage Change

		To Stage			
		1	2	3	4
From Stage	1		6	6	6
	2	6		6	6
	3	6	6		6
	4	6	6	6	
		6	6	6	6

Phases in Stage

Stage No.	Phases in Stage
1	A
2	B
3	C
4	D

LinSig V1 style report

Give-Way Lane Input Data

Junction: Queniborough Road_Barkby Road

There are no Opposed Lanes in this Junction

Lane Input Data

Junction: Queniborough Road_Barkby Road												
Lane	Lane Type	Phases	Start Disp.	End Disp.	Physical Length (PCU)	Sat Flow Type	Def User Saturation Flow (PCU/Hr)	Lane Width (m)	Gradient	Nearside Lane	Turns	Turning Radius (m)
1/1 (Queniborough Road N)	U	A	2	3	60.0	Geom	-	3.21	0.00	Y	Arm 5 Left	Inf
											Arm 6 Ahead	5.11
											Arm 7 Right	Inf
											Arm 6 Left	5.52
2/1 (Barkby Road E)	U	D	2	3	60.0	Geom	-	2.19	0.00	Y	Arm 7 Ahead	Inf
											Arm 8 Right	9.38
3/1 (Queniborough Road S)	U	B	2	3	60.0	Geom	-	2.95	0.00	Y	Arm 5 Right	Inf
											Arm 7 Left	12.79
											Arm 8 Ahead	Inf
4/1 (Barbky Road W)	U	C	2	3	60.0	Geom	-	3.38	0.00	Y	Arm 5 Ahead	Inf
											Arm 6 Right	13.42
											Arm 8 Left	8.39
5/1	U		2	3	60.0	Inf	-	-	-	-	-	-
6/1	U		2	3	60.0	Inf	-	-	-	-	-	-
7/1	U		2	3	60.0	Inf	-	-	-	-	-	-
8/1	U		2	3	60.0	Inf	-	-	-	-	-	-

Lane Saturation Flows

Scenario 1: '2021 AM' (FG1: '2021 Base AM', Plan 1: 'Network Control Plan 1')

Junction: Queniborough Road_Barkby Road								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (Queniborough Road N)	3.21	0.00	Y	Arm 5 Left	Inf	22.9 %	1647	1647
				Arm 6 Ahead	5.11	59.8 %		
				Arm 7 Right	Inf	17.3 %		
2/1 (Barkby Road E)	2.19	0.00	Y	Arm 6 Left	5.52	0.0 %	1741	1741
				Arm 7 Ahead	Inf	66.7 %		
				Arm 8 Right	9.38	33.3 %		
3/1 (Queniborough Road S)	2.95	0.00	Y	Arm 5 Right	Inf	0.4 %	1814	1814
				Arm 7 Left	12.79	45.3 %		
				Arm 8 Ahead	Inf	54.3 %		
4/1 (Barkby Road W)	3.38	0.00	Y	Arm 5 Ahead	Inf	0.9 %	1719	1719
				Arm 6 Right	13.42	61.0 %		
				Arm 8 Left	8.39	38.0 %		
5/1	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf
7/1	Infinite Saturation Flow						Inf	Inf
8/1	Infinite Saturation Flow						Inf	Inf

Scenario 2: '2021 PM' (FG2: '2021 Base PM', Plan 1: 'Network Control Plan 1')

Junction: Queniborough Road_Barkby Road								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (Queniborough Road N)	3.21	0.00	Y	Arm 5 Left	Inf	24.7 %	1687	1687
				Arm 6 Ahead	5.11	50.2 %		
				Arm 7 Right	Inf	25.1 %		
2/1 (Barkby Road E)	2.19	0.00	Y	Arm 6 Left	5.52	0.0 %	1730	1730
				Arm 7 Ahead	Inf	62.5 %		
				Arm 8 Right	9.38	37.5 %		
3/1 (Queniborough Road S)	2.95	0.00	Y	Arm 5 Right	Inf	0.7 %	1821	1821
				Arm 7 Left	12.79	41.4 %		
				Arm 8 Ahead	Inf	57.9 %		
4/1 (Barkby Road W)	3.38	0.00	Y	Arm 5 Ahead	Inf	2.0 %	1718	1718
				Arm 6 Right	13.42	57.9 %		
				Arm 8 Left	8.39	40.1 %		
5/1	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf
7/1	Infinite Saturation Flow						Inf	Inf
8/1	Infinite Saturation Flow						Inf	Inf

Scenario 3: '2027 AM' (FG3: '2027 Base AM', Plan 1: 'Network Control Plan 1')

Junction: Queniborough Road_Barkby Road								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (Queniborough Road N)	3.21	0.00	Y	Arm 5 Left	Inf	22.9 %	1647	1647
				Arm 6 Ahead	5.11	59.8 %		
				Arm 7 Right	Inf	17.3 %		
2/1 (Barkby Road E)	2.19	0.00	Y	Arm 6 Left	5.52	0.0 %	1741	1741
				Arm 7 Ahead	Inf	66.7 %		
				Arm 8 Right	9.38	33.3 %		
3/1 (Queniborough Road S)	2.95	0.00	Y	Arm 5 Right	Inf	0.3 %	1813	1813
				Arm 7 Left	12.79	45.4 %		
				Arm 8 Ahead	Inf	54.3 %		
4/1 (Barkby Road W)	3.38	0.00	Y	Arm 5 Ahead	Inf	0.9 %	1719	1719
				Arm 6 Right	13.42	61.2 %		
				Arm 8 Left	8.39	37.9 %		
5/1	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf
7/1	Infinite Saturation Flow						Inf	Inf
8/1	Infinite Saturation Flow						Inf	Inf

Scenario 4: '2027 PM' (FG4: '2027 Base PM', Plan 1: 'Network Control Plan 1')

Junction: Queniborough Road_Barkby Road								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (Queniborough Road N)	3.21	0.00	Y	Arm 5 Left	Inf	24.7 %	1687	1687
				Arm 6 Ahead	5.11	50.2 %		
				Arm 7 Right	Inf	25.1 %		
2/1 (Barkby Road E)	2.19	0.00	Y	Arm 6 Left	5.52	0.0 %	1730	1730
				Arm 7 Ahead	Inf	62.5 %		
				Arm 8 Right	9.38	37.5 %		
3/1 (Queniborough Road S)	2.95	0.00	Y	Arm 5 Right	Inf	0.6 %	1821	1821
				Arm 7 Left	12.79	41.6 %		
				Arm 8 Ahead	Inf	57.8 %		
4/1 (Barkby Road W)	3.38	0.00	Y	Arm 5 Ahead	Inf	1.9 %	1718	1718
				Arm 6 Right	13.42	58.1 %		
				Arm 8 Left	8.39	40.0 %		
5/1	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf
7/1	Infinite Saturation Flow						Inf	Inf
8/1	Infinite Saturation Flow						Inf	Inf

Scenario 5: '2027 + Dev AM' (FG5: '2027 Base+Dev AM', Plan 1: 'Network Control Plan 1')

Junction: Queniborough Road_Barkby Road								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (Queniborough Road N)	3.21	0.00	Y	Arm 5 Left	Inf	22.7 %	1649	1649
				Arm 6 Ahead	5.11	59.4 %		
				Arm 7 Right	Inf	17.9 %		
2/1 (Barkby Road E)	2.19	0.00	Y	Arm 6 Left	5.52	0.0 %	1741	1741
				Arm 7 Ahead	Inf	66.7 %		
				Arm 8 Right	9.38	33.3 %		
3/1 (Queniborough Road S)	2.95	0.00	Y	Arm 5 Right	Inf	0.3 %	1808	1808
				Arm 7 Left	12.79	48.2 %		
				Arm 8 Ahead	Inf	51.5 %		
4/1 (Barkby Road W)	3.38	0.00	Y	Arm 5 Ahead	Inf	0.8 %	1722	1722
				Arm 6 Right	13.42	64.4 %		
				Arm 8 Left	8.39	34.8 %		
5/1	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf
7/1	Infinite Saturation Flow						Inf	Inf
8/1	Infinite Saturation Flow						Inf	Inf

Scenario 6: '2027 + Dev PM' (FG6: '2027 Base+Dev PM', Plan 1: 'Network Control Plan 1')

Junction: Queniborough Road_Barkby Road								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (Queniborough Road N)	3.21	0.00	Y	Arm 5 Left	Inf	24.2 %	1692	1692
				Arm 6 Ahead	5.11	49.1 %		
				Arm 7 Right	Inf	26.8 %		
2/1 (Barkby Road E)	2.19	0.00	Y	Arm 6 Left	5.52	0.0 %	1730	1730
				Arm 7 Ahead	Inf	62.5 %		
				Arm 8 Right	9.38	37.5 %		
3/1 (Queniborough Road S)	2.95	0.00	Y	Arm 5 Right	Inf	0.0 %	1811	1811
				Arm 7 Left	12.79	46.8 %		
				Arm 8 Ahead	Inf	53.2 %		
4/1 (Barkby Road W)	3.38	0.00	Y	Arm 5 Ahead	Inf	1.6 %	1721	1721
				Arm 6 Right	13.42	61.0 %		
				Arm 8 Left	8.39	37.4 %		
5/1	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf
7/1	Infinite Saturation Flow						Inf	Inf
8/1	Infinite Saturation Flow						Inf	Inf

Scenario 7: '2021 AM CF' (FG7: '2021 Base AM CF', Plan 1: 'Network Control Plan 1')

Junction: Queniborough Road_Barkby Road								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (Queniborough Road N)	3.21	0.00	Y	Arm 5 Left	Inf	23.0 %	1647	1647
				Arm 6 Ahead	5.11	59.7 %		
				Arm 7 Right	Inf	17.3 %		
2/1 (Barkby Road E)	2.19	0.00	Y	Arm 6 Left	5.52	0.0 %	1741	1741
				Arm 7 Ahead	Inf	66.7 %		
				Arm 8 Right	9.38	33.3 %		
3/1 (Queniborough Road S)	2.95	0.00	Y	Arm 5 Right	Inf	0.3 %	1814	1814
				Arm 7 Left	12.79	45.3 %		
				Arm 8 Ahead	Inf	54.4 %		
4/1 (Barkby Road W)	3.38	0.00	Y	Arm 5 Ahead	Inf	0.8 %	1719	1719
				Arm 6 Right	13.42	61.0 %		
				Arm 8 Left	8.39	38.1 %		
5/1	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf
7/1	Infinite Saturation Flow						Inf	Inf
8/1	Infinite Saturation Flow						Inf	Inf

Scenario 8: '2021 PM CF' (FG8: '2021 Base PM CF', Plan 1: 'Network Control Plan 1')

Junction: Queniborough Road_Barkby Road								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (Queniborough Road N)	3.21	0.00	Y	Arm 5 Left	Inf	24.7 %	1687	1687
				Arm 6 Ahead	5.11	50.2 %		
				Arm 7 Right	Inf	25.1 %		
2/1 (Barkby Road E)	2.19	0.00	Y	Arm 6 Left	5.52	0.0 %	1730	1730
				Arm 7 Ahead	Inf	62.5 %		
				Arm 8 Right	9.38	37.5 %		
3/1 (Queniborough Road S)	2.95	0.00	Y	Arm 5 Right	Inf	0.6 %	1821	1821
				Arm 7 Left	12.79	41.4 %		
				Arm 8 Ahead	Inf	58.0 %		
4/1 (Barkby Road W)	3.38	0.00	Y	Arm 5 Ahead	Inf	1.8 %	1718	1718
				Arm 6 Right	13.42	58.1 %		
				Arm 8 Left	8.39	40.1 %		
5/1	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf
7/1	Infinite Saturation Flow						Inf	Inf
8/1	Infinite Saturation Flow						Inf	Inf

Scenario 9: '2027 AM CF' (FG9: '2027 Base AM CF', Plan 1: 'Network Control Plan 1')

Junction: Queniborough Road_Barkby Road								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (Queniborough Road N)	3.21	0.00	Y	Arm 5 Left	Inf	23.0 %	1647	1647
				Arm 6 Ahead	5.11	59.8 %		
				Arm 7 Right	Inf	17.2 %		
2/1 (Barkby Road E)	2.19	0.00	Y	Arm 6 Left	5.52	0.0 %	1741	1741
				Arm 7 Ahead	Inf	66.7 %		
				Arm 8 Right	9.38	33.3 %		
3/1 (Queniborough Road S)	2.95	0.00	Y	Arm 5 Right	Inf	0.3 %	1814	1814
				Arm 7 Left	12.79	45.4 %		
				Arm 8 Ahead	Inf	54.3 %		
4/1 (Barkby Road W)	3.38	0.00	Y	Arm 5 Ahead	Inf	0.8 %	1719	1719
				Arm 6 Right	13.42	61.0 %		
				Arm 8 Left	8.39	38.2 %		
5/1	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf
7/1	Infinite Saturation Flow						Inf	Inf
8/1	Infinite Saturation Flow						Inf	Inf

Scenario 10: '2027 PM CF' (FG7: '2021 Base AM CF', Plan 1: 'Network Control Plan 1')

Junction: Queniborough Road_Barkby Road								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (Queniborough Road N)	3.21	0.00	Y	Arm 5 Left	Inf	23.0 %	1647	1647
				Arm 6 Ahead	5.11	59.7 %		
				Arm 7 Right	Inf	17.3 %		
2/1 (Barkby Road E)	2.19	0.00	Y	Arm 6 Left	5.52	0.0 %	1741	1741
				Arm 7 Ahead	Inf	66.7 %		
				Arm 8 Right	9.38	33.3 %		
3/1 (Queniborough Road S)	2.95	0.00	Y	Arm 5 Right	Inf	0.3 %	1814	1814
				Arm 7 Left	12.79	45.3 %		
				Arm 8 Ahead	Inf	54.4 %		
4/1 (Barkby Road W)	3.38	0.00	Y	Arm 5 Ahead	Inf	0.8 %	1719	1719
				Arm 6 Right	13.42	61.0 %		
				Arm 8 Left	8.39	38.1 %		
5/1	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf
7/1	Infinite Saturation Flow						Inf	Inf
8/1	Infinite Saturation Flow						Inf	Inf

Scenario 11: '2027 + Dev AM CF' (FG11: '2027 Base+Dev AM CF', Plan 1: 'Network Control Plan 1')

Junction: Queniborough Road_Barkby Road								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (Queniborough Road N)	3.21	0.00	Y	Arm 5 Left	Inf	22.8 %	1649	1649
				Arm 6 Ahead	5.11	59.2 %		
				Arm 7 Right	Inf	18.0 %		
2/1 (Barkby Road E)	2.19	0.00	Y	Arm 6 Left	5.52	0.0 %	1741	1741
				Arm 7 Ahead	Inf	66.7 %		
				Arm 8 Right	9.38	33.3 %		
3/1 (Queniborough Road S)	2.95	0.00	Y	Arm 5 Right	Inf	0.3 %	1808	1808
				Arm 7 Left	12.79	48.1 %		
				Arm 8 Ahead	Inf	51.6 %		
4/1 (Barkby Road W)	3.38	0.00	Y	Arm 5 Ahead	Inf	0.7 %	1721	1721
				Arm 6 Right	13.42	64.2 %		
				Arm 8 Left	8.39	35.1 %		
5/1	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf
7/1	Infinite Saturation Flow						Inf	Inf
8/1	Infinite Saturation Flow						Inf	Inf

Scenario 12: '2027 + Dev PM CF' (FG12: '2027 Base+Dev PM CF', Plan 1: 'Network Control Plan 1')

Junction: Queniborough Road_Barkby Road								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (Queniborough Road N)	3.21	0.00	Y	Arm 5 Left	Inf	31.7 %	1627	1627
				Arm 6 Ahead	5.11	64.7 %		
				Arm 7 Right	Inf	3.6 %		
2/1 (Barkby Road E)	2.19	0.00	Y	Arm 6 Left	5.52	0.0 %	1741	1741
				Arm 7 Ahead	Inf	66.7 %		
				Arm 8 Right	9.38	33.3 %		
3/1 (Queniborough Road S)	2.95	0.00	Y	Arm 5 Right	Inf	0.5 %	1812	1812
				Arm 7 Left	12.79	46.3 %		
				Arm 8 Ahead	Inf	53.1 %		
4/1 (Barkby Road W)	3.38	0.00	Y	Arm 5 Ahead	Inf	1.5 %	1720	1720
				Arm 6 Right	13.42	60.9 %		
				Arm 8 Left	8.39	37.6 %		
5/1	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf
7/1	Infinite Saturation Flow						Inf	Inf
8/1	Infinite Saturation Flow						Inf	Inf

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
1: '2021 Base AM'	08:00	09:00	01:00	
2: '2021 Base PM'	17:00	18:00	01:00	
3: '2027 Base AM'	08:00	09:00	01:00	
4: '2027 Base PM'	17:00	18:00	01:00	
5: '2027 Base+Dev AM'	08:00	09:00	01:00	
6: '2027 Base+Dev PM'	17:00	18:00	01:00	
7: '2021 Base AM CF'	08:00	09:00	01:00	
8: '2021 Base PM CF'	17:00	18:00	01:00	
9: '2027 Base AM CF'	08:00	09:00	01:00	
10: '2027 Base PM CF'	17:00	18:00	01:00	
11: '2027 Base+Dev AM CF'	08:00	09:00	01:00	
12: '2027 Base+Dev PM CF'	17:00	18:00	01:00	

Traffic Flows, Desired

FG1: '2021 Base AM'

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	126	151	1	278
	B	130	0	81	2	213
	C	211	61	0	81	353
	D	0	2	1	0	3
	Tot.	341	189	233	84	847

FG2: '2021 Base PM'

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	126	176	2	304
	B	88	0	61	3	152
	C	124	62	0	61	247
	D	0	5	3	0	8
	Tot.	212	193	240	66	711

FG3: '2027 Base AM'

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	133	159	1	293
	B	137	0	85	2	224
	C	222	64	0	85	371
	D	0	2	1	0	3
	Tot.	359	199	245	88	891

FG4: '2027 Base PM'

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	133	185	2	320
	B	93	0	64	3	160
	C	130	65	0	64	259
	D	0	5	3	0	8
	Tot.	223	203	252	69	747

FG5: '2027 Base+Dev AM'

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	149	159	1	309
	B	170	0	92	2	264
	C	222	67	0	85	374
	D	0	2	1	0	3
	Tot.	392	218	252	88	950

FG6: '2027 Base+Dev PM'

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	163	185	0	348
	B	111	0	68	3	182
	C	130	71	0	64	265
	D	0	5	3	0	8
	Tot.	241	239	256	67	803

FG7: '2021 Base AM CF'

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	140	168	1	309
	B	144	0	90	2	236
	C	234	68	0	90	392
	D	0	2	1	0	3
	Tot.	378	210	259	93	940

FG8: '2021 Base PM CF'

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	138	193	2	333
	B	97	0	67	3	167
	C	136	68	0	67	271
	D	0	5	3	0	8
	Tot.	233	211	263	72	779

FG9: '2027 Base AM CF'

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	147	176	1	324
	B	152	0	95	2	249
	C	247	71	0	95	413
	D	0	2	1	0	3
	Tot.	399	220	272	98	989

FG10: '2027 Base PM CF'

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	146	203	2	351
	B	102	0	70	3	175
	C	143	72	0	70	285
	D	0	6	3	0	9
	Tot.	245	224	276	75	820

FG11: '2027 Base+Dev AM CF'

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	164	176	1	341
	B	185	0	101	2	288
	C	247	75	0	95	417
	D	0	2	1	0	3
	Tot.	432	241	278	98	1049

FG12: '2027 Base+Dev PM CF'

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	177	203	2	382
	B	120	0	74	3	197
	C	143	8	0	70	221
	D	0	6	3	0	9
	Tot.	263	191	280	75	809

Stage Timings

Scenario 1: '2021 AM' (FG1: '2021 Base AM', Plan 1: 'Network Control Plan 1')

Stage	1	2	3	4
Duration	39	28	22	7
Change Point	0	45	79	107

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	N/A	-	-		-	-	-	-	-	-	64.6%
Queniborough Road_Barkby Road	-	-	N/A	-	-		-	-	-	-	-	-	64.6%
1/1	Queniborough Road N Left Ahead Right	U	N/A	N/A	A		1	39	-	353	1647	549	64.3%
2/1	Barkby Road E Left Ahead Right	U	N/A	N/A	D		1	7	-	3	1741	116	2.6%
3/1	Queniborough Road S Right Left Ahead	U	N/A	N/A	B		1	28	-	278	1814	438	63.4%
4/1	Barbky Road W Ahead Right Left	U	N/A	N/A	C		1	22	-	213	1719	329	64.6%
5/1		U	N/A	N/A	-		-	-	-	84	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	341	Inf	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	189	Inf	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	233	Inf	Inf	0.0%

LinSig V1 style report

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)														
Network	-	-	0	0	0	9.2	2.7	0.0	11.8	-	-	-	-														
Queniborough Road_Barkby Road	-	-	0	0	0	9.2	2.7	0.0	11.8	-	-	-	-														
1/1	353	353	-	-	-	3.3	0.9	-	4.2	43.0	9.9	0.9	10.8														
2/1	3	3	-	-	-	0.0	0.0	-	0.1	68.6	0.1	0.0	0.1														
3/1	278	278	-	-	-	3.1	0.9	-	4.0	51.9	8.3	0.9	9.1														
4/1	213	213	-	-	-	2.6	0.9	-	3.5	60.0	6.5	0.9	7.4														
5/1	84	84	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0														
6/1	341	341	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0														
7/1	189	189	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0														
8/1	233	233	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0														
<table style="width:100%; border:none;"> <tr> <td style="width:20%;">C1</td> <td style="width:20%;">PRC for Signalled Lanes (%):</td> <td style="width:10%;">39.2</td> <td style="width:20%;">Total Delay for Signalled Lanes (pcuHr):</td> <td style="width:10%;">11.83</td> <td style="width:20%;">Cycle Time (s):</td> <td>120</td> </tr> <tr> <td></td> <td>PRC Over All Lanes (%):</td> <td>39.2</td> <td>Total Delay Over All Lanes(pcuHr):</td> <td>11.83</td> <td></td> <td></td> </tr> </table>														C1	PRC for Signalled Lanes (%):	39.2	Total Delay for Signalled Lanes (pcuHr):	11.83	Cycle Time (s):	120		PRC Over All Lanes (%):	39.2	Total Delay Over All Lanes(pcuHr):	11.83		
C1	PRC for Signalled Lanes (%):	39.2	Total Delay for Signalled Lanes (pcuHr):	11.83	Cycle Time (s):	120																					
	PRC Over All Lanes (%):	39.2	Total Delay Over All Lanes(pcuHr):	11.83																							

LinSig V1 style report

Stage Timings

Scenario 2: '2021 PM' (FG2: '2021 Base PM', Plan 1: 'Network Control Plan 1')

Stage	1	2	3	4
Duration	33	37	19	7
Change Point	0	39	82	107

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	N/A	-	-		-	-	-	-	-	-	53.1%
Queniborough Road_Barkby Road	-	-	N/A	-	-		-	-	-	-	-	-	53.1%
1/1	Queniborough Road N Left Ahead Right	U	N/A	N/A	A		1	33	-	247	1687	478	51.7%
2/1	Barkby Road E Left Ahead Right	U	N/A	N/A	D		1	7	-	8	1730	115	6.9%
3/1	Queniborough Road S Right Left Ahead	U	N/A	N/A	B		1	37	-	304	1821	577	52.7%
4/1	Barbky Road W Ahead Right Left	U	N/A	N/A	C		1	19	-	152	1718	286	53.1%
5/1		U	N/A	N/A	-		-	-	-	66	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	212	Inf	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	193	Inf	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	240	Inf	Inf	0.0%

LinSig V1 style report

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)														
Network	-	-	0	0	0	7.4	1.7	0.0	9.1	-	-	-	-														
Queniborough Road_Barkby Road	-	-	0	0	0	7.4	1.7	0.0	9.1	-	-	-	-														
1/1	247	247	-	-	-	2.5	0.5	-	3.0	43.9	6.9	0.5	7.4														
2/1	8	8	-	-	-	0.1	0.0	-	0.2	69.5	0.2	0.0	0.3														
3/1	304	304	-	-	-	2.8	0.6	-	3.4	40.2	8.3	0.6	8.8														
4/1	152	152	-	-	-	1.9	0.6	-	2.5	59.0	4.6	0.6	5.2														
5/1	66	66	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0														
6/1	212	212	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0														
7/1	193	193	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0														
8/1	240	240	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0														
<table style="width:100%; border:none;"> <tr> <td style="width:20%;">C1</td> <td style="width:20%;">PRC for Signalled Lanes (%):</td> <td style="width:10%;">69.5</td> <td style="width:20%;">Total Delay for Signalled Lanes (pcuHr):</td> <td style="width:10%;">9.05</td> <td style="width:20%;">Cycle Time (s):</td> <td>120</td> </tr> <tr> <td></td> <td>PRC Over All Lanes (%):</td> <td>69.5</td> <td>Total Delay Over All Lanes(pcuHr):</td> <td>9.05</td> <td></td> <td></td> </tr> </table>														C1	PRC for Signalled Lanes (%):	69.5	Total Delay for Signalled Lanes (pcuHr):	9.05	Cycle Time (s):	120		PRC Over All Lanes (%):	69.5	Total Delay Over All Lanes(pcuHr):	9.05		
C1	PRC for Signalled Lanes (%):	69.5	Total Delay for Signalled Lanes (pcuHr):	9.05	Cycle Time (s):	120																					
	PRC Over All Lanes (%):	69.5	Total Delay Over All Lanes(pcuHr):	9.05																							

Stage Timings

Scenario 3: '2027 AM' (FG3: '2027 Base AM', Plan 1: 'Network Control Plan 1')

Stage	1	2	3	4
Duration	39	28	22	7
Change Point	0	45	79	107

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	N/A	-	-		-	-	-	-	-	-	68.0%
Queniborough Road_Barkby Road	-	-	N/A	-	-		-	-	-	-	-	-	68.0%
1/1	Queniborough Road N Left Ahead Right	U	N/A	N/A	A		1	39	-	371	1647	549	67.6%
2/1	Barkby Road E Left Ahead Right	U	N/A	N/A	D		1	7	-	3	1741	116	2.6%
3/1	Queniborough Road S Right Left Ahead	U	N/A	N/A	B		1	28	-	293	1813	438	66.9%
4/1	Barbky Road W Ahead Right Left	U	N/A	N/A	C		1	22	-	224	1719	329	68.0%
5/1		U	N/A	N/A	-		-	-	-	88	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	359	Inf	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	199	Inf	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	245	Inf	Inf	0.0%

LinSig V1 style report

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)														
Network	-	-	0	0	0	9.7	3.1	0.0	12.8	-	-	-	-														
Queniborough Road_Barkby Road	-	-	0	0	0	9.7	3.1	0.0	12.8	-	-	-	-														
1/1	371	371	-	-	-	3.5	1.0	-	4.6	44.4	10.6	1.0	11.6														
2/1	3	3	-	-	-	0.0	0.0	-	0.1	68.6	0.1	0.0	0.1														
3/1	293	293	-	-	-	3.4	1.0	-	4.3	53.4	8.8	1.0	9.8														
4/1	224	224	-	-	-	2.8	1.0	-	3.8	61.8	6.9	1.0	7.9														
5/1	88	88	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0														
6/1	359	359	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0														
7/1	199	199	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0														
8/1	245	245	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0														
<table style="width:100%; border:none;"> <tr> <td style="width:25%;">C1</td> <td style="width:25%;">PRC for Signalled Lanes (%):</td> <td style="width:10%;">32.4</td> <td style="width:25%;">Total Delay for Signalled Lanes (pcuHr):</td> <td style="width:15%;">12.83</td> <td style="width:20%;">Cycle Time (s):</td> <td>120</td> </tr> <tr> <td></td> <td>PRC Over All Lanes (%):</td> <td>32.4</td> <td>Total Delay Over All Lanes(pcuHr):</td> <td>12.83</td> <td></td> <td></td> </tr> </table>														C1	PRC for Signalled Lanes (%):	32.4	Total Delay for Signalled Lanes (pcuHr):	12.83	Cycle Time (s):	120		PRC Over All Lanes (%):	32.4	Total Delay Over All Lanes(pcuHr):	12.83		
C1	PRC for Signalled Lanes (%):	32.4	Total Delay for Signalled Lanes (pcuHr):	12.83	Cycle Time (s):	120																					
	PRC Over All Lanes (%):	32.4	Total Delay Over All Lanes(pcuHr):	12.83																							

Stage Timings

Scenario 4: '2027 PM' (FG4: '2027 Base PM', Plan 1: 'Network Control Plan 1')

Stage	1	2	3	4
Duration	32	37	20	7
Change Point	0	38	81	107

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	N/A	-	-		-	-	-	-	-	-	55.8%
Queniborough Road_Barkby Road	-	-	N/A	-	-		-	-	-	-	-	-	55.8%
1/1	Queniborough Road N Left Ahead Right	U	N/A	N/A	A		1	32	-	259	1687	464	55.8%
2/1	Barkby Road E Left Ahead Right	U	N/A	N/A	D		1	7	-	8	1730	115	6.9%
3/1	Queniborough Road S Right Left Ahead	U	N/A	N/A	B		1	37	-	320	1821	577	55.5%
4/1	Barbky Road W Ahead Right Left	U	N/A	N/A	C		1	20	-	160	1718	301	53.2%
5/1		U	N/A	N/A	-		-	-	-	69	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	223	Inf	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	203	Inf	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	252	Inf	Inf	0.0%

LinSig V1 style report

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	-	-	0	0	0	7.8	1.9	0.0	9.7	-	-	-	-
Queniborough Road_Barkby Road	-	-	0	0	0	7.8	1.9	0.0	9.7	-	-	-	-
1/1	259	259	-	-	-	2.7	0.6	-	3.3	46.0	7.3	0.6	8.0
2/1	8	8	-	-	-	0.1	0.0	-	0.2	69.5	0.2	0.0	0.3
3/1	320	320	-	-	-	3.0	0.6	-	3.6	41.0	8.8	0.6	9.4
4/1	160	160	-	-	-	2.0	0.6	-	2.6	57.7	4.8	0.6	5.4
5/1	69	69	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	223	223	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	203	203	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	252	252	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
<p>C1 PRC for Signalled Lanes (%): 61.2 Total Delay for Signalled Lanes (pcuHr): 9.67 Cycle Time (s): 120 PRC Over All Lanes (%): 61.2 Total Delay Over All Lanes(pcuHr): 9.67</p>													

Stage Timings

Scenario 5: '2027 + Dev AM' (FG5: '2027 Base+Dev AM', Plan 1: 'Network Control Plan 1')

Stage	1	2	3	4
Duration	37	27	25	7
Change Point	0	43	76	107

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	N/A	-	-		-	-	-	-	-	-	73.2%
Queniborough Road_Barkby Road	-	-	N/A	-	-		-	-	-	-	-	-	73.2%
1/1	Queniborough Road N Left Ahead Right	U	N/A	N/A	A		1	37	-	374	1649	522	71.6%
2/1	Barkby Road E Left Ahead Right	U	N/A	N/A	D		1	7	-	3	1741	116	2.6%
3/1	Queniborough Road S Right Left Ahead	U	N/A	N/A	B		1	27	-	309	1808	422	73.2%
4/1	Barbky Road W Ahead Right Left	U	N/A	N/A	C		1	25	-	264	1722	373	70.8%
5/1		U	N/A	N/A	-		-	-	-	88	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	392	Inf	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	218	Inf	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	252	Inf	Inf	0.0%

LinSig V1 style report

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)								
Network	-	-	0	0	0	10.6	3.8	0.0	14.4	-	-	-	-								
Queniborough Road_Barkby Road	-	-	0	0	0	10.6	3.8	0.0	14.4	-	-	-	-								
1/1	374	374	-	-	-	3.8	1.2	-	5.0	48.2	11.0	1.2	12.3								
2/1	3	3	-	-	-	0.0	0.0	-	0.1	68.6	0.1	0.0	0.1								
3/1	309	309	-	-	-	3.7	1.3	-	5.0	58.1	9.4	1.3	10.8								
4/1	264	264	-	-	-	3.2	1.2	-	4.4	59.6	8.1	1.2	9.3								
5/1	88	88	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0								
6/1	392	392	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0								
7/1	218	218	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0								
8/1	252	252	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0								
<table style="width:100%; border:none;"> <tr> <td style="width:25%;">C1</td> <td style="width:25%;">PRC for Signalled Lanes (%): 22.9</td> <td style="width:25%;">Total Delay for Signalled Lanes (pcuHr): 14.42</td> <td style="width:25%;">Cycle Time (s): 120</td> </tr> <tr> <td></td> <td>PRC Over All Lanes (%): 22.9</td> <td>Total Delay Over All Lanes(pcuHr): 14.42</td> <td></td> </tr> </table>														C1	PRC for Signalled Lanes (%): 22.9	Total Delay for Signalled Lanes (pcuHr): 14.42	Cycle Time (s): 120		PRC Over All Lanes (%): 22.9	Total Delay Over All Lanes(pcuHr): 14.42	
C1	PRC for Signalled Lanes (%): 22.9	Total Delay for Signalled Lanes (pcuHr): 14.42	Cycle Time (s): 120																		
	PRC Over All Lanes (%): 22.9	Total Delay Over All Lanes(pcuHr): 14.42																			

Stage Timings

Scenario 6: '2027 + Dev PM' (FG6: '2027 Base+Dev PM', Plan 1: 'Network Control Plan 1')

Stage	1	2	3	4
Duration	31	38	20	7
Change Point	0	37	81	107

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	N/A	-	-		-	-	-	-	-	-	60.4%
Queniborough Road_Barkby Road	-	-	N/A	-	-		-	-	-	-	-	-	60.4%
1/1	Queniborough Road N Left Ahead Right	U	N/A	N/A	A		1	31	-	265	1692	451	58.7%
2/1	Barkby Road E Left Ahead Right	U	N/A	N/A	D		1	7	-	8	1730	115	6.9%
3/1	Queniborough Road S Right Left Ahead	U	N/A	N/A	B		1	38	-	348	1811	589	59.1%
4/1	Barbky Road W Ahead Right Left	U	N/A	N/A	C		1	20	-	182	1721	301	60.4%
5/1		U	N/A	N/A	-		-	-	-	67	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	241	Inf	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	239	Inf	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	256	Inf	Inf	0.0%

LinSig V1 style report

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)								
Network	-	-	0	0	0	8.5	2.2	0.0	10.7	-	-	-	-								
Queniborough Road_Barkby Road	-	-	0	0	0	8.5	2.2	0.0	10.7	-	-	-	-								
1/1	265	265	-	-	-	2.8	0.7	-	3.5	47.9	7.7	0.7	8.4								
2/1	8	8	-	-	-	0.1	0.0	-	0.2	69.5	0.2	0.0	0.3								
3/1	348	348	-	-	-	3.3	0.7	-	4.0	41.3	9.7	0.7	10.4								
4/1	182	182	-	-	-	2.3	0.8	-	3.1	60.6	5.6	0.8	6.3								
5/1	67	67	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0								
6/1	241	241	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0								
7/1	239	239	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0								
8/1	256	256	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0								
<table style="width:100%; border:none;"> <tr> <td style="width:25%;">C1</td> <td style="width:25%;">PRC for Signalled Lanes (%): 48.9</td> <td style="width:25%;">Total Delay for Signalled Lanes (pcuHr): 10.73</td> <td style="width:25%;">Cycle Time (s): 120</td> </tr> <tr> <td></td> <td>PRC Over All Lanes (%): 48.9</td> <td>Total Delay Over All Lanes(pcuHr): 10.73</td> <td></td> </tr> </table>														C1	PRC for Signalled Lanes (%): 48.9	Total Delay for Signalled Lanes (pcuHr): 10.73	Cycle Time (s): 120		PRC Over All Lanes (%): 48.9	Total Delay Over All Lanes(pcuHr): 10.73	
C1	PRC for Signalled Lanes (%): 48.9	Total Delay for Signalled Lanes (pcuHr): 10.73	Cycle Time (s): 120																		
	PRC Over All Lanes (%): 48.9	Total Delay Over All Lanes(pcuHr): 10.73																			

Stage Timings

Scenario 7: '2021 AM CF' (FG7: '2021 Base AM CF', Plan 1: 'Network Control Plan 1')

Stage	1	2	3	4
Duration	39	28	22	7
Change Point	0	45	79	107

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	N/A	-	-		-	-	-	-	-	-	71.6%
Queniborough Road_Barkby Road	-	-	N/A	-	-		-	-	-	-	-	-	71.6%
1/1	Queniborough Road N Left Ahead Right	U	N/A	N/A	A		1	39	-	392	1647	549	71.4%
2/1	Barkby Road E Left Ahead Right	U	N/A	N/A	D		1	7	-	3	1741	116	2.6%
3/1	Queniborough Road S Right Left Ahead	U	N/A	N/A	B		1	28	-	309	1814	438	70.5%
4/1	Barbky Road W Ahead Right Left	U	N/A	N/A	C		1	22	-	236	1719	329	71.6%
5/1		U	N/A	N/A	-		-	-	-	93	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	378	Inf	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	210	Inf	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	259	Inf	Inf	0.0%

LinSig V1 style report

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	-	-	0	0	0	10.4	3.6	0.0	14.0	-	-	-	-
Queniborough Road_Barkby Road	-	-	0	0	0	10.4	3.6	0.0	14.0	-	-	-	-
1/1	392	392	-	-	-	3.8	1.2	-	5.0	46.3	11.3	1.2	12.6
2/1	3	3	-	-	-	0.0	0.0	-	0.1	68.6	0.1	0.0	0.1
3/1	309	309	-	-	-	3.6	1.2	-	4.7	55.3	9.4	1.2	10.5
4/1	236	236	-	-	-	3.0	1.2	-	4.2	64.2	7.3	1.2	8.6
5/1	93	93	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	378	378	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	210	210	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	259	259	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1			PRC for Signalled Lanes (%):	25.6	Total Delay for Signalled Lanes (pcuHr):	14.05	Cycle Time (s):	120					
			PRC Over All Lanes (%):	25.6	Total Delay Over All Lanes(pcuHr):	14.05							

Stage Timings

Scenario 8: '2021 PM CF' (FG8: '2021 Base PM CF', Plan 1: 'Network Control Plan 1')

Stage	1	2	3	4
Duration	33	37	19	7
Change Point	0	39	82	107

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	N/A	-	-		-	-	-	-	-	-	58.3%
Queniborough Road_Barkby Road	-	-	N/A	-	-		-	-	-	-	-	-	58.3%
1/1	Queniborough Road N Left Ahead Right	U	N/A	N/A	A		1	33	-	271	1687	478	56.7%
2/1	Barkby Road E Left Ahead Right	U	N/A	N/A	D		1	7	-	8	1730	115	6.9%
3/1	Queniborough Road S Right Left Ahead	U	N/A	N/A	B		1	37	-	333	1821	577	57.7%
4/1	Barbky Road W Ahead Right Left	U	N/A	N/A	C		1	19	-	167	1718	286	58.3%
5/1		U	N/A	N/A	-		-	-	-	72	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	233	Inf	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	211	Inf	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	263	Inf	Inf	0.0%

LinSig V1 style report

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)														
Network	-	-	0	0	0	8.2	2.1	0.0	10.3	-	-	-	-														
Queniborough Road_Barkby Road	-	-	0	0	0	8.2	2.1	0.0	10.3	-	-	-	-														
1/1	271	271	-	-	-	2.8	0.7	-	3.4	45.4	7.7	0.7	8.3														
2/1	8	8	-	-	-	0.1	0.0	-	0.2	69.5	0.2	0.0	0.3														
3/1	333	333	-	-	-	3.2	0.7	-	3.9	41.6	9.2	0.7	9.9														
4/1	167	167	-	-	-	2.1	0.7	-	2.8	61.1	5.1	0.7	5.8														
5/1	72	72	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0														
6/1	233	233	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0														
7/1	211	211	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0														
8/1	263	263	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0														
<table style="width:100%; border:none;"> <tr> <td style="width:20%;">C1</td> <td style="width:20%;">PRC for Signalled Lanes (%):</td> <td style="width:10%;">54.3</td> <td style="width:20%;">Total Delay for Signalled Lanes (pcuHr):</td> <td style="width:10%;">10.25</td> <td style="width:20%;">Cycle Time (s):</td> <td>120</td> </tr> <tr> <td></td> <td>PRC Over All Lanes (%):</td> <td>54.3</td> <td>Total Delay Over All Lanes(pcuHr):</td> <td>10.25</td> <td></td> <td></td> </tr> </table>														C1	PRC for Signalled Lanes (%):	54.3	Total Delay for Signalled Lanes (pcuHr):	10.25	Cycle Time (s):	120		PRC Over All Lanes (%):	54.3	Total Delay Over All Lanes(pcuHr):	10.25		
C1	PRC for Signalled Lanes (%):	54.3	Total Delay for Signalled Lanes (pcuHr):	10.25	Cycle Time (s):	120																					
	PRC Over All Lanes (%):	54.3	Total Delay Over All Lanes(pcuHr):	10.25																							

Stage Timings

Scenario 9: '2027 AM CF' (FG9: '2027 Base AM CF', Plan 1: 'Network Control Plan 1')

Stage	1	2	3	4
Duration	39	28	22	7
Change Point	0	45	79	107

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	N/A	-	-		-	-	-	-	-	-	75.6%
Queniborough Road_Barkby Road	-	-	N/A	-	-		-	-	-	-	-	-	75.6%
1/1	Queniborough Road N Left Ahead Right	U	N/A	N/A	A		1	39	-	413	1647	549	75.2%
2/1	Barkby Road E Left Ahead Right	U	N/A	N/A	D		1	7	-	3	1741	116	2.6%
3/1	Queniborough Road S Right Left Ahead	U	N/A	N/A	B		1	28	-	324	1814	438	73.9%
4/1	Barbky Road W Ahead Right Left	U	N/A	N/A	C		1	22	-	249	1719	329	75.6%
5/1		U	N/A	N/A	-		-	-	-	98	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	399	Inf	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	220	Inf	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	272	Inf	Inf	0.0%

LinSig V1 style report

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)								
Network	-	-	0	0	0	11.1	4.4	0.0	15.5	-	-	-	-								
Queniborough Road_Barkby Road	-	-	0	0	0	11.1	4.4	0.0	15.5	-	-	-	-								
1/1	413	413	-	-	-	4.1	1.5	-	5.6	48.5	12.2	1.5	13.6								
2/1	3	3	-	-	-	0.0	0.0	-	0.1	68.6	0.1	0.0	0.1								
3/1	324	324	-	-	-	3.8	1.4	-	5.2	57.4	9.9	1.4	11.3								
4/1	249	249	-	-	-	3.2	1.5	-	4.7	67.4	7.8	1.5	9.3								
5/1	98	98	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0								
6/1	399	399	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0								
7/1	220	220	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0								
8/1	272	272	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0								
<table style="width:100%; border:none;"> <tr> <td style="width:25%;">C1</td> <td style="width:25%;">PRC for Signalled Lanes (%): 19.1</td> <td style="width:25%;">Total Delay for Signalled Lanes (pcuHr): 15.45</td> <td style="width:25%;">Cycle Time (s): 120</td> </tr> <tr> <td></td> <td>PRC Over All Lanes (%): 19.1</td> <td>Total Delay Over All Lanes(pcuHr): 15.45</td> <td></td> </tr> </table>														C1	PRC for Signalled Lanes (%): 19.1	Total Delay for Signalled Lanes (pcuHr): 15.45	Cycle Time (s): 120		PRC Over All Lanes (%): 19.1	Total Delay Over All Lanes(pcuHr): 15.45	
C1	PRC for Signalled Lanes (%): 19.1	Total Delay for Signalled Lanes (pcuHr): 15.45	Cycle Time (s): 120																		
	PRC Over All Lanes (%): 19.1	Total Delay Over All Lanes(pcuHr): 15.45																			

Stage Timings

Scenario 10: '2027 PM CF' (FG7: '2021 Base AM CF', Plan 1: 'Network Control Plan 1')

Stage	1	2	3	4
Duration	39	28	22	7
Change Point	0	45	79	107

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	N/A	-	-		-	-	-	-	-	-	71.6%
Queniborough Road_Barkby Road	-	-	N/A	-	-		-	-	-	-	-	-	71.6%
1/1	Queniborough Road N Left Ahead Right	U	N/A	N/A	A		1	39	-	392	1647	549	71.4%
2/1	Barkby Road E Left Ahead Right	U	N/A	N/A	D		1	7	-	3	1741	116	2.6%
3/1	Queniborough Road S Right Left Ahead	U	N/A	N/A	B		1	28	-	309	1814	438	70.5%
4/1	Barbky Road W Ahead Right Left	U	N/A	N/A	C		1	22	-	236	1719	329	71.6%
5/1		U	N/A	N/A	-		-	-	-	93	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	378	Inf	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	210	Inf	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	259	Inf	Inf	0.0%

LinSig V1 style report

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)								
Network	-	-	0	0	0	10.4	3.6	0.0	14.0	-	-	-	-								
Queniborough Road_Barkby Road	-	-	0	0	0	10.4	3.6	0.0	14.0	-	-	-	-								
1/1	392	392	-	-	-	3.8	1.2	-	5.0	46.3	11.3	1.2	12.6								
2/1	3	3	-	-	-	0.0	0.0	-	0.1	68.6	0.1	0.0	0.1								
3/1	309	309	-	-	-	3.6	1.2	-	4.7	55.3	9.4	1.2	10.5								
4/1	236	236	-	-	-	3.0	1.2	-	4.2	64.2	7.3	1.2	8.6								
5/1	93	93	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0								
6/1	378	378	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0								
7/1	210	210	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0								
8/1	259	259	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0								
<table style="width:100%; border:none;"> <tr> <td style="width:25%;">C1</td> <td style="width:25%;">PRC for Signalled Lanes (%): 25.6</td> <td style="width:25%;">Total Delay for Signalled Lanes (pcuHr): 14.05</td> <td style="width:25%;">Cycle Time (s): 120</td> </tr> <tr> <td></td> <td>PRC Over All Lanes (%): 25.6</td> <td>Total Delay Over All Lanes(pcuHr): 14.05</td> <td></td> </tr> </table>														C1	PRC for Signalled Lanes (%): 25.6	Total Delay for Signalled Lanes (pcuHr): 14.05	Cycle Time (s): 120		PRC Over All Lanes (%): 25.6	Total Delay Over All Lanes(pcuHr): 14.05	
C1	PRC for Signalled Lanes (%): 25.6	Total Delay for Signalled Lanes (pcuHr): 14.05	Cycle Time (s): 120																		
	PRC Over All Lanes (%): 25.6	Total Delay Over All Lanes(pcuHr): 14.05																			

Stage Timings

Scenario 11: '2027 + Dev AM CF' (FG11: '2027 Base+Dev AM CF', Plan 1: 'Network Control Plan 1')

Stage	1	2	3	4
Duration	37	28	24	7
Change Point	0	43	77	107

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	N/A	-	-		-	-	-	-	-	-	80.3%
Queniborough Road_Barkby Road	-	-	N/A	-	-		-	-	-	-	-	-	80.3%
1/1	Queniborough Road N Left Ahead Right	U	N/A	N/A	A		1	37	-	417	1649	522	79.9%
2/1	Barkby Road E Left Ahead Right	U	N/A	N/A	D		1	7	-	3	1741	116	2.6%
3/1	Queniborough Road S Right Left Ahead	U	N/A	N/A	B		1	28	-	341	1808	437	78.0%
4/1	Barbky Road W Ahead Right Left	U	N/A	N/A	C		1	24	-	288	1721	359	80.3%
5/1		U	N/A	N/A	-		-	-	-	98	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	432	Inf	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	241	Inf	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	278	Inf	Inf	0.0%

LinSig V1 style report

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)														
Network	-	-	0	0	0	12.0	5.6	0.0	17.6	-	-	-	-														
Queniborough Road_Barkby Road	-	-	0	0	0	12.0	5.6	0.0	17.6	-	-	-	-														
1/1	417	417	-	-	-	4.3	1.9	-	6.3	54.0	12.6	1.9	14.5														
2/1	3	3	-	-	-	0.0	0.0	-	0.1	68.6	0.1	0.0	0.1														
3/1	341	341	-	-	-	4.0	1.7	-	5.7	60.6	10.6	1.7	12.3														
4/1	288	288	-	-	-	3.6	1.9	-	5.5	69.4	9.1	1.9	11.1														
5/1	98	98	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0														
6/1	432	432	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0														
7/1	241	241	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0														
8/1	278	278	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0														
<table style="width:100%; border:none;"> <tr> <td style="width:25%;">C1</td> <td style="width:25%;">PRC for Signalled Lanes (%):</td> <td style="width:10%;">12.0</td> <td style="width:25%;">Total Delay for Signalled Lanes (pcuHr):</td> <td style="width:15%;">17.61</td> <td style="width:20%;">Cycle Time (s):</td> <td>120</td> </tr> <tr> <td></td> <td>PRC Over All Lanes (%):</td> <td>12.0</td> <td>Total Delay Over All Lanes(pcuHr):</td> <td>17.61</td> <td></td> <td></td> </tr> </table>														C1	PRC for Signalled Lanes (%):	12.0	Total Delay for Signalled Lanes (pcuHr):	17.61	Cycle Time (s):	120		PRC Over All Lanes (%):	12.0	Total Delay Over All Lanes(pcuHr):	17.61		
C1	PRC for Signalled Lanes (%):	12.0	Total Delay for Signalled Lanes (pcuHr):	17.61	Cycle Time (s):	120																					
	PRC Over All Lanes (%):	12.0	Total Delay Over All Lanes(pcuHr):	17.61																							

Stage Timings

Scenario 12: '2027 + Dev PM CF' (FG12: '2027 Base+Dev PM CF', Plan 1: 'Network Control Plan 1')

Stage	1	2	3	4
Duration	26	41	22	7
Change Point	0	32	79	107

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	N/A	-	-		-	-	-	-	-	-	60.4%
Queniborough Road_Barkby Road	-	-	N/A	-	-		-	-	-	-	-	-	60.4%
1/1	Queniborough Road N Left Ahead Right	U	N/A	N/A	A		1	26	-	221	1627	366	60.4%
2/1	Barkby Road E Left Ahead Right	U	N/A	N/A	D		1	7	-	9	1741	116	7.8%
3/1	Queniborough Road S Right Left Ahead	U	N/A	N/A	B		1	41	-	382	1812	634	60.2%
4/1	Barbky Road W Ahead Right Left	U	N/A	N/A	C		1	22	-	197	1720	330	59.8%
5/1		U	N/A	N/A	-		-	-	-	75	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	263	Inf	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	191	Inf	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	280	Inf	Inf	0.0%

LinSig V1 style report

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)														
Network	-	-	0	0	0	8.5	2.3	0.0	10.8	-	-	-	-														
Queniborough Road_Barkby Road	-	-	0	0	0	8.5	2.3	0.0	10.8	-	-	-	-														
1/1	221	221	-	-	-	2.6	0.8	-	3.3	54.0	6.6	0.8	7.3														
2/1	9	9	-	-	-	0.1	0.0	-	0.2	69.5	0.3	0.0	0.3														
3/1	382	382	-	-	-	3.4	0.8	-	4.2	39.2	10.4	0.8	11.2														
4/1	197	197	-	-	-	2.4	0.7	-	3.2	57.7	6.0	0.7	6.7														
5/1	75	75	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0														
6/1	263	263	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0														
7/1	191	191	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0														
8/1	280	280	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0														
<table style="width:100%; border:none;"> <tr> <td style="width:20%;">C1</td> <td style="width:20%;">PRC for Signalled Lanes (%):</td> <td style="width:10%;">49.1</td> <td style="width:20%;">Total Delay for Signalled Lanes (pcuHr):</td> <td style="width:10%;">10.81</td> <td style="width:20%;">Cycle Time (s):</td> <td>120</td> </tr> <tr> <td></td> <td>PRC Over All Lanes (%):</td> <td>49.1</td> <td>Total Delay Over All Lanes(pcuHr):</td> <td>10.81</td> <td></td> <td></td> </tr> </table>														C1	PRC for Signalled Lanes (%):	49.1	Total Delay for Signalled Lanes (pcuHr):	10.81	Cycle Time (s):	120		PRC Over All Lanes (%):	49.1	Total Delay Over All Lanes(pcuHr):	10.81		
C1	PRC for Signalled Lanes (%):	49.1	Total Delay for Signalled Lanes (pcuHr):	10.81	Cycle Time (s):	120																					
	PRC Over All Lanes (%):	49.1	Total Delay Over All Lanes(pcuHr):	10.81																							

<h1>Junctions 10</h1>
<h2>PICADY 10 - Priority Intersection Module</h2>
Version: 10.0.4.1693 © Copyright TRL Software Limited, 2021
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Filename: Barkby Road - Pembroke Avenue T Junction Assessment.j10

Path: P:\20000's\20060\Technical\Junction Modelling\2022 Junction Assessments\Oct 2022

Report generation date: 13/12/2022 15:17:01

-
- »2022, AM
 - »2022, PM
 - »2027, AM
 - »2027, PM
 - »2027 + Dev, AM
 - »2027 + Dev, PM
 - »2022 CF, AM
 - »2022 CF, PM
 - »2027 CF, AM
 - »2027 CF, PM
 - »2027 + Development CF, AM
 - »2027 + Development CF, PM

Summary of junction performance

	AM			PM		
	Q (PCU)	Delay (s)	RFC	Q (PCU)	Delay (s)	RFC
2022						
Stream B-C	0.1	6.65	0.06	0.1	7.29	0.06
Stream B-A	0.2	10.33	0.17	0.4	11.96	0.31
Stream C-AB	0.2	6.51	0.13	0.2	5.72	0.10
2027						
Stream B-C	0.1	6.73	0.07	0.1	7.42	0.06
Stream B-A	0.2	10.57	0.18	0.5	12.42	0.32
Stream C-AB	0.2	6.55	0.14	0.2	5.73	0.11
2027 + Dev						
Stream B-C	0.1	7.07	0.07	0.1	7.97	0.07
Stream B-A	0.3	11.46	0.22	0.6	14.23	0.40
Stream C-AB	0.2	6.61	0.14	0.2	5.65	0.11
2022 CF						
Stream B-C	0.1	6.68	0.06	0.1	7.58	0.07
Stream B-A	0.2	10.44	0.17	0.5	12.96	0.34
Stream C-AB	0.2	6.53	0.13	0.2	5.74	0.12
2027 CF						
Stream B-C	0.1	6.77	0.07	0.1	7.75	0.07
Stream B-A	0.2	10.71	0.18	0.6	13.51	0.36
Stream C-AB	0.2	6.58	0.14	0.2	5.76	0.12
2027 + Development CF						
Stream B-C	0.1	7.12	0.07	0.1	8.41	0.08
Stream B-A	0.3	11.62	0.22	0.8	15.70	0.44
Stream C-AB	0.3	6.66	0.15	0.2	5.67	0.13

There are warnings associated with one or more model runs - see the 'Data Errors and Warnings' tables for each Analysis or Demand Set.

Values shown are the highest values encountered over all time segments. Delay is the maximum value of Av. delay per arriving vehicle.

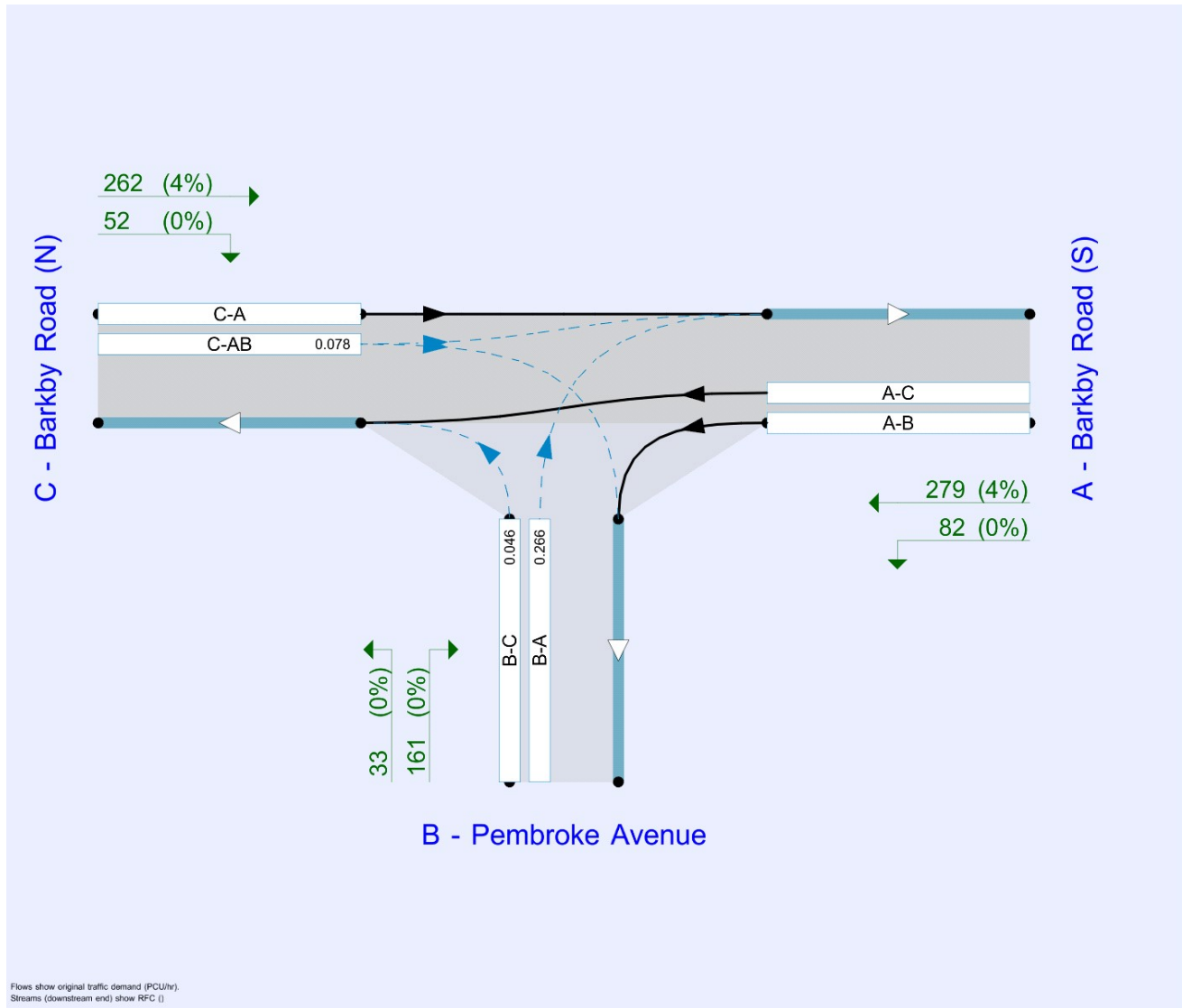
File summary

File Description

Title	(untitled)
Location	
Site number	
Date	04/10/2018
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	DTA\Arcady
Description	

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Av. delay units	Total delay units	Rate of delay units
m	kph	PCU	PCU	perHour	s	-Min	perMin



The junction diagram reflects the last run of Junctions.

Analysis Options

Vehicle length (m)	Calculate Q Percentiles	Calculate detailed queuing delay	Show lane queues in feet / metres	Show all PICADY stream intercepts	Calculate residual capacity	RFC Threshold	Av. Delay threshold (s)	Q threshold (PCU)	Use iterations with HCM roundabouts	Max number of iterations for roundabouts
5.75						0.85	36.00	20.00		500

Demand Set Summary

ID	Scenario name	Time Period name	Description	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2022	AM		ONE HOUR	07:45	09:15	15	✓
D2	2022	PM		ONE HOUR	16:45	18:15	15	✓
D3	2027	AM		ONE HOUR	07:45	09:15	15	✓
D4	2027	PM		ONE HOUR	16:45	18:15	15	✓
D5	2027 + Dev	AM		ONE HOUR	07:45	09:15	15	✓
D6	2027 + Dev	PM		ONE HOUR	16:45	18:15	15	✓
D7	2022 CF	AM	Covid Factor	ONE HOUR	07:45	09:15	15	✓
D8	2022 CF	PM	Covid Factor	ONE HOUR	16:45	18:15	15	✓
D9	2027 CF	AM	Covid Factor	ONE HOUR	07:45	09:15	15	✓
D10	2027 CF	PM	Covid Factor	ONE HOUR	16:45	18:15	15	✓
D11	2027 + Development CF	AM	Covid Factor	ONE HOUR	07:45	09:15	15	✓
D12	2027 + Development CF	PM	Covid Factor	ONE HOUR	16:45	18:15	15	✓

Analysis Set Details

ID	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	✓	100.000	100.000

2022, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Minor arm visibility to right	B - Pembroke Avenue - Minor arm geometry	Visibility to right expected to have two components if the arm has two lanes, or two lanes in a flared section.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	Two-way	Two-way		2.04	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	2.04	A

Arms

Arms

Arm	Name	Description	Arm type
A	Barkby Road (S)		Major
B	Pembroke Avenue		Minor
C	Barkby Road (N)		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right-turn storage	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C - Barkby Road (N)	6.60			99.0	✓	0.00

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relevant) are measured opposite Arm D.

Minor Arm Geometry

Arm	Minor arm type	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate flare length	Flare length (PCU)	Visibility to left (m)	Visibility to right (m)
B - Pembroke Avenue	One lane plus flare	10.00	6.00	3.10	3.10	3.10	✓	1.00	54	41

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
B-A	549	0.097	0.246	0.155	0.352
B-C	684	0.102	0.258	-	-
C-B	631	0.238	0.238	-	-

The slopes and intercepts shown above include custom intercept adjustments only.

Streams may be combined, in which case capacity will be adjusted.

Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2022	AM	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Av. Demand (PCU/hr)	Scaling Factor (%)
A - Barkby Road (S)		ONE HOUR	✓	364	100.000
B - Pembroke Avenue		ONE HOUR	✓	97	100.000
C - Barkby Road (N)		ONE HOUR	✓	209	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A - Barkby Road (S)	B - Pembroke Avenue	C - Barkby Road (N)
From	A - Barkby Road (S)	0	148	216
	B - Pembroke Avenue	64	0	33
	C - Barkby Road (N)	151	58	0

Vehicle Mix

HV %s

		To		
		A - Barkby Road (S)	B - Pembroke Avenue	C - Barkby Road (N)
From	A - Barkby Road (S)	0	0	5
	B - Pembroke Avenue	2	0	0
	C - Barkby Road (N)	7	1	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.06	6.65	0.1	A	30	45
B-A	0.17	10.33	0.2	B	59	88
C-AB	0.13	6.51	0.2	A	68	103
C-A					123	185
A-B					136	204
A-C					198	297

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	25	6	613	0.041	25	0.0	0.0	6.113	A
B-A	48	12	465	0.104	48	0.0	0.1	8.788	A
C-AB	53	13	644	0.082	53	0.0	0.1	6.206	A
C-A	104	26			104				
A-B	111	28			111				
A-C	163	41			163				

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	30	7	599	0.050	30	0.0	0.1	6.326	A
B-A	58	14	449	0.128	57	0.1	0.1	9.383	A
C-AB	66	17	647	0.102	66	0.1	0.1	6.322	A
C-A	122	30			122				
A-B	133	33			133				
A-C	194	49			194				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	36	9	578	0.063	36	0.1	0.1	6.646	A
B-A	70	18	426	0.165	70	0.1	0.2	10.315	B
C-AB	86	21	653	0.132	86	0.1	0.2	6.499	A
C-A	144	36			144				
A-B	163	41			163				
A-C	238	59			238				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	36	9	578	0.063	36	0.1	0.1	6.648	A
B-A	70	18	426	0.165	70	0.2	0.2	10.330	B
C-AB	86	21	653	0.132	86	0.2	0.2	6.514	A
C-A	144	36			144				
A-B	163	41			163				
A-C	238	59			238				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	30	7	598	0.050	30	0.1	0.1	6.329	A
B-A	58	14	449	0.128	58	0.2	0.2	9.400	A
C-AB	66	17	648	0.102	66	0.2	0.2	6.346	A
C-A	122	30			122				
A-B	133	33			133				
A-C	194	49			194				

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	25	6	613	0.041	25	0.1	0.0	6.123	A
B-A	48	12	465	0.104	48	0.2	0.1	8.816	A
C-AB	53	13	644	0.083	53	0.2	0.1	6.229	A
C-A	104	26			104				
A-B	111	28			111				
A-C	163	41			163				

2022, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Minor arm visibility to right	B - Pembroke Avenue - Minor arm geometry	Visibility to right expected to have two components if the arm has two lanes, or two lanes in a flared section.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	Two-way	Two-way		2.93	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	2.93	A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D2	2022	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Av. Demand (PCU/hr)	Scaling Factor (%)
A - Barkby Road (S)		ONE HOUR	✓	289	100.000
B - Pembroke Avenue		ONE HOUR	✓	150	100.000
C - Barkby Road (N)		ONE HOUR	✓	251	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A - Barkby Road (S)	B - Pembroke Avenue	C - Barkby Road (N)
From	A - Barkby Road (S)	0	59	230
	B - Pembroke Avenue	121	0	29
	C - Barkby Road (N)	205	46	0

Vehicle Mix

HV %s

		To		
		A - Barkby Road (S)	B - Pembroke Avenue	C - Barkby Road (N)
From	A - Barkby Road (S)	0	0	4
	B - Pembroke Avenue	0	0	0
	C - Barkby Road (N)	4	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.06	7.29	0.1	A	27	40
B-A	0.31	11.96	0.4	B	111	167
C-AB	0.10	5.72	0.2	A	59	88
C-A					172	258
A-B					54	81
A-C					211	317

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	22	5	575	0.038	22	0.0	0.0	6.505	A
B-A	91	23	474	0.192	90	0.0	0.2	9.368	A
C-AB	45	11	684	0.065	44	0.0	0.1	5.674	A
C-A	144	36			144				
A-B	44	11			44				
A-C	173	43			173				

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	26	7	556	0.047	26	0.0	0.0	6.795	A
B-A	109	27	457	0.238	108	0.2	0.3	10.322	B
C-AB	56	14	695	0.081	56	0.1	0.1	5.689	A
C-A	169	42			169				
A-B	53	13			53				
A-C	207	52			207				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	32	8	526	0.061	32	0.0	0.1	7.280	A
B-A	133	33	434	0.307	133	0.3	0.4	11.925	B
C-AB	74	19	712	0.104	74	0.1	0.2	5.713	A
C-A	202	51			202				
A-B	65	16			65				
A-C	253	63			253				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	32	8	526	0.061	32	0.1	0.1	7.286	A
B-A	133	33	434	0.307	133	0.4	0.4	11.964	B
C-AB	74	19	712	0.105	74	0.2	0.2	5.724	A
C-A	202	50			202				
A-B	65	16			65				
A-C	253	63			253				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	26	7	555	0.047	26	0.1	0.0	6.806	A
B-A	109	27	457	0.238	109	0.4	0.3	10.371	B
C-AB	56	14	696	0.081	57	0.2	0.1	5.706	A
C-A	169	42			169				
A-B	53	13			53				
A-C	207	52			207				

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	22	5	574	0.038	22	0.0	0.0	6.519	A
B-A	91	23	473	0.192	91	0.3	0.2	9.432	A
C-AB	45	11	684	0.066	45	0.1	0.1	5.688	A
C-A	144	36			144				
A-B	44	11			44				
A-C	173	43			173				

2027, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Minor arm visibility to right	B - Pembroke Avenue - Minor arm geometry	Visibility to right expected to have two components if the arm has two lanes, or two lanes in a flared section.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	Two-way	Two-way		2.08	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	2.08	A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D3	2027	AM	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Av. Demand (PCU/hr)	Scaling Factor (%)
A - Barkby Road (S)		ONE HOUR	✓	379	100.000
B - Pembroke Avenue		ONE HOUR	✓	101	100.000
C - Barkby Road (N)		ONE HOUR	✓	217	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A - Barkby Road (S)	B - Pembroke Avenue	C - Barkby Road (N)
From	A - Barkby Road (S)	0	154	225
	B - Pembroke Avenue	67	0	34
	C - Barkby Road (N)	157	60	0

Vehicle Mix

HV %s

		To		
		A - Barkby Road (S)	B - Pembroke Avenue	C - Barkby Road (N)
From	A - Barkby Road (S)	0	0	5
	B - Pembroke Avenue	2	0	0
	C - Barkby Road (N)	7	1	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.07	6.73	0.1	A	31	47
B-A	0.18	10.57	0.2	B	61	92
C-AB	0.14	6.55	0.2	A	71	107
C-A					128	191
A-B					141	212
A-C					206	310

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	26	6	610	0.042	25	0.0	0.0	6.161	A
B-A	50	13	462	0.109	50	0.0	0.1	8.902	A
C-AB	55	14	645	0.086	55	0.0	0.1	6.226	A
C-A	108	27			108				
A-B	116	29			116				
A-C	169	42			169				

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	31	8	594	0.051	31	0.0	0.1	6.386	A
B-A	60	15	445	0.135	60	0.1	0.2	9.542	A
C-AB	69	17	648	0.107	69	0.1	0.2	6.349	A
C-A	126	32			126				
A-B	138	35			138				
A-C	202	51			202				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	37	9	572	0.065	37	0.1	0.1	6.729	A
B-A	74	18	421	0.175	74	0.2	0.2	10.555	B
C-AB	90	22	654	0.138	90	0.2	0.2	6.537	A
C-A	149	37			149				
A-B	170	42			170				
A-C	248	62			248				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	37	9	572	0.065	37	0.1	0.1	6.731	A
B-A	74	18	421	0.175	74	0.2	0.2	10.569	B
C-AB	90	23	654	0.138	90	0.2	0.2	6.551	A
C-A	149	37			149				
A-B	170	42			170				
A-C	248	62			248				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	31	8	594	0.051	31	0.1	0.1	6.390	A
B-A	60	15	445	0.135	60	0.2	0.2	9.561	A
C-AB	69	17	648	0.107	69	0.2	0.2	6.377	A
C-A	126	31			126				
A-B	138	35			138				
A-C	202	51			202				

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	26	6	609	0.042	26	0.1	0.0	6.168	A
B-A	50	13	462	0.109	51	0.2	0.1	8.933	A
C-AB	55	14	645	0.086	56	0.2	0.1	6.248	A
C-A	108	27			108				
A-B	116	29			116				
A-C	169	42			169				

2027, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Minor arm visibility to right	B - Pembroke Avenue - Minor arm geometry	Visibility to right expected to have two components if the arm has two lanes, or two lanes in a flared section.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	Two-way	Two-way		3.02	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	3.02	A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D4	2027	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Av. Demand (PCU/hr)	Scaling Factor (%)
A - Barkby Road (S)		ONE HOUR	✓	302	100.000
B - Pembroke Avenue		ONE HOUR	✓	156	100.000
C - Barkby Road (N)		ONE HOUR	✓	262	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A - Barkby Road (S)	B - Pembroke Avenue	C - Barkby Road (N)
From	A - Barkby Road (S)	0	62	240
	B - Pembroke Avenue	126	0	30
	C - Barkby Road (N)	214	48	0

Vehicle Mix

HV %s

		To		
		A - Barkby Road (S)	B - Pembroke Avenue	C - Barkby Road (N)
From	A - Barkby Road (S)	0	0	4
	B - Pembroke Avenue	0	0	0
	C - Barkby Road (N)	4	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.06	7.42	0.1	A	28	41
B-A	0.32	12.42	0.5	B	116	173
C-AB	0.11	5.73	0.2	A	62	93
C-A					178	268
A-B					57	85
A-C					220	330

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	23	6	571	0.040	22	0.0	0.0	6.563	A
B-A	95	24	470	0.202	94	0.0	0.2	9.550	A
C-AB	47	12	687	0.069	47	0.0	0.1	5.676	A
C-A	150	38			150				
A-B	47	12			47				
A-C	181	45			181				

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	27	7	550	0.049	27	0.0	0.1	6.877	A
B-A	113	28	453	0.250	113	0.2	0.3	10.591	B
C-AB	60	15	699	0.085	60	0.1	0.1	5.691	A
C-A	176	44			176				
A-B	56	14			56				
A-C	216	54			216				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	33	8	519	0.064	33	0.1	0.1	7.413	A
B-A	139	35	429	0.324	138	0.3	0.5	12.368	B
C-AB	79	20	716	0.110	79	0.1	0.2	5.724	A
C-A	209	52			209				
A-B	68	17			68				
A-C	264	66			264				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	33	8	518	0.064	33	0.1	0.1	7.420	A
B-A	139	35	429	0.324	139	0.5	0.5	12.416	B
C-AB	79	20	716	0.110	79	0.2	0.2	5.734	A
C-A	209	52			209				
A-B	68	17			68				
A-C	264	66			264				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	27	7	550	0.049	27	0.1	0.1	6.889	A
B-A	113	28	452	0.250	114	0.5	0.3	10.646	B
C-AB	60	15	699	0.086	60	0.2	0.1	5.711	A
C-A	176	44			176				
A-B	56	14			56				
A-C	216	54			216				

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	23	6	570	0.040	23	0.1	0.0	6.578	A
B-A	95	24	470	0.202	95	0.3	0.3	9.621	A
C-AB	47	12	687	0.069	47	0.1	0.1	5.694	A
C-A	150	37			150				
A-B	47	12			47				
A-C	181	45			181				

2027 + Dev, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Minor arm visibility to right	B - Pembroke Avenue - Minor arm geometry	Visibility to right expected to have two components if the arm has two lanes, or two lanes in a flared section.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	Two-way	Two-way		2.15	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	2.15	A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D5	2027 + Dev	AM	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Av. Demand (PCU/hr)	Scaling Factor (%)
A - Barkby Road (S)		ONE HOUR	✓	437	100.000
B - Pembroke Avenue		ONE HOUR	✓	114	100.000
C - Barkby Road (N)		ONE HOUR	✓	234	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A - Barkby Road (S)	B - Pembroke Avenue	C - Barkby Road (N)
From	A - Barkby Road (S)	0	180	257
	B - Pembroke Avenue	80	0	34
	C - Barkby Road (N)	174	60	0

Vehicle Mix

HV %s

		To		
		A - Barkby Road (S)	B - Pembroke Avenue	C - Barkby Road (N)
From	A - Barkby Road (S)	0	0	5
	B - Pembroke Avenue	2	0	0
	C - Barkby Road (N)	7	1	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.07	7.07	0.1	A	31	47
B-A	0.22	11.46	0.3	B	73	110
C-AB	0.14	6.61	0.2	A	74	111
C-A					141	211
A-B					165	248
A-C					236	354

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	26	6	591	0.043	25	0.0	0.0	6.364	A
B-A	60	15	454	0.133	60	0.0	0.2	9.297	A
C-AB	57	14	644	0.088	56	0.0	0.1	6.257	A
C-A	119	30			119				
A-B	136	34			136				
A-C	193	48			193				

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	31	8	573	0.053	31	0.0	0.1	6.638	A
B-A	72	18	435	0.165	72	0.2	0.2	10.106	B
C-AB	71	18	647	0.110	71	0.1	0.2	6.391	A
C-A	139	35			139				
A-B	162	40			162				
A-C	231	58			231				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	37	9	547	0.068	37	0.1	0.1	7.070	A
B-A	88	22	409	0.216	88	0.2	0.3	11.439	B
C-AB	94	23	653	0.143	93	0.2	0.2	6.594	A
C-A	164	41			164				
A-B	198	50			198				
A-C	283	71			283				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	37	9	546	0.069	37	0.1	0.1	7.073	A
B-A	88	22	408	0.216	88	0.3	0.3	11.461	B
C-AB	94	23	653	0.143	94	0.2	0.2	6.613	A
C-A	164	41			164				
A-B	198	50			198				
A-C	283	71			283				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	31	8	572	0.053	31	0.1	0.1	6.647	A
B-A	72	18	435	0.165	72	0.3	0.2	10.137	B
C-AB	71	18	648	0.110	72	0.2	0.2	6.420	A
C-A	139	35			139				
A-B	162	40			162				
A-C	231	58			231				

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	26	6	590	0.043	26	0.1	0.0	6.376	A
B-A	60	15	454	0.133	60	0.2	0.2	9.339	A
C-AB	57	14	644	0.088	57	0.2	0.1	6.280	A
C-A	119	30			119				
A-B	136	34			136				
A-C	193	48			193				

2027 + Dev, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Minor arm visibility to right	B - Pembroke Avenue - Minor arm geometry	Visibility to right expected to have two components if the arm has two lanes, or two lanes in a flared section.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	Two-way	Two-way		3.45	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	3.45	A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D6	2027 + Dev	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Av. Demand (PCU/hr)	Scaling Factor (%)
A - Barkby Road (S)		ONE HOUR	✓	334	100.000
B - Pembroke Avenue		ONE HOUR	✓	180	100.000
C - Barkby Road (N)		ONE HOUR	✓	291	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A - Barkby Road (S)	B - Pembroke Avenue	C - Barkby Road (N)
From	A - Barkby Road (S)	0	76	258
	B - Pembroke Avenue	150	0	30
	C - Barkby Road (N)	243	48	0

Vehicle Mix

HV %s

		To		
		A - Barkby Road (S)	B - Pembroke Avenue	C - Barkby Road (N)
From	A - Barkby Road (S)	0	0	4
	B - Pembroke Avenue	0	0	0
	C - Barkby Road (N)	4	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.07	7.97	0.1	A	28	41
B-A	0.40	14.23	0.6	B	138	206
C-AB	0.11	5.65	0.2	A	65	98
C-A					202	303
A-B					70	105
A-C					237	355

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	23	6	553	0.041	22	0.0	0.0	6.784	A
B-A	113	28	463	0.244	112	0.0	0.3	10.202	B
C-AB	49	12	696	0.070	49	0.0	0.1	5.613	A
C-A	170	43			170				
A-B	57	14			57				
A-C	194	49			194				

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	27	7	527	0.051	27	0.0	0.1	7.192	A
B-A	135	34	444	0.303	134	0.3	0.4	11.597	B
C-AB	62	16	710	0.088	62	0.1	0.1	5.620	A
C-A	199	50			199				
A-B	68	17			68				
A-C	232	58			232				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	33	8	486	0.068	33	0.1	0.1	7.951	A
B-A	165	41	418	0.395	164	0.4	0.6	14.135	B
C-AB	84	21	731	0.114	83	0.1	0.2	5.641	A
C-A	237	59			237				
A-B	84	21			84				
A-C	284	71			284				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	33	8	485	0.068	33	0.1	0.1	7.965	A
B-A	165	41	418	0.395	165	0.6	0.6	14.227	B
C-AB	84	21	731	0.115	84	0.2	0.2	5.649	A
C-A	237	59			237				
A-B	84	21			84				
A-C	284	71			284				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	27	7	527	0.051	27	0.1	0.1	7.209	A
B-A	135	34	444	0.304	136	0.6	0.4	11.699	B
C-AB	63	16	710	0.088	63	0.2	0.2	5.640	A
C-A	199	50			199				
A-B	68	17			68				
A-C	232	58			232				

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	23	6	552	0.041	23	0.1	0.0	6.802	A
B-A	113	28	463	0.244	113	0.4	0.3	10.309	B
C-AB	49	12	696	0.071	49	0.2	0.1	5.629	A
C-A	170	42			170				
A-B	57	14			57				
A-C	194	49			194				

2022 CF, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Minor arm visibility to right	B - Pembroke Avenue - Minor arm geometry	Visibility to right expected to have two components if the arm has two lanes, or two lanes in a flared section.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	Two-way	Two-way		2.05	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	2.05	A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Description	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D7	2022 CF	AM	Covid Factor	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Av. Demand (PCU/hr)	Scaling Factor (%)
A - Barkby Road (S)		ONE HOUR	✓	371	100.000
B - Pembroke Avenue		ONE HOUR	✓	99	100.000
C - Barkby Road (N)		ONE HOUR	✓	213	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A - Barkby Road (S)	B - Pembroke Avenue	C - Barkby Road (N)
From	A - Barkby Road (S)	0	151	220
	B - Pembroke Avenue	65	0	34
	C - Barkby Road (N)	154	59	0

Vehicle Mix

HV %s

		To		
		A - Barkby Road (S)	B - Pembroke Avenue	C - Barkby Road (N)
From	A - Barkby Road (S)	0	0	5
	B - Pembroke Avenue	2	0	0
	C - Barkby Road (N)	7	1	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.06	6.68	0.1	A	31	47
B-A	0.17	10.44	0.2	B	60	89
C-AB	0.13	6.53	0.2	A	70	105
C-A					126	188
A-B					139	208
A-C					202	303

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	26	6	613	0.042	25	0.0	0.0	6.129	A
B-A	49	12	463	0.106	48	0.0	0.1	8.842	A
C-AB	54	14	644	0.084	54	0.0	0.1	6.215	A
C-A	106	27			106				
A-B	114	28			114				
A-C	166	41			166				

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	31	8	598	0.051	31	0.0	0.1	6.348	A
B-A	58	15	447	0.131	58	0.1	0.2	9.454	A
C-AB	68	17	648	0.104	67	0.1	0.2	6.334	A
C-A	124	31			124				
A-B	136	34			136				
A-C	198	49			198				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	37	9	576	0.065	37	0.1	0.1	6.679	A
B-A	72	18	423	0.169	71	0.2	0.2	10.421	B
C-AB	88	22	653	0.135	88	0.2	0.2	6.516	A
C-A	147	37			147				
A-B	166	42			166				
A-C	242	61			242				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	37	9	576	0.065	37	0.1	0.1	6.681	A
B-A	72	18	423	0.169	72	0.2	0.2	10.435	B
C-AB	88	22	653	0.135	88	0.2	0.2	6.529	A
C-A	147	37			147				
A-B	166	42			166				
A-C	242	61			242				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	31	8	597	0.051	31	0.1	0.1	6.352	A
B-A	58	15	446	0.131	59	0.2	0.2	9.474	A
C-AB	68	17	648	0.104	68	0.2	0.2	6.362	A
C-A	124	31			124				
A-B	136	34			136				
A-C	198	49			198				

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	26	6	612	0.042	26	0.1	0.0	6.137	A
B-A	49	12	463	0.106	49	0.2	0.1	8.870	A
C-AB	54	14	644	0.084	54	0.2	0.1	6.238	A
C-A	106	27			106				
A-B	114	28			114				
A-C	166	41			166				

2022 CF, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Minor arm visibility to right	B - Pembroke Avenue - Minor arm geometry	Visibility to right expected to have two components if the arm has two lanes, or two lanes in a flared section.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	Two-way	Two-way		3.15	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	3.15	A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Description	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D8	2022 CF	PM	Covid Factor	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Av. Demand (PCU/hr)	Scaling Factor (%)
A - Barkby Road (S)		ONE HOUR	✓	314	100.000
B - Pembroke Avenue		ONE HOUR	✓	164	100.000
C - Barkby Road (N)		ONE HOUR	✓	273	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A - Barkby Road (S)	B - Pembroke Avenue	C - Barkby Road (N)
From	A - Barkby Road (S)	0	64	250
	B - Pembroke Avenue	132	0	32
	C - Barkby Road (N)	223	50	0

Vehicle Mix

HV %s

		To		
		A - Barkby Road (S)	B - Pembroke Avenue	C - Barkby Road (N)
From	A - Barkby Road (S)	0	0	4
	B - Pembroke Avenue	0	0	0
	C - Barkby Road (N)	4	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.07	7.58	0.1	A	29	44
B-A	0.34	12.96	0.5	B	121	182
C-AB	0.12	5.74	0.2	A	66	98
C-A					185	277
A-B					59	88
A-C					229	344

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	24	6	567	0.042	24	0.0	0.0	6.628	A
B-A	99	25	466	0.213	98	0.0	0.3	9.761	A
C-AB	50	12	689	0.072	49	0.0	0.1	5.677	A
C-A	156	39			156				
A-B	48	12			48				
A-C	188	47			188				

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	29	7	545	0.053	29	0.0	0.1	6.973	A
B-A	119	30	448	0.265	118	0.3	0.4	10.906	B
C-AB	63	16	702	0.090	63	0.1	0.1	5.694	A
C-A	182	46			182				
A-B	58	14			58				
A-C	225	56			225				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	35	9	510	0.069	35	0.1	0.1	7.575	A
B-A	145	36	423	0.344	145	0.4	0.5	12.903	B
C-AB	84	21	720	0.116	84	0.1	0.2	5.730	A
C-A	217	54			217				
A-B	70	18			70				
A-C	275	69			275				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	35	9	510	0.069	35	0.1	0.1	7.584	A
B-A	145	36	423	0.344	145	0.5	0.5	12.961	B
C-AB	84	21	720	0.116	84	0.2	0.2	5.740	A
C-A	217	54			217				
A-B	70	18			70				
A-C	275	69			275				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	29	7	544	0.053	29	0.1	0.1	6.987	A
B-A	119	30	448	0.265	119	0.5	0.4	10.975	B
C-AB	63	16	702	0.090	63	0.2	0.1	5.715	A
C-A	182	46			182				
A-B	58	14			58				
A-C	225	56			225				

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	24	6	566	0.043	24	0.1	0.0	6.642	A
B-A	99	25	466	0.213	100	0.4	0.3	9.842	A
C-AB	50	12	689	0.072	50	0.1	0.1	5.693	A
C-A	156	39			156				
A-B	48	12			48				
A-C	188	47			188				

2027 CF, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Minor arm visibility to right	B - Pembroke Avenue - Minor arm geometry	Visibility to right expected to have two components if the arm has two lanes, or two lanes in a flared section.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	Two-way	Two-way		2.10	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	2.10	A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Description	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D9	2027 CF	AM	Covid Factor	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Av. Demand (PCU/hr)	Scaling Factor (%)
A - Barkby Road (S)		ONE HOUR	✓	387	100.000
B - Pembroke Avenue		ONE HOUR	✓	103	100.000
C - Barkby Road (N)		ONE HOUR	✓	223	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A - Barkby Road (S)	B - Pembroke Avenue	C - Barkby Road (N)
From	A - Barkby Road (S)	0	157	230
	B - Pembroke Avenue	68	0	35
	C - Barkby Road (N)	161	62	0

Vehicle Mix

HV %s

		To		
		A - Barkby Road (S)	B - Pembroke Avenue	C - Barkby Road (N)
From	A - Barkby Road (S)	0	0	5
	B - Pembroke Avenue	2	0	0
	C - Barkby Road (N)	7	1	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.07	6.77	0.1	A	32	48
B-A	0.18	10.71	0.2	B	62	94
C-AB	0.14	6.58	0.2	A	74	112
C-A					130	195
A-B					144	216
A-C					211	317

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	26	7	609	0.043	26	0.0	0.0	6.179	A
B-A	51	13	460	0.111	51	0.0	0.1	8.969	A
C-AB	57	14	645	0.089	57	0.0	0.1	6.243	A
C-A	110	28			110				
A-B	118	30			118				
A-C	173	43			173				

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	31	8	593	0.053	31	0.0	0.1	6.412	A
B-A	61	15	442	0.138	61	0.1	0.2	9.636	A
C-AB	72	18	649	0.111	72	0.1	0.2	6.371	A
C-A	129	32			129				
A-B	141	35			141				
A-C	207	52			207				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	39	10	570	0.068	38	0.1	0.1	6.768	A
B-A	75	19	418	0.179	75	0.2	0.2	10.689	B
C-AB	94	23	655	0.143	94	0.2	0.2	6.569	A
C-A	152	38			152				
A-B	173	43			173				
A-C	253	63			253				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	39	10	570	0.068	39	0.1	0.1	6.770	A
B-A	75	19	418	0.179	75	0.2	0.2	10.706	B
C-AB	94	23	655	0.143	94	0.2	0.2	6.584	A
C-A	152	38			152				
A-B	173	43			173				
A-C	253	63			253				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	31	8	593	0.053	32	0.1	0.1	6.419	A
B-A	61	15	442	0.138	61	0.2	0.2	9.652	A
C-AB	72	18	649	0.111	72	0.2	0.2	6.400	A
C-A	129	32			129				
A-B	141	35			141				
A-C	207	52			207				

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	26	7	608	0.043	26	0.1	0.0	6.189	A
B-A	51	13	459	0.111	51	0.2	0.1	9.000	A
C-AB	58	14	645	0.089	58	0.2	0.1	6.265	A
C-A	110	28			110				
A-B	118	30			118				
A-C	173	43			173				

2027 CF, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Minor arm visibility to right	B - Pembroke Avenue - Minor arm geometry	Visibility to right expected to have two components if the arm has two lanes, or two lanes in a flared section.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	Two-way	Two-way		3.25	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	3.25	A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Description	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D10	2027 CF	PM	Covid Factor	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Av. Demand (PCU/hr)	Scaling Factor (%)
A - Barkby Road (S)		ONE HOUR	✓	328	100.000
B - Pembroke Avenue		ONE HOUR	✓	170	100.000
C - Barkby Road (N)		ONE HOUR	✓	284	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A - Barkby Road (S)	B - Pembroke Avenue	C - Barkby Road (N)
From	A - Barkby Road (S)	0	67	261
	B - Pembroke Avenue	137	0	33
	C - Barkby Road (N)	232	52	0

Vehicle Mix

HV %s

		To		
		A - Barkby Road (S)	B - Pembroke Avenue	C - Barkby Road (N)
From	A - Barkby Road (S)	0	0	4
	B - Pembroke Avenue	0	0	0
	C - Barkby Road (N)	4	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.07	7.75	0.1	A	30	45
B-A	0.36	13.51	0.6	B	126	189
C-AB	0.12	5.76	0.2	A	69	104
C-A					191	287
A-B					61	92
A-C					239	359

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	25	6	562	0.044	25	0.0	0.0	6.693	A
B-A	103	26	462	0.223	102	0.0	0.3	9.965	A
C-AB	52	13	692	0.076	52	0.0	0.1	5.682	A
C-A	161	40			161				
A-B	50	13			50				
A-C	196	49			196				

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	30	7	539	0.055	30	0.0	0.1	7.067	A
B-A	123	31	443	0.278	123	0.3	0.4	11.215	B
C-AB	67	17	705	0.094	66	0.1	0.2	5.702	A
C-A	189	47			189				
A-B	60	15			60				
A-C	235	59			235				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	36	9	502	0.072	36	0.1	0.1	7.736	A
B-A	151	38	417	0.361	150	0.4	0.6	13.437	B
C-AB	89	22	723	0.123	88	0.2	0.2	5.746	A
C-A	224	56			224				
A-B	74	18			74				
A-C	287	72			287				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	36	9	501	0.073	36	0.1	0.1	7.748	A
B-A	151	38	417	0.361	151	0.6	0.6	13.508	B
C-AB	89	22	724	0.123	89	0.2	0.2	5.757	A
C-A	224	56			224				
A-B	74	18			74				
A-C	287	72			287				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	30	7	538	0.055	30	0.1	0.1	7.080	A
B-A	123	31	443	0.278	124	0.6	0.4	11.294	B
C-AB	67	17	705	0.095	67	0.2	0.2	5.721	A
C-A	189	47			189				
A-B	60	15			60				
A-C	235	59			235				

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	25	6	562	0.044	25	0.1	0.0	6.708	A
B-A	103	26	462	0.223	104	0.4	0.3	10.054	B
C-AB	53	13	692	0.076	53	0.2	0.1	5.698	A
C-A	161	40			161				
A-B	50	13			50				
A-C	196	49			196				

2027 + Development CF, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Minor arm visibility to right	B - Pembroke Avenue - Minor arm geometry	Visibility to right expected to have two components if the arm has two lanes, or two lanes in a flared section.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	Two-way	Two-way		2.18	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	2.18	A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Description	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D11	2027 + Development CF	AM	Covid Factor	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Av. Demand (PCU/hr)	Scaling Factor (%)
A - Barkby Road (S)		ONE HOUR	✓	446	100.000
B - Pembroke Avenue		ONE HOUR	✓	116	100.000
C - Barkby Road (N)		ONE HOUR	✓	239	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A - Barkby Road (S)	B - Pembroke Avenue	C - Barkby Road (N)
From	A - Barkby Road (S)	0	184	262
	B - Pembroke Avenue	81	0	35
	C - Barkby Road (N)	177	62	0

Vehicle Mix

HV %s

		To		
		A - Barkby Road (S)	B - Pembroke Avenue	C - Barkby Road (N)
From	A - Barkby Road (S)	0	0	5
	B - Pembroke Avenue	2	0	0
	C - Barkby Road (N)	7	1	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.07	7.12	0.1	A	32	48
B-A	0.22	11.62	0.3	B	74	111
C-AB	0.15	6.66	0.3	A	77	115
C-A					142	214
A-B					169	253
A-C					240	361

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	26	7	590	0.045	26	0.0	0.0	6.385	A
B-A	61	15	452	0.135	60	0.0	0.2	9.367	A
C-AB	59	15	644	0.091	58	0.0	0.1	6.281	A
C-A	121	30			121				
A-B	139	35			139				
A-C	197	49			197				

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	31	8	571	0.055	31	0.0	0.1	6.667	A
B-A	73	18	432	0.168	73	0.2	0.2	10.207	B
C-AB	74	19	648	0.114	74	0.1	0.2	6.420	A
C-A	141	35			141				
A-B	165	41			165				
A-C	236	59			236				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	39	10	544	0.071	38	0.1	0.1	7.115	A
B-A	89	22	405	0.220	89	0.2	0.3	11.595	B
C-AB	97	24	654	0.149	97	0.2	0.3	6.638	A
C-A	166	41			166				
A-B	203	51			203				
A-C	288	72			288				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	39	10	544	0.071	39	0.1	0.1	7.119	A
B-A	89	22	405	0.220	89	0.3	0.3	11.620	B
C-AB	98	24	654	0.149	98	0.3	0.3	6.658	A
C-A	166	41			166				
A-B	203	51			203				
A-C	288	72			288				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	31	8	571	0.055	32	0.1	0.1	6.673	A
B-A	73	18	432	0.169	73	0.3	0.2	10.237	B
C-AB	74	19	648	0.114	74	0.3	0.2	6.450	A
C-A	141	35			141				
A-B	165	41			165				
A-C	236	59			236				

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	26	7	589	0.045	26	0.1	0.0	6.396	A
B-A	61	15	452	0.135	61	0.2	0.2	9.412	A
C-AB	59	15	644	0.092	59	0.2	0.1	6.304	A
C-A	121	30			121				
A-B	139	35			139				
A-C	197	49			197				

2027 + Development CF, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Minor arm visibility to right	B - Pembroke Avenue - Minor arm geometry	Visibility to right expected to have two components if the arm has two lanes, or two lanes in a flared section.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	Two-way	Two-way		3.75	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	3.75	A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Description	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D12	2027 + Development CF	PM	Covid Factor	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Av. Demand (PCU/hr)	Scaling Factor (%)
A - Barkby Road (S)		ONE HOUR	✓	361	100.000
B - Pembroke Avenue		ONE HOUR	✓	194	100.000
C - Barkby Road (N)		ONE HOUR	✓	314	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A - Barkby Road (S)	B - Pembroke Avenue	C - Barkby Road (N)
From	A - Barkby Road (S)	0	82	279
	B - Pembroke Avenue	161	0	33
	C - Barkby Road (N)	262	52	0

Vehicle Mix

HV %s

		To		
		A - Barkby Road (S)	B - Pembroke Avenue	C - Barkby Road (N)
From	A - Barkby Road (S)	0	0	4
	B - Pembroke Avenue	0	0	0
	C - Barkby Road (N)	4	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.08	8.41	0.1	A	30	45
B-A	0.44	15.70	0.8	C	148	222
C-AB	0.13	5.67	0.2	A	73	109
C-A					215	323
A-B					75	113
A-C					256	384

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	25	6	544	0.046	25	0.0	0.0	6.929	A
B-A	121	30	455	0.266	120	0.0	0.4	10.686	B
C-AB	54	14	702	0.078	54	0.0	0.1	5.617	A
C-A	182	45			182				
A-B	62	15			62				
A-C	210	53			210				

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	30	7	515	0.058	30	0.0	0.1	7.421	A
B-A	145	36	435	0.333	144	0.4	0.5	12.364	B
C-AB	70	17	717	0.097	70	0.1	0.2	5.630	A
C-A	212	53			212				
A-B	74	18			74				
A-C	251	63			251				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	36	9	465	0.078	36	0.1	0.1	8.389	A
B-A	177	44	406	0.436	176	0.5	0.8	15.565	C
C-AB	94	24	739	0.127	94	0.2	0.2	5.662	A
C-A	252	63			252				
A-B	90	23			90				
A-C	307	77			307				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	36	9	464	0.078	36	0.1	0.1	8.414	A
B-A	177	44	406	0.436	177	0.8	0.8	15.703	C
C-AB	94	24	739	0.128	94	0.2	0.2	5.674	A
C-A	251	63			251				
A-B	90	23			90				
A-C	307	77			307				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	30	7	513	0.058	30	0.1	0.1	7.447	A
B-A	145	36	435	0.333	146	0.8	0.5	12.501	B
C-AB	70	17	717	0.097	70	0.2	0.2	5.651	A
C-A	212	53			212				
A-B	74	18			74				
A-C	251	63			251				

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	25	6	543	0.046	25	0.1	0.0	6.954	A
B-A	121	30	455	0.266	122	0.5	0.4	10.816	B
C-AB	55	14	702	0.078	55	0.2	0.1	5.635	A
C-A	182	45			182				
A-B	62	15			62				
A-C	210	53			210				

<h1>Junctions 10</h1>
<h2>PICADY 10 - Priority Intersection Module</h2>
Version: 10.0.4.1693 © Copyright TRL Software Limited, 2021
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Filename: Melton - Goodes Assessment RevB LCC Geometry Comment.j10
Path: P:\20000's\20060\Technical\Junction Modelling\2022 Junction Assessments\Oct 2022
Report generation date: 13/12/2022 15:14:39

- »2022, AM
- »2022, PM
- »2027, AM
- »2027, PM
- »2027 + Development, AM
- »2027 + Development, PM
- »2022 CF, AM
- »2022 CF, PM
- »2027 CF, AM
- »2027 CF, PM
- »2027 + Development CF, AM
- »2027 + Development CF, PM

Summary of junction performance

	AM			PM		
	Q (PCU)	Delay (s)	RFC	Q (PCU)	Delay (s)	RFC
2022						
Stream B-C	1.9	21.18	0.66	0.4	10.28	0.30
Stream B-A	0.2	21.31	0.19	0.1	18.93	0.09
Stream C-AB	1.2	7.68	0.40	5.9	21.71	0.79
2027						
Stream B-C	2.3	24.58	0.70	0.5	10.74	0.32
Stream B-A	0.3	25.08	0.22	0.1	20.87	0.11
Stream C-AB	1.4	8.00	0.43	8.4	30.37	0.85
2027 + Development						
Stream B-C	3.0	30.63	0.76	0.5	11.35	0.35
Stream B-A	0.4	31.28	0.26	0.1	23.02	0.12
Stream C-AB	1.6	8.63	0.47	15.8	58.67	0.94
2022 CF						
Stream B-C	1.3	14.38	0.57	0.4	10.51	0.31
Stream B-A	0.2	13.83	0.13	0.1	19.88	0.10
Stream C-AB	0.9	6.59	0.36	7.0	25.54	0.82
2027 CF						
Stream B-C	2.5	26.41	0.72	0.5	11.01	0.33
Stream B-A	0.3	27.13	0.24	0.1	22.13	0.11
Stream C-AB	1.4	8.14	0.44	10.7	38.48	0.89
2027 + Development CF						
Stream B-C	3.4	33.49	0.78	0.6	11.62	0.36
Stream B-A	0.4	35.01	0.28	0.1	24.76	0.12
Stream C-AB	1.7	8.85	0.49	20.0	75.13	0.97

There are warnings associated with one or more model runs - see the 'Data Errors and Warnings' tables for each Analysis or Demand Set.

Values shown are the highest values encountered over all time segments. Delay is the maximum value of Av. delay per arriving vehicle.

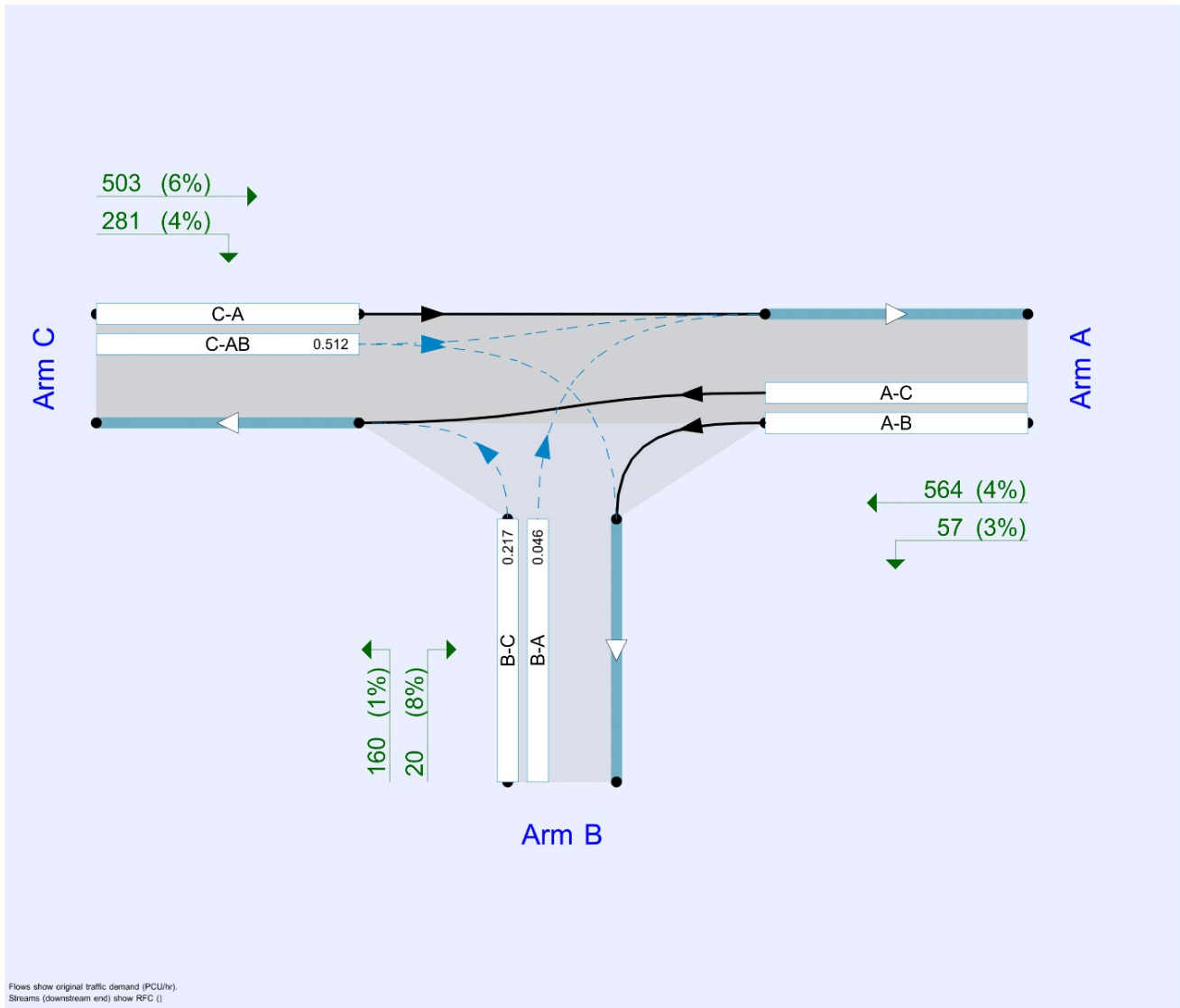
File summary

File Description

Title	(untitled)
Location	
Site number	
Date	11/04/2018
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	DTA\Arcady
Description	

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Av. delay units	Total delay units	Rate of delay units
m	kph	PCU	PCU	perHour	s	-Min	perMin



The junction diagram reflects the last run of Junctions.

Analysis Options

Vehicle length (m)	Calculate Q Percentiles	Calculate detailed queuing delay	Show lane queues in feet / metres	Show all PICADY stream intercepts	Calculate residual capacity	RFC Threshold	Av. Delay threshold (s)	Q threshold (PCU)	Use iterations with HCM roundabouts	Max number of iterations for roundabouts
5.75						0.85	36.00	20.00		500

Demand Set Summary

ID	Scenario name	Time Period name	Description	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2022	AM		ONE HOUR	07:45	09:15	15	✓
D2	2022	PM		ONE HOUR	16:45	18:15	15	✓
D5	2027	AM		ONE HOUR	07:45	09:15	15	✓
D6	2027	PM		ONE HOUR	16:45	18:15	15	✓
D7	2027 + Development	AM		ONE HOUR	07:45	09:15	15	✓
D8	2027 + Development	PM		ONE HOUR	16:45	18:15	15	✓
D9	2022 CF	AM	Covid Factor	ONE HOUR	07:45	09:15	15	✓
D10	2022 CF	PM	Covid Factor	ONE HOUR	16:45	18:15	15	✓
D11	2027 CF	AM	Covid Factor	ONE HOUR	07:45	09:15	15	✓
D12	2027 CF	PM	Covid Factor	ONE HOUR	16:45	18:15	15	✓
D13	2027 + Development CF	AM	Covid Factor	ONE HOUR	07:45	09:15	15	✓
D14	2027 + Development CF	PM	Covid Factor	ONE HOUR	16:45	18:15	15	✓

Analysis Set Details

ID	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	✓	100.000	100.000

2022, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Major arm width	Arm C - Major arm geometry	For two-way major roads, please interpret results with caution if the total major carriageway width is less than 6m.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	Two-way	Two-way		6.49	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	6.49	A

Arms

Arms

Arm	Name	Description	Arm type
A	Melton Road N		Major
B	Goodes Lane		Minor
C	Melton Road S		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right-turn storage	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C	5.80			114.0	✓	0.00

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relevant) are measured opposite Arm D.

Minor Arm Geometry

Arm	Minor arm type	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate flare length	Flare length (PCU)	Visibility to left (m)	Visibility to right (m)
B	One lane plus flare	10.00	4.26	2.98	2.94	2.89		1.00	53	23

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
B-A	607	0.112	0.282	0.177	0.403
B-C	678	0.105	0.265	-	-
C-B	640	0.250	0.250	-	-

The slopes and intercepts shown above include custom intercept adjustments only.

Streams may be combined, in which case capacity will be adjusted.

Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2022	AM	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Av. Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	532	100.000
B		ONE HOUR	✓	339	100.000
C		ONE HOUR	✓	551	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
	A	B	C	
From	A	0	24	508
	B	38	0	301
	C	418	133	0

Vehicle Mix

HV %s

	To			
	A	B	C	
From	A	0	3	4
	B	8	0	1
	C	6	4	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.66	21.18	1.9	C	276	414
B-A	0.19	21.31	0.2	C	35	52
C-AB	0.40	7.68	1.2	A	245	367
C-A					261	391
A-B					22	33
A-C					466	699

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	227	57	563	0.402	224	0.0	0.7	10.637	B
B-A	29	7	378	0.076	28	0.0	0.1	11.111	B
C-AB	171	43	760	0.225	169	0.0	0.5	6.378	A
C-A	244	61			244				
A-B	18	5			18				
A-C	382	96			382				

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	271	68	539	0.502	269	0.7	1.0	13.418	B
B-A	34	9	319	0.107	34	0.1	0.1	13.638	B
C-AB	230	57	788	0.292	229	0.5	0.7	6.764	A
C-A	266	66			266				
A-B	22	5			22				
A-C	457	114			457				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	331	83	503	0.659	328	1.0	1.8	20.424	C
B-A	42	10	227	0.184	41	0.1	0.2	20.896	C
C-AB	332	83	828	0.401	330	0.7	1.2	7.610	A
C-A	275	69			275				
A-B	26	7			26				
A-C	559	140			559				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	331	83	502	0.660	331	1.8	1.9	21.183	C
B-A	42	10	224	0.187	42	0.2	0.2	21.315	C
C-AB	333	83	829	0.401	333	1.2	1.2	7.675	A
C-A	274	68			274				
A-B	26	7			26				
A-C	559	140			559				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	271	68	538	0.503	274	1.9	1.0	13.916	B
B-A	34	9	316	0.108	35	0.2	0.1	13.839	B
C-AB	231	58	789	0.292	233	1.2	0.7	6.847	A
C-A	265	66			265				
A-B	22	5			22				
A-C	457	114			457				

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	227	57	563	0.403	228	1.0	0.7	10.905	B
B-A	29	7	376	0.076	29	0.1	0.1	11.214	B
C-AB	172	43	761	0.226	173	0.7	0.5	6.446	A
C-A	243	61			243				
A-B	18	5			18				
A-C	382	96			382				

2022, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Major arm width	Arm C - Major arm geometry	For two-way major roads, please interpret results with caution if the total major carriageway width is less than 6m.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	Two-way	Two-way		9.25	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	9.25	A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D2	2022	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Av. Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	582	100.000
B		ONE HOUR	✓	156	100.000
C		ONE HOUR	✓	713	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
	A	B	C	
From	A	0	54	528
	B	19	0	137
	C	472	241	0

Vehicle Mix

HV %s

	To			
	A	B	C	
From	A	0	3	4
	B	8	0	1
	C	6	4	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.30	10.28	0.4	B	126	189
B-A	0.09	18.93	0.1	C	17	26
C-AB	0.79	21.71	5.9	C	492	739
C-A					162	243
A-B					50	74
A-C					485	727

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	103	26	562	0.183	102	0.0	0.2	7.890	A
B-A	14	4	353	0.041	14	0.0	0.0	11.481	B
C-AB	333	83	781	0.426	328	0.0	1.1	8.314	A
C-A	204	51			204				
A-B	41	10			41				
A-C	398	99			398				

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	123	31	539	0.229	123	0.2	0.3	8.736	A
B-A	17	4	301	0.057	17	0.0	0.1	13.697	B
C-AB	456	114	815	0.560	453	1.1	2.0	10.478	B
C-A	185	46			185				
A-B	49	12			49				
A-C	475	119			475				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	151	38	505	0.299	150	0.3	0.4	10.244	B
B-A	21	5	230	0.091	21	0.1	0.1	18.595	C
C-AB	677	169	864	0.783	663	2.0	5.4	18.938	C
C-A	108	27			108				
A-B	59	15			59				
A-C	581	145			581				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	151	38	504	0.299	151	0.4	0.4	10.283	B
B-A	21	5	226	0.092	21	0.1	0.1	18.934	C
C-AB	687	172	870	0.789	685	5.4	5.9	21.713	C
C-A	98	25			98				
A-B	59	15			59				
A-C	581	145			581				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	123	31	538	0.229	124	0.4	0.3	8.775	A
B-A	17	4	296	0.058	17	0.1	0.1	13.958	B
C-AB	465	116	824	0.565	480	5.9	2.2	11.686	B
C-A	176	44			176				
A-B	49	12			49				
A-C	475	119			475				

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	103	26	562	0.184	103	0.3	0.2	7.932	A
B-A	14	4	350	0.041	14	0.1	0.0	11.588	B
C-AB	337	84	784	0.429	341	2.2	1.2	8.666	A
C-A	200	50			200				
A-B	41	10			41				
A-C	398	99			398				

2027, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Major arm width	Arm C - Major arm geometry	For two-way major roads, please interpret results with caution if the total major carriageway width is less than 6m.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	Two-way	Two-way		7.43	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	7.43	A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D5	2027	AM	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Av. Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	555	100.000
B		ONE HOUR	✓	354	100.000
C		ONE HOUR	✓	575	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	25	530
	B	40	0	314
	C	436	139	0

Vehicle Mix

HV %s

		To		
		A	B	C
From	A	0	3	4
	B	8	0	1
	C	6	4	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.70	24.58	2.3	C	288	432
B-A	0.22	25.08	0.3	D	37	55
C-AB	0.43	8.00	1.4	A	265	397
C-A					263	395
A-B					23	34
A-C					486	730

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	236	59	558	0.424	233	0.0	0.7	11.115	B
B-A	30	8	366	0.082	30	0.0	0.1	11.566	B
C-AB	183	46	766	0.239	181	0.0	0.5	6.446	A
C-A	250	62			250				
A-B	19	5			19				
A-C	399	100			399				

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	282	71	532	0.531	281	0.7	1.1	14.379	B
B-A	36	9	302	0.119	36	0.1	0.1	14.575	B
C-AB	248	62	796	0.311	247	0.5	0.8	6.897	A
C-A	269	67			269				
A-B	22	6			22				
A-C	476	119			476				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	346	86	493	0.701	341	1.1	2.2	23.328	C
B-A	44	11	203	0.217	43	0.1	0.3	24.306	C
C-AB	361	90	838	0.431	359	0.8	1.3	7.917	A
C-A	272	68			272				
A-B	28	7			28				
A-C	584	146			584				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	346	86	492	0.702	345	2.2	2.3	24.582	C
B-A	44	11	199	0.221	44	0.3	0.3	25.079	D
C-AB	362	91	840	0.432	362	1.3	1.4	8.001	A
C-A	271	68			271				
A-B	28	7			28				
A-C	584	146			584				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	282	71	531	0.531	287	2.3	1.2	15.105	C
B-A	36	9	298	0.121	37	0.3	0.2	14.885	B
C-AB	249	62	797	0.312	251	1.4	0.8	6.991	A
C-A	268	67			268				
A-B	22	6			22				
A-C	476	119			476				

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	236	59	557	0.424	238	1.2	0.8	11.443	B
B-A	30	8	363	0.083	30	0.2	0.1	11.695	B
C-AB	184	46	767	0.240	185	0.8	0.5	6.523	A
C-A	248	62			248				
A-B	19	5			19				
A-C	399	100			399				

2027, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Major arm width	Arm C - Major arm geometry	For two-way major roads, please interpret results with caution if the total major carriageway width is less than 6m.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	Two-way	Two-way		13.00	B

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	13.00	B

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D6	2027	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Av. Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	606	100.000
B		ONE HOUR	✓	163	100.000
C		ONE HOUR	✓	743	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	56	550
	B	20	0	143
	C	492	251	0

Vehicle Mix

HV %s

		To		
		A	B	C
From	A	0	3	4
	B	8	0	1
	C	6	4	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.32	10.74	0.5	B	131	197
B-A	0.11	20.87	0.1	C	18	28
C-AB	0.85	30.37	8.4	D	535	802
C-A					147	220
A-B					51	77
A-C					505	757

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	108	27	557	0.193	107	0.0	0.2	8.054	A
B-A	15	4	342	0.044	15	0.0	0.0	11.884	B
C-AB	357	89	788	0.452	351	0.0	1.3	8.620	A
C-A	203	51			203				
A-B	42	11			42				
A-C	414	104			414				

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	129	32	533	0.241	128	0.2	0.3	8.985	A
B-A	18	4	288	0.063	18	0.0	0.1	14.408	B
C-AB	492	123	824	0.597	488	1.3	2.3	11.304	B
C-A	176	44			176				
A-B	50	13			50				
A-C	494	124			494				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	157	39	496	0.317	157	0.3	0.5	10.691	B
B-A	22	6	213	0.103	22	0.1	0.1	20.288	C
C-AB	738	184	876	0.842	718	2.3	7.3	23.916	C
C-A	80	20			80				
A-B	62	15			62				
A-C	606	151			606				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	157	39	496	0.318	157	0.5	0.5	10.744	B
B-A	22	6	208	0.106	22	0.1	0.1	20.873	C
C-AB	754	188	886	0.851	750	7.3	8.4	30.373	D
C-A	64	16			64				
A-B	62	15			62				
A-C	606	151			606				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	129	32	532	0.242	129	0.5	0.3	9.034	A
B-A	18	4	280	0.064	18	0.1	0.1	14.838	B
C-AB	507	127	838	0.605	530	8.4	2.7	13.555	B
C-A	161	40			161				
A-B	50	13			50				
A-C	494	124			494				

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	108	27	557	0.193	108	0.3	0.2	8.104	A
B-A	15	4	339	0.044	15	0.1	0.1	12.020	B
C-AB	361	90	792	0.456	367	2.7	1.4	9.074	A
C-A	198	49			198				
A-B	42	11			42				
A-C	414	104			414				

2027 + Development, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Major arm width	Arm C - Major arm geometry	For two-way major roads, please interpret results with caution if the total major carriageway width is less than 6m.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	Two-way	Two-way		9.45	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	9.45	A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D7	2027 + Development	AM	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Av. Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	555	100.000
B		ONE HOUR	✓	380	100.000
C		ONE HOUR	✓	588	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	25	530
	B	40	0	340
	C	436	152	0

Vehicle Mix

HV %s

		To		
		A	B	C
From	A	0	3	4
	B	8	0	1
	C	6	4	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.76	30.63	3.0	D	312	468
B-A	0.26	31.28	0.4	D	37	55
C-AB	0.47	8.63	1.6	A	289	434
C-A					250	375
A-B					23	34
A-C					486	730

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	256	64	558	0.459	253	0.0	0.8	11.801	B
B-A	30	8	355	0.085	30	0.0	0.1	11.953	B
C-AB	200	50	766	0.261	198	0.0	0.6	6.635	A
C-A	242	61			242				
A-B	19	5			19				
A-C	399	100			399				

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	306	76	532	0.575	304	0.8	1.3	15.824	C
B-A	36	9	285	0.126	36	0.1	0.2	15.571	C
C-AB	271	68	796	0.340	270	0.6	0.9	7.197	A
C-A	258	64			258				
A-B	22	6			22				
A-C	476	119			476				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	374	94	492	0.762	368	1.3	2.9	28.118	D
B-A	44	11	174	0.253	43	0.2	0.4	29.490	D
C-AB	395	99	839	0.471	392	0.9	1.6	8.511	A
C-A	253	63			253				
A-B	28	7			28				
A-C	584	146			584				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	374	94	491	0.763	374	2.9	3.0	30.632	D
B-A	44	11	168	0.262	44	0.4	0.4	31.276	D
C-AB	396	99	840	0.472	396	1.6	1.6	8.626	A
C-A	251	63			251				
A-B	28	7			28				
A-C	584	146			584				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	306	76	531	0.576	312	3.0	1.4	17.082	C
B-A	36	9	279	0.129	37	0.4	0.2	16.108	C
C-AB	272	68	798	0.342	275	1.6	0.9	7.322	A
C-A	256	64			256				
A-B	22	6			22				
A-C	476	119			476				

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	256	64	557	0.459	258	1.4	0.9	12.249	B
B-A	30	8	351	0.086	30	0.2	0.1	12.123	B
C-AB	202	50	767	0.263	203	0.9	0.6	6.728	A
C-A	241	60			241				
A-B	19	5			19				
A-C	399	100			399				

2027 + Development, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Major arm width	Arm C - Major arm geometry	For two-way major roads, please interpret results with caution if the total major carriageway width is less than 6m.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	Two-way	Two-way		25.90	D

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	25.90	D

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D8	2027 + Development	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Av. Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	606	100.000
B		ONE HOUR	✓	178	100.000
C		ONE HOUR	✓	768	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	56	550
	B	20	0	158
	C	492	276	0

Vehicle Mix

HV %s

		To		
		A	B	C
From	A	0	3	4
	B	8	0	1
	C	6	4	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.35	11.35	0.5	B	145	217
B-A	0.12	23.02	0.1	C	18	28
C-AB	0.94	58.67	15.8	F	594	890
C-A					111	167
A-B					51	77
A-C					505	757

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	119	30	557	0.214	118	0.0	0.3	8.260	A
B-A	15	4	333	0.045	15	0.0	0.1	12.195	B
C-AB	392	98	788	0.498	386	0.0	1.5	9.350	A
C-A	186	47			186				
A-B	42	11			42				
A-C	414	104			414				

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	142	36	532	0.267	142	0.3	0.4	9.303	A
B-A	18	4	277	0.065	18	0.1	0.1	14.991	B
C-AB	541	135	824	0.657	536	1.5	2.9	13.170	B
C-A	149	37			149				
A-B	50	13			50				
A-C	494	124			494				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	174	43	495	0.351	173	0.4	0.5	11.266	B
B-A	22	6	200	0.110	22	0.1	0.1	21.823	C
C-AB	813	203	877	0.927	777	2.9	11.8	36.428	E
C-A	33	8			33				
A-B	62	15			62				
A-C	606	151			606				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	174	43	494	0.352	174	0.5	0.5	11.347	B
B-A	22	6	191	0.115	22	0.1	0.1	23.018	C
C-AB	843	211	894	0.943	827	11.8	15.8	58.669	F
C-A	2	0.59			2				
A-B	62	15			62				
A-C	606	151			606				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	142	36	531	0.267	143	0.5	0.4	9.371	A
B-A	18	4	263	0.068	18	0.1	0.1	15.915	C
C-AB	573	143	851	0.673	622	15.8	3.6	20.755	C
C-A	117	29			117				
A-B	50	13			50				
A-C	494	124			494				

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	119	30	557	0.214	119	0.4	0.3	8.319	A
B-A	15	4	329	0.046	15	0.1	0.1	12.378	B
C-AB	399	100	794	0.502	407	3.6	1.6	10.077	B
C-A	179	45			179				
A-B	42	11			42				
A-C	414	104			414				

2022 CF, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Major arm width	Arm C - Major arm geometry	For two-way major roads, please interpret results with caution if the total major carriageway width is less than 6m.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	Two-way	Two-way		5.79	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	5.79	A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Description	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D9	2022 CF	AM	Covid Factor	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Av. Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	242	100.000
B		ONE HOUR	✓	346	100.000
C		ONE HOUR	✓	563	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	24	218
	B	39	0	307
	C	427	136	0

Vehicle Mix

HV %s

		To		
		A	B	C
From	A	0	3	4
	B	8	0	1
	C	6	4	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.57	14.38	1.3	B	282	423
B-A	0.13	13.83	0.2	B	36	54
C-AB	0.36	6.59	0.9	A	238	357
C-A					279	418
A-B					22	33
A-C					200	300

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	231	58	621	0.372	229	0.0	0.6	9.207	A
B-A	29	7	439	0.067	29	0.0	0.1	9.470	A
C-AB	170	42	810	0.210	168	0.0	0.4	5.875	A
C-A	254	64			254				
A-B	18	5			18				
A-C	164	41			164				

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	276	69	609	0.453	275	0.6	0.8	10.855	B
B-A	35	9	395	0.089	35	0.1	0.1	10.798	B
C-AB	225	56	845	0.266	224	0.4	0.6	6.091	A
C-A	281	70			281				
A-B	22	5			22				
A-C	196	49			196				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	338	85	591	0.572	336	0.8	1.3	14.170	B
B-A	43	11	326	0.132	43	0.1	0.2	13.732	B
C-AB	317	79	894	0.355	316	0.6	0.9	6.551	A
C-A	302	76			302				
A-B	26	7			26				
A-C	240	60			240				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	338	85	590	0.572	338	1.3	1.3	14.382	B
B-A	43	11	324	0.132	43	0.2	0.2	13.825	B
C-AB	318	80	895	0.355	318	0.9	0.9	6.588	A
C-A	302	75			302				
A-B	26	7			26				
A-C	240	60			240				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	276	69	609	0.453	278	1.3	0.9	11.050	B
B-A	35	9	393	0.089	35	0.2	0.1	10.870	B
C-AB	226	56	846	0.267	227	0.9	0.6	6.141	A
C-A	280	70			280				
A-B	22	5			22				
A-C	196	49			196				

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	231	58	621	0.372	232	0.9	0.6	9.371	A
B-A	29	7	438	0.067	29	0.1	0.1	9.529	A
C-AB	171	43	810	0.211	171	0.6	0.4	5.925	A
C-A	253	63			253				
A-B	18	5			18				
A-C	164	41			164				

2022 CF, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Major arm width	Arm C - Major arm geometry	For two-way major roads, please interpret results with caution if the total major carriageway width is less than 6m.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	Two-way	Two-way		10.89	B

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	10.89	B

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Description	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D10	2022 CF	PM	Covid Factor	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Av. Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	596	100.000
B		ONE HOUR	✓	159	100.000
C		ONE HOUR	✓	729	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
	A	B	C	
From	A	0	55	541
	B	19	0	140
	C	483	246	0

Vehicle Mix

HV %s

	To			
	A	B	C	
From	A	0	3	4
	B	8	0	1
	C	6	4	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.31	10.51	0.4	B	128	193
B-A	0.10	19.88	0.1	C	17	26
C-AB	0.82	25.54	7.0	D	514	771
C-A					155	232
A-B					50	76
A-C					496	745

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	105	26	559	0.188	104	0.0	0.2	7.975	A
B-A	14	4	347	0.041	14	0.0	0.0	11.687	B
C-AB	345	86	785	0.440	340	0.0	1.2	8.468	A
C-A	204	51			204				
A-B	41	10			41				
A-C	407	102			407				

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	126	31	535	0.235	126	0.2	0.3	8.866	A
B-A	17	4	294	0.058	17	0.0	0.1	14.056	B
C-AB	475	119	820	0.579	471	1.2	2.2	10.887	B
C-A	181	45			181				
A-B	49	12			49				
A-C	486	122			486				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	154	39	500	0.308	154	0.3	0.4	10.469	B
B-A	21	5	221	0.095	21	0.1	0.1	19.430	C
C-AB	708	177	870	0.814	692	2.2	6.3	21.275	C
C-A	94	24			94				
A-B	61	15			61				
A-C	596	149			596				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	154	39	500	0.308	154	0.4	0.4	10.514	B
B-A	21	5	216	0.097	21	0.1	0.1	19.878	C
C-AB	721	180	879	0.821	718	6.3	7.0	25.544	D
C-A	81	20			81				
A-B	61	15			61				
A-C	596	149			596				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	126	31	535	0.235	126	0.4	0.3	8.909	A
B-A	17	4	288	0.059	17	0.1	0.1	14.392	B
C-AB	487	122	831	0.586	505	7.0	2.4	12.532	B
C-A	169	42			169				
A-B	49	12			49				
A-C	486	122			486				

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	105	26	559	0.188	106	0.3	0.2	8.022	A
B-A	14	4	344	0.042	14	0.1	0.0	11.804	B
C-AB	350	87	789	0.443	354	2.4	1.3	8.867	A
C-A	199	50			199				
A-B	41	10			41				
A-C	407	102			407				

2027 CF, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Major arm width	Arm C - Major arm geometry	For two-way major roads, please interpret results with caution if the total major carriageway width is less than 6m.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	Two-way	Two-way		7.91	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	7.91	A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Description	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D11	2027 CF	AM	Covid Factor	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Av. Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	566	100.000
B		ONE HOUR	✓	360	100.000
C		ONE HOUR	✓	586	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	26	540
	B	40	0	320
	C	445	141	0

Vehicle Mix

HV %s

		To		
		A	B	C
From	A	0	3	4
	B	8	0	1
	C	6	4	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.72	26.41	2.5	D	294	440
B-A	0.24	27.13	0.3	D	37	55
C-AB	0.44	8.14	1.4	A	273	409
C-A					265	397
A-B					24	36
A-C					496	743

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	241	60	556	0.434	238	0.0	0.8	11.341	B
B-A	30	8	360	0.084	30	0.0	0.1	11.763	B
C-AB	188	47	769	0.245	186	0.0	0.5	6.467	A
C-A	253	63			253				
A-B	20	5			20				
A-C	407	102			407				

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	288	72	529	0.543	286	0.8	1.2	14.843	B
B-A	36	9	295	0.122	36	0.1	0.1	14.995	B
C-AB	255	64	799	0.319	254	0.5	0.8	6.941	A
C-A	272	68			272				
A-B	23	6			23				
A-C	485	121			485				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	352	88	489	0.720	347	1.2	2.4	24.829	C
B-A	44	11	192	0.230	43	0.1	0.3	26.109	D
C-AB	374	93	843	0.443	371	0.8	1.4	8.042	A
C-A	272	68			272				
A-B	29	7			29				
A-C	595	149			595				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	352	88	488	0.721	352	2.4	2.5	26.407	D
B-A	44	11	187	0.235	44	0.3	0.3	27.135	D
C-AB	375	94	845	0.444	375	1.4	1.4	8.136	A
C-A	270	68			270				
A-B	29	7			29				
A-C	595	149			595				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	288	72	529	0.544	293	2.5	1.2	15.708	C
B-A	36	9	290	0.124	37	0.3	0.2	15.381	C
C-AB	257	64	801	0.320	259	1.4	0.8	7.045	A
C-A	270	68			270				
A-B	23	6			23				
A-C	485	121			485				

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	241	60	555	0.434	243	1.2	0.8	11.701	B
B-A	30	8	357	0.084	30	0.2	0.1	11.905	B
C-AB	189	47	770	0.246	191	0.8	0.5	6.550	A
C-A	252	63			252				
A-B	20	5			20				
A-C	407	102			407				

2027 CF, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Major arm width	Arm C - Major arm geometry	For two-way major roads, please interpret results with caution if the total major carriageway width is less than 6m.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	Two-way	Two-way		16.49	C

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	16.49	C

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Description	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D12	2027 CF	PM	Covid Factor	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Av. Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	621	100.000
B		ONE HOUR	✓	166	100.000
C		ONE HOUR	✓	759	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
	A	B	C	
From	A	0	57	564
	B	20	0	146
	C	503	256	0

Vehicle Mix

HV %s

	To			
	A	B	C	
From	A	0	3	4
	B	8	0	1
	C	6	4	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.33	11.01	0.5	B	134	201
B-A	0.11	22.13	0.1	C	18	28
C-AB	0.89	38.48	10.7	E	559	839
C-A					137	206
A-B					52	78
A-C					518	776

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	110	27	554	0.198	109	0.0	0.2	8.147	A
B-A	15	4	336	0.045	15	0.0	0.1	12.114	B
C-AB	369	92	792	0.467	364	0.0	1.4	8.800	A
C-A	202	50			202				
A-B	43	11			43				
A-C	425	106			425				

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	131	33	529	0.248	131	0.2	0.3	9.128	A
B-A	18	4	280	0.064	18	0.1	0.1	14.822	B
C-AB	512	128	829	0.618	507	1.4	2.5	11.825	B
C-A	170	43			170				
A-B	51	13			51				
A-C	507	127			507				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	161	40	492	0.327	160	0.3	0.5	10.949	B
B-A	22	6	204	0.108	22	0.1	0.1	21.327	C
C-AB	773	193	883	0.875	747	2.5	8.9	27.791	D
C-A	63	16			63				
A-B	63	16			63				
A-C	621	155			621				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	161	40	491	0.327	161	0.5	0.5	11.011	B
B-A	22	6	198	0.111	22	0.1	0.1	22.135	C
C-AB	794	198	895	0.887	787	8.9	10.7	38.480	E
C-A	42	10			42				
A-B	63	16			63				
A-C	621	155			621				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	131	33	528	0.248	132	0.5	0.3	9.184	A
B-A	18	4	271	0.066	18	0.1	0.1	15.409	C
C-AB	532	133	847	0.629	563	10.7	3.0	15.231	C
C-A	150	37			150				
A-B	51	13			51				
A-C	507	127			507				

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	110	27	554	0.198	110	0.3	0.3	8.199	A
B-A	15	4	332	0.045	15	0.1	0.1	12.265	B
C-AB	375	94	797	0.471	381	3.0	1.5	9.329	A
C-A	196	49			196				
A-B	43	11			43				
A-C	425	106			425				

2027 + Development CF, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Major arm width	Arm C - Major arm geometry	For two-way major roads, please interpret results with caution if the total major carriageway width is less than 6m.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	Two-way	Two-way		10.23	B

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	10.23	B

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Description	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D13	2027 + Development CF	AM	Covid Factor	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Av. Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	566	100.000
B		ONE HOUR	✓	386	100.000
C		ONE HOUR	✓	600	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
	A	B	C	
From	A	0	26	540
	B	40	0	346
	C	445	155	0

Vehicle Mix

HV %s

	To			
	A	B	C	
From	A	0	3	4
	B	8	0	1
	C	6	4	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.78	33.49	3.4	D	317	476
B-A	0.28	35.01	0.4	E	37	55
C-AB	0.49	8.85	1.7	A	300	450
C-A					250	376
A-B					24	36
A-C					496	743

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	260	65	555	0.469	257	0.0	0.9	12.054	B
B-A	30	8	348	0.086	30	0.0	0.1	12.185	B
C-AB	207	52	769	0.269	204	0.0	0.6	6.677	A
C-A	245	61			245				
A-B	20	5			20				
A-C	407	102			407				

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	311	78	529	0.588	309	0.9	1.4	16.386	C
B-A	36	9	277	0.130	36	0.1	0.2	16.116	C
C-AB	281	70	800	0.351	279	0.6	0.9	7.278	A
C-A	259	65			259				
A-B	23	6			23				
A-C	485	121			485				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	381	95	488	0.781	374	1.4	3.1	30.231	D
B-A	44	11	162	0.272	43	0.2	0.4	32.462	D
C-AB	411	103	844	0.487	408	0.9	1.7	8.721	A
C-A	250	62			250				
A-B	29	7			29				
A-C	595	149			595				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	381	95	487	0.783	380	3.1	3.4	33.487	D
B-A	44	11	155	0.285	44	0.4	0.4	35.011	E
C-AB	413	103	845	0.488	412	1.7	1.7	8.854	A
C-A	248	62			248				
A-B	29	7			29				
A-C	595	149			595				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	311	78	528	0.589	318	3.4	1.5	17.927	C
B-A	36	9	269	0.133	37	0.4	0.2	16.788	C
C-AB	282	71	802	0.352	285	1.7	1.0	7.416	A
C-A	257	64			257				
A-B	23	6			23				
A-C	485	121			485				

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	260	65	555	0.469	263	1.5	0.9	12.548	B
B-A	30	8	345	0.087	30	0.2	0.1	12.375	B
C-AB	208	52	771	0.270	210	1.0	0.6	6.774	A
C-A	243	61			243				
A-B	20	5			20				
A-C	407	102			407				

2027 + Development CF, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Major arm width	Arm C - Major arm geometry	For two-way major roads, please interpret results with caution if the total major carriageway width is less than 6m.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	Two-way	Two-way		33.34	D

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	33.34	D

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Description	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D14	2027 + Development CF	PM	Covid Factor	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Av. Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	621	100.000
B		ONE HOUR	✓	180	100.000
C		ONE HOUR	✓	784	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	57	564
	B	20	0	160
	C	503	281	0

Vehicle Mix

HV %s

		To		
		A	B	C
From	A	0	3	4
	B	8	0	1
	C	6	4	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.36	11.62	0.6	B	147	220
B-A	0.12	24.76	0.1	C	18	28
C-AB	0.97	75.13	20.0	F	617	925
C-A					103	154
A-B					52	78
A-C					518	776

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	120	30	554	0.217	119	0.0	0.3	8.343	A
B-A	15	4	327	0.046	15	0.0	0.1	12.435	B
C-AB	406	101	792	0.512	399	0.0	1.6	9.574	A
C-A	185	46			185				
A-B	43	11			43				
A-C	425	106			425				

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	144	36	529	0.272	143	0.3	0.4	9.432	A
B-A	18	4	270	0.067	18	0.1	0.1	15.429	C
C-AB	562	141	829	0.678	556	1.6	3.2	13.920	B
C-A	143	36			143				
A-B	51	13			51				
A-C	507	127			507				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	176	44	490	0.359	175	0.4	0.6	11.516	B
B-A	22	6	190	0.116	22	0.1	0.1	23.020	C
C-AB	850	213	884	0.962	804	3.2	14.8	43.867	E
C-A	13	3			13				
A-B	63	16			63				
A-C	621	155			621				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	176	44	489	0.360	176	0.6	0.6	11.620	B
B-A	22	6	179	0.123	22	0.1	0.1	24.761	C
C-AB	863	216	892	0.968	842	14.8	20.0	75.131	F
C-A	0	0			0				
A-B	63	16			63				
A-C	621	155			621				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	144	36	528	0.273	145	0.6	0.4	9.512	A
B-A	18	4	251	0.072	18	0.1	0.1	16.712	C
C-AB	606	151	864	0.701	669	20.0	4.2	26.841	D
C-A	99	25			99				
A-B	51	13			51				
A-C	507	127			507				

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	120	30	554	0.218	121	0.4	0.3	8.406	A
B-A	15	4	323	0.047	15	0.1	0.1	12.650	B
C-AB	413	103	799	0.518	423	4.2	1.7	10.464	B
C-A	177	44			177				
A-B	43	11			43				
A-C	425	106			425				

User and Project Details

Project:	
Title:	
Location:	Fosse Way_High Street, Syston
Additional detail:	
File name:	Fosse Way_High Street_RevD.lsg3x
Author:	
Company:	David Tucker Associates
Address:	

Phase Input Data

Phase Name	Phase Type	Assoc. Phase	Street Min	Cont Min
A	Traffic		7	7
B	Traffic		7	7
C	Ind. Arrow	B	4	4
D	Traffic		7	7

Phase Intergreens Matrix

		Starting Phase				
		A	B	C	D	
Terminating Phase	A					
	B					
	C					
	D					

Phase Delays

Term. Stage	Start Stage	Phase	Type	Value	Cont value
There are no Phase Delays defined					

Prohibited Stage Change

		To Stage		
		1	2	3
From Stage	1			
	2			
	3			

Phases in Stage

Stage No.	Phases in Stage
1	A B
2	B C
3	D

Give-Way Lane Input Data

Junction: Unnamed Junction											
Lane	Movement	Max Flow when Giving Way (PCU/Hr)	Min Flow when Giving Way (PCU/Hr)	Opposing Lane	Opp. Lane Coeff.	Opp. Mvmnts.	Right Turn Storage (PCU)	Non-Blocking Storage (PCU)	RTF	Right Turn Move up (s)	Max Turns in Intergreen (PCU)
1/1 (Fosse Way (south))	6/1 (Right)	1439	0	2/1	1.09	All	2.00	2.00	0.50	2	2.00

Lane Input Data

Junction: Unnamed Junction												
Lane	Lane Type	Phases	Start Disp.	End Disp.	Physical Length (PCU)	Sat Flow Type	Def User Saturation Flow (PCU/Hr)	Lane Width (m)	Gradient	Nearside Lane	Turns	Turning Radius (m)
1/1 (Fosse Way (south))	O	B C	2	3	60.0	Geom	-	3.30	0.00	Y	Arm 5 Ahead	Inf
											Arm 6 Right	16.00
2/1 (Fosse Way (north))	U	A	2	3	60.0	Geom	-	3.70	0.00	Y	Arm 4 Ahead	Inf
											Arm 6 Left	17.00
3/1 (High Street)	U	D	2	3	60.0	Geom	-	3.20	0.00	Y	Arm 4 Left	15.00
											Arm 5 Right	21.00
4/1 (Fosse Way (south))	U		2	3	60.0	Inf	-	-	-	-	-	-
5/1 (Fosse Way (north))	U		2	3	60.0	Inf	-	-	-	-	-	-
6/1 (High Street)	U		2	3	60.0	Inf	-	-	-	-	-	-

Lane Saturation Flows

Scenario 1: '2022 Base AM Peak' (FG1: '2022 Base AM Peak', Plan 1: 'Network Control Plan 1')

Junction: Unnamed Junction									
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)	
1/1 (Fosse Way (south))	3.30	0.00	Y	Arm 5 Ahead	Inf	24.7 %	1817	1817	
				Arm 6 Right	16.00	75.3 %			
2/1 (Fosse Way (north))	3.70	0.00	Y	Arm 4 Ahead	Inf	50.5 %	1902	1902	
				Arm 6 Left	17.00	49.5 %			
3/1 (High Street)	3.20	0.00	Y	Arm 4 Left	15.00	69.4 %	1773	1773	
				Arm 5 Right	21.00	30.6 %			
4/1 (Fosse Way (south) Lane 1)				Infinite Saturation Flow			Inf	Inf	
5/1 (Fosse Way (north) Lane 1)				Infinite Saturation Flow			Inf	Inf	
6/1 (High Street Lane 1)				Infinite Saturation Flow			Inf	Inf	

Scenario 2: '2022 Base PM Peak' (FG2: '2022 Base PM Peak', Plan 1: 'Network Control Plan 1')

Junction: Unnamed Junction								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (Fosse Way (south))	3.30	0.00	Y	Arm 5 Ahead	Inf	3.6 %	1784	1784
				Arm 6 Right	16.00	96.4 %		
2/1 (Fosse Way (north))	3.70	0.00	Y	Arm 4 Ahead	Inf	54.5 %	1908	1908
				Arm 6 Left	17.00	45.5 %		
3/1 (High Street)	3.20	0.00	Y	Arm 4 Left	15.00	65.6 %	1775	1775
				Arm 5 Right	21.00	34.4 %		
4/1 (Fosse Way (south) Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (Fosse Way (north) Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (High Street Lane 1)	Infinite Saturation Flow						Inf	Inf

Scenario 3: '2027 Base AM Peak' (FG3: '2027 AM Peak', Plan 1: 'Network Control Plan 1')

Junction: Unnamed Junction								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (Fosse Way (south))	3.30	0.00	Y	Arm 5 Ahead	Inf	24.6 %	1817	1817
				Arm 6 Right	16.00	75.4 %		
2/1 (Fosse Way (north))	3.70	0.00	Y	Arm 4 Ahead	Inf	50.4 %	1902	1902
				Arm 6 Left	17.00	49.6 %		
3/1 (High Street)	3.20	0.00	Y	Arm 4 Left	15.00	69.5 %	1773	1773
				Arm 5 Right	21.00	30.5 %		
4/1 (Fosse Way (south) Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (Fosse Way (north) Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (High Street Lane 1)	Infinite Saturation Flow						Inf	Inf

Scenario 4: '2027 Base PM Peak' (FG4: '2027 PM Peak', Plan 1: 'Network Control Plan 1')

Junction: Unnamed Junction								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (Fosse Way (south))	3.30	0.00	Y	Arm 5 Ahead	Inf	27.9 %	1822	1822
				Arm 6 Right	16.00	72.1 %		
2/1 (Fosse Way (north))	3.70	0.00	Y	Arm 4 Ahead	Inf	54.6 %	1909	1909
				Arm 6 Left	17.00	45.4 %		
3/1 (High Street)	3.20	0.00	Y	Arm 4 Left	15.00	65.7 %	1775	1775
				Arm 5 Right	21.00	34.3 %		
4/1 (Fosse Way (south) Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (Fosse Way (north) Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (High Street Lane 1)	Infinite Saturation Flow						Inf	Inf

Scenario 5: '2027 Base + Dev AM Peak' (FG5: '2027 + Dev AM Peak', Plan 1: 'Network Control Plan 1')

Junction: Unnamed Junction								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (Fosse Way (south))	3.30	0.00	Y	Arm 5 Ahead	Inf	24.1 %	1816	1816
				Arm 6 Right	16.00	75.9 %		
2/1 (Fosse Way (north))	3.70	0.00	Y	Arm 4 Ahead	Inf	50.1 %	1901	1901
				Arm 6 Left	17.00	49.9 %		
3/1 (High Street)	3.20	0.00	Y	Arm 4 Left	15.00	70.7 %	1773	1773
				Arm 5 Right	21.00	29.3 %		
4/1 (Fosse Way (south) Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (Fosse Way (north) Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (High Street Lane 1)	Infinite Saturation Flow						Inf	Inf

Scenario 6: '2027 Base + Dev PM Peak' (FG6: '2027+ Dev PM Peak', Plan 1: 'Network Control Plan 1')

Junction: Unnamed Junction								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (Fosse Way (south))	3.30	0.00	Y	Arm 5 Ahead	Inf	26.8 %	1820	1820
				Arm 6 Right	16.00	73.2 %		
2/1 (Fosse Way (north))	3.70	0.00	Y	Arm 4 Ahead	Inf	54.1 %	1908	1908
				Arm 6 Left	17.00	45.9 %		
3/1 (High Street)	3.20	0.00	Y	Arm 4 Left	15.00	66.2 %	1775	1775
				Arm 5 Right	21.00	33.8 %		
4/1 (Fosse Way (south) Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (Fosse Way (north) Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (High Street Lane 1)	Infinite Saturation Flow						Inf	Inf

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
1: '2022 Base AM Peak'	08:00	09:00	01:00	
2: '2022 Base PM Peak'	17:00	18:00	01:00	
3: '2027 AM Peak'	08:00	09:00	01:00	
4: '2027 PM Peak'	17:00	18:00	01:00	
5: '2027 + Dev AM Peak'	08:00	09:00	01:00	
6: '2027+ Dev PM Peak'	17:00	18:00	01:00	

Traffic Flows, Desired

FG1: '2022 Base AM Peak'

Desired Flow :

	Destination				
		A	B	C	Tot.
Origin	A	0	164	167	331
	B	132	0	299	431
	C	130	396	0	526
	Tot.	262	560	466	1288

FG2: '2022 Base PM Peak'

Desired Flow :

		Destination			
		A	B	C	Tot.
Origin	A	0	157	188	345
	B	195	0	372	567
	C	15	407	0	422
	Tot.	210	564	560	1334

FG3: '2027 AM Peak'

Desired Flow :

		Destination			
		A	B	C	Tot.
Origin	A	0	171	174	345
	B	137	0	312	449
	C	135	413	0	548
	Tot.	272	584	486	1342

FG4: '2027 PM Peak'

Desired Flow :

		Destination			
		A	B	C	Tot.
Origin	A	0	163	196	359
	B	203	0	388	591
	C	164	424	0	588
	Tot.	367	587	584	1538

FG5: '2027 + Dev AM Peak'

Desired Flow :

		Destination			
		A	B	C	Tot.
Origin	A	0	173	174	347
	B	140	0	338	478
	C	135	426	0	561
	Tot.	275	599	512	1386

FG6: '2027+ Dev PM Peak'

Desired Flow :

		Destination			
		A	B	C	Tot.
Origin	A	0	166	196	362
	B	205	0	402	607
	C	164	448	0	612
	Tot.	369	614	598	1581

Stage Timings

Scenario 1: '2022 Base AM Peak' (FG1: '2022 Base AM Peak', Plan 1: 'Network Control Plan 1')

Stage	1	2	3
Duration	29	32	40
Change Point	0	36	73

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	N/A	-	-		-	-	-	-	-	-	71.3%
Unnamed Junction	-	-	N/A	-	-		-	-	-	-	-	-	71.3%
1/1	Fosse Way (south) Ahead Right	O	N/A	N/A	B	C	1	66	32	526	1817	738	71.3%
2/1	Fosse Way (north) Ahead Left	U	N/A	N/A	A		1	29	-	331	1902	475	69.6%
3/1	High Street Left Right	U	N/A	N/A	D		1	40	-	431	1773	606	71.1%
4/1	Fosse Way (south)	U	N/A	N/A	-		-	-	-	466	Inf	Inf	0.0%
5/1	Fosse Way (north)	U	N/A	N/A	-		-	-	-	262	Inf	Inf	0.0%
6/1	High Street	U	N/A	N/A	-		-	-	-	560	Inf	Inf	0.0%
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	-	-	99	291	7	11.8	3.6	0.4	15.8	-	-	-	-
Unnamed Junction	-	-	99	291	7	11.8	3.6	0.4	15.8	-	-	-	-
1/1	526	526	99	291	7	3.9	1.2	0.4	5.6	38.2	14.6	1.2	15.8
2/1	331	331	-	-	-	3.8	1.1	-	4.9	53.1	9.9	1.1	11.1
3/1	431	431	-	-	-	4.1	1.2	-	5.3	44.5	12.5	1.2	13.7
4/1	466	466	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	262	262	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	560	560	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1			PRC for Signalled Lanes (%): 26.3		26.3		Total Delay for Signalled Lanes (pcuHr): 15.80		15.80		Cycle Time (s): 120		
			PRC Over All Lanes (%): 26.3				Total Delay Over All Lanes(pcuHr): 15.80						

Stage Timings

Scenario 2: '2022 Base PM Peak' (FG2: '2022 Base PM Peak', Plan 1: 'Network Control Plan 1')

Stage	1	2	3
Duration	33	20	48
Change Point	0	40	65

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	N/A	-	-		-	-	-	-	-	-	78.2%
Unnamed Junction	-	-	N/A	-	-		-	-	-	-	-	-	78.2%
1/1	Fosse Way (south) Ahead Right	O	N/A	N/A	B	C	1	58	20	422	1784	542	77.9%
2/1	Fosse Way (north) Ahead Left	U	N/A	N/A	A		1	33	-	345	1908	541	63.8%
3/1	High Street Left Right	U	N/A	N/A	D		1	48	-	567	1775	725	78.2%
4/1	Fosse Way (south)	U	N/A	N/A	-		-	-	-	560	Inf	Inf	0.0%
5/1	Fosse Way (north)	U	N/A	N/A	-		-	-	-	210	Inf	Inf	0.0%
6/1	High Street	U	N/A	N/A	-		-	-	-	564	Inf	Inf	0.0%
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	-	-	133	267	7	12.4	4.3	0.6	17.4	-	-	-	-
Unnamed Junction	-	-	133	267	7	12.4	4.3	0.6	17.4	-	-	-	-
1/1	422	422	133	267	7	4.0	1.7	0.6	6.3	53.4	12.8	1.7	14.5
2/1	345	345	-	-	-	3.6	0.9	-	4.5	46.7	10.0	0.9	10.8
3/1	567	567	-	-	-	4.9	1.8	-	6.6	42.0	16.4	1.8	18.1
4/1	560	560	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	210	210	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	564	564	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1			PRC for Signalled Lanes (%): 15.0		15.0		Total Delay for Signalled Lanes (pcuHr): 17.36		17.36		Cycle Time (s): 120		
			PRC Over All Lanes (%): 15.0		15.0		Total Delay Over All Lanes(pcuHr): 17.36		17.36				

Stage Timings

Scenario 3: '2027 Base AM Peak' (FG3: '2027 AM Peak', Plan 1: 'Network Control Plan 1')

Stage	1	2	3
Duration	28	33	40
Change Point	0	35	73

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	N/A	-	-		-	-	-	-	-	-	75.6%
Unnamed Junction	-	-	N/A	-	-		-	-	-	-	-	-	75.6%
1/1	Fosse Way (south) Ahead Right	O	N/A	N/A	B	C	1	66	33	548	1817	724	75.6%
2/1	Fosse Way (north) Ahead Left	U	N/A	N/A	A		1	28	-	345	1902	460	75.1%
3/1	High Street Left Right	U	N/A	N/A	D		1	40	-	449	1773	606	74.1%
4/1	Fosse Way (south)	U	N/A	N/A	-		-	-	-	486	Inf	Inf	0.0%
5/1	Fosse Way (north)	U	N/A	N/A	-		-	-	-	272	Inf	Inf	0.0%
6/1	High Street	U	N/A	N/A	-		-	-	-	584	Inf	Inf	0.0%
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	-	-	77	329	7	12.7	4.4	0.4	17.5	-	-	-	-
Unnamed Junction	-	-	77	329	7	12.7	4.4	0.4	17.5	-	-	-	-
1/1	548	548	77	329	7	4.3	1.5	0.4	6.3	41.1	15.7	1.5	17.2
2/1	345	345	-	-	-	4.0	1.5	-	5.5	57.5	10.6	1.5	12.1
3/1	449	449	-	-	-	4.3	1.4	-	5.8	46.1	13.1	1.4	14.5
4/1	486	486	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	272	272	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	584	584	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1			PRC for Signalled Lanes (%): 19.0		19.0		Total Delay for Signalled Lanes (pcuHr): 17.51		17.51		Cycle Time (s): 120		
			PRC Over All Lanes (%): 19.0		19.0		Total Delay Over All Lanes(pcuHr): 17.51		17.51				

Stage Timings

Scenario 4: '2027 Base PM Peak' (FG4: '2027 PM Peak', Plan 1: 'Network Control Plan 1')

Stage	1	2	3
Duration	32	25	44
Change Point	0	39	69

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	N/A	-	-		-	-	-	-	-	-	89.2%
Unnamed Junction	-	-	N/A	-	-		-	-	-	-	-	-	89.2%
1/1	Fosse Way (south) Ahead Right	O	N/A	N/A	B	C	1	62	25	588	1822	659	89.2%
2/1	Fosse Way (north) Ahead Left	U	N/A	N/A	A		1	32	-	359	1909	525	68.4%
3/1	High Street Left Right	U	N/A	N/A	D		1	44	-	591	1775	666	88.8%
4/1	Fosse Way (south)	U	N/A	N/A	-		-	-	-	584	Inf	Inf	0.0%
5/1	Fosse Way (north)	U	N/A	N/A	-		-	-	-	367	Inf	Inf	0.0%
6/1	High Street	U	N/A	N/A	-		-	-	-	587	Inf	Inf	0.0%
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	-	-	111	306	7	15.0	8.4	0.5	23.9	-	-	-	-
Unnamed Junction	-	-	111	306	7	15.0	8.4	0.5	23.9	-	-	-	-
1/1	588	588	111	306	7	5.4	3.7	0.5	9.6	58.8	18.5	3.7	22.2
2/1	359	359	-	-	-	3.9	1.1	-	4.9	49.6	10.7	1.1	11.7
3/1	591	591	-	-	-	5.8	3.6	-	9.4	57.1	18.4	3.6	22.0
4/1	584	584	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	367	367	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	587	587	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1			PRC for Signalled Lanes (%):		0.9	Total Delay for Signalled Lanes (pcuHr):		23.93	Cycle Time (s): 120				
			PRC Over All Lanes (%):		0.9	Total Delay Over All Lanes(pcuHr):		23.93					

Stage Timings

Scenario 5: '2027 Base + Dev AM Peak' (FG5: '2027 + Dev AM Peak', Plan 1: 'Network Control Plan 1')

Stage	1	2	3
Duration	38	23	40
Change Point	0	45	73

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	N/A	-	-		-	-	-	-	-	-	78.9%
Unnamed Junction	-	-	N/A	-	-		-	-	-	-	-	-	78.9%
1/1	Fosse Way (south) Ahead Right	O	N/A	N/A	B	C	1	66	23	561	1816	713	78.7%
2/1	Fosse Way (north) Ahead Left	U	N/A	N/A	A		1	38	-	347	1901	618	56.2%
3/1	High Street Left Right	U	N/A	N/A	D		1	40	-	478	1773	606	78.9%
4/1	Fosse Way (south)	U	N/A	N/A	-		-	-	-	512	Inf	Inf	0.0%
5/1	Fosse Way (north)	U	N/A	N/A	-		-	-	-	275	Inf	Inf	0.0%
6/1	High Street	U	N/A	N/A	-		-	-	-	599	Inf	Inf	0.0%
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	-	-	184	235	7	12.4	4.3	0.5	17.2	-	-	-	-
Unnamed Junction	-	-	184	235	7	12.4	4.3	0.5	17.2	-	-	-	-
1/1	561	561	184	235	7	4.4	1.8	0.5	6.8	43.4	16.4	1.8	18.2
2/1	347	347	-	-	-	3.2	0.6	-	3.9	40.1	9.5	0.6	10.2
3/1	478	478	-	-	-	4.7	1.8	-	6.5	49.3	14.3	1.8	16.2
4/1	512	512	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	275	275	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	599	599	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1			PRC for Signalled Lanes (%):	14.1	Total Delay for Signalled Lanes (pcuHr):			17.16	Cycle Time (s): 120				
			PRC Over All Lanes (%):	14.1	Total Delay Over All Lanes(pcuHr):			17.16					

Stage Timings

Scenario 6: '2027 Base + Dev PM Peak' (FG6: '2027+ Dev PM Peak', Plan 1: 'Network Control Plan 1')

Stage	1	2	3
Duration	51	7	43
Change Point	0	58	70

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	N/A	-	-		-	-	-	-	-	-	93.3%
Unnamed Junction	-	-	N/A	-	-		-	-	-	-	-	-	93.3%
1/1	Fosse Way (south) Ahead Right	O	N/A	N/A	B	C	1	63	7	612	1820	658	92.9%
2/1	Fosse Way (north) Ahead Left	U	N/A	N/A	A		1	51	-	362	1908	827	43.8%
3/1	High Street Left Right	U	N/A	N/A	D		1	43	-	607	1775	651	93.3%
4/1	Fosse Way (south)	U	N/A	N/A	-		-	-	-	598	Inf	Inf	0.0%
5/1	Fosse Way (north)	U	N/A	N/A	-		-	-	-	369	Inf	Inf	0.0%
6/1	High Street	U	N/A	N/A	-		-	-	-	614	Inf	Inf	0.0%
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	-	-	313	127	7	13.9	11.3	0.7	25.8	-	-	-	-
Unnamed Junction	-	-	313	127	7	13.9	11.3	0.7	25.8	-	-	-	-
1/1	612	612	313	127	7	5.4	5.4	0.7	11.4	66.9	19.6	5.4	24.9
2/1	362	362	-	-	-	2.4	0.4	-	2.8	27.6	8.3	0.4	8.7
3/1	607	607	-	-	-	6.2	5.5	-	11.7	69.4	19.4	5.5	24.9
4/1	598	598	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	369	369	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	614	614	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1			PRC for Signalled Lanes (%):	-3.6	Total Delay for Signalled Lanes (pcuHr):			25.84	Cycle Time (s): 120				
			PRC Over All Lanes (%):	-3.6	Total Delay Over All Lanes(pcuHr):			25.84					

Junctions 10
ARCADY 10 - Roundabout Module
Version: 10.0.4.1693 © Copyright TRL Software Limited, 2021
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Filename: Barkby - Site Access Roundabout.j10
 Path: P:\20000's\20060
 Report generation date: 13/12/2022 15:49:25

»2027 + Dev, AM
 »2027 + Dev, PM

Summary of junction performance

	AM							PM						
	Set ID	Q (PCU)	Delay (s)	RFC	LOS	Junction Delay (s)	Res Cap	Set ID	Q (PCU)	Delay (s)	RFC	LOS	Junction Delay (s)	Res Cap
2027 + Dev														
B - Northern Site Access	D5	0.1	3.85	0.10	A	3.82	185 % [A - Barkby Road (W)]	D6	0.1	3.57	0.06	A	4.01	175 % [C - Barkby Road (E)]
C - Barkby Road (E)		0.2	3.58	0.20	A				0.4	4.11	0.29	A		
D - Southern Site Access		0.2	3.49	0.17	A				0.1	3.29	0.10	A		
A - Barkby Road (W)		0.4	4.17	0.29	A				0.4	4.22	0.30	A		

There are warnings associated with one or more model runs - see the 'Data Errors and Warnings' tables for each Analysis or Demand Set.

Values shown are the highest values encountered over all time segments. Delay is the maximum value of Av. delay per arriving vehicle. Junction LOS and Junction Delay are demand-weighted Av.s. Res Cap indicates the amount by which network flow could be increased before a user-definable threshold (see Analysis Options) is met.

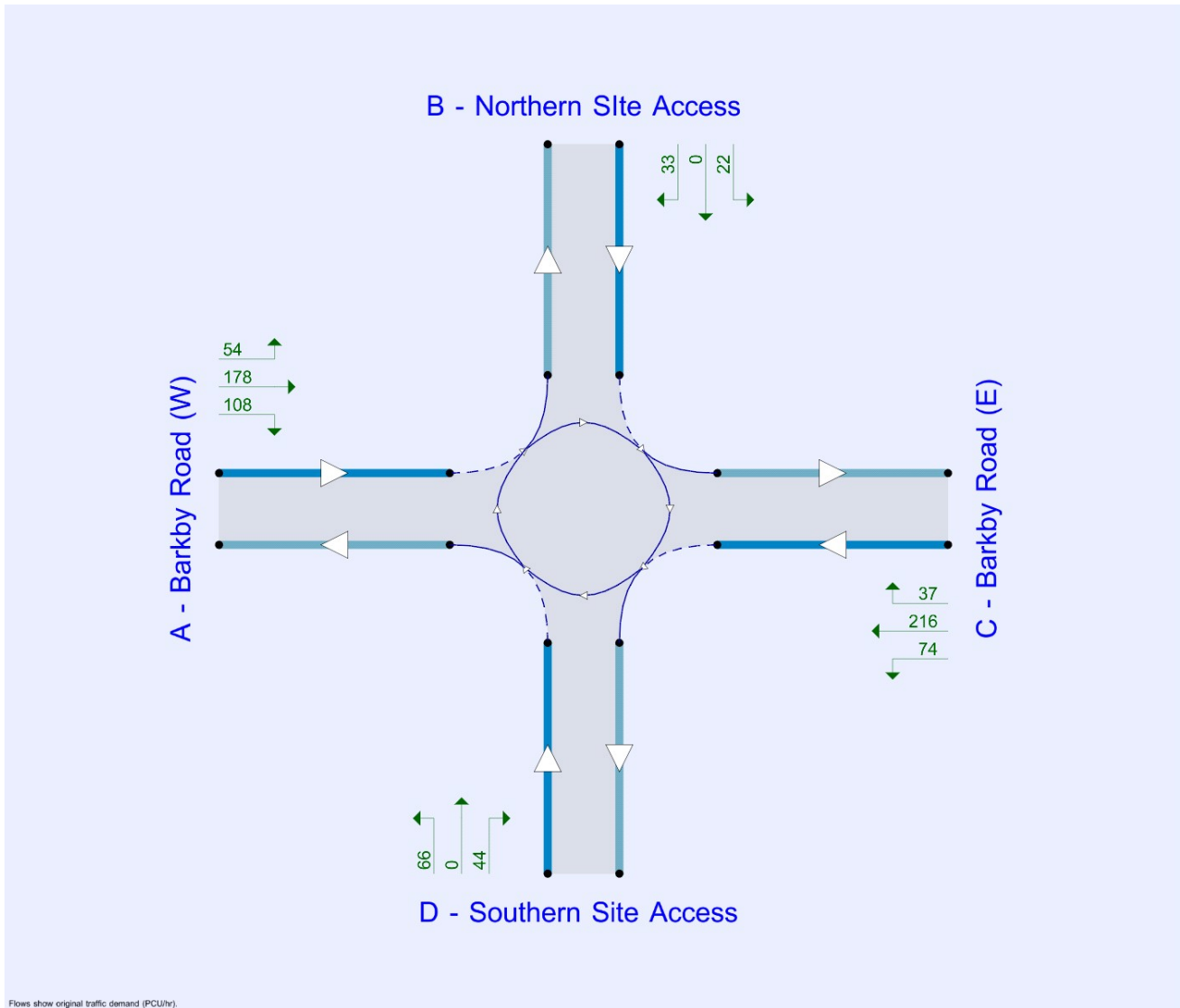
File summary

File Description

Title	
Location	
Site number	
Date	17/10/2022
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	DTA\arcady
Description	

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Av. delay units	Total delay units	Rate of delay units
m	kph	PCU	PCU	perHour	s	-Min	perMin



Flows show original traffic demand (PCU/hr).
The junction diagram reflects the last run of Junctions.

Analysis Options

Vehicle length (m)	Calculate Q Percentiles	Calculate detailed queuing delay	Show lane queues in feet / metres	Show all PICADY stream intercepts	Calculate residual capacity	Residual capacity criteria type	RFC Threshold	Av. Delay threshold (s)	Q threshold (PCU)	Use iterations with HCM roundabouts	Max number of iterations for roundabouts
5.75					✓	Delay	0.85	36.00	20.00		500

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D5	2027 + Dev	AM	ONE HOUR	07:45	09:15	15	✓
D6	2027 + Dev	PM	ONE HOUR	16:45	18:15	15	✓

Analysis Set Details

ID	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	✓	100.000	100.000

2027 + Dev, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		B, C, D, A	3.82	A

Junction Network

Driving side	Lighting	Res Cap (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	185	A - Barkby Road (W)	3.82	A

Arms

Arms

Arm	Name	Description	No give-way line
A	Barkby Road (W)		
B	Northern Site Access		
C	Barkby Road (E)		
D	Southern Site Access		

Roundabout Geometry

Arm	V (m)	E (m)	I' (m)	R (m)	D (m)	PHI (deg)	Entry only	Exit only
A - Barkby Road (W)	3.20	5.20	4.7	25.0	25.0	20.0		
B - Northern Site Access	3.00	5.50	6.0	30.0	34.0	24.0		
C - Barkby Road (E)	3.50	5.20	4.0	20.0	34.0	19.0		
D - Southern Site Access	3.00	4.60	25.0	25.0	34.0	11.0		

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
A - Barkby Road (W)	0.589	1281
B - Northern Site Access	0.579	1279
C - Barkby Road (E)	0.589	1328
D - Southern Site Access	0.618	1411

The slope and intercept shown above include any corrections and adjustments.

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D5	2027 + Dev	AM	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Av. Demand (PCU/hr)	Scaling Factor (%)
A - Barkby Road (W)		ONE HOUR	✓	321	100.000
B - Northern Site Access		ONE HOUR	✓	98	100.000
C - Barkby Road (E)		ONE HOUR	✓	224	100.000
D - Southern Site Access		ONE HOUR	✓	196	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		B - Northern Site Access	C - Barkby Road (E)	D - Southern Site Access	A - Barkby Road (W)
From	B - Northern Site Access	0	40	0	58
	C - Barkby Road (E)	20	0	40	164
	D - Southern Site Access	0	80	0	116
	A - Barkby Road (W)	29	234	58	0

Vehicle Mix

HV %s

		To			
		B - Northern Site Access	C - Barkby Road (E)	D - Southern Site Access	A - Barkby Road (W)
From	B - Northern Site Access	0	0	1	0
	C - Barkby Road (E)	0	0	0	0
	D - Southern Site Access	0	0	0	0
	A - Barkby Road (W)	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
A - Barkby Road (W)	0.29	4.17	0.4	A	295	442
B - Northern Site Access	0.10	3.85	0.1	A	90	135
C - Barkby Road (E)	0.20	3.58	0.2	A	206	308
D - Southern Site Access	0.17	3.49	0.2	A	180	270

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A - Barkby Road (W)	242	60	75	1237	0.195	241	254	0.0	0.2	3.612	A
B - Northern Site Access	74	18	279	1118	0.066	73	37	0.0	0.1	3.447	A
C - Barkby Road (E)	169	42	87	1276	0.132	168	265	0.0	0.2	3.246	A
D - Southern Site Access	148	37	182	1299	0.114	147	73	0.0	0.1	3.124	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A - Barkby Road (W)	289	72	90	1228	0.235	288	304	0.2	0.3	3.832	A
B - Northern Site Access	88	22	334	1086	0.081	88	44	0.1	0.1	3.606	A
C - Barkby Road (E)	201	50	104	1266	0.159	201	318	0.2	0.2	3.380	A
D - Southern Site Access	176	44	217	1276	0.138	176	88	0.1	0.2	3.271	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A - Barkby Road (W)	353	88	110	1216	0.291	353	372	0.3	0.4	4.170	A
B - Northern Site Access	108	27	409	1043	0.104	108	54	0.1	0.1	3.851	A
C - Barkby Road (E)	247	62	128	1252	0.197	246	389	0.2	0.2	3.578	A
D - Southern Site Access	216	54	266	1246	0.173	216	108	0.2	0.2	3.492	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A - Barkby Road (W)	353	88	110	1216	0.291	353	372	0.4	0.4	4.174	A
B - Northern Site Access	108	27	410	1042	0.104	108	54	0.1	0.1	3.852	A
C - Barkby Road (E)	247	62	128	1252	0.197	247	390	0.2	0.2	3.578	A
D - Southern Site Access	216	54	266	1246	0.173	216	108	0.2	0.2	3.493	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A - Barkby Road (W)	289	72	90	1228	0.235	289	304	0.4	0.3	3.838	A
B - Northern Site Access	88	22	335	1086	0.081	88	44	0.1	0.1	3.609	A
C - Barkby Road (E)	201	50	104	1266	0.159	202	319	0.2	0.2	3.384	A
D - Southern Site Access	176	44	218	1276	0.138	176	88	0.2	0.2	3.275	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A - Barkby Road (W)	242	60	75	1236	0.195	242	255	0.3	0.2	3.620	A
B - Northern Site Access	74	18	280	1117	0.066	74	37	0.1	0.1	3.452	A
C - Barkby Road (E)	169	42	87	1276	0.132	169	267	0.2	0.2	3.253	A
D - Southern Site Access	148	37	182	1298	0.114	148	74	0.2	0.1	3.131	A

2027 + Dev, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		B, C, D, A	4.01	A

Junction Network

Driving side	Lighting	Res Cap (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	175	C - Barkby Road (E)	4.01	A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D6	2027 + Dev	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Av. Demand (PCU/hr)	Scaling Factor (%)
A - Barkby Road (W)		ONE HOUR	✓	340	100.000
B - Northern Site Access		ONE HOUR	✓	55	100.000
C - Barkby Road (E)		ONE HOUR	✓	327	100.000
D - Southern Site Access		ONE HOUR	✓	110	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		B - Northern Site Access	C - Barkby Road (E)	D - Southern Site Access	A - Barkby Road (W)
From	B - Northern Site Access	0	22	0	33
	C - Barkby Road (E)	37	0	74	216
	D - Southern Site Access	0	44	0	66
	A - Barkby Road (W)	54	178	108	0

Vehicle Mix

HV %s

		To			
From		B - Northern Site Access	C - Barkby Road (E)	D - Southern Site Access	A - Barkby Road (W)
	B - Northern Site Access	0	0	0	0
	C - Barkby Road (E)	0	0	0	0
	D - Southern Site Access	0	0	0	0
	A - Barkby Road (W)	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
A - Barkby Road (W)	0.30	4.22	0.4	A	312	468
B - Northern Site Access	0.06	3.57	0.1	A	50	76
C - Barkby Road (E)	0.29	4.11	0.4	A	300	450
D - Southern Site Access	0.10	3.29	0.1	A	101	151

Main Results for each time segment
16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A - Barkby Road (W)	256	64	61	1245	0.206	255	236	0.0	0.3	3.633	A
B - Northern Site Access	41	10	247	1136	0.036	41	68	0.0	0.0	3.287	A
C - Barkby Road (E)	246	62	106	1265	0.195	245	183	0.0	0.2	3.526	A
D - Southern Site Access	83	21	214	1278	0.065	83	136	0.0	0.1	3.010	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A - Barkby Road (W)	306	76	73	1238	0.247	305	283	0.3	0.3	3.860	A
B - Northern Site Access	49	12	296	1108	0.045	49	82	0.0	0.0	3.400	A
C - Barkby Road (E)	294	73	127	1253	0.235	294	219	0.2	0.3	3.752	A
D - Southern Site Access	99	25	257	1252	0.079	99	163	0.1	0.1	3.121	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A - Barkby Road (W)	374	94	89	1228	0.305	374	346	0.3	0.4	4.212	A
B - Northern Site Access	61	15	363	1069	0.057	61	100	0.0	0.1	3.567	A
C - Barkby Road (E)	360	90	155	1236	0.291	360	268	0.3	0.4	4.105	A
D - Southern Site Access	121	30	315	1216	0.100	121	200	0.1	0.1	3.285	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A - Barkby Road (W)	374	94	89	1228	0.305	374	347	0.4	0.4	4.216	A
B - Northern Site Access	61	15	363	1069	0.057	61	100	0.1	0.1	3.568	A
C - Barkby Road (E)	360	90	155	1236	0.291	360	269	0.4	0.4	4.108	A
D - Southern Site Access	121	30	315	1216	0.100	121	200	0.1	0.1	3.286	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A - Barkby Road (W)	306	76	73	1238	0.247	306	284	0.4	0.3	3.865	A
B - Northern Site Access	49	12	297	1107	0.045	49	82	0.1	0.0	3.402	A
C - Barkby Road (E)	294	73	127	1253	0.235	294	220	0.4	0.3	3.756	A
D - Southern Site Access	99	25	257	1252	0.079	99	164	0.1	0.1	3.122	A

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A - Barkby Road (W)	256	64	61	1245	0.206	256	237	0.3	0.3	3.644	A
B - Northern Site Access	41	10	249	1135	0.036	41	69	0.0	0.0	3.292	A
C - Barkby Road (E)	246	62	106	1265	0.195	246	184	0.3	0.2	3.537	A
D - Southern Site Access	83	21	216	1278	0.065	83	137	0.1	0.1	3.015	A

Substantive response of the Local Highway Authority to a planning consultation received under The Development Management Order.

Response provided under the delegated authority of the Director of Environment & Transport.

APPLICATION DETAILS:

Planning Application Number: P/21/2639/2

Highway Reference Number: 2021/2639/02/H/R4

Application Address: Land North of Barkby Road Syston Leicestershire

Application Type: Outline (with access)

Description of Application:

Re-consultation. Outline application for up to 195 dwellings with all matters reserved except access.

GENERAL DETAILS

Planning Case Officer: Liam Ward

Applicant: Taylor Wimpey (UK) Ltd

County Councillor: Mr Tom Barkley

Parish: Syston

Road Classification: Class C

Substantive Response provided in accordance with article 22(5) of The Town and Country Planning (Development Management Procedure) (England) Order 2015:

The Local Highway Authority does not consider that the application as submitted fully assesses the highway impact of the proposed development and further information is required as set out in this response. Without this information the Local Highway Authority is unable to provide final highway advice on this application.

Advice to Local Planning Authority

Background

The Local Highway Authority (LHA) has been re-consulted on an outline with access planning application for up to 195 dwellings to be located on land north of Barkby Road, Syston.

In its previous response dated 3rd October 2022, the LHA requested further information to be submitted with regard to a number of elements.

These highway observations are in response to the following document and drawings which have now been submitted to Charnwood Borough Council in support of the planning application.

- SJT/SC 20060_10 Transport Note (TN) prepared by David Tucker Associates dated 13th December 2022;
- Drawing 20060-02-2 Rev D (Swept Path Analysis);
- Drawing 20060-02-2 Rev D (Site Access Plan);
- Drawing 20060-06 (Roundabout Dimensions); and
- Drawing 2060-06-2 (Roundabout Tracking)

Site Access

Revised swept-path analysis demonstrated in drawing 20060-02-2 now shows a Phoenix 2-23 W 6x4 refuse vehicle manoeuvring in and out of the site access. It is noted that some of the manoeuvres show that the refuse vehicle will encroach onto the other lane, notwithstanding this, as these movements will occur infrequently the LHA consider the swept path analysis to be acceptable.

As requested in its previous comments, the site access plan, drawing 20060-02 Rev D has been revised to include layout dimensions for the proposed ghost island and right turn lane provision, along with the proposed footway running adjacent to the kerb line. It should however be noted that the drawing indicates lane widths of 3.0m. Widths of 3.25m should ideally be provided for the through lanes along the bus route. The drawing indicates a 55m length for deceleration / turning / queuing lengths. This would meet CD116 requirements for a 70kph design speed, including an allowance of 5m for queuing length. However, the 55m distance should be measured to the centre line of the side road and not to the right turn arrow as shown.

The lane direction arrows are also located slightly too far beyond the centre line of the access road, and their locations need to be adjusted. No dimensions have been shown for the width of the right-turn lane and this needs to be indicated on the drawing. The taper length over which right-turn ghost island is developed also needs to be shown; this should be 1 in 20 as per CD116 Table 6.1.1 guidance. The LHA considers that the length shown on the drawing is too short. The LHA is concerned that the amendments to the design required would push the start of the central hatching closer to the existing junction with Queniborough Road. There will need to be sufficient space to fit the 1:20 taper in before the stop line, however this may not be achievable.

An orange line has been added to indicate the highway boundary, and this indicates that land would need to be transferred into the publicly maintained highway. This would need to include visibility splays, footway widths and required verge widths.

It is noted that the wide verge provision between the footway and carriageway edge has now been removed, and that 2.0m wide footways are being proposed which is considered acceptable.

Whilst the LHA note that a Stage 1 Road Safety Audit was undertaken for the proposed site access, the LHA would request for an updated RSA and accompanying Designer's Response once the requested changes mentioned earlier in these comments have been addressed.

Site Access Roundabout Option

The LHA have reviewed the submitted drawings 20060-06 (Roundabout Dimensions); and 2060-06-2 (Roundabout Tracking) and have the following comments.

The drawing indicates a proposed Inscribed Circle Diameter (ICD) of 34.0m for the roundabout layout. It would appear that a compact roundabout is being proposed but no dimensions have been provided for the central island diameter and overrun area, and these are required to be submitted for review. It is noted from the Roundabout Tracking drawing that a central overrun area may not be necessary, and if possible, this should be avoided.

Although no circulatory carriageway width information has been provided, it would appear that the circulatory carriageway is wider than CD116 para 3.6.8 guidance, in which case this should be amended accordingly.

Entry path curvature has been shown for the Barkby Road approaches to the roundabout, but not for the side road approaches, and these would also need to be submitted for review.

Further information for the geometrical design parameters of the roundabout is required to be submitted including entry widths, entry angles, exit widths, exit kerb radius and exit width tapers.

For the Barkby Road Eastbound approach to the roundabout, a stopping sight distance of 90m is shown to the give way line, however this would need to be 120m based on the 85th percentile speed measurements recorded for this direction. The Applicant should ensure that this is amended.

Forward visibility for the side road approaches to the roundabout also needs to be advised on the drawing.

No provision has been shown for pedestrian movements at the roundabout, and it is likely that the provision of footway to the Western side of the junction would be required across the Western arm.

The tracking shown indicates that the design vehicle would overrun the proposed kerb-lines at a number of locations, and so the design layout should be amended to avoid this. The vehicle tracking would need to be resubmitted using a 15kph vehicle speed and indicating a 0.5m clearance to kerb-lines.

There is also concern that on both Barkby Road approaches to the roundabout, the design vehicle is also shown as conflicting with opposing traffic exiting the junction. The design layout must be amended to avoid this.

As mentioned earlier, the tracking for a vehicle on the circulatory carriageway suggests that a central overrun area may not be required and this should be avoided if possible. However, this would be subject to revisiting the tracking once the other concerns raised above have been addressed.

The junction has been subject to detailed capacity analysis using ARCADY. As part of the wider allocation, the southern parcel is forecast to deliver around 200 homes served from the southern arm of this proposed roundabout. Given that the assignment of trips to/from the site is yet to be determined, an estimation of the number of trips from the southern arm has been estimated by applying a factor of two of the proposed development trips (i.e., a total of c 400 houses from the south). The trips have also been assigned using the same distribution percentages as the proposed development traffic. A summary of the assessment is shown below in Table 1.

Trip Generation

The LHA requested that the 'Oadby' trip rates be used as the actual predicted trip rates in the assignment. The Applicant has confirmed that the requested trip rates have been used and the LHA are now satisfied with the proposed trip rates.

Junction Capacity Assessments

The LHA requested classified turning counts to be undertaken with covid factors applied. The LHA also requested that once the new surveys have been undertaken, the detailed junction capacity assessments should be re-rerun and that the Fosse Way/ High Street and Barkby Road/ Pembroke Avenue junctions be included within the assessment. The LHA requested that the 2022 base flows should be factored up to a future year of 2027 following application of Covid factors, with the TEMPro growth factor to also be revised and committed developments added.

The junction capacity assessments have been re-run following the application of Covid factors provided by the LHA to the base year traffic flows. The adopted rates and flow matrices are provided at Appendix C of the TN.

The LHA also requested which committed developments were included within the assessment and these have been provided below. The Applicant has stated there are only two sites in the area which could be considered committed as follows, but neither have a direct impact / material on the junctions within the scope of the TA:

1. P/20/2349/2 (50 dwellings) - Impact is 30 trips so wider assessment was scoped out and
2. P/20/2383/2 (270 dwellings) - There is minimal trips through the potential overlapping junctions (less than 10 trips so this has been scoped out. It is likely that those numbers could dissipate through the network before reaching the assessed junctions, but even as a worst case, they are considered to be minimal.
3. Hallam and DWH were both recently refused and all other applications north of Syston are either built out or expired (P/13/1696/2 Queniborough Lodge for 125 dwells was granted in Jan 2015 and no Reserved Matters)

The LHA consider the above to be acceptable and consider both committed developments do not have a material impact on the junctions within the study area.

The results of the revised capacity analysis undertaken at each junction by DTA are shown in Table 1 extracted from the TN below:

Table 1: Junction Capacity Assessment Summary

Junction	Base Year (2021/2022)	2027	2027 + Development
Site Access Roundabout	-		Within capacity (highest RFC of 0.29 and Q of 0) Development flows (excluding HA1) through junction: 147 AM, 146, PM
1. High Street/Melton Road/Barkby Road	Within capacity (highest RFC of 0.84 and Q of 5)	Approaching capacity (highest RFC of 0.89 and Q of 7)	Approaching capacity (highest RFC of 0.93 and Q of 10) Development flows through junction: 48 AM, 48, PM
2. Barkby Road/ Queniborough Road	Within capacity (highest DoS of 71.6% and Q of 9)	Within capacity (highest DoS of 75.6% and Q of 9)	Within capacity (highest DoS of 80.3% and Q of 11) Development flows through junction: 60 AM, 60, PM
4. Barkby Road/ Pembroke Avenue	Within capacity (highest RFC of 0.34 and Q of 1)	Within capacity (highest RFC of 0.36 and Q of 1)	Within capacity (highest RFC of 0.44 and Q of 1) Development flows through junction: 87 AM, 87, PM
5. Goodes Lane/ Melton Road;	Within capacity (highest RFC of 0.82 and Q of 7)	Approaching capacity (highest RFC of 0.89 and Q of 11)	Nearing capacity (highest RFC of 0.97 and Q of 20) Development flows through junction: 40 AM, 39, PM
6. Fosse Way/ High Street	Within capacity (highest DoS of 78.2% and Q of 18)	Within capacity (highest DoS of 89.2% and Q of 22)	Approaching capacity (highest DoS of 92.9% and Q of 25) Development flows through junction: 44 AM, 44, PM

The results of the revised assessment demonstrates that junctions 1m, 5 and 6 are forecast to operate above the theoretical capacity threshold of 0.85 RFC when development traffic is added.

The LHA would request for the modelling files for J1-J6 to be submitted so the LHA can review and verify the models. It should be noted that the LHA may seek mitigation at the aforementioned junctions following a review of the models.

For a consistent and robust approach, as advised in the LHA's response for planning application P/22/0354/2 (Land at Barkby Road/ Queniborough Road Syston - 251 dwellings - HA2), the LHA would request for the Applicant to undertake and submit a sensitivity test which would consider the cumulative impacts of all of the draft allocation sites included in the Draft Charnwood Local Plan, which will include sites in Syston and Queniborough in particular.

Date Received
14 December 2022

Case Officer
Suraj Dave

Reviewer
AW

Date issued
27 January 2023

From: [Simon Tucker](#)
To: [Suraj Dave](#); [Adrian Whiteman](#)
Cc: [Liam Ward](#); [Gary Tucker - TW Strategic Land](#); [Nichola Willder - TW Strategic Land](#)
Subject: 20060: Syston P/21/2639/2
Attachments: [image001.jpg](#)
[20060-08-2.pdf](#)
[20060-08.pdf](#)

Dear Adrian and Suraj,

Thank you (and Liam) for your time on Thursday. It was helpful to have agreed that the site access arrangements are acceptable and can be secured by planning permission. I attach a final version of our response note which reflects those discussed.

You will see that in respect of the traffic modelling, I have included an additional section in my response note which considers a further sensitivity test that includes our site and Jelsons and then adds growth to the end of the Local Plan Period (2037) as we agreed. This, as might be expected, shows that the three junctions approaching capacity in the TA assessment are worsened by further growth. I have expanded my view on the impacts of this development in that context in the note and as you will see, conclude that there remain no severe impact or changes as a result of the development. I have provided the model files for those in a separate zip file.

That said and without prejudice I have prepared two potential mitigation schemes for the junction of Fosse Way / High Street and Goodes Lane / Melton Road.

At Goodes Lane / Melton Road, the capacity constraint that is emerging is the fact that right turning traffic into Goodes Lane blocks northbound traffic on Melton Road. The attached scheme therefore suggests removing 2 or 3 parking spaces on the northern side of Melton Road thus removing that constraint. This will need a change to the TRO and some white lining so presumably would be best secured by S106 contribution. I would expect a contribution in the order of £10,000 would cover that.

At Fosse Way / High Street, the site was previously asked to contribute £2,000 towards changes to the signal timing. However the highway boundary here is generous on the north and eastern sides and there is scope to provide more capacity by widening the approaches in a modest way to provide more space for right turning vehicle and to tighten up the stop lines to reduce intergreen times. Clearly the detail of that would need refinement through S278 and indeed consideration of wider development impacts when they are known.

As agreed in the meeting, physical improvements at the High Street / Melton Road junction are likely to increase capacity and attract more traffic through the junction in the longer term. A potential mitigation scheme has accordingly not been prepared.

As mentioned in the meeting we have prepared a draft highway obligation which covers the above and provides a potential mechanism to deal with other sites coming forward that allows LCC to either take a contribution or require us to complete the works via S278 agreement. I trust this provides all parties with the necessary flexibility but also importantly caps Taylor Wimpey's liability on a fair and reasonable basis.

In relation to Public Transport, we agreed it would be appropriate and reasonable to have a capped commitment to improving services. We are willing in principle to support improvements

to the 100 and / or to contribute towards other wider improvements to bus services that might come forward from other development consents. In order to establish an appropriate level from this development we have spoken to Centre Bus who have indicated a cost of £71,000 pa would allow them to improve the Service 100 to a 30 minute frequency between the hours of 0700-0900 and 1600-1900. We can therefore undertake to provide an equivalent funding of 5 years which would give an overall contribution of 6 years. This is on the basis that we would commence a contribution on occupation of the 50th house. In the attached note we have rounded the annual contribution to £75,000.

I trust this provides a reasonable and appropriate basis against which to resolve the outstanding highway matters and look forward to meeting next week to discuss. Obviously if anything immediately arises before the meeting and you need any further detailed from me please do let me know.

Simon

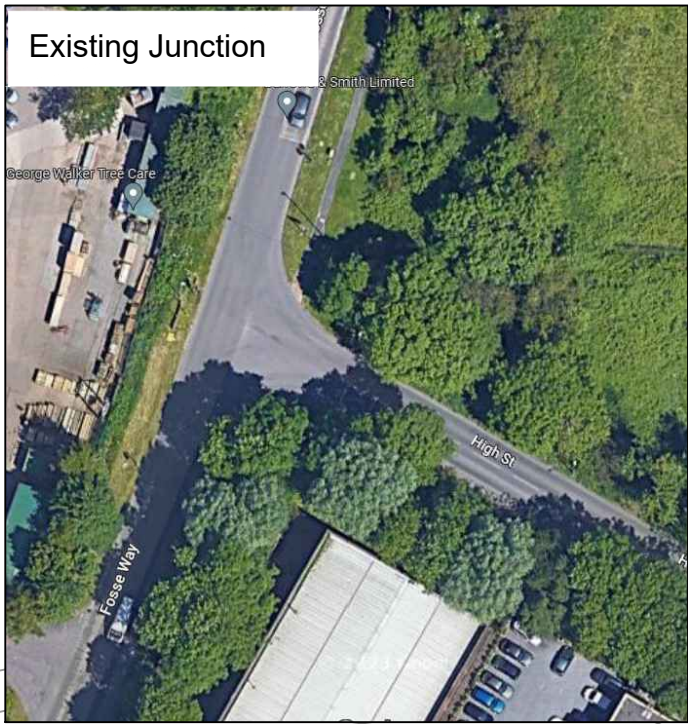
Kind regards

Simon Tucker



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Fosse Way
ROMAN ROAD

FOSSE WAY

Giveway moved forward

Widened radii

Widened carriageway to allow for a right turn lane

Highway boundary extents

Giveway moved forward

Industrial Estate

Without Prejudice

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JOB TITLE		System		CLIENT		Taylor Wimpey	
DRAWING TITLE							
Fosse Way – High Street Junction Potential Improvements							
SCALE	DRAWN BY	DATE	DRAWING No	REVISION			
1/500@A3	BP	16-03-23	20060-08-2				



Proposed Junction

Existing bus stop retained

On street parking reduced by 3 spaces

Right turn lane

On street parking reduced

Existing bus layby retained

MELTON ROAD

1113

1096

1098
1102

1109

2

Without Prejudice

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REV	DESCRIPTION	DRAWN	INITIALS	DATE

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JOB TITLE		CLIENT	
System		Taylor Wimpey	
DRAWING TITLE			
Godes Lane – Melton Road Potential Improvements			
SCALE	DRAWN BY	DATE	DRAWING No
1/250@A3	BP	16-03-23	20060-08
			REVISION

Land North of Barkby Road, Syston
Response to Leicestershire County Council Highways
Comments 27th January 2023



1.0 INTRODUCTION

1.1 Overview

1.1.1 DTA Transportation has been commissioned by Taylor Wimpey to provide transportation advice on the viability and delivery of the proposed residential development of up to 195 dwellings on land north of Barkby Road, Syston. A Transport Assessment (DTA reference 20060-08b) has been produced that has assessed the potential implications.

1.1.2 As part of the application process, Leicestershire County Council ("LCC") as Local Highway Authority has reviewed the TA and previously made a number of comments (dated 13th May 2022). DTA responded to the comments via a response noted dated June 2022. Further comments were received on 3rd October 2022 (responded to on 13th December 2022).

1.2 Report Purpose and Structure

1.2.1 This note has been produced in response to additional comments raised by LCC in their response of 27th January 2023 and discussions at a meeting held on 16th March 2023.

1.2.2 The additional comments raised by LCC are summarised below individually with a response from DTA.

1.2.3 The comments from LCC in full is contained within **Appendix A** of this note and should be read in conjunction with this note. For ease, the summary of LCC's comments are set out in *blue italics*, with DTA's response set out in black.

1.2.4 These clarifications confirm and support the findings of the original Transport Assessment.



2.0 LCC COMMENTS AND DTA RESPONSES

2.1 Site Access

2.1.1 Swept-path

Revised swept path analysis has been provided and the LHA consider the swept path analysis to be acceptable.

DTA response: Noted

2.1.2 Site Access Plan

LCC have requested that the access design be revised to consider the requirements of CD116 in respect of lane widths, deceleration lane length and tapers.

DTA response: The appropriate design standard for the right turn lane is CD123 and therefore is assumed that the LCC reference is to the roundabout overlay not the right turn lane.

For completeness, the site access plan, (**Drawing 20060-02 Rev F**) has been revised to include layout dimensions for the proposed ghost island and right turn lane provision. It was confirmed at the meeting on the 16th March 2023 that this arrangement is acceptable and agreed.

In terms of the lane widths these have been increased to 3.25m running lanes and a 3.5m wide right turn lane as per CD123 (Para 6.8 and 6.10 respectively).

The deceleration length (length b below) for a 70kph design speed (as in this instance) is set out in Table 5.22 is 40m. The turning length (a) should be 10m. A total of 50m is thus shown on the plan. No additional queue length is required as set out in the capacity assessments provided in the TA.



Figure 6.3a Major / minor priority junction with a ghost Island on single carriageway

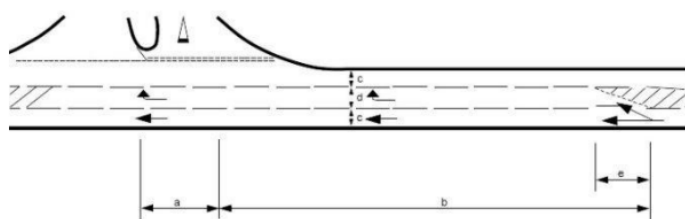


Figure 6.3b Major / minor priority junction with a up-gradient ghost island on climbing lane

The length of the direct taper (e) is 15m.

The taper length is (as per Table 6.1.1) set at 1 in 20 and in accordance with Para 6.1.2 are developed symmetrically on the road, giving a taper of 35m long (1.75m x 1:20) either side of the central line.

Whilst modest tweaks have been provided to the layout, the form (and indeed interaction with the signal control junction) are the same as the previous version of the plan. There is therefore no fundamental change to the overall scheme and therefore no need to revisit the (agreed) Road Safety Audit.

The scheme can readily be secured by planning condition and further detailed design developed as part of the Section 278 agreement.

It is noted that the scheme in respect of the pedestrian footway provision is now agreed.

2.1.3 Roundabout Option

LCC have requested further design details of the roundabout shown on Drawing 20060-06.

DTA response:

Drawing 20060-06 was prepared at the request of LCC to demonstrate that the issuing of planning permission for this application and the associated proposed right turn lane would not prejudice the delivery of development to the south of Barkby Road (as included as Draft Allocation HA1).

We wish to make it absolutely clear that **Drawing 20060-06** was submitted for information purposes only and approval to it is not sought as part of this planning



application.

The comments raised by LCC relate to detailed design matters (circulatory widths, entry path curvature and tracking). These are all matters which can be addressed as part of the future planning application for the land south of Barkby Road but for completeness the details are provided on **Drawing 20060-06 Rev A and 20060-06-2A**.

Clearly the submitted drawing does however demonstrate that there are no constraints to providing a compliant roundabout junction in the future. This was agreed at the meeting on the 16th March 2023.

2.1.4 Junction Capacity Assessments

The LHA have noted that the consideration of committed developments in the addendum report is appropriate and that the neither "committed" development have a material impact on the junctions with the Study Area.

DTA response: Noted

Notwithstanding this, the LHA have asked for a sensitivity test which would consider the cumulative impacts of all of the draft allocation sites included in the Draft Charnwood Local Plan, which will include sites in Syston and Queniborough in particular.

DTA response:

The scope of the transport assessment has been discussed in detail with LCC since submission the application in December 2021.

The first LCC response in May 2022 requested that committed developments be included in the assessment. The June 2022 response was based on Temprow growth on the basis that there were no significant other consents that impacted on the same study area.

As set out above this is now an agreed position.

The requirement in respect of committed development is set out in Planning practice guidance which confirms that:

It is important to give appropriate consideration to the cumulative impacts arising from other committed development (ie development that is consented or allocated where there is a



reasonable degree of certainty will proceed within the next 3 years). At the decision-taking stage this may require the developer to carry out an assessment of the impact of those adopted Local Plan allocations which have the potential to impact on the same sections of transport network as well as other relevant local sites benefitting from as yet unimplemented planning approval

The submitted transport analysis and assessment for the proposed development, accords with that guidance. It is also consistent with LCCs own response to planning application ref P/22/0354/2 (Draft Allocation HA2) which states in terms – “No ‘committed developments’ have been considered within the modelling. A ‘committed development’ is one that has received full or outline planning permission or is allocated in an adopted development plan.”

At present, assessment of wider development in the Local Plan across Charnwood has been undertaken at a strategic level, as is appropriate for the evidence base for the Local Plan.

However, the lack of detail on those other draft allocations (including access strategy and mitigation package) means that full assessment of their impacts at this stage is not feasible or possible. Whilst HA1 is being promoted by the same applicant, discussions are ongoing about the overall access strategy, trip rates and distribution, which means that a meaningful assessment of that site cannot be undertaken at this stage.

The assessments submitted in support of this application to date, confirms that there are junctions within Syston approaching capacity but that the scale of the impact from this application is not sufficient to warrant mitigation and / or trigger any severe impact.

Clearly the requirement of the NPPF (and indeed the CIL regulations) is that any mitigation provided by a development is directly related to it and essential to make the development acceptable in planning terms. The submitted assessment provides a wholly appropriate basis on which to consider the impacts, given it does not include wider development or indeed any other strategic mitigation that might be forthcoming as part of the IDP.

The sensitivity test requested would therefore provide no meaningful additional evidence on which to consider the appropriateness of the application site or mitigation required.



The approach taken is also consistent with other recently determined schemes.

Notwithstanding this, and without prejudice to the above, a sensitivity test has been undertaken to test the implications of allowing for future growth on the network by applying TEMPro to the end of the Local Plan period (i.e 2037).

The Tempro growth figure applies a further 14% traffic growth and relates to an additional 1,300 houses within and around Syston. In addition to this the application site and HA2 traffic flows have been added to the test. No allowance has been made for other mitigation measures (including, as suggested in the Local Plan IDP draft, strategic active travel interventions). It is therefore particularly robust.

It is also worthy of note that the Local Plan Evidence base modelling confirms (at Table 5.10 of the Further Analysis and Refinement Report – MAY 2021) a general reduction (or at worst no change) in vehicle flows through Syston as a result of local plan interventions. The assessment of future growth should therefore be considered in that context.

The results are tabulated below. It can be seen that junctions 2 and 4 remain well within capacity. On the basis of unconstrained Tempro Growth, Junction 1, 5 and 6 are shown over capacity in the 2037 base. Clearly however the development does not materially change operation of the junctions to a point at which mitigation could be considered necessary in the context of the NPPF Para 110. There is no severe impact in the context of NPPF Para 111.

Given that, in reality, the wider modelling for the Local Plan confirms that significant increases in flow in Syston are unlikely this supports the conclusions of the TA that no mitigation is appropriate as a result of this development.

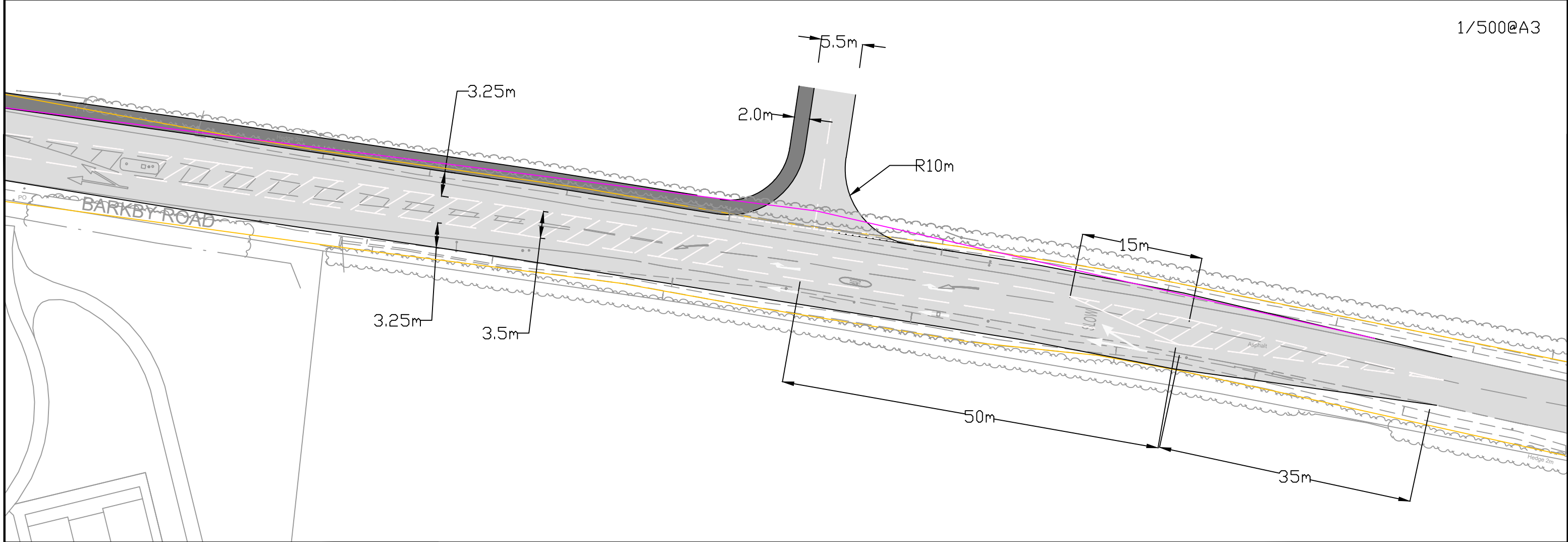
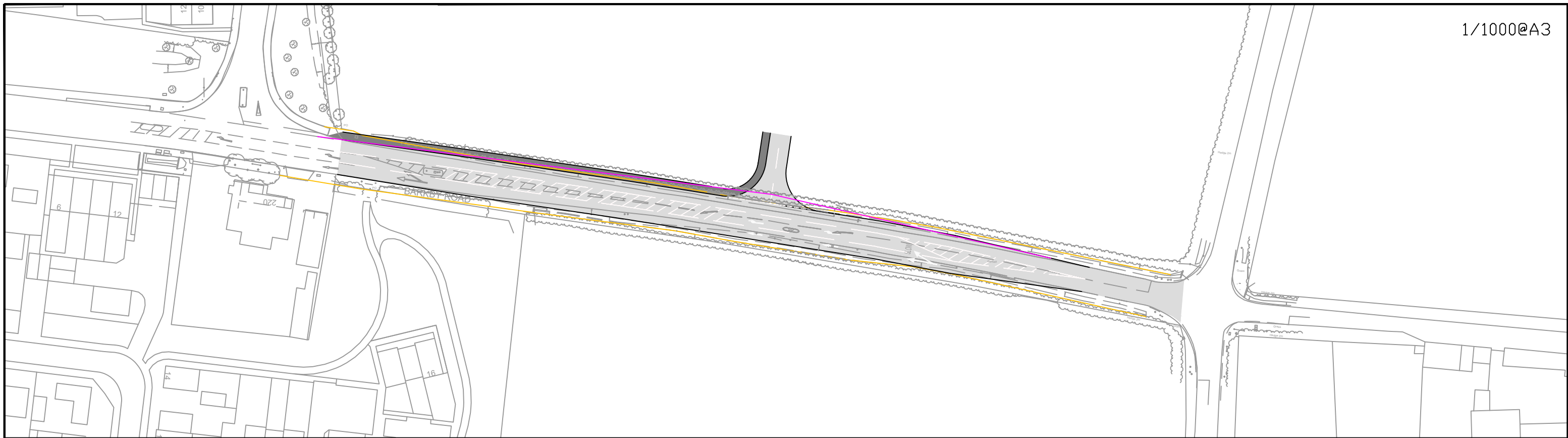
Junction	Base Year (2021/2022)	2027 Base	2027 + Development	2037 (Base Sensitivity)	2037 + Development
Site Access	-		Within capacity (highest RFC of 0.33 and Q of 1) Development flows (excluding HA1) through junction: 147 AM, 146, PM	Highest RFC of 0.23 Q of 0	Highest RFC of 0.35 Q of 1
1. High Street/Melton Road/Barkby Road	Within capacity (highest RFC of 0.84 and Q of 5)	Approaching capacity (highest RFC of 0.91 and Q of 8)	Approaching capacity (highest RFC of 0.95 and Q of 12) Development flows through junction: 48 AM, 48, PM	Highest RFC of 1.04 Q of 27	Highest RFC of 1.09 Q of 39
2. Barkby Road/Queniborough Road	Within capacity (highest DoS of 71.6% and Q of 9)	Within capacity (highest DoS of 81.7% and Q of 16)	Within capacity (highest DoS of 86.4% and Q of 18) Development flows through junction: 60 AM, 60, PM	Highest DoS of 88.6% Q of 12	Highest DoS of 93.5% Q of 14
4. Barkby Road/Pembroke Avenue	Within capacity (highest RFC of 0.34 and Q of 1)	Within capacity (highest RFC of 0.37 and Q of 1)	Within capacity (highest RFC of 0.44 and Q of 1) Development flows through junction: 87 AM, 87, PM	Highest RFC of 0.42 Q of 1	Highest RFC of 0.50 Q of 1
5. Goodes Lane/Melton Road;	Within capacity (highest RFC of 0.82 and Q of 7)	Approaching capacity (highest RFC of 0.89 and Q of 11)	Nearing capacity (highest RFC of 0.97 and Q of 20) Development flows through junction: 40 AM, 39, PM	Highest RFC of 1.03 Q of 34	Highest RFC of 1.09 Q of 53
6. Fosse Way/ High Street	Within capacity (highest DoS of 78.2% and Q of 18)	Within capacity (highest DoS of 92.0% and Q of 24)	Approaching capacity (highest DoS of 94.5% and Q of 26) Development flows through junction: 44 AM, 44, PM	Highest DoS of 103.3% Q of 42	Highest DoS of 105.7% Q of 49



3.0 SUMMARY

- 3.1 The purpose of this note is to address the additional comments raised by Leicestershire County Council on the Transport Assessment produced in support of the planning application for the proposed residential development on land north of Barkby Road, Syston.
- 3.2 The response confirms that all the geometrical issues relating to the proposed access have been addressed.
- 3.3 The details requested have been provided, which further confirms that the development will not have a severe impact, and, on this basis, the development should be supported from a transportation perspective.

Drawings

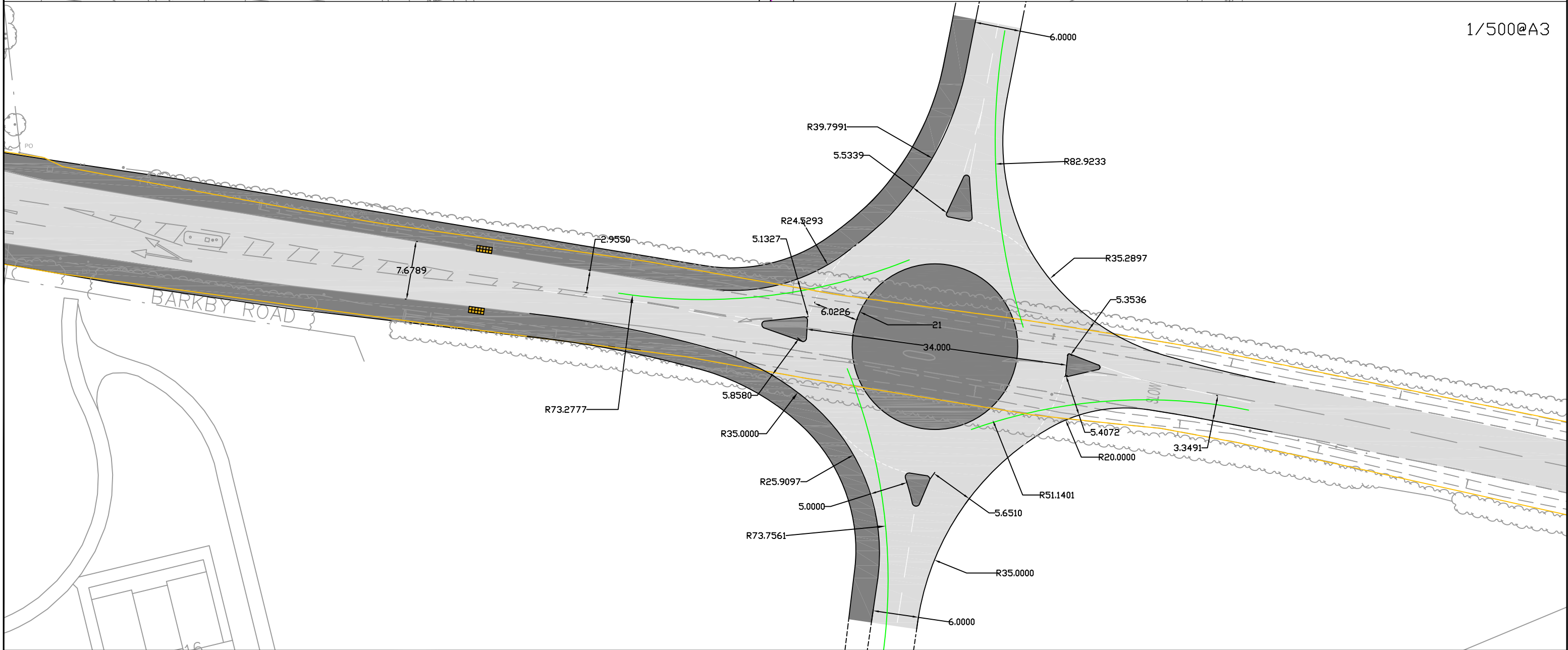
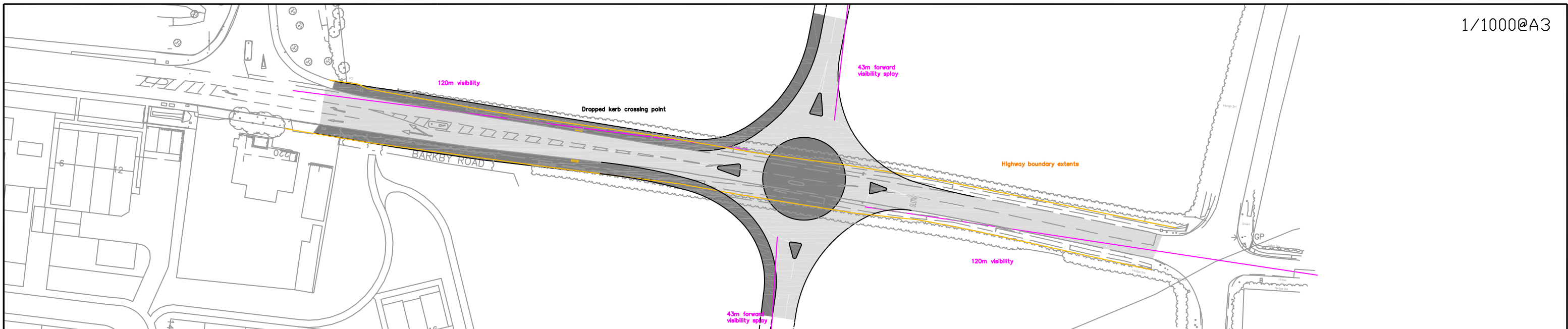


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REV	DESCRIPTION	DRAWN	INITIALS	DATE	DRAWING STATUS	CHECKED BY	DATE

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JOB TITLE	Syston	CLIENT	Taylor Wimpey
DRAWING TITLE	Proposed Site Access Right Turn Lane Northern Site		
SCALE	See Plan	DRAWN BY	BP
DATE	31-01-23	DRAWING No	20060-02
REVISION	F		

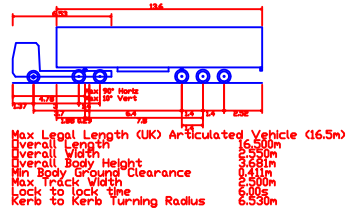
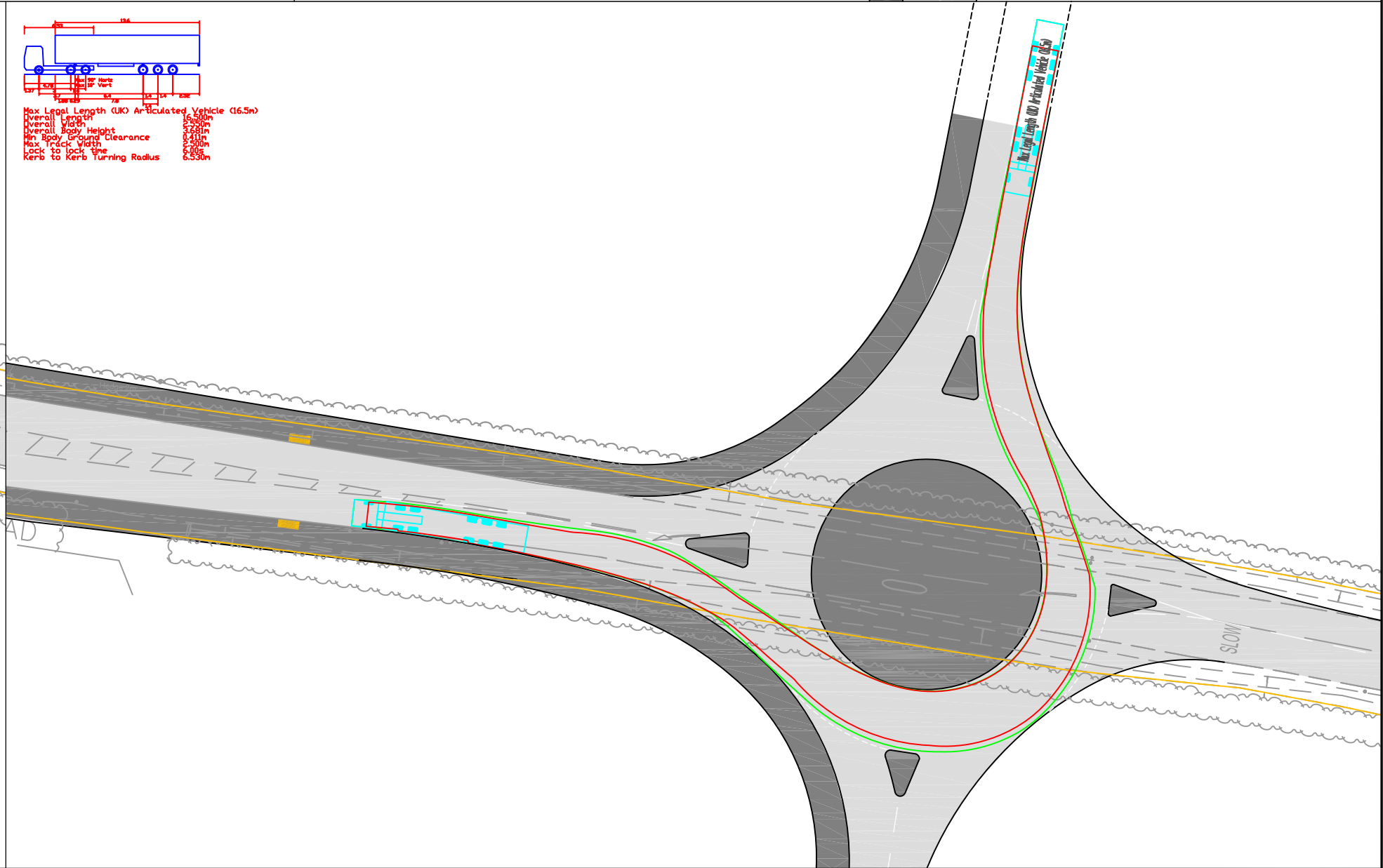
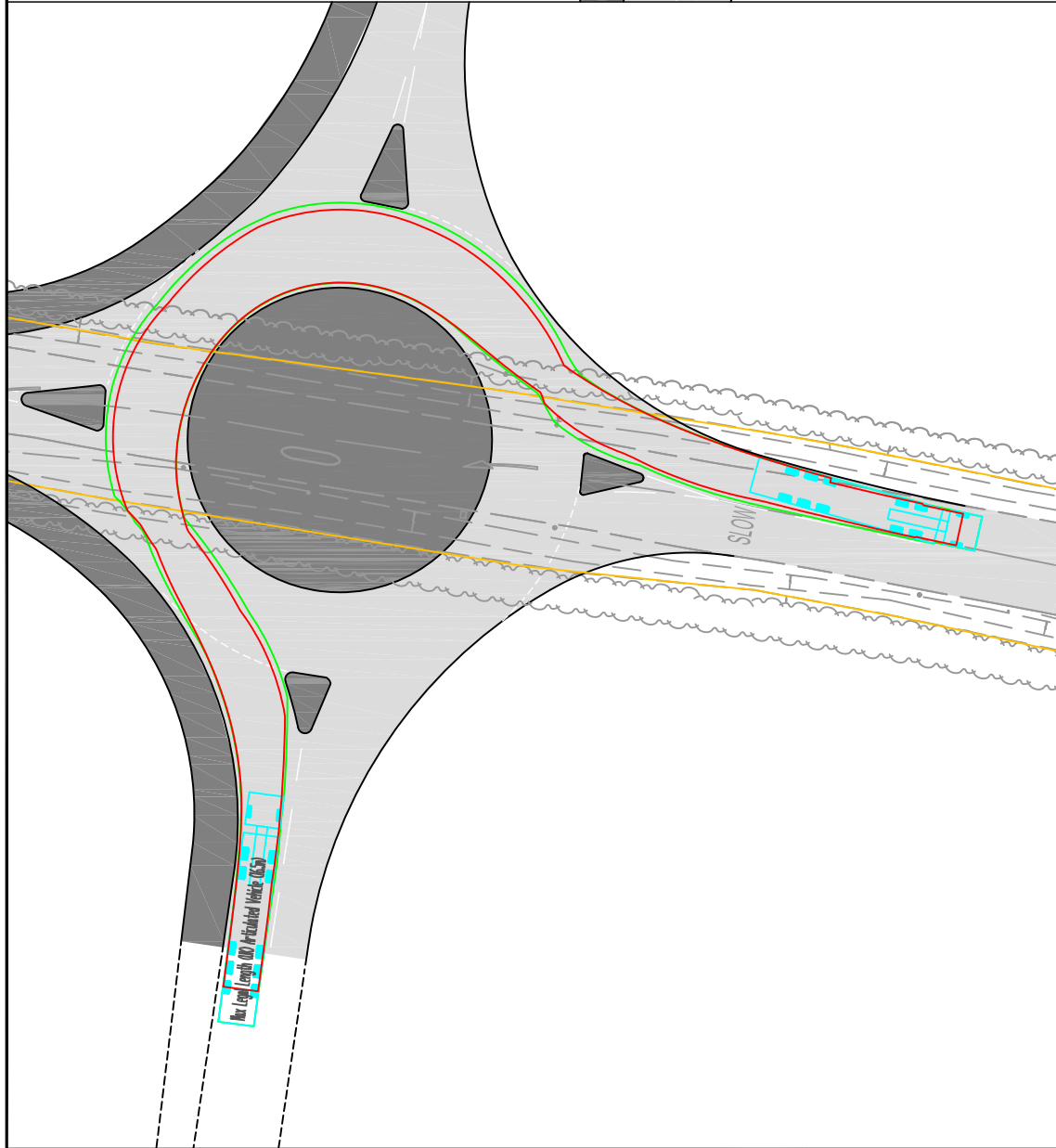
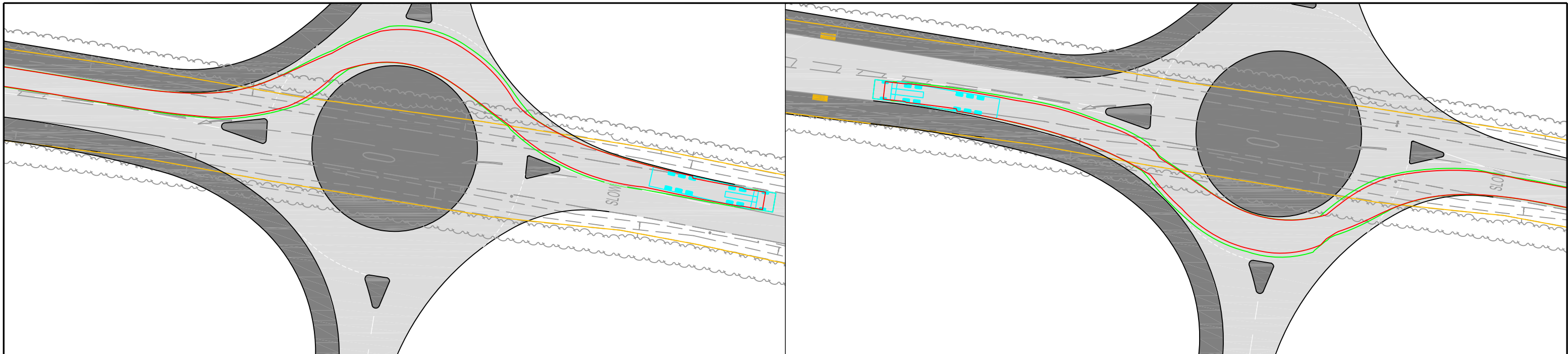


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JOB TITLE	System	CLIENT	Taylor Wimpey
DRAWING TITLE	Potential Future Roudabout Access		
SCALE	DRAWN BY	DATE	DRAWING No
1/1000@A3	BP	09-02-23	20060-06
REVISION	a		



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JOB TITLE		CLIENT	
Syston		Taylor Wimpey	
DRAWING TITLE			
Potential Future Roudabout Access Tracking			
SCALE	DRAWN BY	DATE	DRAWING No
1/500@A3	BP	09-02-23	20060-06-2
REVISION			
			a

Appendix A
LCC Comments

Substantive response of the Local Highway Authority to a planning consultation received under The Development Management Order.

Response provided under the delegated authority of the Director of Environment & Transport.

APPLICATION DETAILS:

Planning Application Number: P/21/2639/2

Highway Reference Number: 2021/2639/02/H/R4

Application Address: Land North of Barkby Road Syston Leicestershire

Application Type: Outline (with access)

Description of Application:

Re-consultation. Outline application for up to 195 dwellings with all matters reserved except access.

GENERAL DETAILS

Planning Case Officer: Liam Ward

Applicant: Taylor Wimpey (UK) Ltd

County Councillor: Mr Tom Barkley

Parish: Syston

Road Classification: Class C

Substantive Response provided in accordance with article 22(5) of The Town and Country Planning (Development Management Procedure) (England) Order 2015:

The Local Highway Authority does not consider that the application as submitted fully assesses the highway impact of the proposed development and further information is required as set out in this response. Without this information the Local Highway Authority is unable to provide final highway advice on this application.

Advice to Local Planning Authority

Background

The Local Highway Authority (LHA) has been re-consulted on an outline with access planning application for up to 195 dwellings to be located on land north of Barkby Road, Syston.

In its previous response dated 3rd October 2022, the LHA requested further information to be submitted with regard to a number of elements.

These highway observations are in response to the following document and drawings which have now been submitted to Charnwood Borough Council in support of the planning application.

- SJT/SC 20060_10 Transport Note (TN) prepared by David Tucker Associates dated 13th December 2022;
- Drawing 20060-02-2 Rev D (Swept Path Analysis);
- Drawing 20060-02-2 Rev D (Site Access Plan);
- Drawing 20060-06 (Roundabout Dimensions); and
- Drawing 2060-06-2 (Roundabout Tracking)

Site Access

Revised swept-path analysis demonstrated in drawing 20060-02-2 now shows a Phoenix 2-23 W 6x4 refuse vehicle manoeuvring in and out of the site access. It is noted that some of the manoeuvres show that the refuse vehicle will encroach onto the other lane, notwithstanding this, as these movements will occur infrequently the LHA consider the swept path analysis to be acceptable.

As requested in its previous comments, the site access plan, drawing 20060-02 Rev D has been revised to include layout dimensions for the proposed ghost island and right turn lane provision, along with the proposed footway running adjacent to the kerb line. It should however be noted that the drawing indicates lane widths of 3.0m. Widths of 3.25m should ideally be provided for the through lanes along the bus route. The drawing indicates a 55m length for deceleration / turning / queuing lengths. This would meet CD116 requirements for a 70kph design speed, including an allowance of 5m for queuing length. However, the 55m distance should be measured to the centre line of the side road and not to the right turn arrow as shown.

The lane direction arrows are also located slightly too far beyond the centre line of the access road, and their locations need to be adjusted. No dimensions have been shown for the width of the right-turn lane and this needs to be indicated on the drawing. The taper length over which right-turn ghost island is developed also needs to be shown; this should be 1 in 20 as per CD116 Table 6.1.1 guidance. The LHA considers that the length shown on the drawing is too short. The LHA is concerned that the amendments to the design required would push the start of the central hatching closer to the existing junction with Queniborough Road. There will need to be sufficient space to fit the 1:20 taper in before the stop line, however this may not be achievable.

An orange line has been added to indicate the highway boundary, and this indicates that land would need to be transferred into the publicly maintained highway. This would need to include visibility splays, footway widths and required verge widths.

It is noted that the wide verge provision between the footway and carriageway edge has now been removed, and that 2.0m wide footways are being proposed which is considered acceptable.

Whilst the LHA note that a Stage 1 Road Safety Audit was undertaken for the proposed site access, the LHA would request for an updated RSA and accompanying Designer's Response once the requested changes mentioned earlier in these comments have been addressed.

Site Access Roundabout Option

The LHA have reviewed the submitted drawings 20060-06 (Roundabout Dimensions); and 2060-06-2 (Roundabout Tracking) and have the following comments.

The drawing indicates a proposed Inscribed Circle Diameter (ICD) of 34.0m for the roundabout layout. It would appear that a compact roundabout is being proposed but no dimensions have been provided for the central island diameter and overrun area, and these are required to be submitted for review. It is noted from the Roundabout Tracking drawing that a central overrun area may not be necessary, and if possible, this should be avoided.

Although no circulatory carriageway width information has been provided, it would appear that the circulatory carriageway is wider than CD116 para 3.6.8 guidance, in which case this should be amended accordingly.

Entry path curvature has been shown for the Barkby Road approaches to the roundabout, but not for the side road approaches, and these would also need to be submitted for review.

Further information for the geometrical design parameters of the roundabout is required to be submitted including entry widths, entry angles, exit widths, exit kerb radius and exit width tapers.

For the Barkby Road Eastbound approach to the roundabout, a stopping sight distance of 90m is shown to the give way line, however this would need to be 120m based on the 85th percentile speed measurements recorded for this direction. The Applicant should ensure that this is amended.

Forward visibility for the side road approaches to the roundabout also needs to be advised on the drawing.

No provision has been shown for pedestrian movements at the roundabout, and it is likely that the provision of footway to the Western side of the junction would be required across the Western arm.

The tracking shown indicates that the design vehicle would overrun the proposed kerb-lines at a number of locations, and so the design layout should be amended to avoid this. The vehicle tracking would need to be resubmitted using a 15kph vehicle speed and indicating a 0.5m clearance to kerb-lines.

There is also concern that on both Barkby Road approaches to the roundabout, the design vehicle is also shown as conflicting with opposing traffic exiting the junction. The design layout must be amended to avoid this.

As mentioned earlier, the tracking for a vehicle on the circulatory carriageway suggests that a central overrun area may not be required and this should be avoided if possible. However, this would be subject to revisiting the tracking once the other concerns raised above have been addressed.

The junction has been subject to detailed capacity analysis using ARCADY. As part of the wider allocation, the southern parcel is forecast to deliver around 200 homes served from the southern arm of this proposed roundabout. Given that the assignment of trips to/from the site is yet to be determined, an estimation of the number of trips from the southern arm has been estimated by applying a factor of two of the proposed development trips (i.e., a total of c 400 houses from the south). The trips have also been assigned using the same distribution percentages as the proposed development traffic. A summary of the assessment is shown below in Table 1.

Trip Generation

The LHA requested that the 'Oadby' trip rates be used as the actual predicted trip rates in the assignment. The Applicant has confirmed that the requested trip rates have been used and the LHA are now satisfied with the proposed trip rates.

Junction Capacity Assessments

The LHA requested classified turning counts to be undertaken with covid factors applied. The LHA also requested that once the new surveys have been undertaken, the detailed junction capacity assessments should be re-rerun and that the Fosse Way/ High Street and Barkby Road/ Pembroke Avenue junctions be included within the assessment. The LHA requested that the 2022 base flows should be factored up to a future year of 2027 following application of Covid factors, with the TEMPro growth factor to also be revised and committed developments added.

The junction capacity assessments have been re-run following the application of Covid factors provided by the LHA to the base year traffic flows. The adopted rates and flow matrices are provided at Appendix C of the TN.

The LHA also requested which committed developments were included within the assessment and these have been provided below. The Applicant has stated there are only two sites in the area which could be considered committed as follows, but neither have a direct impact / material on the junctions within the scope of the TA:

1. P/20/2349/2 (50 dwellings) - Impact is 30 trips so wider assessment was scoped out and
2. P/20/2383/2 (270 dwellings) - There is minimal trips through the potential overlapping junctions (less than 10 trips so this has been scoped out. It is likely that those numbers could dissipate through the network before reaching the assessed junctions, but even as a worst case, they are considered to be minimal.
3. Hallam and DWH were both recently refused and all other applications north of Syston are either built out or expired (P/13/1696/2 Queniborough Lodge for 125 dwells was granted in Jan 2015 and no Reserved Matters)

The LHA consider the above to be acceptable and consider both committed developments do not have a material impact on the junctions within the study area.

The results of the revised capacity analysis undertaken at each junction by DTA are shown in Table 1 extracted from the TN below:

Table 1: Junction Capacity Assessment Summary

Junction	Base Year (2021/2022)	2027	2027 + Development
Site Access Roundabout	-		Within capacity (highest RFC of 0.29 and Q of 0) Development flows (excluding HA1) through junction: 147 AM, 146, PM
1. High Street/Melton Road/Barkby Road	Within capacity (highest RFC of 0.84 and Q of 5)	Approaching capacity (highest RFC of 0.89 and Q of 7)	Approaching capacity (highest RFC of 0.93 and Q of 10) Development flows through junction: 48 AM, 48, PM
2. Barkby Road/ Queniborough Road	Within capacity (highest DoS of 71.6% and Q of 9)	Within capacity (highest DoS of 75.6% and Q of 9)	Within capacity (highest DoS of 80.3% and Q of 11) Development flows through junction: 60 AM, 60, PM
4. Barkby Road/ Pembroke Avenue	Within capacity (highest RFC of 0.34 and Q of 1)	Within capacity (highest RFC of 0.36 and Q of 1)	Within capacity (highest RFC of 0.44 and Q of 1) Development flows through junction: 87 AM, 87, PM
5. Goodes Lane/ Melton Road;	Within capacity (highest RFC of 0.82 and Q of 7)	Approaching capacity (highest RFC of 0.89 and Q of 11)	Nearing capacity (highest RFC of 0.97 and Q of 20) Development flows through junction: 40 AM, 39, PM
6. Fosse Way/ High Street	Within capacity (highest DoS of 78.2% and Q of 18)	Within capacity (highest DoS of 89.2% and Q of 22)	Approaching capacity (highest DoS of 92.9% and Q of 25) Development flows through junction: 44 AM, 44, PM

The results of the revised assessment demonstrates that junctions 1m, 5 and 6 are forecast to operate above the theoretical capacity threshold of 0.85 RFC when development traffic is added.

The LHA would request for the modelling files for J1-J6 to be submitted so the LHA can review and verify the models. It should be noted that the LHA may seek mitigation at the aforementioned junctions following a review of the models.


For a consistent and robust approach, as advised in the LHA's response for planning application P/22/0354/2 (Land at Barkby Road/ Queniborough Road Syston - 251 dwellings - HA2), the LHA would request for the Applicant to undertake and submit a sensitivity test which would consider the cumulative impacts of all of the draft allocation sites included in the Draft Charnwood Local Plan, which will include sites in Syston and Queniborough in particular.

Date Received
14 December 2022

Case Officer
Suraj Dave

Reviewer
AW

Date issued
27 January 2023



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B95 5AW

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inmail@dtatransportation.co.uk
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From: [Simon Tucker](#)
To: [Suraj Dave](#); [Adrian Whiteman](#)
Cc: [Liam Ward](#); [Gary Tucker - TW Strategic Land](#); [Nichola Willder - TW Strategic Land](#)
Subject: HA3 - Land North of Barkby Road (LPA Ref: P/21/2639/2)
Attachments: [image002.jpg](#)

Adrian / Suraj (and Liam),

Thank you for your time on Friday, I have set out my notes of our discussion below for agreement:

1. Deadline for final consultation response from LCC to application – Friday 31st March.
2. Site Access arrangements (DTA Drawing 20060-02 F and 20060-02-2 F) are agreed and will be secured by planning condition.
3. TW proposals for public transport contribution is agreed. This amounts to £450,000 in total, payable in 6 x £75,000 annual instalments commencing prior to 50th occupation. Whilst this is based on costs of enhancing Service 100, LCC would like flexibility within the wording to spend funds on other measures (for example DRT). This is agreeable to TW and precise details can be covered at S106 drafting stage.
4. LCC welcome the sensitivity tests provided by TW. ST confirmed that these were particularly robust because the strategic Transport Assessment evidence base for the local plan confirms traffic flows will reduce through Syston as a result of wider interventions included in the IDP.
5. LCC consider mitigation is required at two locations as a result of the development and are seeking a commitment (under 278 / condition) for these to be provided by the development.
 - a. Goodes Lane / Melton Road. ST explained the without prejudice scheme involved creating a right turn pocket to ease blocking by right turners into Goodes Lane. LCC consider the scheme needs further detailed review, design and RSA (comments received from SD on 24th and under review by DTA).
 - b. Fosse Road / High Street. ST explained the without prejudice scheme involved localised widening to provide more stop line capacity at the signals. LCC consider the scheme needs further detailed review, design and RSA.
6. In the meantime, LCC advised that to support the planning application they would be proposing a condition that would secure the refinement and implementation of the scheme. GT advised that it would be TWs intention to agree the detailed design of the junction improvements with LCC in the period post committee and prior to signing the S106 in order to have clarity of associated costs. GT suggested that if the off-site schemes were agreed with LCC prior to the S106 being signed there may be no requirement for a condition and the works can be secured through the S106 or the drawing numbers added to drafted conditions.
7. In relation to the Melton Road / High Street / Barkby Road Junction, ST explained that works to improve capacity here would conflict with wider strategic objectives and therefore none was considered necessary. LCC to review position and confirm by 29th March 2023.
8. Strategic Contribution. LCC confirmed that a contribution towards strategic improvements would be sought from the development. The method for arriving at this figure is still being discussed by officers at LCC and Charnwood (with a meeting being held on Wednesday 29th March), so it was likely that the final response from LCC would refer

the need for a payment with the details "TBC". TW seek a firmer commitment on scale of costs – LCC to confirm.

9. LCC to share proposed conditions with Liam Ward who would share with TW for discussion.

Simon

Kind regards

Simon Tucker



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Warwickshire B95 5AW Registered in England & Wales No. 5305640

From: [Suraj Dave](#)
To: [Nichola Willder - TW Strategic Land](#)
Cc: [Gary Tucker - TW Strategic Land](#); [Liam Ward](#); [Simon Tucker](#); [Adrian Whiteman](#)
Subject: RE: HA3 - Land North of Barkby Road (LPA Ref: P/21/2639/2)
Date: 13 April 2023 11:50:27
Attachments: [image001.png](#)
[image002.png](#)
[image003.png](#)
[image004.jpg](#)

Good Morning Nichola,

We have now had an opportunity to discuss this application with colleagues and it has been concluded that we do not consider the suggested 'improvement' conditions approach to be acceptable on the basis that without additional information being provided at application stage, it is not clear if the necessary mitigation is deliverable. To provide further advice to CBC (either condition or contribution) we will need to see evidence of site specific schemes i.e. detailed design (taking on board any previous LHA comments), supporting junction modelling, RSA and Designer's Response for the following junctions:

- High Street/Melton Road/Barkby Road;
- Goodes Lane/Melton Road (taking into consideration the LHA's design comments); and
- Fosse Way/High Street

This site specific mitigation is considered necessary to make the development acceptable, alongside a wider highway and transport contribution as identified in the CBC emerging Local Plan.

Kind Regards,

Suraj Dave

Senior Transport Planner

Highway Development Management
Leicestershire County Council

Tel: 0116 305 5682

Email: suraj.dave@leics.gov.uk

Please note that the contents of this email including any attachments are offered as my officer opinion and will not prejudice any future decision the Highway Authority may make in relation to this matter.

From: Nichola Willder - TW Strategic Land <Nichola.Willder@taylorwimpey.com>

Sent: 06 April 2023 17:29

To: Adrian Whiteman <Adrian.Whiteman@leics.gov.uk>; Suraj Dave <Suraj.Dave@leics.gov.uk>

Cc: Gary Tucker - TW Strategic Land <Gary.Tucker@taylorwimpey.com>; Liam Ward <Liam.Ward@charnwood.gov.uk>; Simon Tucker <SJT@dtatransportation.co.uk>

Subject: RE: HA3 - Land North of Barkby Road (LPA Ref: P/21/2639/2)

Afternoon Adrian/Suraj

Further to our email exchanges last week I wondered if you had issued your response as I don't think I have seen anything come through and it's the bank holiday tomorrow.

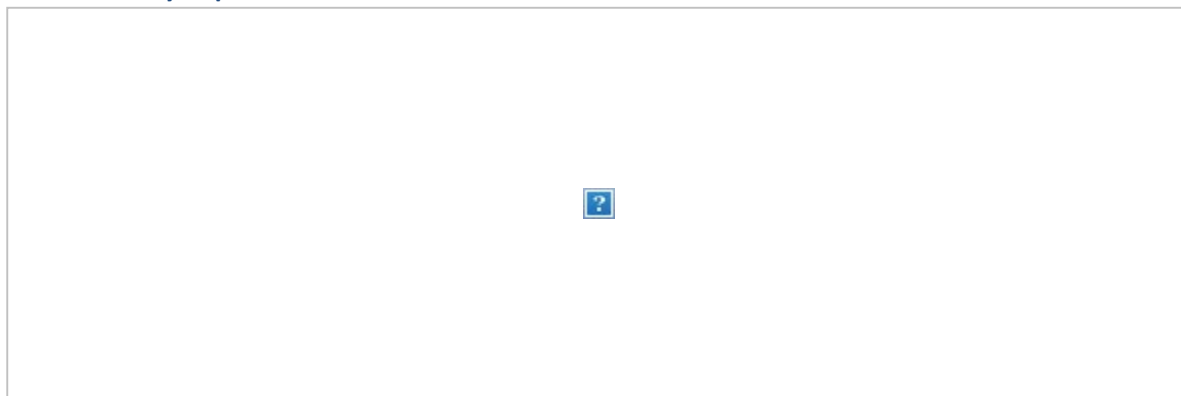
Kind Regards

Nichola Willder | Senior Strategic Land & Planning Manager | Taylor Wimpey Strategic Land

Mobile: 07977190776 | e: nichola.willder@taylorwimpey.com

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From: Adrian Whiteman <Adrian.Whiteman@leics.gov.uk>

Sent: 31 March 2023 10:31

To: Nichola Willder - TW Strategic Land <Nichola.Willder@taylorwimpey.com>

Cc: Gary Tucker - TW Strategic Land <Gary.Tucker@taylorwimpey.com>; Suraj Dave <Suraj.Dave@leics.gov.uk>; Liam Ward <Liam.Ward@charnwood.gov.uk>; Simon Tucker <SJT@dtatransportation.co.uk>

Subject: RE: HA3 - Land North of Barkby Road (LPA Ref: P/21/2639/2)

Importance: High

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Hi Nichola,

I respond on Suraj's behalf.

I note all of your comments, however clearly the LHA will only issue highway observations that it is comfortable with. That being said, I don't have any significant issues with the condition as worded, just tweaks.

Liam has advised that, given the LHA currently anticipates being able issue observations advising approval subject to conditions and obligations, he is comfortable that we issue our observations by the end of next week. This is also on the basis that it will give Suraj a bit more time to try and resolve some of the issues, mainly with regard to the Melton Road / High Street / Barkby Road Junction.

Our observations, whilst fairly advanced, will not therefore be issued today.

Regards,

Adrian

Adrian Whiteman (he/him)
Principal Transport Planner
Highway Development Management
Highways & Transport Commissioning Service
Leicestershire County Council

Tel: (0116) 305 0001
DD: (0116) 305 5461
Email: adrian.whiteman@leics.gov.uk

****Please note that the contents of this email including any attachments are offered as my officer opinion and will not prejudice any future decision the Highway Authority may make in relation to this matter****



From: Nichola Willder - TW Strategic Land <Nichola.Willder@taylorwimpey.com>
Sent: 31 March 2023 09:53
To: Suraj Dave <Suraj.Dave@leics.gov.uk>; Liam Ward <Liam.Ward@charnwood.gov.uk>; Simon Tucker <SJT@dtatransportation.co.uk>
Cc: Adrian Whiteman <Adrian.Whiteman@leics.gov.uk>; Gary Tucker - TW Strategic Land <Gary.Tucker@taylorwimpey.com>
Subject: RE: HA3 - Land North of Barkby Road (LPA Ref: P/21/2639/2)
Importance: High

Dear Suraj

Thank you for your email. I will just like to take the opportunity to set out TW's position.

For expediency we provided without prejudice improvements to two junctions. The outputs of the junction modelling confirms that whilst these junctions may be approaching capacity with the development the change in junction operation is not material. In accordance with Para 110d of the NPPF, mitigation need only be considered where there are "significant impacts". That is clearly not the case here in our view and there is case law which supports that conclusion. However clearly the County have reached a different conclusions as they are requesting mitigation. In principle that could be accepted provided it is reasonable in kind and scale (NPPF Para 57). The schemes and conditions need to reflect that test.

We suggest that the following conditions with regards Goodes Lane / Melton Road and Fosse Road / High Street junctions

1. Prior to development commencing, a scheme for the improvements relating to the XXXX junction shall be submitted and agreed in writing with the Local Planning Authority. The scheme shall include the following:

- a. Detailed design for the improvements;
 - b. Road Safety Audit; and
 - c. Informed by phased junction modelling, the trigger that the works are required to be implemented by.
2. The improvements to the junction of XXXX shall be implemented in full, in accordance with the scheme agreed with the Local Planning Authority' pursuant to Condition [1] above.

In terms of the second point you raise Suraj on the Melton Road / High Street / Barkby Road Junction, I am hoping by now that a decision has been made in line with what we discussed in the meeting as set out in the minutes below. I think the point was made at the meeting that the wider modelling for the Local Plan confirms that the flows in Syston are likely to decrease and that works to improve capacity here would conflict with wider strategic objectives and therefore mitigation was not considered appropriate or necessary. If that is now not LCC's view and contributions are being sought for all three junction this could only be achieved by requesting an off-site commuted sum through S106 agreement and the costs per scheme is split proportionally across the three allocations in Syston (HA1, HA2 and HA3). To suggest an approach that would mean that HA3 alone would have to bear the costs for improving all three junctions through a condition is not reasonable, necessary or proportionate and as such would not in our view meet the CIL tests.

Please do contact myself or Simon if you would like to discuss. I know you have a lot on so thank you again for prioritising the response to this application and I look forward to seeing your final response later today.

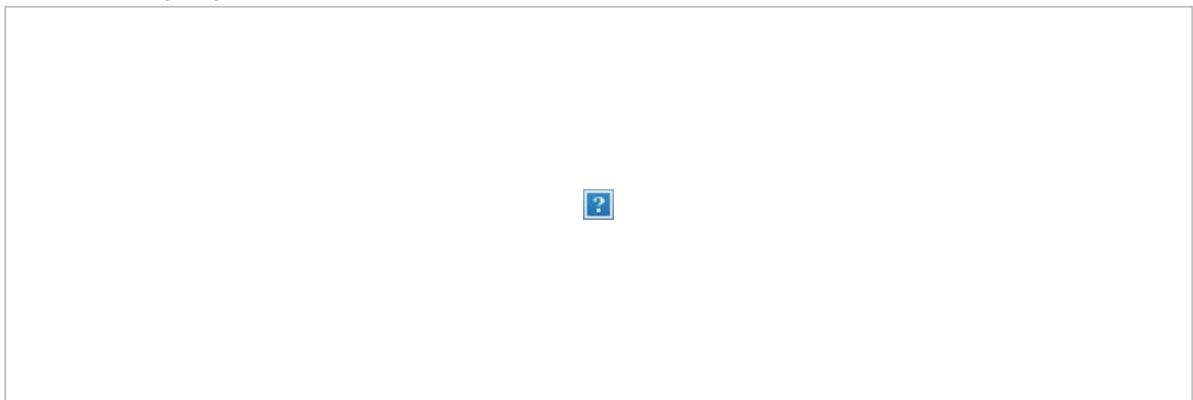
Kind Regards

Nichola Willder | Senior Strategic Land & Planning Manager | Taylor Wimpey Strategic Land

Mobile: 07977190776 | e: nichola.willder@taylorwimpey.com

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From: Suraj Dave <Suraj.Dave@leics.gov.uk>

Sent: 30 March 2023 15:11

To: Liam Ward <Liam.Ward@charnwood.gov.uk>; Simon Tucker <SJT@dtatransportation.co.uk>

Cc: Adrian Whiteman <Adrian.Whiteman@leics.gov.uk>; Nichola Willder - TW Strategic Land

<Nichola.Willder@taylorwimpey.com>; Gary Tucker - TW Strategic Land

<Gary.Tucker@taylorwimpey.com>

Subject: FW: HA3 - Land North of Barkby Road (LPA Ref: P/21/2639/2)

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or links.

Afternoon Liam,

Please see an example draft condition below for the junction mitigations where there is no scheme.

'No Part of the development hereby permitted shall be occupied until such time as improvements to the junction of XXXX have been agreed in writing with the Local Planning Authority and implemented in full.

Reason: To mitigate the impact of the development in the general interests of highway safety and in accordance with the National Planning Policy Framework (2021).'

If you have any concerns, please let us know by mid-morning tomorrow.

[@Simon Tucker](#) in relation to point 7 in your email below, we haven't been able to resolve this matter yet, so may have to offer a similar condition to the above if we are unable to resolve it tomorrow.

Thanks,

Kind Regards,

Suraj Dave

Senior Transport Planner

Highway Development Management

Leicestershire County Council

Tel: 0116 305 5682

Email: suraj.dave@leics.gov.uk

Please note that the contents of this email including any attachments are offered as my officer opinion and will not prejudice any future decision the Highway Authority may make in relation to this matter.

From: Simon Tucker <SJT@dtatransportation.co.uk>

Sent: 27 March 2023 16:55

To: Suraj Dave <Suraj.Dave@leics.gov.uk>; Adrian Whiteman <Adrian.Whiteman@leics.gov.uk>

Cc: Liam Ward <Liam.Ward@charnwood.gov.uk>; Gary Tucker - TW Strategic Land <Gary.Tucker@taylorwimpey.com>; Nichola Willder - TW Strategic Land <nichola.willder@taylorwimpey.com>

Subject: HA3 - Land North of Barkby Road (LPA Ref: P/21/2639/2)

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Simon

Kind regards

Simon Tucker



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Land North of Barkby Road, Syston

LPA Ref:P21//2639

Mitigation Schemes Summary Note



Transport Planning Consultants



Contents

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1.0 INTRODUCTION AND CONTEXT	1
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4.0 PUBLIC TRANSPORT STRATEGY	10

Appendices

Appendix A	Draft Highway Obligations
Appendix B	Scheme Drawings
Appendix C	Melton Road/ Barkby Road/ High Street Junction Modelling
Appendix D	Melton Road/ Barkby Road/ High Street Junction RSA
Appendix E	Car Parking Survey
Appendix F	Goodes Lane/ Melton Road Junction Modelling
Appendix G	Goodes Lane/ Melton Road Junction RSA
Appendix H	Fosse Way/ High Street Junction Modelling
Appendix I	Fosse Way/ High Street Junction RSA
Appendix J	Arcadis Cost Plan



1.0 INTRODUCTION AND CONTEXT

1.1 DTA has been commissioned by Taylor Wimpey to provide transportation advice in relation to the proposed residential development of up to 195 dwellings on land north of Barkby Road, Syston.

1.2 DTA prepared a Transport Assessment (DTA reference 20060-08b) in support of the planning application. As part of the planning application process, Leicestershire County Council ("LCC") as Local Highway Authority has reviewed the TA and previously made a number of comments / requested additional information. DTA has responded to comments received from the initial planning application submission in response notes 20060-09, 20060-10 and 20060-11.

1.3 All matters relating to the physical access arrangements to the site are agreed. Contributions have been requested by LCC in respect of improved public transport provision to the site. These are also agreed.

1.4 Discussions in respect of the traffic modelling and impact have reached an impasse. Following a meeting on the 16th March 2023 DTA produced a final report (20060-11- 17th March 2023) which included, without prejudice, a sensitivity test that includes the trips associated with the proposed development, draft allocation site HA2 (proposed residential development at Queniborough Road), and then added growth to the end of the Local Plan Period (2037), as agreed with LCC.

1.5 The results showed that three off-site junctions approaching capacity in the TA assessment are worsened by the cumulative impact of further growth. The three junctions are:

- Melton Road/ Barkby Road/ High Street;
- Goodes Lane/ Melton Road; and
- Fosse Way/ High Street;



- 1.6 It is clear that the requirement of the NPPF (and indeed the CIL regulations) is that any mitigation provided by a development is directly related to it and essential to make the development acceptable in planning terms. It is DTA's position that the scale of the impact from the proposed development is not sufficient to warrant mitigation and / or trigger any severe impact.
- 1.7 In line with the wider evidence base for the submission draft Charnwood Local Plan (2021 – 2037) any improvement scheme within Syston will need to balance mitigation of development impacts with the desire not to increase traffic flows through the town centre. The Draft Infrastructure Delivery Plan (IDP) includes a proposed strategy for securing wider transport improvements and this includes works within and around Syston. These are principally aimed at reducing demand through the town and encouraging traffic (and through traffic in particular) to use the more appropriate Strategic Road Network.
- 1.8 Notwithstanding this and again, on a without prejudice basis, potential mitigation schemes for the three junctions have been prepared. LCC have requested that any schemes be presented with modelling results and be subject to Road Safety Audit and this is provided below in turn.
- 1.9 If it is concluded that mitigation is required due to the cumulative impact, this should be on a proportionate basis and a proposed financial contribution mechanism is attached at **Appendix A.**



2.0 MITIGATION SCHEMES

2.1 Melton Road/ Barkby Road/ High Street

Improvement Scheme Summary

- 2.1.1 This junction is currently laid out as an off-set mini-roundabout with a mixture of pedestrian crossing facilities (some signal controlled, some zebra and some uncontrolled).
- 2.1.2 The junction layout is constrained by third party land ownership on all corners and the oblique angle of Barkby Road. Historically buses have used the junction to travel from Melton Road to Barkby Road to allow the area to the south of Melton Road (including the vicinity of the Site) to be served by buses. Since changes were made to the junction in circa 2015 this has not been possible.
- 2.1.3 Clearly an improvement scheme which significantly increases capacity at this location would run counter to the wider IDP objectives of managing growth in Syston. The potential mitigation scheme has therefore been designed to:
- a) Significantly improve the public realm for pedestrians,
 - b) Allow for the re-introduction of bus movements to Barkby Road.
- 2.1.4 The scheme therefore consists of the conversion of the existing mini roundabout junction to a traffic signal controlled junction with uncontrolled crossing facilities on all 4 approaches;
- 2.1.5 The layout shown on **Drawing 20060-03** was subject to the Road Safety Audit, and this has been updated to reflect comments arising from the Audit. **Drawing 20060-04c** shows the revised layout and the bus tracking to Barkby Road.

Junction Modelling

- 2.1.6 The existing junction modelling shows that for the 2037 test the junction will be operating at an RFC of 1.09 with queues of upto 39 vehicles. The proposed layout has



been tested in Linsig and this is attached at **Appendix C**. It shows a significant improvement on the operation of the junction whilst avoiding over-provision of traffic capacity in the town centre as discussed above.

Table 1: Melton Road/ Barkby Road/ High Street

Scenario	Results Summary	
	Existing Layout	Improvement Scheme
2027	Approaching capacity (highest RFC of 0.91 and Q of 8)	
2027 + Development	Approaching capacity (highest RFC of 0.95 and Q of 12)	
2037	Highest RFC of 1.04 Q of 27	Highest DOS 0.96 Q of 15
2037 + Development	Highest RFC of 1.09 Q of 39	Highest DOS 0.98 Q of 15

Stage 1 Road Safety Audit Summary

2.1.7 An independent Stage 1 Road Safety Audit was carried out on the scheme and the audit report is contained within **Appendix D**. It raises a total of nine issues. All of issues raised are detailed design points and need to be considered in the context of the already constrained urban environment.

Issue 1.1 relates to crossing widths and these can be refined and reviewed at the detailed design stage.

Issue 1.2 relates to spacing of stop lines to crossings which are not considered inappropriate given the urban environment and low speeds but these can be refined and reviewed at the detailed design stage.

Issue 1.3 relates to cycle provision. The existing layout is very poorly defined for cyclists and the change to signals will offer highway safety benefits over the roundabout. Given the urban environment there is limited space for full cycle segregation but the scheme offers and improvement over the existing. This can be reviewed and refined at the detailed design stage.



Issue 1.4 relates to the location of two private accesses within the junction. These are infrequently used and existing. They can safely operate within the signal scheme as is common in most urban areas.

Issue 2.1 requires tracking. This has been undertaken.

Issue 2.2 requires street furniture locations to be checked at detailed design and this is agreed.

Issue 2.3 relates to the location of service covers in the road which need to be considered at detailed design.

Issue 2.4 relates to the provision of improved road markings which is a detailed design matter.

Issue 2.5 requires the levels to be appropriately detailed which is a detailed design matter.

2.1.8 It can be concluded from the report that there are no fundamental safety concerns regarding the proposed layout that cannot be fully resolved at the detailed design stage.

2.2 Goodes Lane/ Melton Road

Improvement Scheme Summary

2.2.1 This junction is currently a priority T-junction. The modelling identifies that, as traffic flows increase in the future, vehicles turning right into Goodes Lane block through traffic travelling north along Melton Road.

2.2.2 To address this issue, it is proposed to provide a right turn lane at the junction and this is shown on drawing **20060-08**. This has been designed as a DRMB compliant right turn lane. The scheme will require some localised widening of the road and the removal of some on-street parking. Surveys of those parking areas have confirmed that they are very lightly used (**Appendix E**).



Junction Modelling

2.2.3 The arrangement has been tested in Junctions 10 and the outputs provided at **Appendix F**. This shows that with the right turn lane provided the junction operates in the 2037 future year with an RFC of 0.91. This again reflects an overall strategy not to over-provide for highway capacity with Syston.

Table 2: Goodes Lane/ Melton Road junction

Scenario	Results Summary	
	Existing Layout	Improvement Scheme
2027	Approaching capacity (highest RFC of 0.89 and Q of 11)	Within capacity (highest RFC of 0.72 and Q of 3)
2027 + Development	Nearing capacity (highest RFC of 0.97 and Q of 20) Development flows through junction: 40 AM, 39, PM	Within capacity (highest RFC of 0.78 and Q of 3) Development flows through junction: 40 AM, 39, PM
2037	Highest RFC of 1.03 Q of 34	Approaching capacity (highest RFC of 0.84 and Q of 5)
2037 + Development	Highest RFC of 1.09 Q of 53	Approaching capacity (highest RFC of 0.91 and Q of 7)

Stage 1 Road Safety Audit Summary

2.2.4 An independent Stage 1 Road Safety Audit was carried out on the scheme and the audit report is contained within **Appendix G**.

2.2.5 The Audit raises one issue with the scheme. Issue 1 (4.1) noted that the removal of the parking bays outside the Syston Day Nursery on Melton Road could result in displaced parking, with parents/ carers alternatively parking on Goodes Lane, with this likely to increase the number of pedestrians with small children needing to cross Melton Road.

2.2.6 The Audit has recommended that an appropriate pedestrian facility is provided. A measure may include but not be limited to incorporating a pedestrian refuge within the hatched area of the junction.

2.2.7 This recommendation is accepted and appropriate pedestrian provision can be made at this location. This is most appropriately confirmed at the detailed design stage.



2.3 Fosse Way/ High Street

Improvement Scheme Summary

2.3.1 This is an existing signal controlled junction which is operating over capacity in the 2037 scenario. A financial contribution towards signal timing improvements was previously requested from the Site.

2.3.2 Further improvements to capacity can be made to the capacity by:

- widening the northbound approach to provide carriageway space for an ahead vehicle to pass a vehicle waiting to turn right into the High Street;
- relaxing the kerb radius between the Fosse Way southbound approach and the High Street to ease the left turn into the High Street;
- the relocation of the stop lines on all three approaches; and
- extending the footway on the northeast side into the High Street arm to allow the uncontrolled pedestrian crossing on the High Street to be relocated further east.

2.3.3 The proposals are shown on **DTA drawing 20060-08-2**.

Junction Modelling

2.3.4 The arrangement has been tested in LINSIG and the outputs provided at **Appendix H**. This shows that with the right turn lane provided the junction operates in the 2037 future year at capacity.



Table 3: Fosse Way/ High Street junction

Scenario	Results Summary	
	Existing Layout	Improvement Scheme
2027	Within capacity (highest DoS of 92.0% and Q of 24)	Within capacity (highest DoS of 88.0% and Q of 22)
2027 + Development	Approaching capacity (highest DoS of 94.5% and Q of 26)	Approaching capacity (highest DoS of 92.4% and Q of 25)
2037	Highest DoS of 103.3% Q of 42	Nearing capacity (highest DoS of 98.7% and Q of 33)
2037 + Development	Highest DoS of 105.7% Q of 49	Nearing capacity (highest DoS of 101.0% and Q of 37)

2.3.5 The results shows that the layout provides improvement to the operation of the junction. This again reflects an overall strategy not to over-provide for highway capacity with Syston.

Stage 1 Road Safety Audit Summary

2.3.6 A Stage 1 Road Safety Audit was carried out and the report is contained within **Appendix I**. The Audit identified two issues, both of which relate to visibility restriction. The recommendation for both issues are to cut back or remove vegetation which lies within the public highway. These are accepted and are matters which can and will be addressed at the detailed design stage.



3.0 CONTRIBUTION STRATEGY

3.1 The schemes set out above have been subject to cost analysis by Arcadis and their cost report is attached at **Appendix J**. The total sum of the costs of the works is £962,676.

3.2 If deemed necessary for a development to make a contribution towards the schemes, it would be appropriate that all three major allocations to make a proportional contribution as follows:

	Dwellings	Proportion
HA1	195 (application)	13.9%
HA2	251 (application)	17.8%
HA3	960 (allocation)	68.3%
Total	1,406	

3.3 On that basis the appropriate contribution for the Site would be £133,523.



4.0 PUBLIC TRANSPORT STRATEGY

- 4.1 In relation to Public Transport, it is agreed with LCC that it would be appropriate and reasonable to have a capped commitment to improving services to the eastern side of Syston.
- 4.2 In order to establish an appropriate level of contribution Centre Bus (who operate the service 100) have been approached for a cost to improve the frequency of the service to provide a 30 minute frequency between the hours of 0700-0900 and 1600-1900. They have confirmed a cost of £71,000 pa would provide this.
- 4.3 It is proposed that the contribution should commence from the occupation of the 50th dwelling and continue for 5 years post completion which gives a total of 6 years worth of contribution – a maximum of £450,000. As stated at paragraph 1.3 above, this has been agreed with LCC.
- 4.4 The adjacent housing development of allocation HA2 is likely to benefit from these bus service enhancements and so should also be liable for financial contribution towards it. The approach to the proposed Highway Obligations at Appendix A provides a mechanism to enable the contribution from the Site to be reduced to reflect any future contributions from allocation HA2.



Appendix A

Land North of Barkby Road, Syston (ref P/21/2639/2)

Draft Highways Obligations

Definitions (non-alphabetical order)

Notice of Intention to Commence	means a notice in writing advising the County Council of the date of the Owner's intention to Commence the Development
HA1 Allocation	means the land to the south east of Syston identified in the [emerging] Charnwood Local Plan as site HA1 shown indicatively on Plan []
HA1 Development	means the development of the HA1 Allocation
HA1 Development Notice of Intention to Commence	means a notice in writing served on the County Council by the Owners and/or developer of the HA1 Development providing the County Council with [3] months' notice of their intention to Implement the HA1 Development
HA2 Allocation	means the land to the west of Queniborough Road, Syston identified in the [emerging] Charnwood Local Plan as site HA2 Shown indicatively on Plan []
HA2 Development	means the development of the HA2 Allocation pursuant to planning application ref P/22/0354/2 or any subsequent planning permission
HA2 Development Notice of Intention to Commence	means a notice in writing served on the County Council by the Owners and/or developer of the HA2 Development providing the County Council with [3] months' notice of their intention to Implement the HA2 Development
High Street / Melton Road Roundabout Improvements	means the improvements to the High Street / Melton Road junction shown indicatively on drawing no 20060-04
Joint Developments	means the Development, the HA1 Development and the HA2 Development together.
Joint Developments Notice	means a notice served on the Owners by the County Council confirming: <ul style="list-style-type: none"> i) That the County Council has received either the HA2 Development Notice of Intention to Commence OR the HA1 Development Notice of Intention to Commence; and ii) that the Joint Highway Works Contribution is required to be paid to the County Council.
Joint Highway Works	means the off-site highway improvements required to mitigate the cumulative impact of the Joint Developments comprising the Melton Road / Goodes Lane Junction Improvements, the High Street / Fosse Way Junction Improvements and the High Street / Melton Road Roundabout Improvements.
Melton Road / Goodes Lane Junction Improvements	means the improvements to the Melton Road / Goodes Lane junction shown indicatively on drawing no 20060-08 Rev B

High Street / Fosse Way Junction Improvements	means the improvements to the High Street / Fosse Way junction shown indicatively on drawing no 20060-08-2 Rev B
Joint Highway Works Contribution	means the sum of [£133,523] apportioned to the Joint Developments and which may be payable to the County Council towards the cost of the County Council delivering the Joint Highway Works or other improvements to the local highway network to mitigate the cumulative impact of the Joint Developments
Public Transport Contribution	means the sum of £450,000 payable to the County Council towards the Bus Service Enhancement
Joint Public Transport Notice	means a notice served on the Owners by the County Council confirming: <ul style="list-style-type: none"> i) That the County Council has received the HA2 Development Notice of Intention to Commence; and ii) the amount of the HA2 Public Transport Contribution.
HA2 Development Public Transport Contribution	means any sum payable by the HA2 Development towards the Bus Service Enhancement
Adjusted Public Transport Contribution	means the sum calculated in application of the below formula and payable to the County Council towards the Bus Service Enhancement <p>$A = B - (C + D)$</p> <p>Where:</p> <p>A = Adjusted Public Transport Contribution</p> <p>B = Public Transport Contribution</p> <p>C = HA2 Development Public Transport Contribution</p> <p>D = the sum of any instalments of the Public Transport Contribution paid to the County Council before the Joint Development Notice has been served.</p>
Enhanced Bus Service	means the enhancement of the existing bus service 100 to 30 mins intervals between 0700-0900 and 1600-1900, or such other bus service(s) that may be provided in the future to serve the Joint Developments and the HA1 Allocation.
Barkby Road Access	means the site access junction shown indicatively on drawing no 20060-02 Rev F
Barkby Road Roundabout	means a roundabout that may be constructed to replace the Barkby Road Access as part of development of the HA1 Allocation
Barkby Road Roundabout Notice	means a notice served by the County Council on the Owners confirming that the Barkby Road Roundabout Deed of Dedication is required.
Barkby Road Roundabout Deed of Dedication	means a Deed that may be entered into between the Owners and the County Council in dedication of the land shown coloured [] on Plan [] (or such other area in the Control of the Owners as may be agreed between the Owners and the County Council) to the

	County Council as highway to enable the future construction of the Barkby Road Roundabout. (SAVE THAT any adoption of the dedicated land will occur following completion of the Barkby Road Access)
--	---

Obligations

General

1. The Owners covenant to serve the Notice of Intention to Commence on the County Council no later than 3 calendar months prior to the date of Commencement of Development. *[DN – The Owners expect that the same provisions below will be secured in any HA2 Development consent]*

Joint Highway Works

2. Subject to the County Council serving the Joint Developments Notice, the Owners covenant with the County Council to pay the Joint Highway Works Contribution as follows:
 - 2.1 [50%] within [3] months of receipt of the Joint Developments Notice; and
 - 2.2 [50%] on the first anniversary of the payment made pursuant paragraph 2.1 above.

Public Transport

3. Subject to the County Council serving the Joint Public Transport Notice prior to Occupation of the 25th Dwelling, the Owners covenant with the County Council to:
 - 3.1 pay the Adjusted Public Transport Contribution in the following instalments;
 - 3.1.1 16.67% prior to Occupation of the 50th Dwelling;
 - 3.1.2 16.67% prior to the first anniversary of the payment made pursuant to paragraph 3.1.1 above;
 - 3.1.3 16.67% prior to the second anniversary of the payment made pursuant to paragraph 3.1.1 above;
 - 3.1.4 16.67% prior to the third anniversary of the payment made pursuant to paragraph 3.1.1 above; and
 - 3.1.5 16.67% prior to the fourth anniversary of the payment made pursuant to paragraph 3.1.1 above; and
 - 3.1.6 16.65% prior to the fifth anniversary of the payment made pursuant to paragraph 3.1.1 above.
4. In the event that the County Council serve a Joint Public Transport Notice after Occupation of the 25th Dwelling, the Owners covenant with the County Council to:
 - 4.1 pay the Adjusted Public Transport Contribution in the following instalments;
 - 4.1.1 £75,000 prior to Occupation of the 50th Dwelling;
 - 4.1.2 £75,000 prior to each anniversary (up to and including the fifth anniversary) of the payment made pursuant to paragraph 4.1.1 above until the Joint Developments Notice has been received.

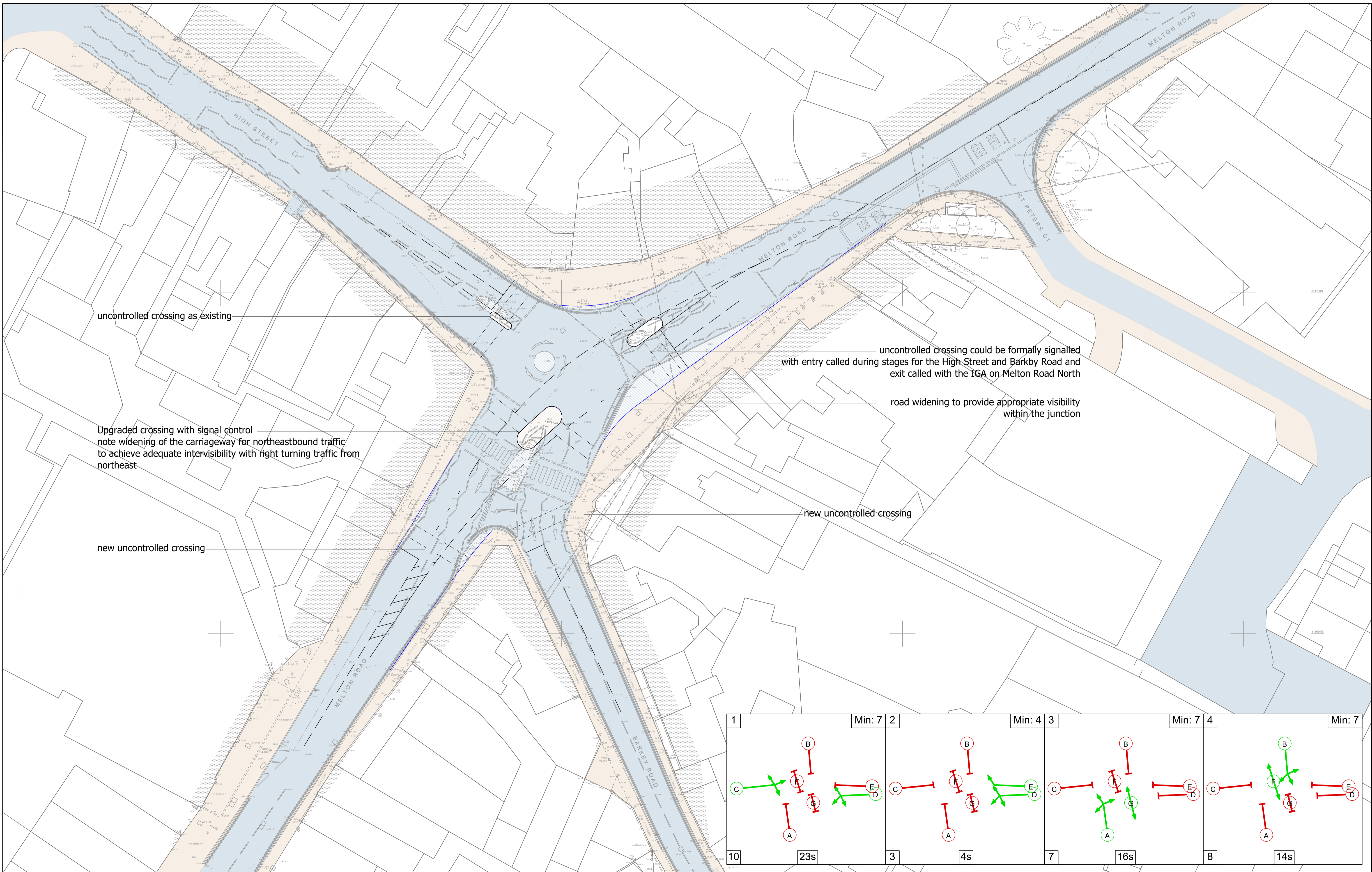
- 4.1.3 Pay the balance (if any) of the Adjusted Public Transport Contribution in equal instalments on the anniversaries up to and including the fifth anniversary of the payment made pursuant to paragraph 4.1.1 above.

Barkby Road Access

5. The County Council may serve the Barkby Road Roundabout Notice within [6] months of the date of the Notice of Intention to Commence
6. The Owners covenant with the County Council to use reasonable endeavours to enter into the Barkby Road Roundabout Deed of Dedication within [6] months of receipt of the Barkby Road Roundabout Notice.



Appendix B



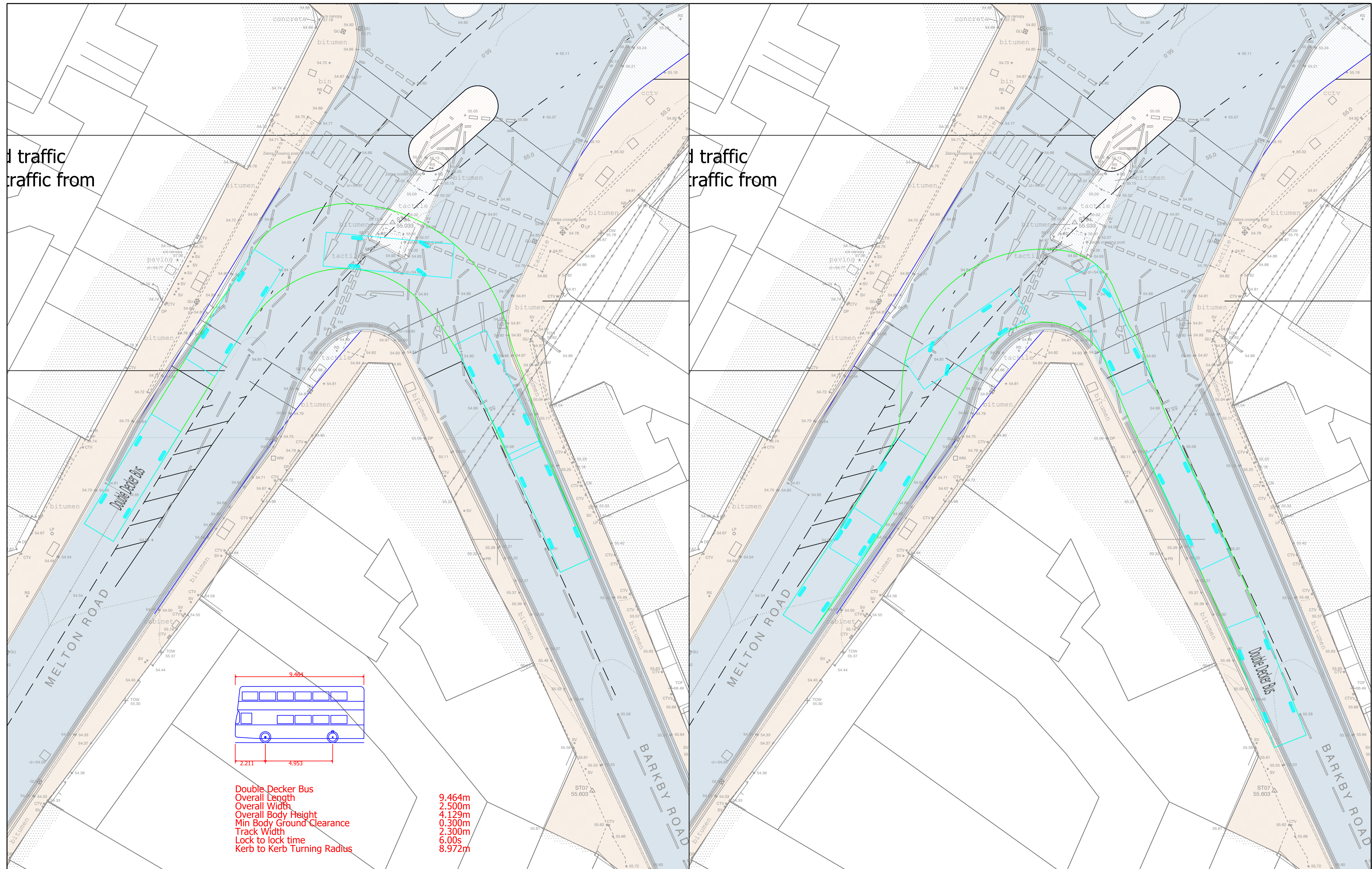
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REV	DESCRIPTION	DRAWN	INITIALS	DATE	DRAWING STATUS	CHECKED BY	DATE

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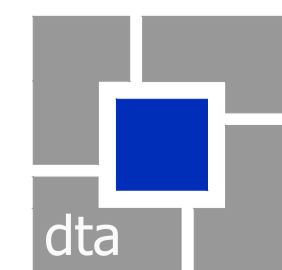
JOB TITLE	SYSTON	CLIENT	TAYLOR WIMPEY
DRAWING TITLE	Preliminary Melton Road Junction Signal Layout		
SCALE	DRAWN BY	DATE	DRAWING No
1: 500@A1	RJM	28/06/23	20060-04-GA
REVISION	C		



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JOB TITLE	CLIENT			
SYSTON	TAYLOR WIMPEY			
DRAWING TITLE				
Preliminary Melton Road Junction Signal Layout Vehicle Tracking				
SCALE	DRAWN BY	DATE	DRAWING No	REVISION
1:125@A1	RJM	28/06/23	20060-04-TRK	C



Fosse Way
ROMAN ROAD

FOSSE WAY

Widened
carriageway to allow
for a right turn lane

Stop line
moved forward

Widened radii

New footway &
Dropped kerb
crossing point

Highway
boundary
extends

Stop line
moved forward

Industrial Estate

Without Prejudice

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JOB TITLE		System		CLIENT		Taylor Wimpey	
DRAWING TITLE							
Fosse Way – High Street Junction Potential Improvements							
SCALE	DRAWN BY	DATE	DRAWING No	REVISION			
1/500@A3	BP	02.05.23	20060-08192	b			



Fosse Way
ROMAN ROAD

FOSSE WAY

Giveway moved forward

Widened radii

Widened carriageway to allow for a right turn lane

Highway boundary extents

Giveway moved forward

Industrial Estate

Without Prejudice

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JOB TITLE		System		CLIENT		Taylor Wimpey	
DRAWING TITLE							
Fosse Way – High Street Junction Potential Improvements							
SCALE	DRAWN BY	DATE	DRAWING No	REVISION			
1/500@A3	BP	16-03-23	20060-08	20			



Appendix C

Junctions 10

ARCADY 10 - Roundabout Module

Version: 10.0.4.1693

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Filename: J1 Melton- High Street roundabout - REV C.j10

Path: P:\20000's\20060\Technical\Junction Modelling\2023 Assessments\Feb 2023

Report generation date: 27/06/2023 13:21:31

-
- »2022 , AM
 - »2022 , PM
 - »2027 + Com, AM
 - »2027 + Com, PM
 - »2027 + Com + Dev, AM
 - »2027 + Com + Dev, PM
 - »2037 + Com, AM
 - »2037 + Com, PM
 - »2037 + Com + Dev , AM
 - »2037 + Com + Dev , PM

Summary of junction performance

	AM			PM		
	Q (PCU)	Delay (s)	RFC	Q (PCU)	Delay (s)	RFC
2022						
1 - Melton Road N	1.6	8.69	0.60	1.9	10.42	0.65
2 - Barkby Road	0.9	14.94	0.48	1.9	22.80	0.67
3 - Melton Road S	1.0	8.11	0.50	1.9	11.63	0.65
4 - High Street	1.2	9.94	0.53	4.9	30.32	0.84
2027 + Com						
1 - Melton Road N	1.8	9.50	0.63	2.2	11.93	0.69
2 - Barkby Road	1.2	17.40	0.54	2.5	27.85	0.72
3 - Melton Road S	1.2	8.77	0.53	2.2	13.13	0.69
4 - High Street	1.3	10.93	0.57	8.1	48.14	0.91
2027 + Com + Dev						
1 - Melton Road N	1.8	9.75	0.64	2.4	12.62	0.70
2 - Barkby Road	1.6	21.03	0.62	3.1	32.52	0.77
3 - Melton Road S	1.2	9.18	0.54	2.4	13.75	0.70
4 - High Street	1.5	11.49	0.59	11.9	66.49	0.95
2037 + Com						
1 - Melton Road N	2.4	11.91	0.71	3.3	16.06	0.77
2 - Barkby Road	1.6	22.00	0.62	4.3	44.33	0.83
3 - Melton Road S	1.5	10.39	0.59	3.4	18.48	0.77
4 - High Street	1.8	13.52	0.64	26.7	130.38	1.04
2037 + Com + Dev						
1 - Melton Road N	2.5	12.30	0.71	3.4	16.87	0.78
2 - Barkby Road	2.3	27.79	0.70	5.5	54.23	0.87
3 - Melton Road S	1.6	10.94	0.61	3.6	19.60	0.79
4 - High Street	2.0	14.38	0.66	38.9	176.13	1.09

There are warnings associated with one or more model runs - see the 'Data Errors and Warnings' tables for each Analysis or Demand Set.

Values shown are the highest values encountered over all time segments. Delay is the maximum value of Av. delay per arriving vehicle.

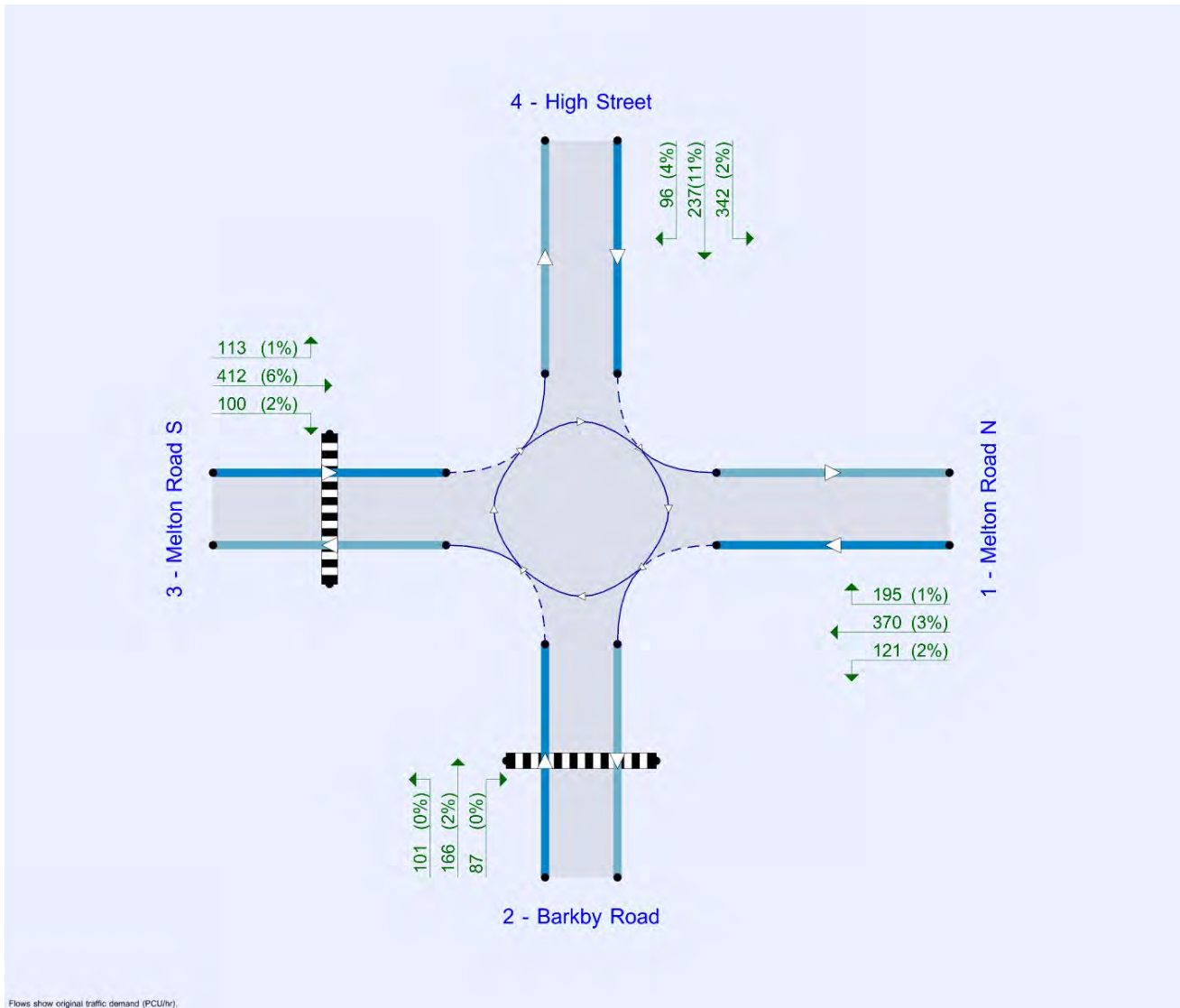
File summary

File Description

Title	(untitled)
Location	
Site number	
Date	01/03/2018
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	DTA\arcady
Description	

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Av. delay units	Total delay units	Rate of delay units
m	kph	PCU	PCU	perHour	s	-Min	perMin



Analysis Options

Vehicle length (m)	Calculate Q Percentiles	Calculate detailed queuing delay	Show lane queues in feet / metres	Show all PICADY stream intercepts	Calculate residual capacity	RFC Threshold	Av. Delay threshold (s)	Q threshold (PCU)	Use iterations with HCM roundabouts	Max number of iterations for roundabouts
5.75						0.85	36.00	20.00		500

Demand Set Summary

ID	Scenario name	Time Period name	Description	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D9	2022	AM	Covid Factor	ONE HOUR	07:45	09:15	15	✓
D10	2022	PM	Covid Factor	ONE HOUR	16:45	18:15	15	✓
D11	2027 + Com	AM	Covid Factor	ONE HOUR	07:45	09:15	15	✓
D12	2027 + Com	PM	Covid Factor	ONE HOUR	16:45	18:15	15	✓
D13	2027 + Com + Dev	AM	Covid Factor	ONE HOUR	07:45	09:15	15	✓
D14	2027 + Com + Dev	PM	Covid Factor	ONE HOUR	16:45	18:15	15	✓
D15	2037 + Com	AM	Covid Factor	ONE HOUR	07:45	09:15	15	✓
D16	2037 + Com	PM	Covid Factor	ONE HOUR	16:45	18:15	15	✓
D17	2037 + Com + Dev	AM	Covid Factor	ONE HOUR	07:45	09:15	15	✓
D18	2037 + Com + Dev	PM	Covid Factor	ONE HOUR	16:45	18:15	15	✓

Analysis Set Details

ID	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	✓	100.000	100.000

2022 , AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Pedestrian Crossing	2 - Barkby Road - Ped crossing	Ped crossing uses default flow of 0. Is this correct?
Warning	Pedestrian Crossing	3 - Melton Road S - Ped crossing	Ped crossing uses default flow of 0. Is this correct?

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	9.62	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	9.62	A

Arms

Arms

Arm	Name	Description	No give-way line
1	Melton Road N		
2	Barkby Road		
3	Melton Road S		
4	High Street		

Roundabout Geometry

Arm	V (m)	E (m)	I' (m)	R (m)	D (m)	PHI (deg)	Entry only	Exit only
1 - Melton Road N	3.54	4.22	9.2	8.6	17.7	14.5		
2 - Barkby Road	3.76	4.33	2.0	3.0	17.7	80.0		
3 - Melton Road S	3.75	4.26	3.8	5.0	17.7	12.0		
4 - High Street	2.41	4.35	7.2	12.9	17.7	26.0		

Zebra Crossings

Arm	VGAP (PCU)	Vehs queueing on exit (PCU)	Central Refuge	Crossing data type	Crossing length (m)	Crossing time (s)
2 - Barkby Road	1.00	3.00		Distance	8.00	5.71
3 - Melton Road S	1.00	1.00		Distance	7.00	5.00

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1 - Melton Road N	0.564	1225
2 - Barkby Road	0.312	675
3 - Melton Road S	0.523	1139
4 - High Street	0.523	1032

The slope and intercept shown above include any corrections and adjustments.

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Description	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D9	2022	AM	Covid Factor	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Av. Demand (PCU/hr)	Scaling Factor (%)
1 - Melton Road N		ONE HOUR	✓	591	100.000
2 - Barkby Road		ONE HOUR	✓	200	100.000
3 - Melton Road S		ONE HOUR	✓	424	100.000
4 - High Street		ONE HOUR	✓	385	100.000

Demand overview (Pedestrians)

Arm	Profile type	Av. Ped flow (Ped/hr)
1 - Melton Road N		
2 - Barkby Road	[ONEHOUR]	0.00
3 - Melton Road S	[ONEHOUR]	0.00
4 - High Street		

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - Melton Road N	2 - Barkby Road	3 - Melton Road S	4 - High Street
From	1 - Melton Road N	1	83	360	147
	2 - Barkby Road	65	0	0	135
	3 - Melton Road S	305	38	2	79
	4 - High Street	187	91	106	1

Vehicle Mix

HV %s

		To			
		1 - Melton Road N	2 - Barkby Road	3 - Melton Road S	4 - High Street
From	1 - Melton Road N	0	3	4	1
	2 - Barkby Road	1	0	1	1
	3 - Melton Road S	6	5	0	8
	4 - High Street	2	2	4	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Melton Road N	0.60	8.69	1.6	A	542	813
2 - Barkby Road	0.48	14.94	0.9	B	184	275
3 - Melton Road S	0.50	8.11	1.0	A	389	584
4 - High Street	0.53	9.94	1.2	A	353	530

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Ped demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Melton Road N	445	111	178		1125	0.395	442	417	0.0	0.7	5.415	A
2 - Barkby Road	151	38	462	0.00	531	0.283	149	159	0.0	0.4	9.474	A
3 - Melton Road S	319	80	260	0.00	1003	0.318	317	350	0.0	0.5	5.564	A
4 - High Street	290	72	307		871	0.333	288	270	0.0	0.5	6.307	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Ped demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Melton Road N	531	133	213		1105	0.481	530	501	0.7	0.9	6.445	A
2 - Barkby Road	180	45	553	0.00	503	0.358	179	190	0.4	0.6	11.218	B
3 - Melton Road S	381	95	313	0.00	975	0.391	380	420	0.5	0.7	6.420	A
4 - High Street	346	87	369		839	0.412	345	325	0.5	0.7	7.463	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Ped demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Melton Road N	651	163	261		1078	0.604	648	612	0.9	1.5	8.585	A
2 - Barkby Road	220	55	677	0.00	464	0.474	219	233	0.6	0.9	14.741	B
3 - Melton Road S	467	117	382	0.00	939	0.497	465	513	0.7	1.0	8.049	A
4 - High Street	424	106	451		796	0.532	422	397	0.7	1.1	9.827	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Ped demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Melton Road N	651	163	262		1078	0.604	651	614	1.5	1.6	8.687	A
2 - Barkby Road	220	55	679	0.00	463	0.475	220	233	0.9	0.9	14.939	B
3 - Melton Road S	467	117	384	0.00	938	0.498	467	515	1.0	1.0	8.113	A
4 - High Street	424	106	452		795	0.533	424	399	1.1	1.2	9.935	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Ped demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Melton Road N	531	133	215		1104	0.481	534	504	1.6	1.0	6.530	A
2 - Barkby Road	180	45	557	0.00	501	0.359	181	191	0.9	0.6	11.396	B
3 - Melton Road S	381	95	316	0.00	974	0.391	383	423	1.0	0.7	6.482	A
4 - High Street	346	87	371		838	0.413	348	327	1.2	0.7	7.558	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Ped demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Melton Road N	445	111	180		1124	0.396	446	421	1.0	0.7	5.485	A
2 - Barkby Road	151	38	466	0.00	530	0.284	151	160	0.6	0.4	9.618	A
3 - Melton Road S	319	80	264	0.00	1001	0.319	320	353	0.7	0.5	5.621	A
4 - High Street	290	72	310		870	0.333	291	273	0.7	0.5	6.385	A

2022 , PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Pedestrian Crossing	2 - Barkby Road - Ped crossing	Ped crossing uses default flow of 0. Is this correct?
Warning	Pedestrian Crossing	3 - Melton Road S - Ped crossing	Ped crossing uses default flow of 0. Is this correct?

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	18.09	C

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	18.09	C

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Description	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D10	2022	PM	Covid Factor	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Av. Demand (PCU/hr)	Scaling Factor (%)
1 - Melton Road N		ONE HOUR	✓	599	100.000
2 - Barkby Road		ONE HOUR	✓	288	100.000
3 - Melton Road S		ONE HOUR	✓	547	100.000
4 - High Street		ONE HOUR	✓	554	100.000

Demand overview (Pedestrians)

Arm	Profile type	Av. Ped flow (Ped/hr)
1 - Melton Road N		
2 - Barkby Road	[ONEHOUR]	0.00
3 - Melton Road S	[ONEHOUR]	0.00
4 - High Street		

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - Melton Road N	2 - Barkby Road	3 - Melton Road S	4 - High Street
From	1 - Melton Road N	0	105	323	171
	2 - Barkby Road	76	1	87	124
	3 - Melton Road S	360	85	3	99
	4 - High Street	299	171	84	0

Vehicle Mix

HV %s

		To			
		1 - Melton Road N	2 - Barkby Road	3 - Melton Road S	4 - High Street
From	1 - Melton Road N	0	2	3	1
	2 - Barkby Road	0	0	0	2
	3 - Melton Road S	6	2	0	1
	4 - High Street	2	11	4	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Melton Road N	0.65	10.42	1.9	B	550	824
2 - Barkby Road	0.67	22.80	1.9	C	264	396
3 - Melton Road S	0.65	11.63	1.9	B	502	753
4 - High Street	0.84	30.32	4.9	D	508	763

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Ped demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Melton Road N	451	113	257		1081	0.417	448	548	0.0	0.7	5.791	A
2 - Barkby Road	217	54	434	0.00	540	0.402	214	270	0.0	0.7	11.063	B
3 - Melton Road S	412	103	277	0.00	994	0.414	409	371	0.0	0.7	6.391	A
4 - High Street	417	104	392		827	0.504	413	294	0.0	1.0	9.039	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Ped demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Melton Road N	538	135	308		1052	0.512	537	658	0.7	1.1	7.132	A
2 - Barkby Road	259	65	521	0.00	513	0.505	258	324	0.7	1.0	14.147	B
3 - Melton Road S	492	123	333	0.00	965	0.510	490	445	0.7	1.1	7.898	A
4 - High Street	498	125	471		786	0.634	495	353	1.0	1.8	12.872	B

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Ped demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Melton Road N	660	165	373		1015	0.650	656	800	1.1	1.8	10.174	B
2 - Barkby Road	317	79	635	0.00	477	0.665	314	394	1.0	1.9	21.746	C
3 - Melton Road S	602	151	406	0.00	927	0.650	599	543	1.1	1.9	11.360	B
4 - High Street	610	152	574		731	0.834	599	431	1.8	4.5	26.556	D

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Ped demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Melton Road N	660	165	378		1012	0.652	659	808	1.8	1.9	10.420	B
2 - Barkby Road	317	79	639	0.00	476	0.666	317	398	1.9	1.9	22.801	C
3 - Melton Road S	602	151	409	0.00	925	0.651	602	547	1.9	1.9	11.626	B
4 - High Street	610	152	578		730	0.836	608	434	4.5	4.9	30.319	D

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Ped demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Melton Road N	538	135	315		1048	0.514	542	670	1.9	1.1	7.319	A
2 - Barkby Road	259	65	527	0.00	511	0.507	262	330	1.9	1.1	14.801	B
3 - Melton Road S	492	123	338	0.00	962	0.511	495	451	1.9	1.1	8.095	A
4 - High Street	498	125	476		783	0.636	510	357	4.9	1.9	14.367	B

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Ped demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Melton Road N	451	113	261		1078	0.418	452	556	1.1	0.7	5.895	A
2 - Barkby Road	217	54	439	0.00	538	0.403	218	274	1.1	0.7	11.398	B
3 - Melton Road S	412	103	282	0.00	992	0.415	413	376	1.1	0.8	6.513	A
4 - High Street	417	104	397		824	0.506	420	298	1.9	1.1	9.422	A

2027 + Com, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Pedestrian Crossing	2 - Barkby Road - Ped crossing	Ped crossing uses default flow of 0. Is this correct?
Warning	Pedestrian Crossing	3 - Melton Road S - Ped crossing	Ped crossing uses default flow of 0. Is this correct?

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	10.70	B

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	10.70	B

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Description	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D11	2027 + Com	AM	Covid Factor	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Av. Demand (PCU/hr)	Scaling Factor (%)
1 - Melton Road N		ONE HOUR	✓	616	100.000
2 - Barkby Road		ONE HOUR	✓	223	100.000
3 - Melton Road S		ONE HOUR	✓	441	100.000
4 - High Street		ONE HOUR	✓	407	100.000

Demand overview (Pedestrians)

Arm	Profile type	Av. Ped flow (Ped/hr)
1 - Melton Road N		
2 - Barkby Road	[ONEHOUR]	0.00
3 - Melton Road S	[ONEHOUR]	0.00
4 - High Street		

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - Melton Road N	2 - Barkby Road	3 - Melton Road S	4 - High Street
From	1 - Melton Road N	1	86	376	153
	2 - Barkby Road	68	0	0	155
	3 - Melton Road S	318	39	2	82
	4 - High Street	195	100	111	1

Vehicle Mix

HV %s

		To			
		1 - Melton Road N	2 - Barkby Road	3 - Melton Road S	4 - High Street
From	1 - Melton Road N	0	3	4	1
	2 - Barkby Road	1	0	1	1
	3 - Melton Road S	6	5	0	8
	4 - High Street	2	2	4	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Melton Road N	0.63	9.50	1.8	A	565	848
2 - Barkby Road	0.54	17.40	1.2	C	205	307
3 - Melton Road S	0.53	8.77	1.2	A	405	607
4 - High Street	0.57	10.93	1.3	B	373	560

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Ped demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Melton Road N	464	116	189		1119	0.415	461	435	0.0	0.7	5.617	A
2 - Barkby Road	168	42	482	0.00	525	0.320	166	168	0.0	0.5	10.077	B
3 - Melton Road S	332	83	282	0.00	992	0.335	330	366	0.0	0.5	5.762	A
4 - High Street	306	77	320		865	0.354	304	292	0.0	0.6	6.560	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Ped demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Melton Road N	554	138	227		1097	0.505	553	522	0.7	1.0	6.796	A
2 - Barkby Road	200	50	578	0.00	495	0.405	200	202	0.5	0.7	12.270	B
3 - Melton Road S	396	99	339	0.00	962	0.412	396	439	0.5	0.7	6.744	A
4 - High Street	366	91	384		831	0.440	365	350	0.6	0.8	7.901	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Ped demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Melton Road N	678	170	277		1069	0.634	675	638	1.0	1.7	9.360	A
2 - Barkby Road	246	61	706	0.00	455	0.540	244	247	0.7	1.1	17.049	C
3 - Melton Road S	486	121	414	0.00	923	0.526	484	536	0.7	1.2	8.681	A
4 - High Street	448	112	469		786	0.570	446	428	0.8	1.3	10.775	B

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Ped demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Melton Road N	678	170	279		1068	0.635	678	641	1.7	1.8	9.503	A
2 - Barkby Road	246	61	709	0.00	454	0.541	245	248	1.1	1.2	17.400	C
3 - Melton Road S	486	121	416	0.00	921	0.527	485	538	1.2	1.2	8.770	A
4 - High Street	448	112	471		785	0.571	448	430	1.3	1.3	10.932	B

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Ped demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Melton Road N	554	138	229		1096	0.505	557	526	1.8	1.1	6.908	A
2 - Barkby Road	200	50	582	0.00	494	0.406	202	203	1.2	0.7	12.552	B
3 - Melton Road S	396	99	342	0.00	960	0.413	398	442	1.2	0.8	6.826	A
4 - High Street	366	91	387		830	0.441	368	354	1.3	0.8	8.032	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Ped demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Melton Road N	464	116	191		1118	0.415	465	440	1.1	0.7	5.700	A
2 - Barkby Road	168	42	486	0.00	524	0.321	169	170	0.7	0.5	10.272	B
3 - Melton Road S	332	83	286	0.00	990	0.336	333	369	0.8	0.5	5.831	A
4 - High Street	306	77	323		863	0.355	307	295	0.8	0.6	6.656	A

2027 + Com, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Pedestrian Crossing	2 - Barkby Road - Ped crossing	Ped crossing uses default flow of 0. Is this correct?
Warning	Pedestrian Crossing	3 - Melton Road S - Ped crossing	Ped crossing uses default flow of 0. Is this correct?

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	24.84	C

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	24.84	C

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Description	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D12	2027 + Com	PM	Covid Factor	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Av. Demand (PCU/hr)	Scaling Factor (%)
1 - Melton Road N		ONE HOUR	✓	625	100.000
2 - Barkby Road		ONE HOUR	✓	308	100.000
3 - Melton Road S		ONE HOUR	✓	569	100.000
4 - High Street		ONE HOUR	✓	592	100.000

Demand overview (Pedestrians)

Arm	Profile type	Av. Ped flow (Ped/hr)
1 - Melton Road N		
2 - Barkby Road	[ONEHOUR]	0.00
3 - Melton Road S	[ONEHOUR]	0.00
4 - High Street		

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - Melton Road N	2 - Barkby Road	3 - Melton Road S	4 - High Street
From	1 - Melton Road N	0	110	337	178
	2 - Barkby Road	79	1	91	137
	3 - Melton Road S	375	88	3	103
	4 - High Street	312	193	87	0

Vehicle Mix

HV %s

		To			
		1 - Melton Road N	2 - Barkby Road	3 - Melton Road S	4 - High Street
From	1 - Melton Road N	0	2	3	1
	2 - Barkby Road	0	0	0	2
	3 - Melton Road S	6	2	0	1
	4 - High Street	2	11	4	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Melton Road N	0.69	11.93	2.2	B	574	860
2 - Barkby Road	0.72	27.85	2.5	D	283	424
3 - Melton Road S	0.69	13.13	2.2	B	522	783
4 - High Street	0.91	48.14	8.1	E	543	815

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Ped demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Melton Road N	471	118	277		1069	0.440	467	571	0.0	0.8	6.086	A
2 - Barkby Road	232	58	452	0.00	534	0.434	229	292	0.0	0.8	11.780	B
3 - Melton Road S	428	107	294	0.00	985	0.435	425	387	0.0	0.8	6.676	A
4 - High Street	446	111	408		819	0.544	441	312	0.0	1.2	9.887	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Ped demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Melton Road N	562	140	332		1038	0.541	560	685	0.8	1.2	7.681	A
2 - Barkby Road	277	69	542	0.00	506	0.547	275	351	0.8	1.2	15.604	C
3 - Melton Road S	512	128	353	0.00	954	0.536	510	464	0.8	1.2	8.430	A
4 - High Street	532	133	489		776	0.686	528	374	1.2	2.2	15.034	C

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Ped demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Melton Road N	688	172	400		1000	0.688	684	829	1.2	2.2	11.514	B
2 - Barkby Road	339	85	660	0.00	469	0.722	334	424	1.2	2.4	25.966	D
3 - Melton Road S	626	157	430	0.00	914	0.685	622	564	1.2	2.2	12.719	B
4 - High Street	652	163	597		720	0.905	633	456	2.2	7.0	37.198	E

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Ped demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Melton Road N	688	172	407		996	0.691	688	841	2.2	2.2	11.932	B
2 - Barkby Road	339	85	665	0.00	468	0.725	339	430	2.4	2.5	27.850	D
3 - Melton Road S	626	157	434	0.00	912	0.687	626	569	2.2	2.2	13.134	B
4 - High Street	652	163	601		718	0.908	647	460	7.0	8.1	48.141	E

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Ped demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Melton Road N	562	140	346		1030	0.545	566	704	2.2	1.2	7.989	A
2 - Barkby Road	277	69	550	0.00	504	0.550	282	361	2.5	1.3	16.722	C
3 - Melton Road S	512	128	360	0.00	951	0.538	516	473	2.2	1.2	8.708	A
4 - High Street	532	133	495		773	0.689	555	380	8.1	2.5	18.935	C

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Ped demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Melton Road N	471	118	283		1066	0.441	472	581	1.2	0.8	6.218	A
2 - Barkby Road	232	58	458	0.00	533	0.435	234	297	1.3	0.8	12.236	B
3 - Melton Road S	428	107	299	0.00	983	0.436	430	392	1.2	0.8	6.825	A
4 - High Street	446	111	413		816	0.546	450	316	2.5	1.3	10.472	B

2027 + Com + Dev, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Pedestrian Crossing	2 - Barkby Road - Ped crossing	Ped crossing uses default flow of 0. Is this correct?
Warning	Pedestrian Crossing	3 - Melton Road S - Ped crossing	Ped crossing uses default flow of 0. Is this correct?

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	11.69	B

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	11.69	B

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Description	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D13	2027 + Com + Dev	AM	Covid Factor	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Av. Demand (PCU/hr)	Scaling Factor (%)
1 - Melton Road N		ONE HOUR	✓	616	100.000
2 - Barkby Road		ONE HOUR	✓	256	100.000
3 - Melton Road S		ONE HOUR	✓	443	100.000
4 - High Street		ONE HOUR	✓	421	100.000

Demand overview (Pedestrians)

Arm	Profile type	Av. Ped flow (Ped/hr)
1 - Melton Road N		
2 - Barkby Road	[ONEHOUR]	0.00
3 - Melton Road S	[ONEHOUR]	0.00
4 - High Street		

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - Melton Road N	2 - Barkby Road	3 - Melton Road S	4 - High Street
From	1 - Melton Road N	1	86	376	153
	2 - Barkby Road	68	0	3	185
	3 - Melton Road S	318	41	2	82
	4 - High Street	195	114	111	1

Vehicle Mix

HV %s

		To			
		1 - Melton Road N	2 - Barkby Road	3 - Melton Road S	4 - High Street
From	1 - Melton Road N	0	3	4	1
	2 - Barkby Road	1	0	1	1
	3 - Melton Road S	6	5	0	8
	4 - High Street	2	2	4	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Melton Road N	0.64	9.75	1.8	A	565	848
2 - Barkby Road	0.62	21.03	1.6	C	235	352
3 - Melton Road S	0.54	9.18	1.2	A	407	610
4 - High Street	0.59	11.49	1.5	B	386	579

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Ped demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Melton Road N	464	116	201		1112	0.417	461	435	0.0	0.7	5.675	A
2 - Barkby Road	193	48	482	0.00	525	0.367	190	180	0.0	0.6	10.796	B
3 - Melton Road S	334	83	304	0.00	980	0.340	331	368	0.0	0.5	5.878	A
4 - High Street	317	79	321		864	0.367	315	314	0.0	0.6	6.692	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Ped demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Melton Road N	554	138	241		1089	0.508	552	522	0.7	1.1	6.895	A
2 - Barkby Road	230	58	578	0.00	495	0.465	229	216	0.6	0.9	13.606	B
3 - Melton Road S	398	100	365	0.00	948	0.420	397	441	0.5	0.8	6.934	A
4 - High Street	378	95	386		830	0.456	377	377	0.6	0.8	8.132	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Ped demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Melton Road N	678	170	295		1059	0.640	675	638	1.1	1.8	9.592	A
2 - Barkby Road	282	70	706	0.00	455	0.619	279	264	0.9	1.6	20.330	C
3 - Melton Road S	488	122	446	0.00	906	0.538	486	539	0.8	1.2	9.066	A
4 - High Street	464	116	471		785	0.590	461	460	0.8	1.4	11.298	B

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Ped demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Melton Road N	678	170	296		1058	0.641	678	641	1.8	1.8	9.751	A
2 - Barkby Road	282	70	709	0.00	454	0.621	282	265	1.6	1.6	21.025	C
3 - Melton Road S	488	122	449	0.00	904	0.539	488	542	1.2	1.2	9.179	A
4 - High Street	464	116	473		784	0.591	463	463	1.4	1.5	11.492	B

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Ped demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Melton Road N	554	138	243		1088	0.509	557	526	1.8	1.1	7.021	A
2 - Barkby Road	230	58	582	0.00	494	0.466	233	218	1.6	0.9	14.089	B
3 - Melton Road S	398	100	370	0.00	945	0.421	400	445	1.2	0.8	7.035	A
4 - High Street	378	95	389		829	0.457	381	382	1.5	0.9	8.284	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Ped demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Melton Road N	464	116	203		1111	0.418	465	440	1.1	0.7	5.759	A
2 - Barkby Road	193	48	486	0.00	524	0.368	194	182	0.9	0.6	11.071	B
3 - Melton Road S	334	83	309	0.00	978	0.341	334	372	0.8	0.6	5.954	A
4 - High Street	317	79	325		862	0.368	318	318	0.9	0.6	6.800	A

2027 + Com + Dev, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Pedestrian Crossing	2 - Barkby Road - Ped crossing	Ped crossing uses default flow of 0. Is this correct?
Warning	Pedestrian Crossing	3 - Melton Road S - Ped crossing	Ped crossing uses default flow of 0. Is this correct?

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	31.52	D

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	31.52	D

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Description	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D14	2027 + Com + Dev	PM	Covid Factor	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Av. Demand (PCU/hr)	Scaling Factor (%)
1 - Melton Road N		ONE HOUR	✓	625	100.000
2 - Barkby Road		ONE HOUR	✓	326	100.000
3 - Melton Road S		ONE HOUR	✓	572	100.000
4 - High Street		ONE HOUR	✓	619	100.000

Demand overview (Pedestrians)

Arm	Profile type	Av. Ped flow (Ped/hr)
1 - Melton Road N		
2 - Barkby Road	[ONEHOUR]	0.00
3 - Melton Road S	[ONEHOUR]	0.00
4 - High Street		

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - Melton Road N	2 - Barkby Road	3 - Melton Road S	4 - High Street
From	1 - Melton Road N	0	110	337	178
	2 - Barkby Road	79	1	92	154
	3 - Melton Road S	375	91	3	103
	4 - High Street	312	220	87	0

Vehicle Mix

HV %s

		To			
		1 - Melton Road N	2 - Barkby Road	3 - Melton Road S	4 - High Street
From	1 - Melton Road N	0	2	3	1
	2 - Barkby Road	0	0	0	2
	3 - Melton Road S	6	2	0	1
	4 - High Street	2	11	4	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Melton Road N	0.70	12.62	2.4	B	574	860
2 - Barkby Road	0.77	32.52	3.1	D	299	449
3 - Melton Road S	0.70	13.75	2.4	B	525	787
4 - High Street	0.95	66.49	11.9	F	568	852

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Ped demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Melton Road N	471	118	299		1057	0.445	467	571	0.0	0.8	6.213	A
2 - Barkby Road	245	61	452	0.00	534	0.459	242	315	0.0	0.8	12.302	B
3 - Melton Road S	431	108	307	0.00	979	0.440	427	387	0.0	0.8	6.779	A
4 - High Street	466	117	410		818	0.570	461	324	0.0	1.4	10.471	B

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Ped demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Melton Road N	562	140	359		1023	0.549	560	685	0.8	1.2	7.924	A
2 - Barkby Road	293	73	542	0.00	506	0.579	291	377	0.8	1.3	16.727	C
3 - Melton Road S	514	129	368	0.00	946	0.543	513	464	0.8	1.2	8.629	A
4 - High Street	556	139	492		775	0.718	552	389	1.4	2.5	16.657	C

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Ped demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Melton Road N	688	172	428		984	0.699	684	825	1.2	2.3	12.097	B
2 - Barkby Road	359	90	659	0.00	470	0.764	353	453	1.3	2.9	29.552	D
3 - Melton Road S	630	157	448	0.00	905	0.696	626	564	1.2	2.3	13.253	B
4 - High Street	682	170	599		718	0.949	654	474	2.5	9.4	46.230	E

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Ped demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Melton Road N	688	172	438		979	0.703	688	838	2.3	2.4	12.623	B
2 - Barkby Road	359	90	664	0.00	468	0.767	358	461	2.9	3.1	32.524	D
3 - Melton Road S	630	157	453	0.00	902	0.698	630	570	2.3	2.4	13.749	B
4 - High Street	682	170	604		716	0.952	672	478	9.4	11.9	66.490	F

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Ped demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Melton Road N	562	140	380		1011	0.556	566	711	2.4	1.3	8.345	A
2 - Barkby Road	293	73	552	0.00	503	0.583	300	394	3.1	1.5	18.383	C
3 - Melton Road S	514	129	376	0.00	942	0.546	518	476	2.4	1.3	8.954	A
4 - High Street	556	139	499		771	0.722	592	396	11.9	2.9	24.710	C

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Ped demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Melton Road N	471	118	306		1053	0.447	472	581	1.3	0.8	6.360	A
2 - Barkby Road	245	61	458	0.00	532	0.461	248	320	1.5	0.9	12.869	B
3 - Melton Road S	431	108	312	0.00	976	0.441	432	393	1.3	0.8	6.939	A
4 - High Street	466	117	415		815	0.572	472	329	2.9	1.4	11.248	B

2037 + Com, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Pedestrian Crossing	2 - Barkby Road - Ped crossing	Ped crossing uses default flow of 0. Is this correct?
Warning	Pedestrian Crossing	3 - Melton Road S - Ped crossing	Ped crossing uses default flow of 0. Is this correct?

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	13.23	B

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	13.23	B

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Description	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D15	2037 + Com	AM	Covid Factor	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Av. Demand (PCU/hr)	Scaling Factor (%)
1 - Melton Road N		ONE HOUR	✓	675	100.000
2 - Barkby Road		ONE HOUR	✓	244	100.000
3 - Melton Road S		ONE HOUR	✓	484	100.000
4 - High Street		ONE HOUR	✓	444	100.000

Demand overview (Pedestrians)

Arm	Profile type	Av. Ped flow (Ped/hr)
1 - Melton Road N		
2 - Barkby Road	[ONEHOUR]	0.00
3 - Melton Road S	[ONEHOUR]	0.00
4 - High Street		

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - Melton Road N	2 - Barkby Road	3 - Melton Road S	4 - High Street
From	1 - Melton Road N	1	94	412	168
	2 - Barkby Road	75	0	0	169
	3 - Melton Road S	349	43	2	90
	4 - High Street	213	109	121	1

Vehicle Mix

HV %s

		To			
		1 - Melton Road N	2 - Barkby Road	3 - Melton Road S	4 - High Street
From	1 - Melton Road N	0	3	4	1
	2 - Barkby Road	1	0	1	1
	3 - Melton Road S	6	5	0	8
	4 - High Street	2	2	4	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Melton Road N	0.71	11.91	2.4	B	619	929
2 - Barkby Road	0.62	22.00	1.6	C	224	336
3 - Melton Road S	0.59	10.39	1.5	B	444	666
4 - High Street	0.64	13.52	1.8	B	407	611

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Ped demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Melton Road N	508	127	206		1109	0.458	505	477	0.0	0.9	6.107	A
2 - Barkby Road	184	46	527	0.00	511	0.360	181	184	0.0	0.6	10.967	B
3 - Melton Road S	364	91	309	0.00	978	0.373	362	400	0.0	0.6	6.187	A
4 - High Street	334	84	351		848	0.394	332	319	0.0	0.7	7.110	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Ped demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Melton Road N	607	152	247		1086	0.559	605	572	0.9	1.3	7.691	A
2 - Barkby Road	219	55	632	0.00	478	0.459	218	221	0.6	0.8	13.929	B
3 - Melton Road S	435	109	371	0.00	945	0.460	434	480	0.6	0.9	7.468	A
4 - High Street	399	100	421		812	0.492	398	383	0.7	1.0	8.896	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Ped demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Melton Road N	743	186	302		1055	0.704	739	698	1.3	2.4	11.577	B
2 - Barkby Road	269	67	772	0.00	435	0.618	266	269	0.8	1.5	21.188	C
3 - Melton Road S	533	133	452	0.00	903	0.590	531	586	0.9	1.5	10.208	B
4 - High Street	489	122	515		763	0.641	486	468	1.0	1.8	13.174	B

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Ped demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Melton Road N	743	186	304		1054	0.705	743	702	2.4	2.4	11.908	B
2 - Barkby Road	269	67	776	0.00	433	0.620	268	271	1.5	1.6	21.999	C
3 - Melton Road S	533	133	456	0.00	901	0.592	533	589	1.5	1.5	10.385	B
4 - High Street	489	122	517		761	0.642	489	471	1.8	1.8	13.519	B

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Ped demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Melton Road N	607	152	250		1084	0.560	611	578	2.4	1.3	7.910	A
2 - Barkby Road	219	55	638	0.00	476	0.461	222	223	1.6	0.9	14.471	B
3 - Melton Road S	435	109	376	0.00	942	0.462	437	484	1.5	0.9	7.613	A
4 - High Street	399	100	425		809	0.493	402	388	1.8	1.0	9.135	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Ped demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Melton Road N	508	127	209		1108	0.459	510	482	1.3	0.9	6.226	A
2 - Barkby Road	184	46	533	0.00	509	0.361	185	186	0.9	0.6	11.257	B
3 - Melton Road S	364	91	313	0.00	975	0.374	366	404	0.9	0.6	6.287	A
4 - High Street	334	84	355		846	0.395	336	324	1.0	0.7	7.251	A

2037 + Com, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Pedestrian Crossing	2 - Barkby Road - Ped crossing	Ped crossing uses default flow of 0. Is this correct?
Warning	Pedestrian Crossing	3 - Melton Road S - Ped crossing	Ped crossing uses default flow of 0. Is this correct?

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	53.11	F

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	53.11	F

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Description	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D16	2037 + Com	PM	Covid Factor	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Av. Demand (PCU/hr)	Scaling Factor (%)
1 - Melton Road N		ONE HOUR	✓	686	100.000
2 - Barkby Road		ONE HOUR	✓	338	100.000
3 - Melton Road S		ONE HOUR	✓	626	100.000
4 - High Street		ONE HOUR	✓	648	100.000

Demand overview (Pedestrians)

Arm	Profile type	Av. Ped flow (Ped/hr)
1 - Melton Road N		
2 - Barkby Road	[ONEHOUR]	0.00
3 - Melton Road S	[ONEHOUR]	0.00
4 - High Street		

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - Melton Road N	2 - Barkby Road	3 - Melton Road S	4 - High Street
From	1 - Melton Road N	0	121	370	195
	2 - Barkby Road	87	1	100	150
	3 - Melton Road S	412	97	4	113
	4 - High Street	342	210	96	0

Vehicle Mix

HV %s

		To			
		1 - Melton Road N	2 - Barkby Road	3 - Melton Road S	4 - High Street
From	1 - Melton Road N	0	2	3	1
	2 - Barkby Road	0	0	0	2
	3 - Melton Road S	6	2	0	1
	4 - High Street	2	11	4	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Melton Road N	0.77	16.06	3.3	C	629	944
2 - Barkby Road	0.83	44.33	4.3	E	310	465
3 - Melton Road S	0.77	18.48	3.4	C	574	862
4 - High Street	1.04	130.38	26.7	F	595	892

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Ped demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Melton Road N	516	129	304		1054	0.490	513	626	0.0	1.0	6.749	A
2 - Barkby Road	254	64	496	0.00	520	0.489	251	320	0.0	0.9	13.292	B
3 - Melton Road S	471	118	322	0.00	971	0.486	467	425	0.0	1.0	7.415	A
4 - High Street	488	122	448		797	0.612	481	341	0.0	1.6	11.746	B

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Ped demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Melton Road N	617	154	363		1021	0.604	614	750	1.0	1.5	9.012	A
2 - Barkby Road	304	76	595	0.00	490	0.621	301	383	0.9	1.6	19.020	C
3 - Melton Road S	563	141	387	0.00	937	0.601	561	509	1.0	1.5	9.929	A
4 - High Street	583	146	538		751	0.776	576	410	1.6	3.3	20.826	C

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Ped demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Melton Road N	755	189	422		987	0.765	749	890	1.5	3.1	15.043	C
2 - Barkby Road	372	93	719	0.00	451	0.825	363	452	1.6	3.9	37.771	E
3 - Melton Road S	689	172	468	0.00	894	0.771	682	613	1.5	3.3	17.206	C
4 - High Street	713	178	654		690	1.034	659	497	3.3	17.0	72.239	F

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Ped demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Melton Road N	755	189	431		983	0.769	755	905	3.1	3.3	16.057	C
2 - Barkby Road	372	93	726	0.00	449	0.829	370	460	3.9	4.3	44.331	E
3 - Melton Road S	689	172	475	0.00	890	0.774	689	621	3.3	3.4	18.476	C
4 - High Street	713	178	661		686	1.040	675	503	17.0	26.7	130.382	F

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Ped demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Melton Road N	617	154	410		994	0.620	623	810	3.3	1.7	10.069	B
2 - Barkby Road	304	76	616	0.00	483	0.629	314	417	4.3	1.8	22.550	C
3 - Melton Road S	563	141	398	0.00	931	0.605	570	532	3.4	1.6	10.603	B
4 - High Street	583	146	549		745	0.782	672	419	26.7	4.5	69.191	F

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Ped demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Melton Road N	516	129	313		1049	0.492	519	641	1.7	1.0	6.984	A
2 - Barkby Road	254	64	505	0.00	518	0.491	258	327	1.8	1.0	14.127	B
3 - Melton Road S	471	118	329	0.00	967	0.487	474	433	1.6	1.0	7.658	A
4 - High Street	488	122	455		794	0.615	499	347	4.5	1.7	13.273	B

2037 + Com + Dev , AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Pedestrian Crossing	2 - Barkby Road - Ped crossing	Ped crossing uses default flow of 0. Is this correct?
Warning	Pedestrian Crossing	3 - Melton Road S - Ped crossing	Ped crossing uses default flow of 0. Is this correct?

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	14.71	B

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	14.71	B

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Description	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D17	2037 + Com + Dev	AM	Covid Factor	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Av. Demand (PCU/hr)	Scaling Factor (%)
1 - Melton Road N		ONE HOUR	✓	675	100.000
2 - Barkby Road		ONE HOUR	✓	276	100.000
3 - Melton Road S		ONE HOUR	✓	486	100.000
4 - High Street		ONE HOUR	✓	458	100.000

Demand overview (Pedestrians)

Arm	Profile type	Av. Ped flow (Ped/hr)
1 - Melton Road N		
2 - Barkby Road	[ONEHOUR]	0.00
3 - Melton Road S	[ONEHOUR]	0.00
4 - High Street		

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - Melton Road N	2 - Barkby Road	3 - Melton Road S	4 - High Street
From	1 - Melton Road N	1	94	412	168
	2 - Barkby Road	75	0	3	198
	3 - Melton Road S	349	45	2	90
	4 - High Street	213	123	121	1

Vehicle Mix

HV %s

		To			
		1 - Melton Road N	2 - Barkby Road	3 - Melton Road S	4 - High Street
From	1 - Melton Road N	0	3	4	1
	2 - Barkby Road	1	0	1	1
	3 - Melton Road S	6	5	0	8
	4 - High Street	2	2	4	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Melton Road N	0.71	12.30	2.5	B	619	929
2 - Barkby Road	0.70	27.79	2.3	D	253	380
3 - Melton Road S	0.61	10.94	1.6	B	446	669
4 - High Street	0.66	14.38	2.0	B	420	630

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Ped demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Melton Road N	508	127	218		1102	0.461	505	476	0.0	0.9	6.174	A
2 - Barkby Road	208	52	527	0.00	511	0.407	205	196	0.0	0.7	11.789	B
3 - Melton Road S	366	91	330	0.00	966	0.379	363	402	0.0	0.6	6.315	A
4 - High Street	345	86	353		848	0.407	342	341	0.0	0.7	7.263	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Ped demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Melton Road N	607	152	262		1078	0.563	605	572	0.9	1.3	7.822	A
2 - Barkby Road	248	62	632	0.00	478	0.519	247	235	0.7	1.1	15.598	C
3 - Melton Road S	437	109	396	0.00	932	0.469	436	482	0.6	0.9	7.693	A
4 - High Street	412	103	423		811	0.508	410	409	0.7	1.0	9.187	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Ped demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Melton Road N	743	186	319		1045	0.711	739	698	1.3	2.4	11.927	B
2 - Barkby Road	304	76	771	0.00	435	0.699	299	287	1.1	2.1	26.078	D
3 - Melton Road S	535	134	482	0.00	887	0.603	533	589	0.9	1.6	10.716	B
4 - High Street	504	126	516		762	0.662	501	498	1.0	1.9	13.944	B

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Ped demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Melton Road N	743	186	321		1044	0.712	743	702	2.4	2.5	12.295	B
2 - Barkby Road	304	76	776	0.00	433	0.701	303	288	2.1	2.3	27.792	D
3 - Melton Road S	535	134	487	0.00	884	0.605	535	592	1.6	1.6	10.941	B
4 - High Street	504	126	519		760	0.663	504	503	1.9	2.0	14.379	B

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Ped demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Melton Road N	607	152	265		1076	0.564	611	578	2.5	1.4	8.060	A
2 - Barkby Road	248	62	639	0.00	476	0.521	253	237	2.3	1.1	16.578	C
3 - Melton Road S	437	109	404	0.00	928	0.471	439	487	1.6	1.0	7.873	A
4 - High Street	412	103	428		808	0.509	415	416	2.0	1.1	9.475	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Ped demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Melton Road N	508	127	221		1101	0.462	510	482	1.4	0.9	6.302	A
2 - Barkby Road	208	52	533	0.00	509	0.408	209	198	1.1	0.7	12.204	B
3 - Melton Road S	366	91	336	0.00	963	0.380	367	407	1.0	0.7	6.425	A
4 - High Street	345	86	357		845	0.408	346	346	1.1	0.7	7.417	A

2037 + Com + Dev , PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Pedestrian Crossing	2 - Barkby Road - Ped crossing	Ped crossing uses default flow of 0. Is this correct?
Warning	Pedestrian Crossing	3 - Melton Road S - Ped crossing	Ped crossing uses default flow of 0. Is this correct?

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	69.10	F

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	69.10	F

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Description	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D18	2037 + Com + Dev	PM	Covid Factor	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Av. Demand (PCU/hr)	Scaling Factor (%)
1 - Melton Road N		ONE HOUR	✓	686	100.000
2 - Barkby Road		ONE HOUR	✓	355	100.000
3 - Melton Road S		ONE HOUR	✓	629	100.000
4 - High Street		ONE HOUR	✓	675	100.000

Demand overview (Pedestrians)

Arm	Profile type	Av. Ped flow (Ped/hr)
1 - Melton Road N		
2 - Barkby Road	[ONEHOUR]	0.00
3 - Melton Road S	[ONEHOUR]	0.00
4 - High Street		

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - Melton Road N	2 - Barkby Road	3 - Melton Road S	4 - High Street
From	1 - Melton Road N	0	121	370	195
	2 - Barkby Road	87	1	101	166
	3 - Melton Road S	412	100	4	113
	4 - High Street	342	237	96	0

Vehicle Mix

HV %s

		To			
		1 - Melton Road N	2 - Barkby Road	3 - Melton Road S	4 - High Street
From	1 - Melton Road N	0	2	3	1
	2 - Barkby Road	0	0	0	2
	3 - Melton Road S	6	2	0	1
	4 - High Street	2	11	4	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Melton Road N	0.78	16.87	3.4	C	629	944
2 - Barkby Road	0.87	54.23	5.5	F	326	489
3 - Melton Road S	0.79	19.60	3.6	C	577	866
4 - High Street	1.09	176.13	38.9	F	619	929

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Ped demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Melton Road N	516	129	326		1042	0.496	512	626	0.0	1.0	6.904	A
2 - Barkby Road	267	67	496	0.00	520	0.514	263	342	0.0	1.0	13.910	B
3 - Melton Road S	474	118	334	0.00	964	0.491	470	426	0.0	1.0	7.535	A
4 - High Street	508	127	450		796	0.638	501	353	0.0	1.8	12.555	B

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Ped demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Melton Road N	617	154	389		1006	0.613	614	749	1.0	1.6	9.339	A
2 - Barkby Road	319	80	595	0.00	490	0.652	316	409	1.0	1.8	20.564	C
3 - Melton Road S	565	141	401	0.00	929	0.608	563	510	1.0	1.6	10.191	B
4 - High Street	607	152	540		749	0.810	598	424	1.8	4.0	23.783	C

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Ped demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Melton Road N	755	189	444		975	0.774	749	880	1.6	3.3	15.774	C
2 - Barkby Road	391	98	716	0.00	452	0.865	379	476	1.8	4.8	43.854	E
3 - Melton Road S	693	173	484	0.00	886	0.782	685	611	1.6	3.4	18.060	C
4 - High Street	743	186	656		689	1.079	668	513	4.0	22.9	89.441	F

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Ped demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Melton Road N	755	189	451		971	0.778	755	892	3.3	3.4	16.870	C
2 - Barkby Road	391	98	723	0.00	450	0.869	388	483	4.8	5.5	54.234	F
3 - Melton Road S	693	173	492	0.00	882	0.785	692	618	3.4	3.6	19.600	C
4 - High Street	743	186	664		685	1.085	679	520	22.9	38.9	176.135	F

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Ped demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Melton Road N	617	154	453		970	0.636	623	823	3.4	1.8	10.786	B
2 - Barkby Road	319	80	620	0.00	482	0.662	333	456	5.5	2.1	26.141	D
3 - Melton Road S	565	141	415	0.00	922	0.613	573	537	3.6	1.7	10.998	B
4 - High Street	607	152	553		743	0.817	723	436	38.9	9.7	128.641	F

18:00 - 18:15

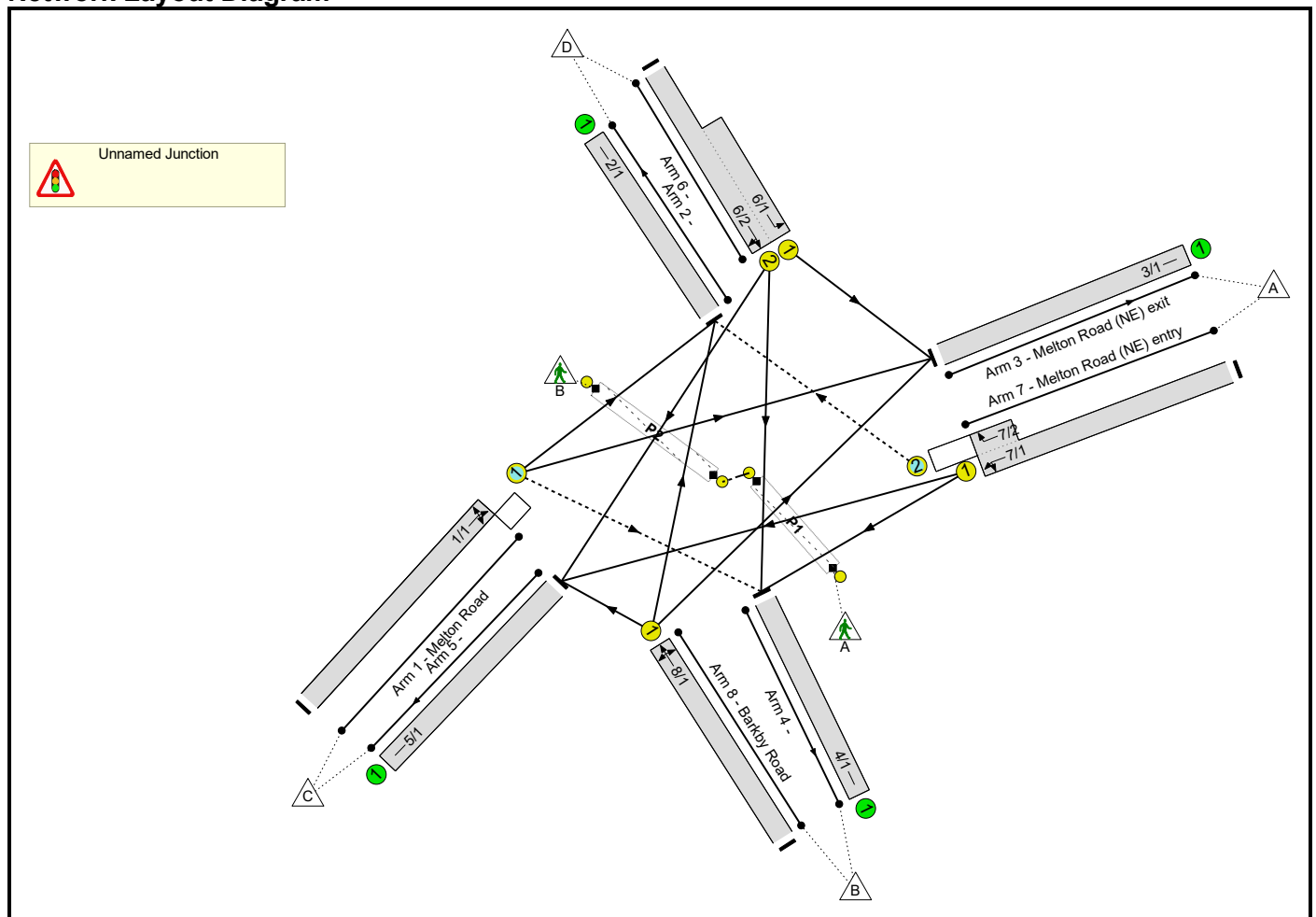
Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Ped demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Melton Road N	516	129	346		1031	0.501	520	652	1.8	1.0	7.250	A
2 - Barkby Road	267	67	508	0.00	517	0.517	271	357	2.1	1.1	15.020	C
3 - Melton Road S	474	118	342	0.00	960	0.493	476	437	1.7	1.0	7.806	A
4 - High Street	508	127	458		792	0.641	539	360	9.7	2.0	16.677	C

Full Input Data And Results
Full Input Data And Results

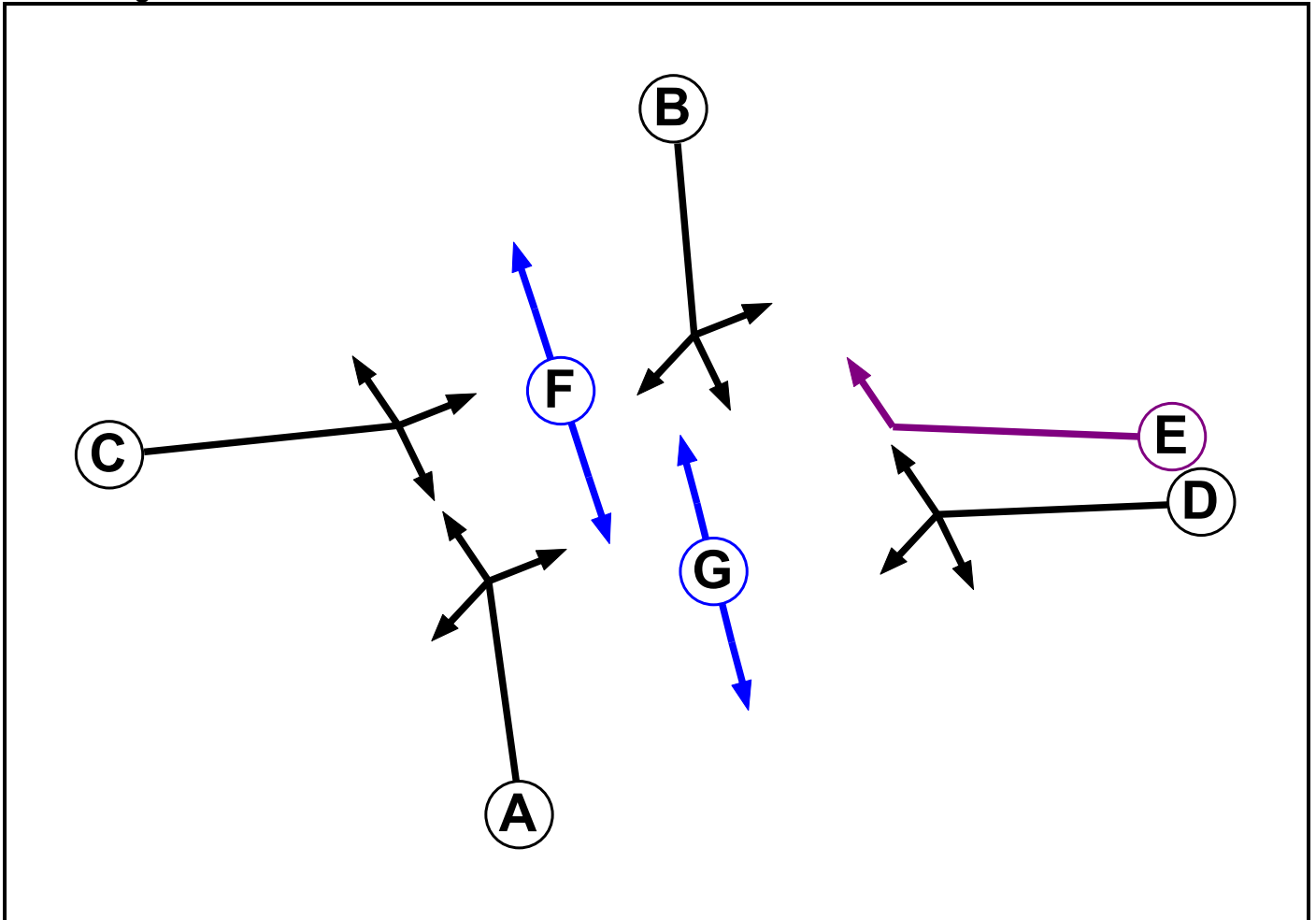
User and Project Details

Project:	
Title:	
Location:	
Additional detail:	
File name:	SIG4 v4.lsg3x
Author:	
Company:	
Address:	

Network Layout Diagram



Phase Diagram



Phase Input Data

Phase Name	Phase Type	Assoc. Phase	Street Min	Cont Min
A	Traffic		7	7
B	Traffic		7	7
C	Traffic		7	7
D	Traffic		7	7
E	Ind. Arrow	D	4	4
F	Pedestrian		5	5
G	Pedestrian		5	5

Full Input Data And Results

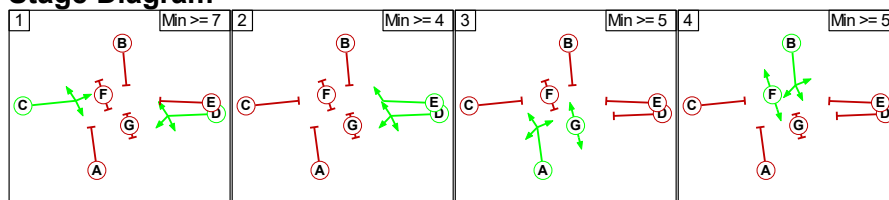
Phase Intergrens Matrix

		Starting Phase						
		A	B	C	D	E	F	G
Terminating Phase	A		8	5	5	5	6	-
	B	8		5	5	6	-	6
	C	5	7		-	3	5	8
	D	7	5	-		-	8	5
	E	6	5	5	-		-	5
	F	10	-	10	10	10		-
	G	-	8	8	8	8	-	

Phases in Stage

Stage No.	Phases in Stage
1	C D
2	D E
3	A G
4	B F

Stage Diagram



Phase Delays

Term. Stage	Start Stage	Phase	Type	Value	Cont value
1	3	C	Losing	2	2
4	1	B	Losing	5	5

Prohibited Stage Change

		To Stage			
		1	2	3	4
From Stage	1		3	10	8
	2	5		7	8
	3	8	8		8
	4	10	10	10	

Full Input Data And Results

Give-Way Lane Input Data

Junction: Unnamed Junction											
Lane	Movement	Max Flow when Giving Way (PCU/Hr)	Min Flow when Giving Way (PCU/Hr)	Opposing Lane	Opp. Lane Coeff.	Opp. Mvmnts.	Right Turn Storage (PCU)	Non-Blocking Storage (PCU)	RTF	Right Turn Move up (s)	Max Turns in Intergreen (PCU)
1/1 (Melton Road)	4/1 (Right)	1439	0	7/1	1.09	All	2.00	2.00	0.50	2	2.00
7/2 (Melton Road (NE) entry)	2/1 (Right)	1439	0	1/1	1.09	To 2/1 (Left) To 3/1 (Ahead)	3.00	-	0.50	3	3.00

Full Input Data And Results

Lane Input Data

Junction: Unnamed Junction												
Lane	Lane Type	Phases	Start Disp.	End Disp.	Physical Length (PCU)	Sat Flow Type	Def User Saturation Flow (PCU/Hr)	Lane Width (m)	Gradient	Nearside Lane	Turns	Turning Radius (m)
1/1 (Melton Road)	O	C	2	3	60.0	Geom	-	3.65	0.00	Y	Arm 2 Left	Inf
											Arm 3 Ahead	Inf
											Arm 4 Right	12.50
2/1	U		2	3	60.0	Inf	-	-	-	-	-	-
3/1 (Melton Road (NE) exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
4/1	U		2	3	60.0	Inf	-	-	-	-	-	-
5/1	U		2	3	60.0	Inf	-	-	-	-	-	-
6/1	U	B	2	3	9.0	Geom	-	3.25	0.00	Y	Arm 3 Left	10.00
6/2	U	B	2	3	60.0	Geom	-	3.25	0.00	Y	Arm 4 Ahead	15.00
											Arm 5 Right	15.00
7/1 (Melton Road (NE) entry)	U	D	2	3	60.0	User	1800	-	-	-	-	-
7/2 (Melton Road (NE) entry)	O	D E	2	3	3.0	Geom	-	3.25	0.00	Y	Arm 2 Right	Inf
											Arm 2 Ahead	Inf
8/1 (Barkby Road)	U	A	2	3	60.0	Geom	-	3.00	0.00	Y	Arm 3 Right	15.00
											Arm 5 Left	6.00

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
1: '2022 AM'	08:00	09:00	01:00	
2: '2022 PM '	17:00	18:00	01:00	
3: '2027 AM'	08:00	09:00	01:00	
4: '2027 PM'	17:00	18:00	01:00	
5: '2027 with Dev'	08:00	09:00	01:00	
6: '2027 with Dev'	17:00	18:00	01:00	
7: '2037 AM'	08:00	09:00	01:00	
8: '2037 PM'	17:00	18:00	01:00	
9: '2037+ Dev AM'	08:00	09:00	01:00	
10: '2037+ Dev PM'	17:00	18:00	01:00	

Scenario 1: '2022 Base AM' (FG1: '2022 AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	83	360	147	590
	B	65	0	0	135	200
	C	305	38	0	79	422
	D	187	91	106	0	384
	Tot.	557	212	466	361	1596

Traffic Lane Flows

Lane	Scenario 1: 2022 Base AM
Junction: Unnamed Junction	
1/1	422
2/1	361
3/1	557
4/1	212
5/1	466
6/1 (short)	187
6/2 (with short)	384(In) 197(Out)
7/1 (with short)	590(In) 443(Out)
7/2 (short)	147
8/1	200

Lane Saturation Flows

Junction: Unnamed Junction								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (Melton Road)	3.65	0.00	Y	Arm 2 Left	Inf	18.7 %	1959	1959
				Arm 3 Ahead	Inf	72.3 %		
				Arm 4 Right	12.50	9.0 %		
2/1	Infinite Saturation Flow						Inf	Inf
3/1 (Melton Road (NE) exit Lane 1)	Infinite Saturation Flow						Inf	Inf
4/1	Infinite Saturation Flow						Inf	Inf
5/1	Infinite Saturation Flow						Inf	Inf
6/1	3.25	0.00	Y	Arm 3 Left	10.00	100.0 %	1687	1687
6/2	3.25	0.00	Y	Arm 4 Ahead	15.00	46.2 %	1764	1764
				Arm 5 Right	15.00	53.8 %		
7/1 (Melton Road (NE) entry Lane 1)	This lane uses a directly entered Saturation Flow						1800	1800
7/2 (Melton Road (NE) entry)	3.25	0.00	Y	Arm 2 Right	Inf	100.0 %	1940	1940
8/1 (Barkby Road)	3.00	0.00	Y	Arm 2 Ahead	Inf	67.5 %	1855	1855
				Arm 3 Right	15.00	32.5 %		
				Arm 5 Left	6.00	0.0 %		

Scenario 2: '2022 Base PM' (FG2: '2022 PM ', Plan 2: 'Network Control Plan 2')

Traffic Flows, Desired

Desired Flow :

	Destination					
		A	B	C	D	Tot.
Origin	A	0	105	323	171	599
	B	76	0	87	124	287
	C	360	85	0	99	544
	D	299	171	84	0	554
	Tot.	735	361	494	394	1984

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 2: 2022 Base PM
Junction: Unnamed Junction	
1/1	544
2/1	394
3/1	735
4/1	361
5/1	494
6/1 (short)	299
6/2 (with short)	554(In) 255(Out)
7/1 (with short)	599(In) 428(Out)
7/2 (short)	171
8/1	287

Lane Saturation Flows

Junction: Unnamed Junction								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (Melton Road)	3.65	0.00	Y	Arm 2 Left	Inf	18.2 %	1944	1944
				Arm 3 Ahead	Inf	66.2 %		
				Arm 4 Right	12.50	15.6 %		
2/1	Infinite Saturation Flow						Inf	Inf
3/1 (Melton Road (NE) exit Lane 1)	Infinite Saturation Flow						Inf	Inf
4/1	Infinite Saturation Flow						Inf	Inf
5/1	Infinite Saturation Flow						Inf	Inf
6/1	3.25	0.00	Y	Arm 3 Left	10.00	100.0 %	1687	1687
6/2	3.25	0.00	Y	Arm 4 Ahead	15.00	67.1 %	1764	1764
				Arm 5 Right	15.00	32.9 %		
7/1 (Melton Road (NE) entry Lane 1)	This lane uses a directly entered Saturation Flow						1800	1800
7/2 (Melton Road (NE) entry)	3.25	0.00	Y	Arm 2 Right	Inf	100.0 %	1940	1940
8/1 (Barkby Road)	3.00	0.00	Y	Arm 2 Ahead	Inf	43.2 %	1737	1737
				Arm 3 Right	15.00	26.5 %		
				Arm 5 Left	6.00	30.3 %		

Full Input Data And Results

Scenario 3: '2027 AM' (FG3: '2027 AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	86	376	153	615
	B	68	0	0	155	223
	C	318	39	0	82	439
	D	195	100	111	0	406
	Tot.	581	225	487	390	1683

Traffic Lane Flows

Lane	Scenario 3: 2027 AM
Junction: Unnamed Junction	
1/1	439
2/1	390
3/1	581
4/1	225
5/1	487
6/1 (short)	195
6/2 (with short)	406(In) 211(Out)
7/1 (with short)	615(In) 462(Out)
7/2 (short)	153
8/1	223

Lane Saturation Flows

Junction: Unnamed Junction								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (Melton Road)	3.65	0.00	Y	Arm 2 Left	Inf	18.7 %	1959	1959
				Arm 3 Ahead	Inf	72.4 %		
				Arm 4 Right	12.50	8.9 %		
2/1	Infinite Saturation Flow						Inf	Inf
3/1 (Melton Road (NE) exit Lane 1)	Infinite Saturation Flow						Inf	Inf
4/1	Infinite Saturation Flow						Inf	Inf
5/1	Infinite Saturation Flow						Inf	Inf
6/1	3.25	0.00	Y	Arm 3 Left	10.00	100.0 %	1687	1687
6/2	3.25	0.00	Y	Arm 4 Ahead	15.00	47.4 %	1764	1764
				Arm 5 Right	15.00	52.6 %		
7/1 (Melton Road (NE) entry Lane 1)	This lane uses a directly entered Saturation Flow						1800	1800
7/2 (Melton Road (NE) entry)	3.25	0.00	Y	Arm 2 Right	Inf	100.0 %	1940	1940
8/1 (Barkby Road)	3.00	0.00	Y	Arm 2 Ahead	Inf	69.5 %	1858	1858
				Arm 3 Right	15.00	30.5 %		
				Arm 5 Left	6.00	0.0 %		

Scenario 4: '2027 PM' (FG4: '2027 PM', Plan 2: 'Network Control Plan 2')

Traffic Flows, Desired

Desired Flow :

	Destination					
	A	B	C	D	Tot.	
Origin	A	0	110	337	178	625
B	79	0	91	137	307	
C	375	88	0	103	566	
D	312	193	87	0	592	
Tot.	766	391	515	418	2090	

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 4: 2027 PM
Junction: Unnamed Junction	
1/1	566
2/1	418
3/1	766
4/1	391
5/1	515
6/1 (short)	312
6/2 (with short)	592(In) 280(Out)
7/1 (with short)	625(In) 447(Out)
7/2 (short)	178
8/1	307

Lane Saturation Flows

Junction: Unnamed Junction								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (Melton Road)	3.65	0.00	Y	Arm 2 Left	Inf	18.2 %	1944	1944
				Arm 3 Ahead	Inf	66.3 %		
				Arm 4 Right	12.50	15.5 %		
2/1	Infinite Saturation Flow						Inf	Inf
3/1 (Melton Road (NE) exit Lane 1)	Infinite Saturation Flow						Inf	Inf
4/1	Infinite Saturation Flow						Inf	Inf
5/1	Infinite Saturation Flow						Inf	Inf
6/1	3.25	0.00	Y	Arm 3 Left	10.00	100.0 %	1687	1687
6/2	3.25	0.00	Y	Arm 4 Ahead	15.00	68.9 %	1764	1764
				Arm 5 Right	15.00	31.1 %		
7/1 (Melton Road (NE) entry Lane 1)	This lane uses a directly entered Saturation Flow						1800	1800
7/2 (Melton Road (NE) entry)	3.25	0.00	Y	Arm 2 Right	Inf	100.0 %	1940	1940
8/1 (Barkby Road)	3.00	0.00	Y	Arm 2 Ahead	Inf	44.6 %	1741	1741
				Arm 3 Right	15.00	25.7 %		
				Arm 5 Left	6.00	29.6 %		

Full Input Data And Results

Scenario 5: '2027 + Dev AM' (FG5: '2027 with Dev', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	86	376	153	615
	B	68	0	3	185	256
	C	318	41	0	82	441
	D	195	114	111	0	420
	Tot.	581	241	490	420	1732

Traffic Lane Flows

Lane	Scenario 5: 2027 + Dev AM
Junction: Unnamed Junction	
1/1	441
2/1	420
3/1	581
4/1	241
5/1	490
6/1 (short)	195
6/2 (with short)	420(In) 225(Out)
7/1 (with short)	615(In) 462(Out)
7/2 (short)	153
8/1	256

Lane Saturation Flows

Junction: Unnamed Junction								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (Melton Road)	3.65	0.00	Y	Arm 2 Left	Inf	18.6 %	1958	1958
				Arm 3 Ahead	Inf	72.1 %		
				Arm 4 Right	12.50	9.3 %		
2/1	Infinite Saturation Flow						Inf	Inf
3/1 (Melton Road (NE) exit Lane 1)	Infinite Saturation Flow						Inf	Inf
4/1	Infinite Saturation Flow						Inf	Inf
5/1	Infinite Saturation Flow						Inf	Inf
6/1	3.25	0.00	Y	Arm 3 Left	10.00	100.0 %	1687	1687
6/2	3.25	0.00	Y	Arm 4 Ahead	15.00	50.7 %	1764	1764
				Arm 5 Right	15.00	49.3 %		
7/1 (Melton Road (NE) entry Lane 1)	This lane uses a directly entered Saturation Flow						1800	1800
7/2 (Melton Road (NE) entry)	3.25	0.00	Y	Arm 2 Right	Inf	100.0 %	1940	1940
8/1 (Barkby Road)	3.00	0.00	Y	Arm 2 Ahead	Inf	72.3 %	1860	1860
				Arm 3 Right	15.00	26.6 %		
				Arm 5 Left	6.00	1.2 %		

Scenario 6: '2027 + Dev PM' (FG6: '2027 with Dev', Plan 2: 'Network Control Plan 2')

Traffic Flows, Desired

Desired Flow :

	Destination					
	A	B	C	D	Tot.	
Origin	A	0	110	337	178	625
B	79	0	92	154	325	
C	375	91	0	103	569	
D	312	220	87	0	619	
Tot.	766	421	516	435	2138	

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 6: 2027 + Dev PM
Junction: Unnamed Junction	
1/1	569
2/1	435
3/1	766
4/1	421
5/1	516
6/1 (short)	312
6/2 (with short)	619(In) 307(Out)
7/1 (with short)	625(In) 447(Out)
7/2 (short)	178
8/1	325

Lane Saturation Flows

Junction: Unnamed Junction								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (Melton Road)	3.65	0.00	Y	Arm 2 Left	Inf	18.1 %	1943	1943
				Arm 3 Ahead	Inf	65.9 %		
				Arm 4 Right	12.50	16.0 %		
2/1	Infinite Saturation Flow						Inf	Inf
3/1 (Melton Road (NE) exit Lane 1)	Infinite Saturation Flow						Inf	Inf
4/1	Infinite Saturation Flow						Inf	Inf
5/1	Infinite Saturation Flow						Inf	Inf
6/1	3.25	0.00	Y	Arm 3 Left	10.00	100.0 %	1687	1687
6/2	3.25	0.00	Y	Arm 4 Ahead	15.00	71.7 %	1764	1764
				Arm 5 Right	15.00	28.3 %		
7/1 (Melton Road (NE) entry Lane 1)	This lane uses a directly entered Saturation Flow						1800	1800
7/2 (Melton Road (NE) entry)	3.25	0.00	Y	Arm 2 Right	Inf	100.0 %	1940	1940
8/1 (Barkby Road)	3.00	0.00	Y	Arm 2 Ahead	Inf	47.4 %	1749	1749
				Arm 3 Right	15.00	24.3 %		
				Arm 5 Left	6.00	28.3 %		

Full Input Data And Results

Scenario 7: '2037 AM' (FG7: '2037 AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	94	412	168	674
	B	75	0	0	169	244
	C	349	43	0	90	482
	D	213	109	121	0	443
	Tot.	637	246	533	427	1843

Traffic Lane Flows

Lane	Scenario 7: 2037 AM
Junction: Unnamed Junction	
1/1	482
2/1	427
3/1	637
4/1	246
5/1	533
6/1 (short)	213
6/2 (with short)	443(In) 230(Out)
7/1 (with short)	674(In) 506(Out)
7/2 (short)	168
8/1	244

Lane Saturation Flows

Junction: Unnamed Junction								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (Melton Road)	3.65	0.00	Y	Arm 2 Left	Inf	18.7 %	1959	1959
				Arm 3 Ahead	Inf	72.4 %		
				Arm 4 Right	12.50	8.9 %		
2/1	Infinite Saturation Flow						Inf	Inf
3/1 (Melton Road (NE) exit Lane 1)	Infinite Saturation Flow						Inf	Inf
4/1	Infinite Saturation Flow						Inf	Inf
5/1	Infinite Saturation Flow						Inf	Inf
6/1	3.25	0.00	Y	Arm 3 Left	10.00	100.0 %	1687	1687
6/2	3.25	0.00	Y	Arm 4 Ahead	15.00	47.4 %	1764	1764
				Arm 5 Right	15.00	52.6 %		
7/1 (Melton Road (NE) entry Lane 1)	This lane uses a directly entered Saturation Flow						1800	1800
7/2 (Melton Road (NE) entry)	3.25	0.00	Y	Arm 2 Right	Inf	100.0 %	1940	1940
8/1 (Barkby Road)	3.00	0.00	Y	Arm 2 Ahead	Inf	69.3 %	1858	1858
				Arm 3 Right	15.00	30.7 %		
				Arm 5 Left	6.00	0.0 %		

Scenario 8: '2037 PM' (FG8: '2037 PM', Plan 2: 'Network Control Plan 2')

Traffic Flows, Desired

Desired Flow :

	Destination					
	A	B	C	D	Tot.	
Origin	A	0	121	370	195	686
B	87	0	100	150	337	
C	412	97	0	113	622	
D	342	210	96	0	648	
Tot.	841	428	566	458	2293	

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 8: 2037 PM
Junction: Unnamed Junction	
1/1	622
2/1	458
3/1	841
4/1	428
5/1	566
6/1 (short)	342
6/2 (with short)	648(In) 306(Out)
7/1 (with short)	686(In) 491(Out)
7/2 (short)	195
8/1	337

Lane Saturation Flows

Junction: Unnamed Junction								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (Melton Road)	3.65	0.00	Y	Arm 2 Left	Inf	18.2 %	1944	1944
				Arm 3 Ahead	Inf	66.2 %		
				Arm 4 Right	12.50	15.6 %		
2/1	Infinite Saturation Flow						Inf	Inf
3/1 (Melton Road (NE) exit Lane 1)	Infinite Saturation Flow						Inf	Inf
4/1	Infinite Saturation Flow						Inf	Inf
5/1	Infinite Saturation Flow						Inf	Inf
6/1	3.25	0.00	Y	Arm 3 Left	10.00	100.0 %	1687	1687
6/2	3.25	0.00	Y	Arm 4 Ahead	15.00	68.6 %	1764	1764
				Arm 5 Right	15.00	31.4 %		
7/1 (Melton Road (NE) entry Lane 1)	This lane uses a directly entered Saturation Flow						1800	1800
7/2 (Melton Road (NE) entry)	3.25	0.00	Y	Arm 2 Right	Inf	100.0 %	1940	1940
8/1 (Barkby Road)	3.00	0.00	Y	Arm 2 Ahead	Inf	44.5 %	1741	1741
				Arm 3 Right	15.00	25.8 %		
				Arm 5 Left	6.00	29.7 %		

Full Input Data And Results

Scenario 9: '2037 + Dev AM' (FG9: '2037+ Dev AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	94	412	168	674
	B	75	0	3	198	276
	C	349	45	0	90	484
	D	213	123	121	0	457
	Tot.	637	262	536	456	1891

Traffic Lane Flows

Lane	Scenario 9: 2037 + Dev AM
Junction: Unnamed Junction	
1/1	484
2/1	456
3/1	637
4/1	262
5/1	536
6/1 (short)	213
6/2 (with short)	457(In) 244(Out)
7/1 (with short)	674(In) 506(Out)
7/2 (short)	168
8/1	276

Lane Saturation Flows

Junction: Unnamed Junction								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (Melton Road)	3.65	0.00	Y	Arm 2 Left	Inf	18.6 %	1958	1958
				Arm 3 Ahead	Inf	72.1 %		
				Arm 4 Right	12.50	9.3 %		
2/1	Infinite Saturation Flow						Inf	Inf
3/1 (Melton Road (NE) exit Lane 1)	Infinite Saturation Flow						Inf	Inf
4/1	Infinite Saturation Flow						Inf	Inf
5/1	Infinite Saturation Flow						Inf	Inf
6/1	3.25	0.00	Y	Arm 3 Left	10.00	100.0 %	1687	1687
6/2	3.25	0.00	Y	Arm 4 Ahead	15.00	50.4 %	1764	1764
				Arm 5 Right	15.00	49.6 %		
7/1 (Melton Road (NE) entry Lane 1)	This lane uses a directly entered Saturation Flow						1800	1800
7/2 (Melton Road (NE) entry)	3.25	0.00	Y	Arm 2 Right	Inf	100.0 %	1940	1940
8/1 (Barkby Road)	3.00	0.00	Y	Arm 2 Ahead	Inf	71.7 %	1859	1859
				Arm 3 Right	15.00	27.2 %		
				Arm 5 Left	6.00	1.1 %		

Scenario 10: '2037 + Dev PM' (FG10: '2037+ Dev PM', Plan 2: 'Network Control Plan 2')

Traffic Flows, Desired

Desired Flow :

	Destination					
	A	B	C	D	Tot.	
Origin	A	0	121	370	195	686
B	87	0	101	166	354	
C	412	100	0	113	625	
D	342	237	96	0	675	
Tot.	841	458	567	474	2340	

Full Input Data And Results

Traffic Lane Flows

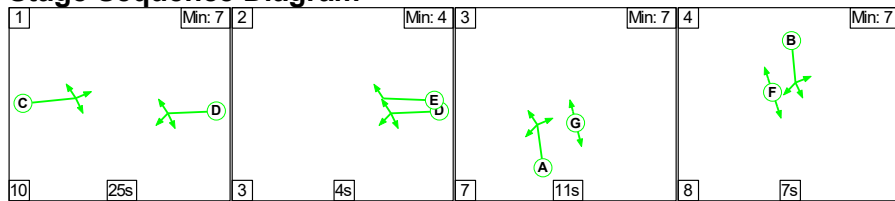
Lane	Scenario 10: 2037 + Dev PM
Junction: Unnamed Junction	
1/1	625
2/1	474
3/1	841
4/1	458
5/1	567
6/1 (short)	342
6/2 (with short)	675(In) 333(Out)
7/1 (with short)	686(In) 491(Out)
7/2 (short)	195
8/1	354

Lane Saturation Flows

Junction: Unnamed Junction								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (Melton Road)	3.65	0.00	Y	Arm 2 Left	Inf	18.1 %	1943	1943
				Arm 3 Ahead	Inf	65.9 %		
				Arm 4 Right	12.50	16.0 %		
2/1	Infinite Saturation Flow						Inf	Inf
3/1 (Melton Road (NE) exit Lane 1)	Infinite Saturation Flow						Inf	Inf
4/1	Infinite Saturation Flow						Inf	Inf
5/1	Infinite Saturation Flow						Inf	Inf
6/1	3.25	0.00	Y	Arm 3 Left	10.00	100.0 %	1687	1687
6/2	3.25	0.00	Y	Arm 4 Ahead	15.00	71.2 %	1764	1764
				Arm 5 Right	15.00	28.8 %		
7/1 (Melton Road (NE) entry Lane 1)	This lane uses a directly entered Saturation Flow						1800	1800
7/2 (Melton Road (NE) entry)	3.25	0.00	Y	Arm 2 Right	Inf	100.0 %	1940	1940
8/1 (Barkby Road)	3.00	0.00	Y	Arm 2 Ahead	Inf	46.9 %	1747	1747
				Arm 3 Right	15.00	24.6 %		
				Arm 5 Left	6.00	28.5 %		

Scenario 1: '2022 Base AM' (FG1: '2022 AM', Plan 1: 'Network Control Plan 1')

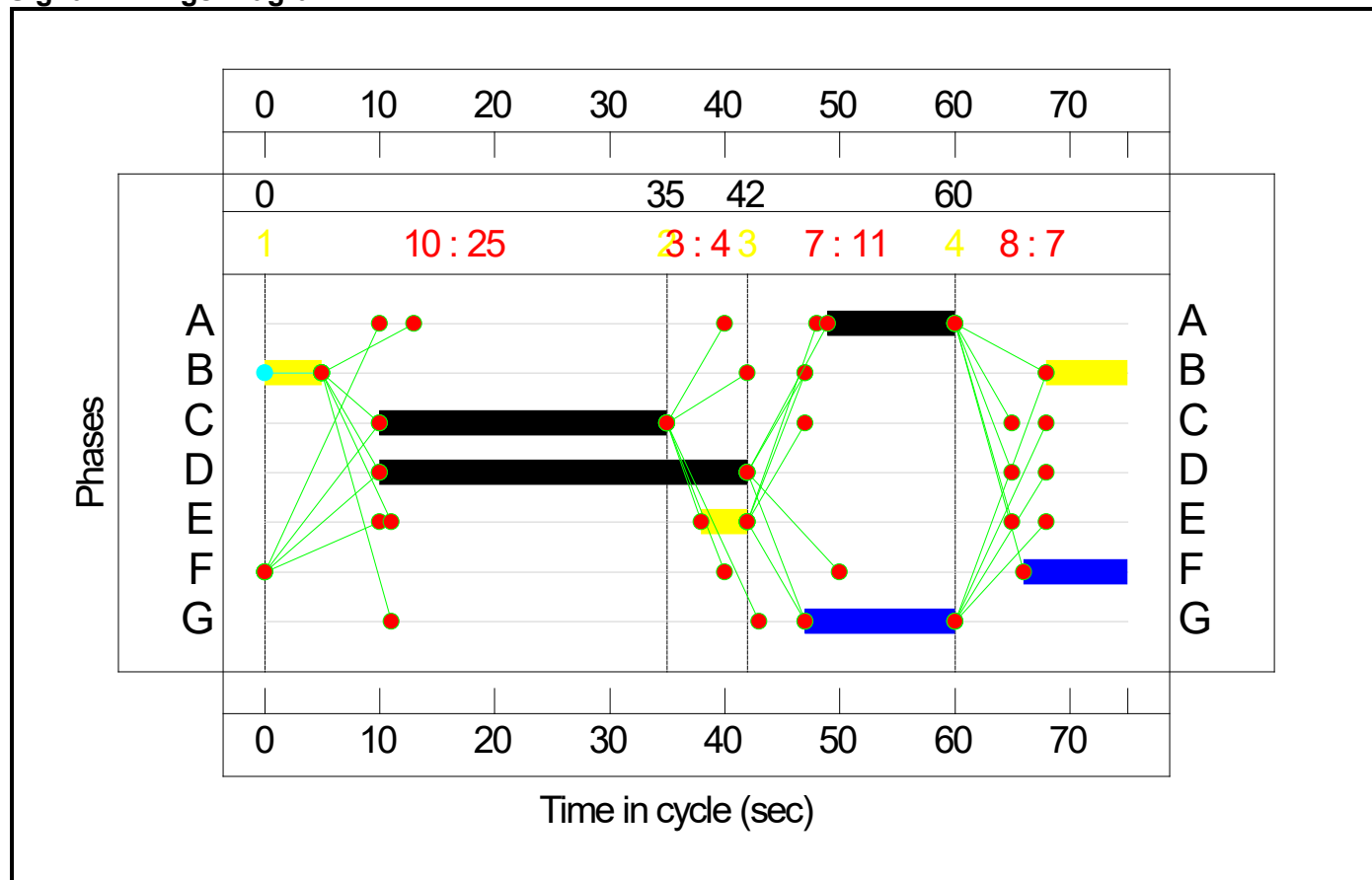
Stage Sequence Diagram




Stage Timings

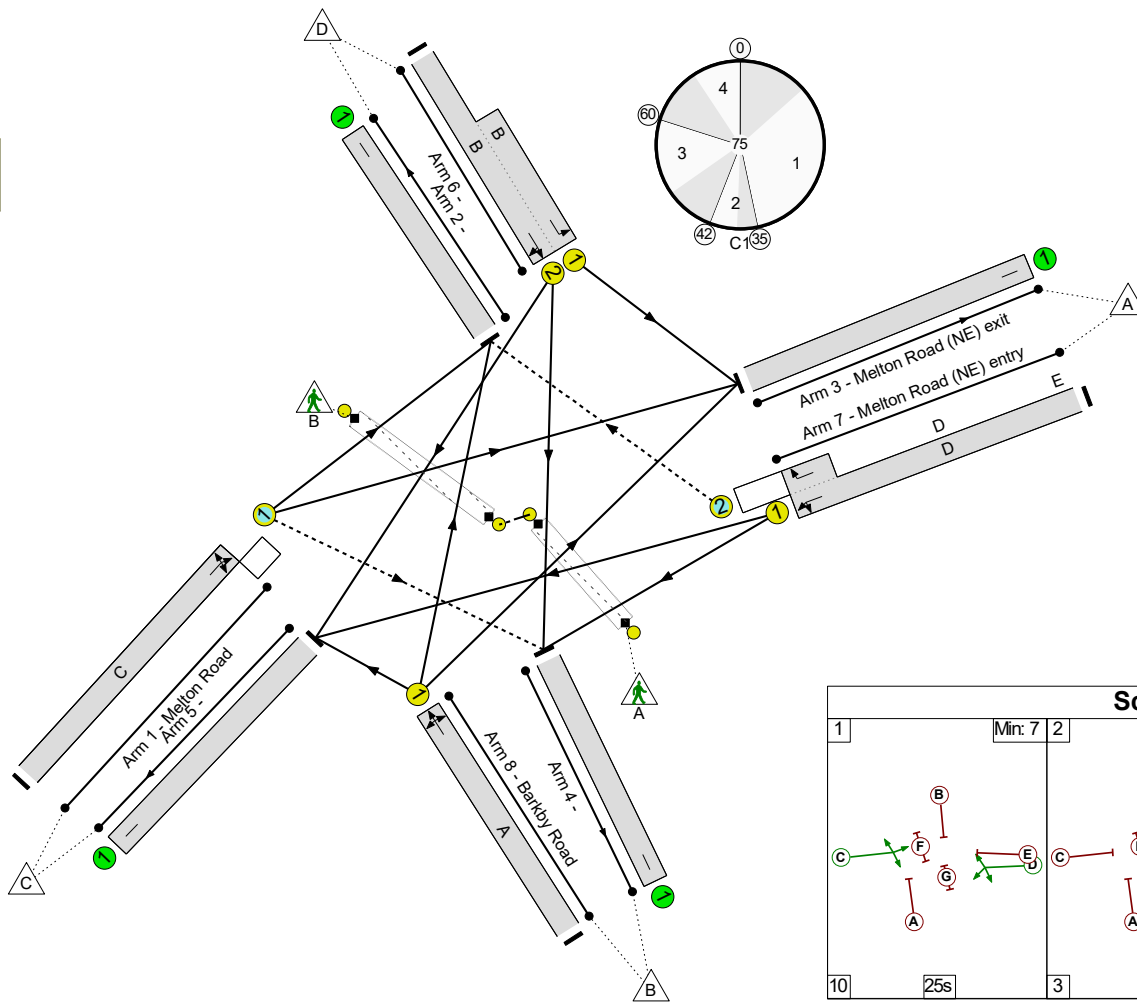
Stage	1	2	3	4
Duration	25	4	11	7
Change Point	0	35	42	60

Signal Timings Diagram

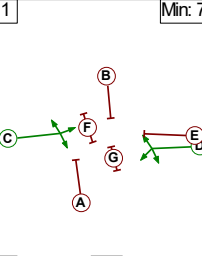
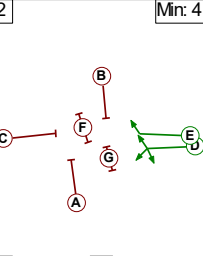
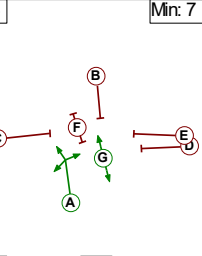
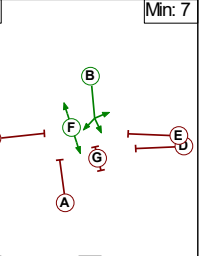


Full Input Data And Results
Network Layout Diagram


 Unnamed Junction
 PRC: 29.9 %
 Total Traffic Delay: 14.0 pcuHr
 Ave. Route Delay Per Ped: 0.0 s/Ped



Scenario '2022 Base AM'

1	Min: 7	2	Min: 4	3	Min: 7	4	Min: 7
							
10	25s	3	4s	7	11s	8	7s

Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	N/A	-	-		-	-	-	-	-	-	69.3%
Unnamed Junction	-	-	N/A	-	-		-	-	-	-	-	-	69.3%
1/1	Melton Road Left Ahead Right	O	N/A	N/A	C		1	25	-	422	1959	679	62.1%
2/1		U	N/A	N/A	-		-	-	-	361	Inf	Inf	0.0%
3/1	Melton Road (NE) exit	U	N/A	N/A	-		-	-	-	557	Inf	Inf	0.0%
4/1		U	N/A	N/A	-		-	-	-	212	Inf	Inf	0.0%
5/1		U	N/A	N/A	-		-	-	-	466	Inf	Inf	0.0%
6/2+6/1	Left Ahead Right	U	N/A	N/A	B		1	12	-	384	1764:1687	306+292	64.4 : 64.0%
7/1+7/2	Melton Road (NE) entry Right Left Ahead	U+O	N/A	N/A	D	E	1	32	4	590	1800:1940	639+212	69.3 : 69.3%
8/1	Barkby Road Ahead Right Left	U	N/A	N/A	A		1	11	-	200	1855	297	67.4%
Ped Link: P1	Unnamed Ped Link	-	N/A	-	G		1	13	-	0	-	12480	0.0%
Ped Link: P2	Unnamed Ped Link	-	N/A	-	F		1	9	-	0	-	8640	0.0%

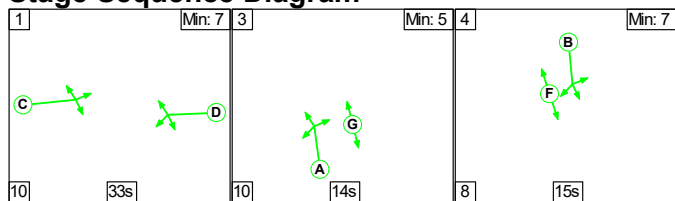
Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	-	-	169	10	6	9.7	3.8	0.4	14.0	-	-	-	-
Unnamed Junction	-	-	169	10	6	9.7	3.8	0.4	14.0	-	-	-	-
1/1	422	422	38	0	0	2.4	0.8	0.1	3.3	28.3	7.3	0.8	8.1
2/1	361	361	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
3/1	557	557	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
4/1	212	212	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	466	466	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/2+6/1	384	384	-	-	-	3.1	0.9	-	4.0	37.2	3.8	0.9	4.7
7/1+7/2	590	590	131	10	6	2.6	1.1	0.3	4.1	24.7	8.7	1.1	9.8
8/1	200	200	-	-	-	1.6	1.0	-	2.7	47.9	3.9	1.0	4.9
Ped Link: P1	0	0	-	-	-	-	-	-	0.0	0.0	-	-	0.0
Ped Link: P2	0	0	-	-	-	-	-	-	0.0	0.0	-	-	0.0
C1			PRC for Signalled Lanes (%):		29.9	Total Delay for Signalled Lanes (pcuHr):		14.00	Cycle Time (s):		75		
			PRC Over All Lanes (%):		29.9	Total Delay Over All Lanes(pcuHr):		14.00					

Full Input Data And Results

Scenario 2: '2022 Base PM' (FG2: '2022 PM ', Plan 2: 'Network Control Plan 2')

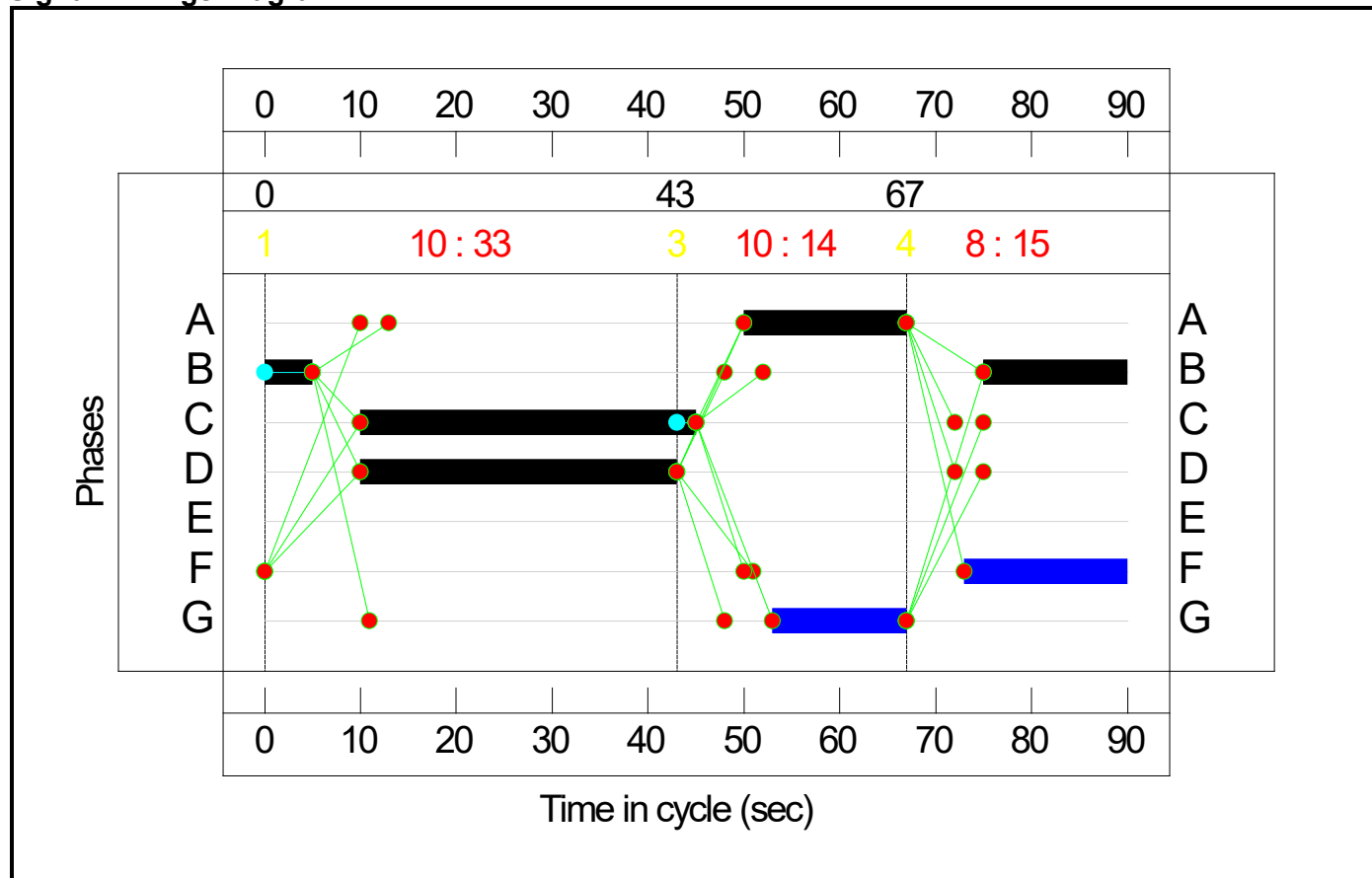
Stage Sequence Diagram




Stage Timings

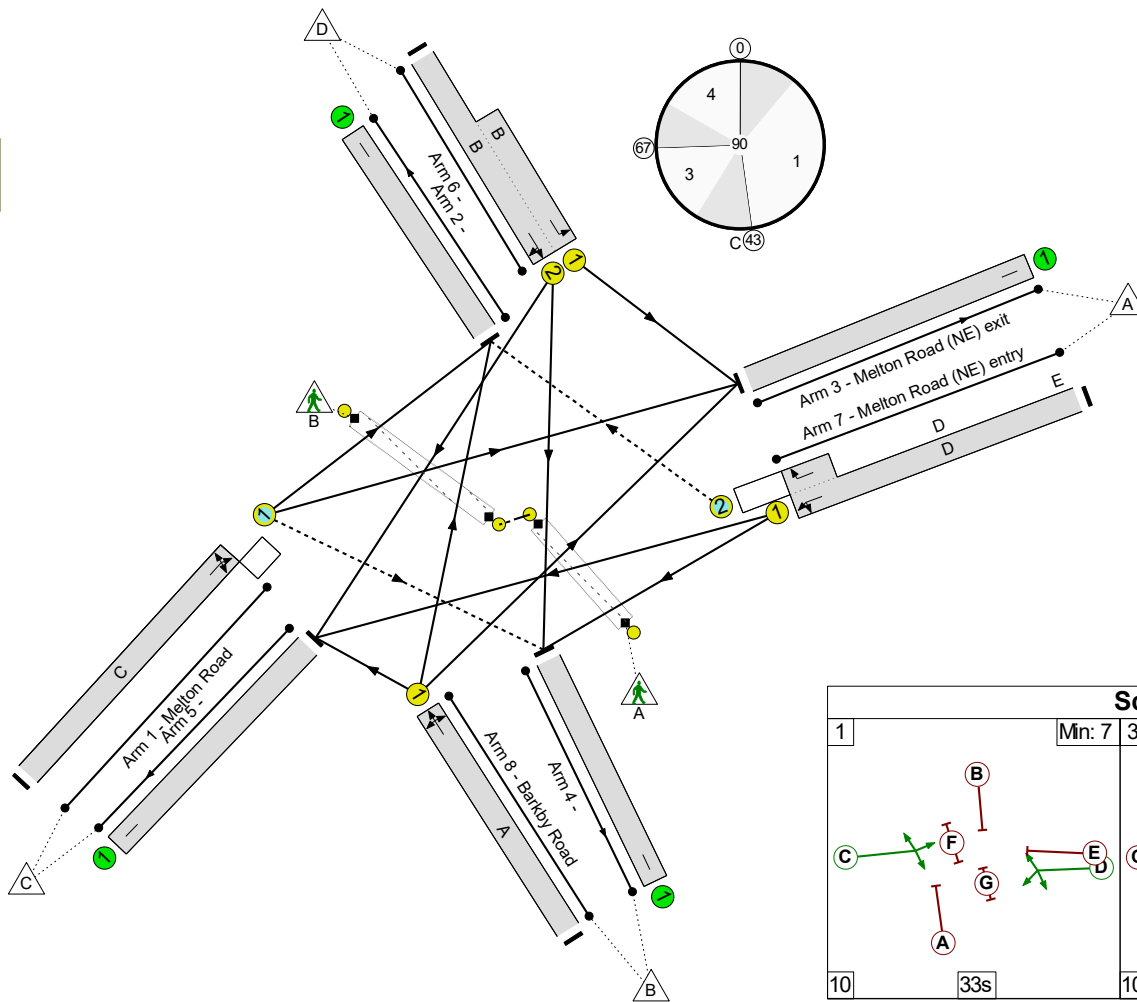
Stage	1	3	4
Duration	33	14	15
Change Point	0	43	67

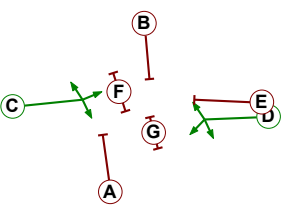
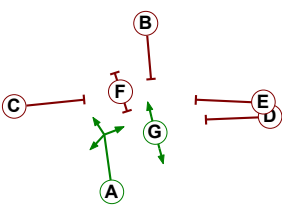
Signal Timings Diagram



Full Input Data And Results
Network Layout Diagram


 Unnamed Junction
 PRC: 8.9 %
 Total Traffic Delay: 23.5 pcuHr
 Ave. Route Delay Per Ped: 0.0 s/Ped



Scenario '2022 Base PM'					
1	Min: 7	3	Min: 5	4	Min: 7
					
10	33s	10	14s	8	15s

Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	N/A	-	-		-	-	-	-	-	-	82.6%
Unnamed Junction	-	-	N/A	-	-		-	-	-	-	-	-	82.6%
1/1	Melton Road Left Ahead Right	O	N/A	N/A	C		1	35	-	544	1944	739	73.7%
2/1		U	N/A	N/A	-		-	-	-	394	Inf	Inf	0.0%
3/1	Melton Road (NE) exit	U	N/A	N/A	-		-	-	-	735	Inf	Inf	0.0%
4/1		U	N/A	N/A	-		-	-	-	361	Inf	Inf	0.0%
5/1		U	N/A	N/A	-		-	-	-	494	Inf	Inf	0.0%
6/2+6/1	Left Ahead Right	U	N/A	N/A	B		1	20	-	554	1764:1687	325+381	78.6 : 78.6%
7/1+7/2	Melton Road (NE) entry Right Left Ahead	U+O	N/A	N/A	D	E	1	33	0	599	1800:1940	529+211	81.0 : 81.0%
8/1	Barkby Road Ahead Right Left	U	N/A	N/A	A		1	17	-	287	1737	347	82.6%
Ped Link: P1	Unnamed Ped Link	-	N/A	-	G		1	14	-	0	-	11200	0.0%
Ped Link: P2	Unnamed Ped Link	-	N/A	-	F		1	17	-	0	-	13600	0.0%

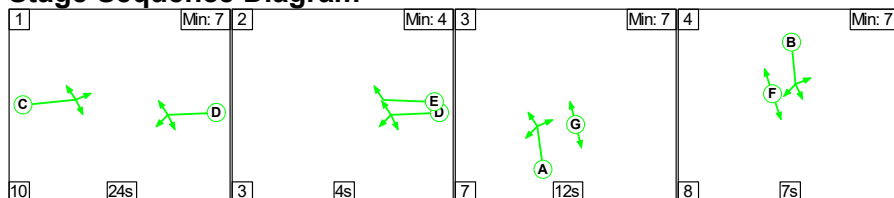
Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	-	-	237	0	19	15.1	7.4	1.0	23.5	-	-	-	-
Unnamed Junction	-	-	237	0	19	15.1	7.4	1.0	23.5	-	-	-	-
1/1	544	544	83	0	2	3.4	1.4	0.3	5.1	33.8	11.3	1.4	12.7
2/1	394	394	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
3/1	735	735	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
4/1	361	361	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	494	494	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/2+6/1	554	554	-	-	-	4.9	1.8	-	6.6	43.2	6.9	1.8	8.7
7/1+7/2	599	599	154	0	17	4.0	2.1	0.7	6.8	40.9	11.9	2.1	14.0
8/1	287	287	-	-	-	2.8	2.2	-	5.0	62.3	6.9	2.2	9.1
Ped Link: P1	0	0	-	-	-	-	-	-	0.0	0.0	-	-	0.0
Ped Link: P2	0	0	-	-	-	-	-	-	0.0	0.0	-	-	0.0
C1			PRC for Signalled Lanes (%):		8.9	Total Delay for Signalled Lanes (pcuHr):		23.53	Cycle Time (s):		90		
			PRC Over All Lanes (%):		8.9	Total Delay Over All Lanes(pcuHr):		23.53					

Full Input Data And Results

Scenario 3: '2027 AM' (FG3: '2027 AM', Plan 1: 'Network Control Plan 1')

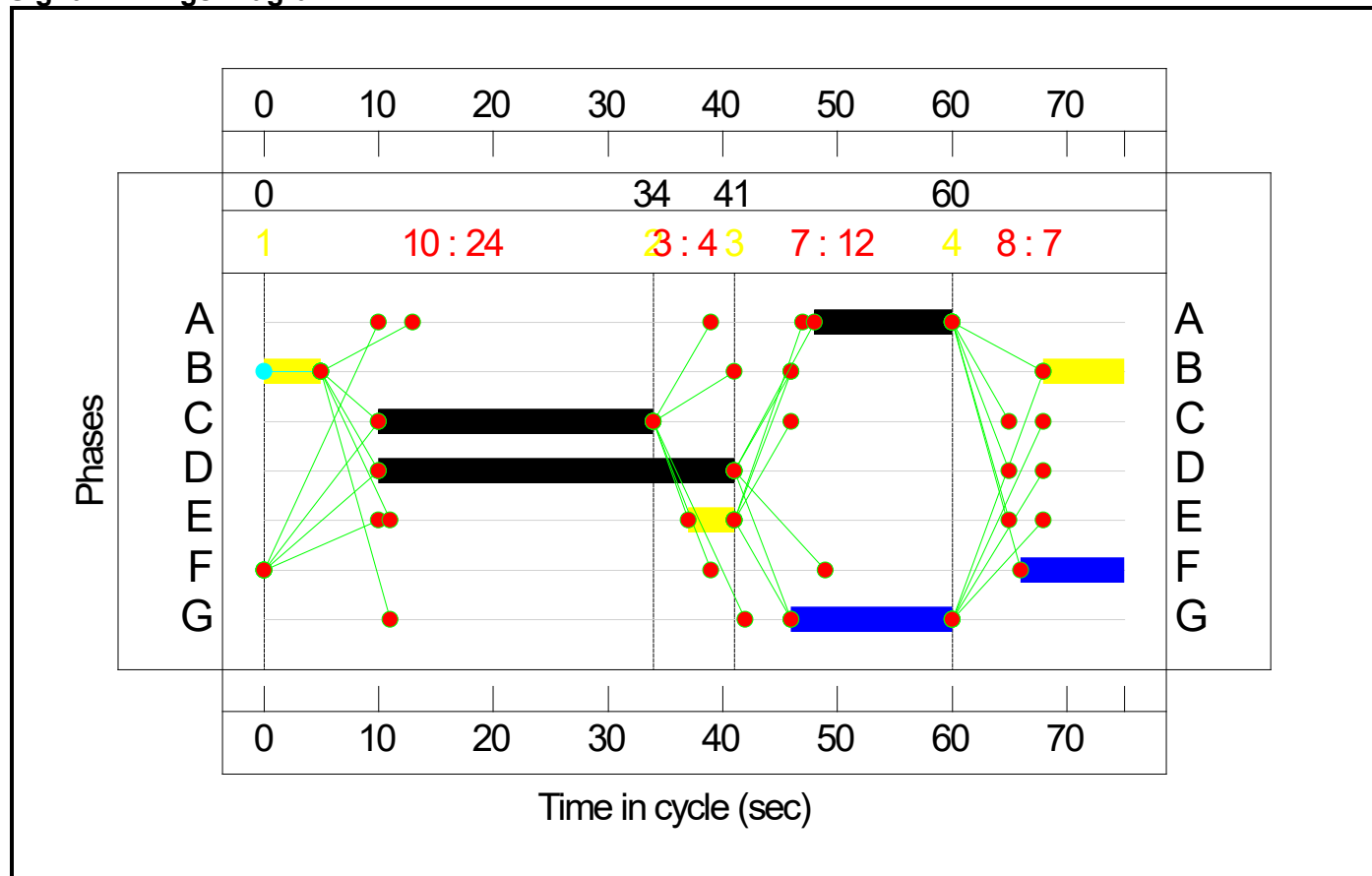
Stage Sequence Diagram




Stage Timings

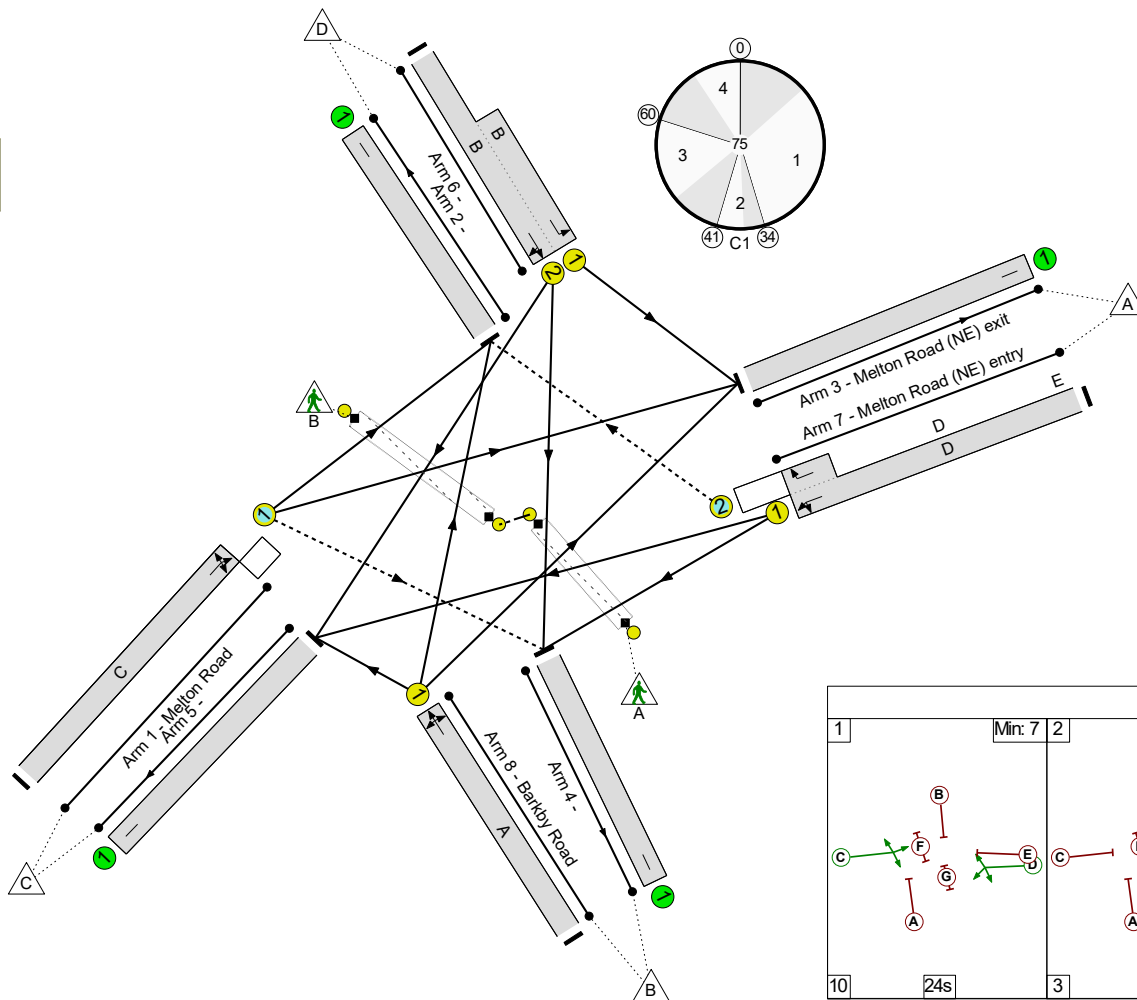
Stage	1	2	3	4
Duration	24	4	12	7
Change Point	0	34	41	60

Signal Timings Diagram



Full Input Data And Results
Network Layout Diagram


Unnamed Junction
 PRC: 21.0 %
 Total Traffic Delay: 15.7 pcuHr
 Ave. Route Delay Per Ped: 0.0 s/Ped



Scenario '2027 AM'

1	Min: 7	2	Min: 4	3	Min: 7	4	Min: 7
10	24s	3	4s	7	12s	8	7s

Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	N/A	-	-		-	-	-	-	-	-	74.4%
Unnamed Junction	-	-	N/A	-	-		-	-	-	-	-	-	74.4%
1/1	Melton Road Left Ahead Right	O	N/A	N/A	C		1	24	-	439	1959	653	67.2%
2/1		U	N/A	N/A	-		-	-	-	390	Inf	Inf	0.0%
3/1	Melton Road (NE) exit	U	N/A	N/A	-		-	-	-	581	Inf	Inf	0.0%
4/1		U	N/A	N/A	-		-	-	-	225	Inf	Inf	0.0%
5/1		U	N/A	N/A	-		-	-	-	487	Inf	Inf	0.0%
6/2+6/1	Left Ahead Right	U	N/A	N/A	B		1	12	-	406	1764:1687	306+292	69.0 : 66.7%
7/1+7/2	Melton Road (NE) entry Right Left Ahead	U+O	N/A	N/A	D	E	1	31	4	615	1800:1940	621+206	74.4 : 74.4%
8/1	Barkby Road Ahead Right Left	U	N/A	N/A	A		1	12	-	223	1858	322	69.2%
Ped Link: P1	Unnamed Ped Link	-	N/A	-	G		1	14	-	0	-	13440	0.0%
Ped Link: P2	Unnamed Ped Link	-	N/A	-	F		1	9	-	0	-	8640	0.0%

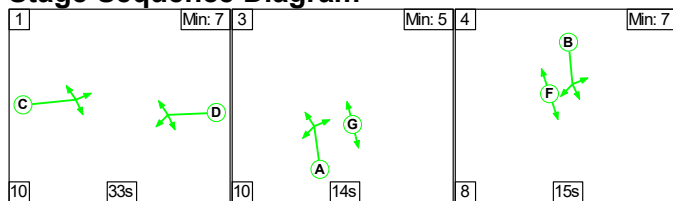
Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	-	-	176	10	6	10.6	4.6	0.5	15.7	-	-	-	-
Unnamed Junction	-	-	176	10	6	10.6	4.6	0.5	15.7	-	-	-	-
1/1	439	439	39	0	0	2.6	1.0	0.1	3.8	30.9	7.8	1.0	8.8
2/1	390	390	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
3/1	581	581	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
4/1	225	225	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	487	487	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/2+6/1	406	406	-	-	-	3.3	1.0	-	4.3	38.3	4.1	1.0	5.1
7/1+7/2	615	615	137	10	6	2.9	1.4	0.4	4.7	27.6	9.4	1.4	10.9
8/1	223	223	-	-	-	1.8	1.1	-	2.9	46.9	4.3	1.1	5.4
Ped Link: P1	0	0	-	-	-	-	-	-	0.0	0.0	-	-	0.0
Ped Link: P2	0	0	-	-	-	-	-	-	0.0	0.0	-	-	0.0
C1			PRC for Signalled Lanes (%):		21.0	Total Delay for Signalled Lanes (pcuHr):		15.71	Cycle Time (s):		75		
			PRC Over All Lanes (%):		21.0	Total Delay Over All Lanes(pcuHr):		15.71					

Full Input Data And Results

Scenario 4: '2027 PM' (FG4: '2027 PM', Plan 2: 'Network Control Plan 2')

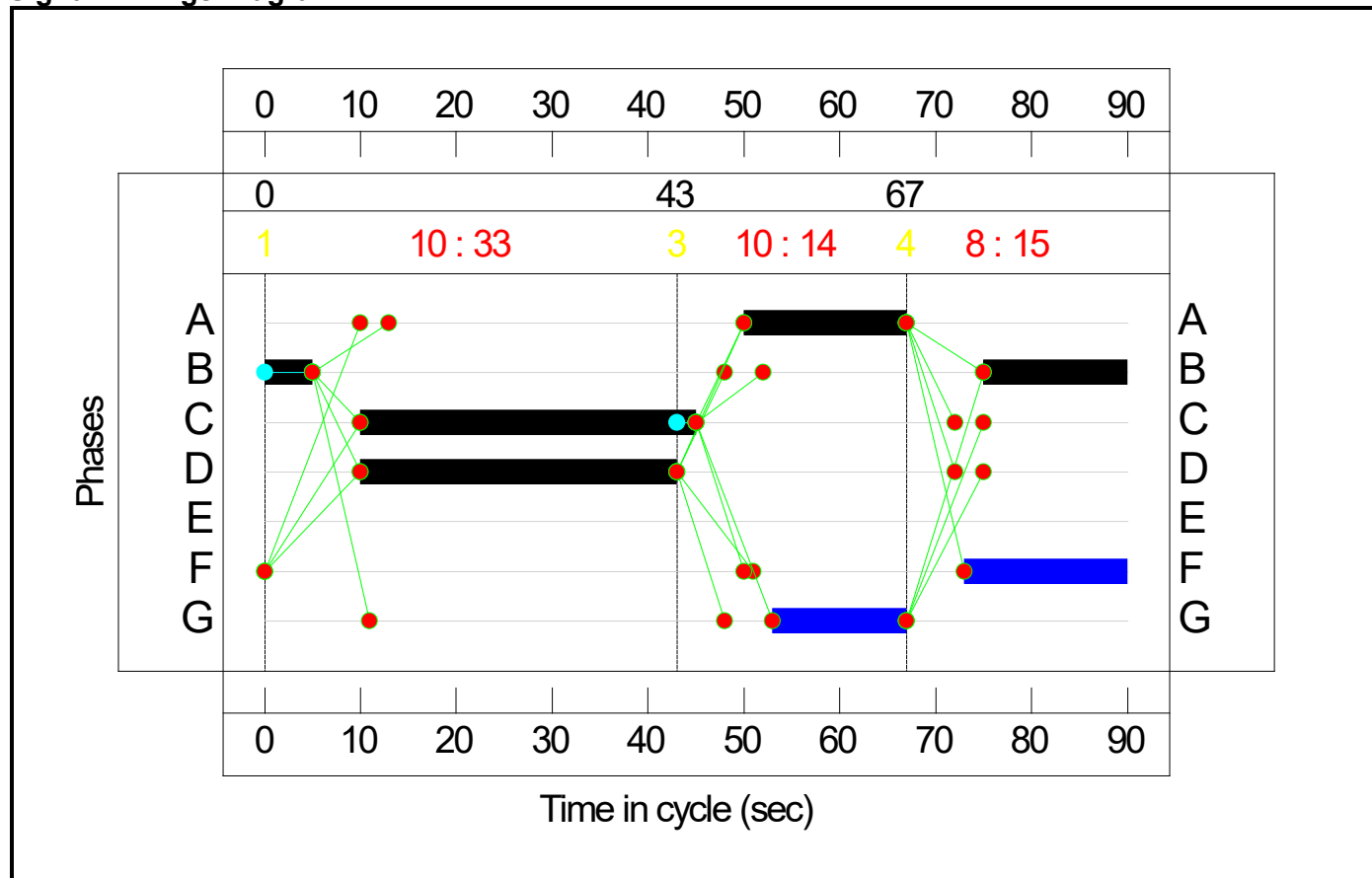
Stage Sequence Diagram




Stage Timings

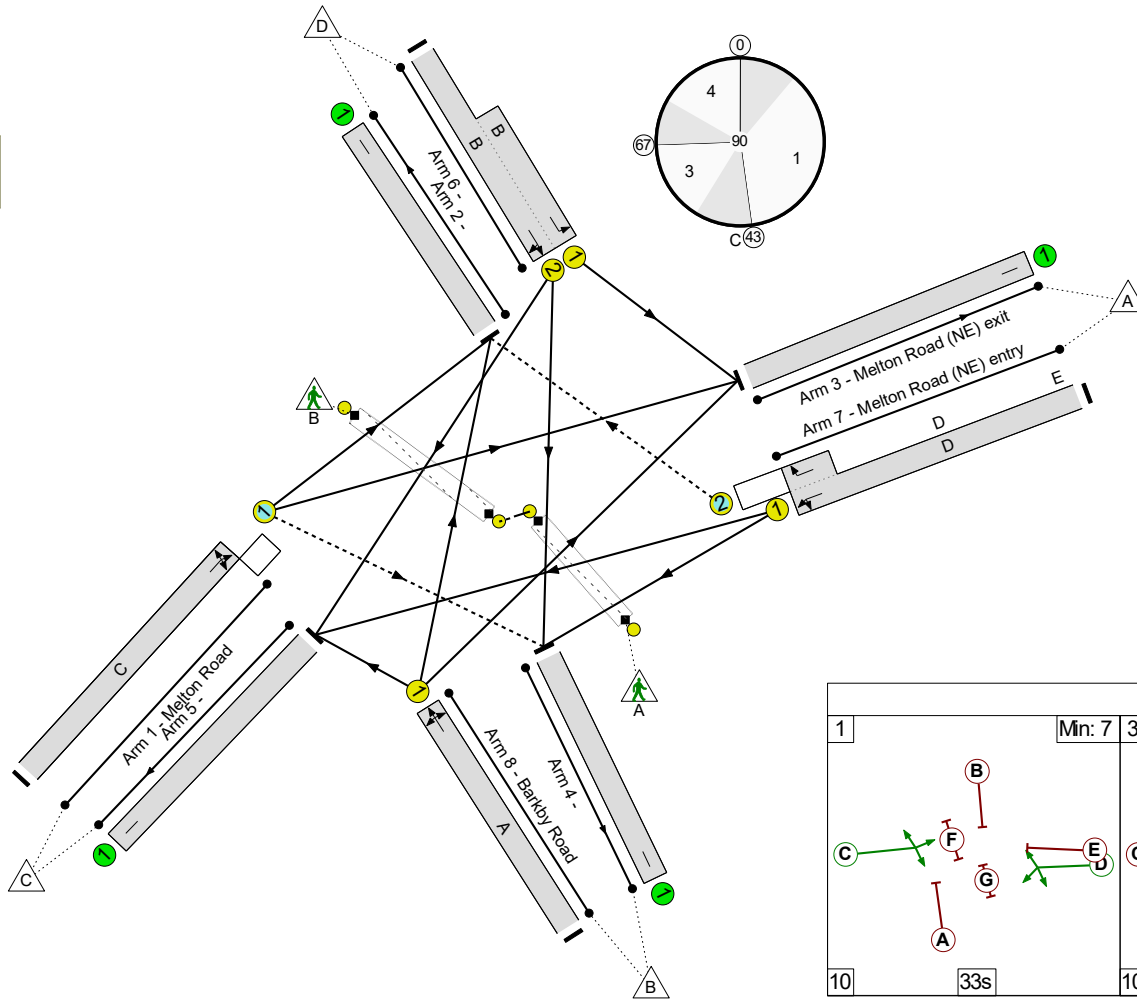
Stage	1	3	4
Duration	33	14	15
Change Point	0	43	67

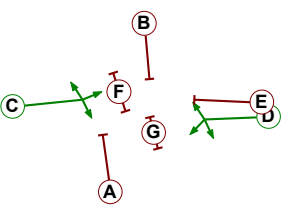
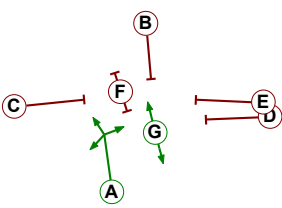
Signal Timings Diagram



Full Input Data And Results
Network Layout Diagram


Unnamed Junction
 PRC: 2.1 %
 Total Traffic Delay: 27.3 pcuHr
 Ave. Route Delay Per Ped: 0.0 s/Ped



Scenario '2027 PM'					
1	Min: 7	3	Min: 5	4	Min: 7
					
10	33s	10	14s	8	15s

Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	N/A	-	-		-	-	-	-	-	-	88.2%
Unnamed Junction	-	-	N/A	-	-		-	-	-	-	-	-	88.2%
1/1	Melton Road Left Ahead Right	O	N/A	N/A	C		1	35	-	566	1944	708	79.9%
2/1		U	N/A	N/A	-		-	-	-	418	Inf	Inf	0.0%
3/1	Melton Road (NE) exit	U	N/A	N/A	-		-	-	-	766	Inf	Inf	0.0%
4/1		U	N/A	N/A	-		-	-	-	391	Inf	Inf	0.0%
5/1		U	N/A	N/A	-		-	-	-	515	Inf	Inf	0.0%
6/2+6/1	Left Ahead Right	U	N/A	N/A	B		1	20	-	592	1764:1687	341+380	82.1 : 82.1%
7/1+7/2	Melton Road (NE) entry Right Left Ahead	U+O	N/A	N/A	D	E	1	33	0	625	1800:1940	529+211	84.5 : 84.5%
8/1	Barkby Road Ahead Right Left	U	N/A	N/A	A		1	17	-	307	1741	348	88.2%
Ped Link: P1	Unnamed Ped Link	-	N/A	-	G		1	14	-	0	-	11200	0.0%
Ped Link: P2	Unnamed Ped Link	-	N/A	-	F		1	17	-	0	-	13600	0.0%

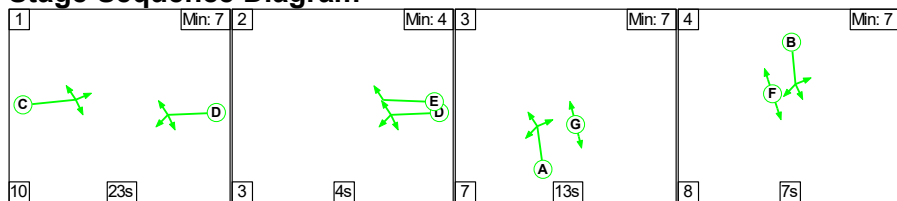
Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	-	-	221	0	45	16.2	10.0	1.2	27.3	-	-	-	-
Unnamed Junction	-	-	221	0	45	16.2	10.0	1.2	27.3	-	-	-	-
1/1	566	566	86	0	2	3.6	1.9	0.4	5.9	37.6	11.9	1.9	13.9
2/1	418	418	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
3/1	766	766	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
4/1	391	391	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	515	515	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/2+6/1	592	592	-	-	-	5.3	2.2	-	7.5	45.4	7.3	2.2	9.5
7/1+7/2	625	625	135	0	43	4.3	2.6	0.8	7.7	44.4	12.9	2.6	15.5
8/1	307	307	-	-	-	3.0	3.2	-	6.2	72.8	7.4	3.2	10.6
Ped Link: P1	0	0	-	-	-	-	-	-	0.0	0.0	-	-	0.0
Ped Link: P2	0	0	-	-	-	-	-	-	0.0	0.0	-	-	0.0
C1			PRC for Signalled Lanes (%):		2.1	Total Delay for Signalled Lanes (pcuHr):		27.30	Cycle Time (s):		90		
			PRC Over All Lanes (%):		2.1	Total Delay Over All Lanes(pcuHr):		27.30					

Full Input Data And Results

Scenario 5: '2027 + Dev AM' (FG5: '2027 with Dev', Plan 1: 'Network Control Plan 1')

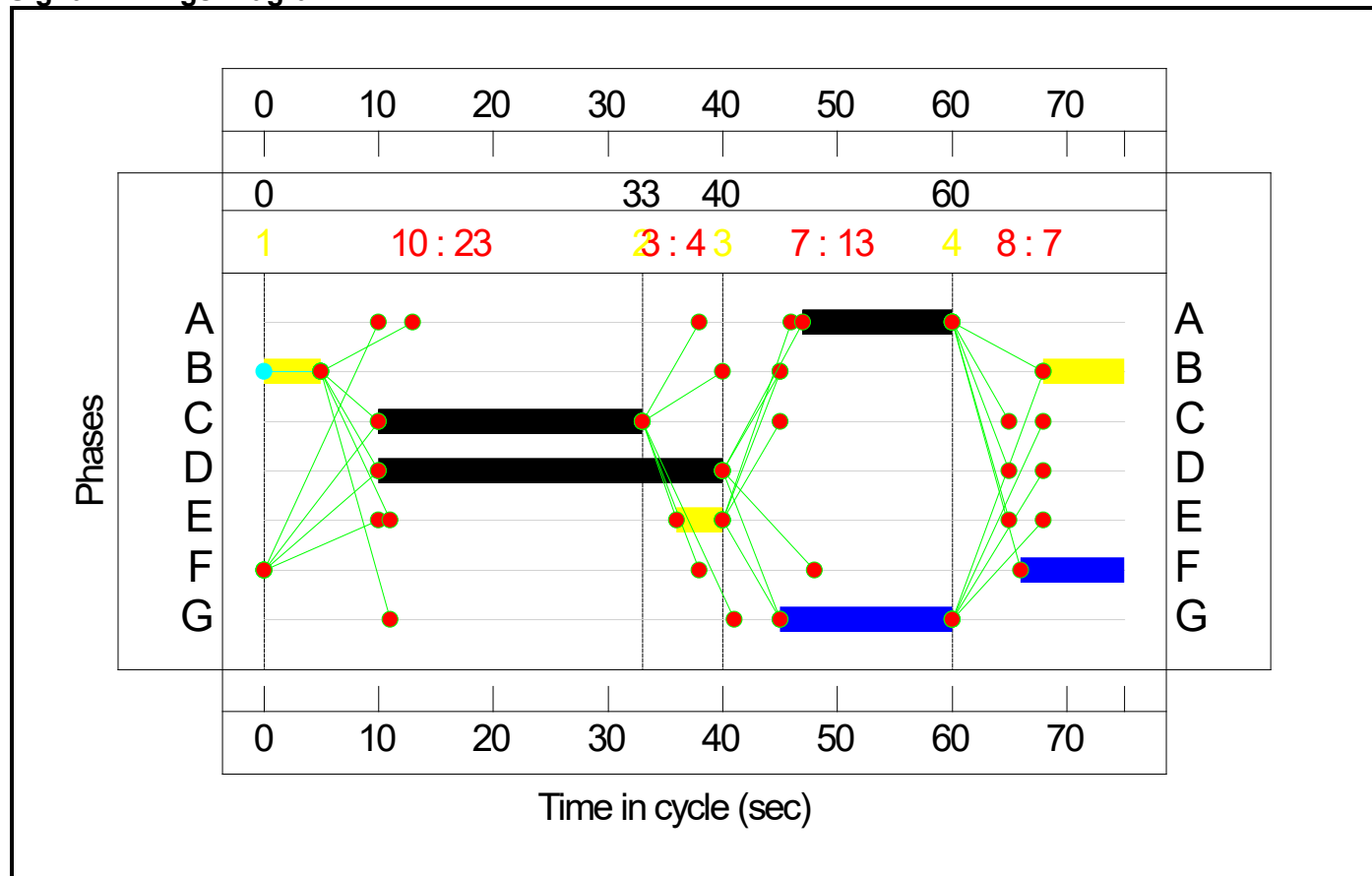
Stage Sequence Diagram



Stage Timings

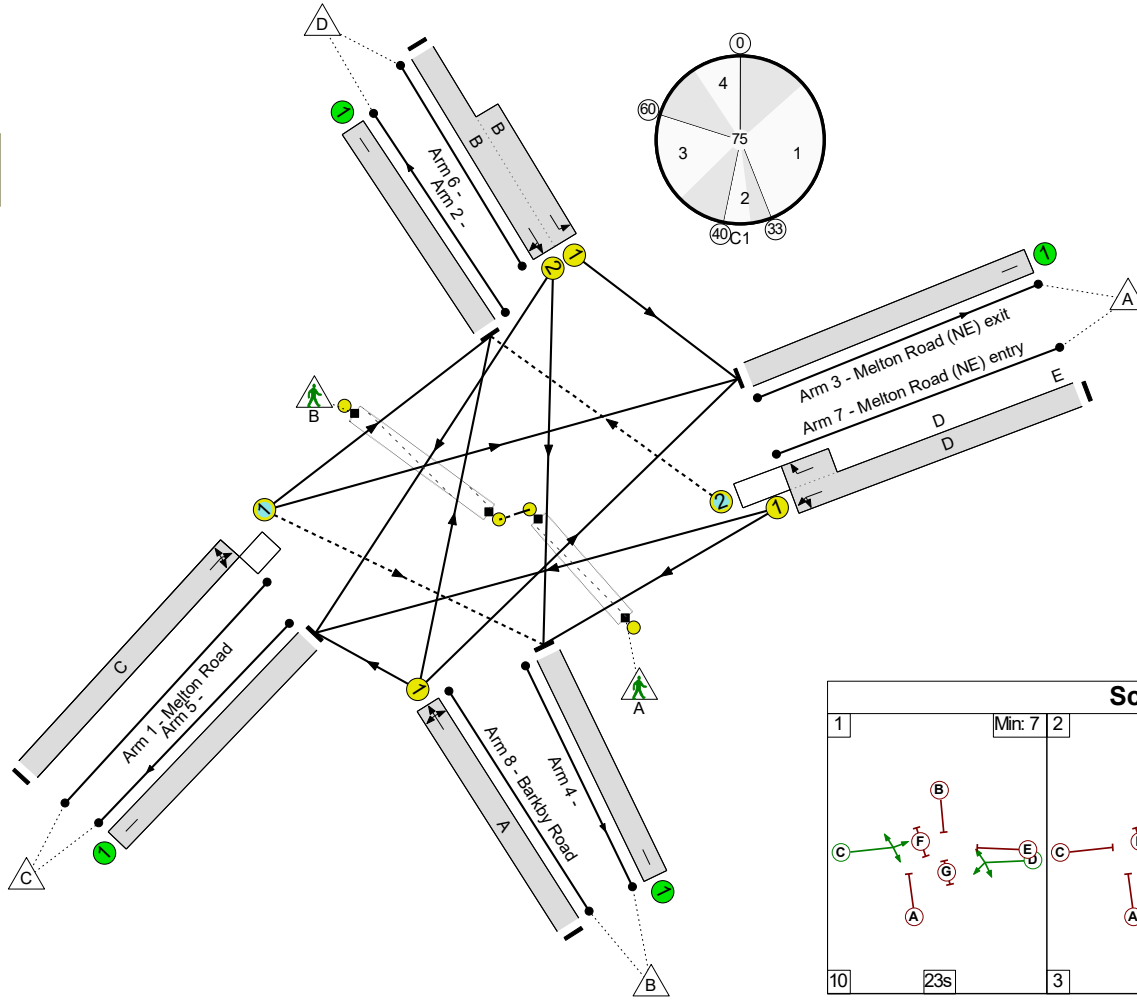
Stage	1	2	3	4
Duration	23	4	13	7
Change Point	0	33	40	60

Signal Timings Diagram



Full Input Data And Results
Network Layout Diagram

Unnamed Junction
 PRC: 17.5 %
 Total Traffic Delay: 17.1 pcuHr
 Ave. Route Delay Per Ped: 0.0 s/Ped



Scenario '2027 + Dev AM'

1	Min: 7	2	Min: 4	3	Min: 7	4	Min: 7
10	23s	3	4s	7	13s	8	7s

Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	N/A	-	-		-	-	-	-	-	-	76.6%
Unnamed Junction	-	-	N/A	-	-		-	-	-	-	-	-	76.6%
1/1	Melton Road Left Ahead Right	O	N/A	N/A	C		1	23	-	441	1958	627	70.4%
2/1		U	N/A	N/A	-		-	-	-	420	Inf	Inf	0.0%
3/1	Melton Road (NE) exit	U	N/A	N/A	-		-	-	-	581	Inf	Inf	0.0%
4/1		U	N/A	N/A	-		-	-	-	241	Inf	Inf	0.0%
5/1		U	N/A	N/A	-		-	-	-	490	Inf	Inf	0.0%
6/2+6/1	Left Ahead Right	U	N/A	N/A	B		1	12	-	420	1764:1687	306+292	73.6 : 66.7%
7/1+7/2	Melton Road (NE) entry Right Left Ahead	U+O	N/A	N/A	D	E	1	30	4	615	1800:1940	603+200	76.6 : 76.6%
8/1	Barkby Road Ahead Right Left	U	N/A	N/A	A		1	13	-	256	1860	347	73.7%
Ped Link: P1	Unnamed Ped Link	-	N/A	-	G		1	15	-	0	-	14400	0.0%
Ped Link: P2	Unnamed Ped Link	-	N/A	-	F		1	9	-	0	-	8640	0.0%

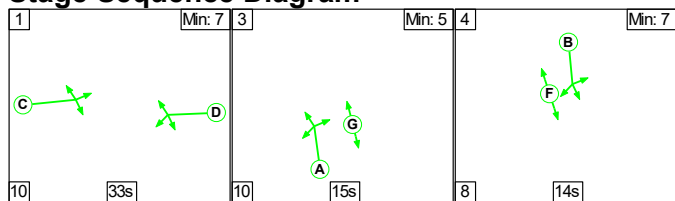
Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	-	-	161	27	6	11.3	5.3	0.5	17.1	-	-	-	-
Unnamed Junction	-	-	161	27	6	11.3	5.3	0.5	17.1	-	-	-	-
1/1	441	441	41	0	0	2.7	1.2	0.1	4.1	33.1	8.0	1.2	9.1
2/1	420	420	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
3/1	581	581	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
4/1	241	241	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	490	490	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/2+6/1	420	420	-	-	-	3.4	1.2	-	4.6	39.2	4.4	1.2	5.6
7/1+7/2	615	615	120	27	6	3.1	1.6	0.4	5.1	29.6	9.8	1.6	11.4
8/1	256	256	-	-	-	2.0	1.4	-	3.4	47.9	5.0	1.4	6.3
Ped Link: P1	0	0	-	-	-	-	-	-	0.0	0.0	-	-	0.0
Ped Link: P2	0	0	-	-	-	-	-	-	0.0	0.0	-	-	0.0
C1			PRC for Signalled Lanes (%):		17.5	Total Delay for Signalled Lanes (pcuHr):		17.09	Cycle Time (s):		75		
			PRC Over All Lanes (%):		17.5	Total Delay Over All Lanes(pcuHr):		17.09					

Full Input Data And Results

Scenario 6: '2027 + Dev PM' (FG6: '2027 with Dev', Plan 2: 'Network Control Plan 2')

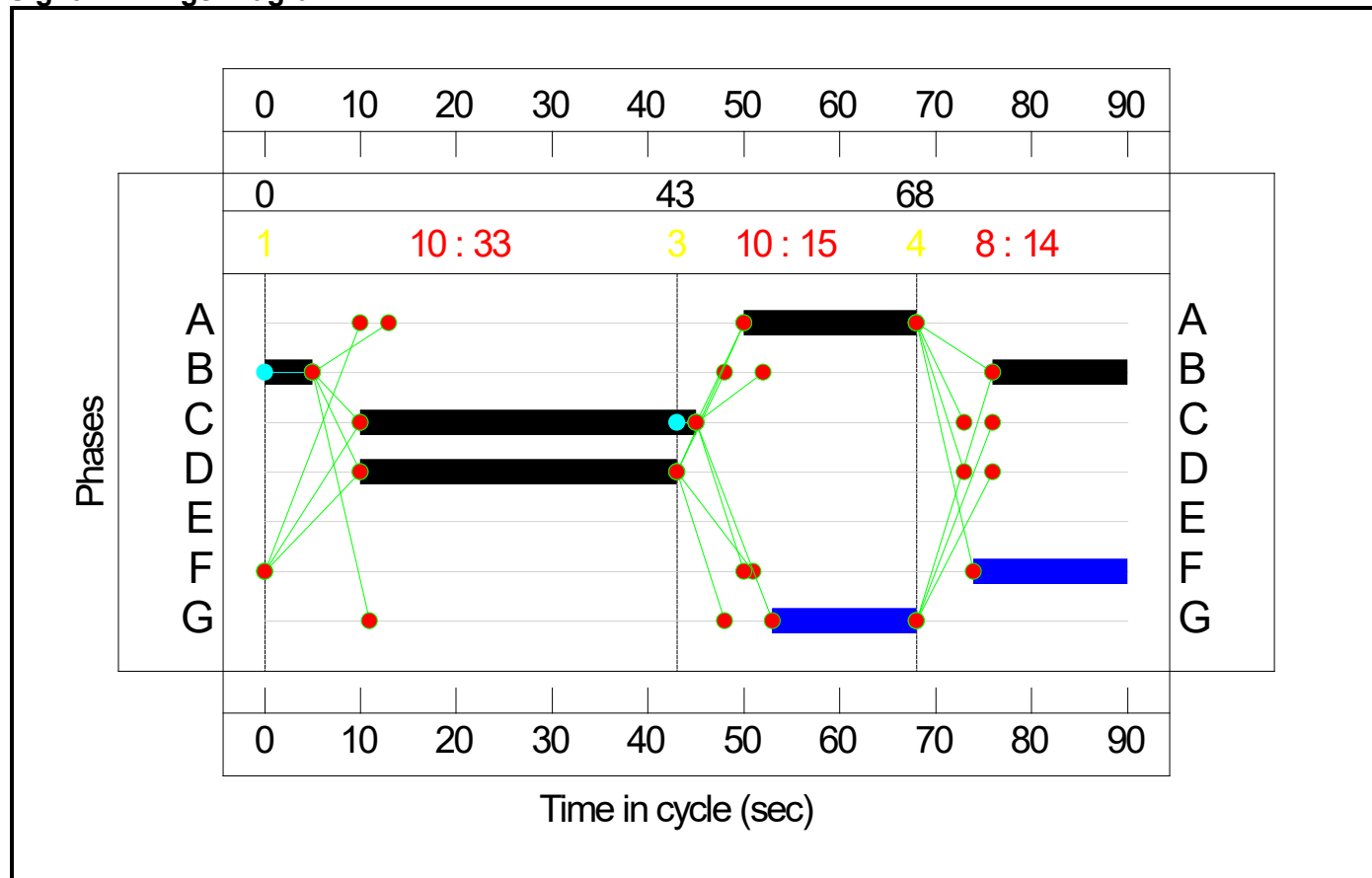
Stage Sequence Diagram




Stage Timings

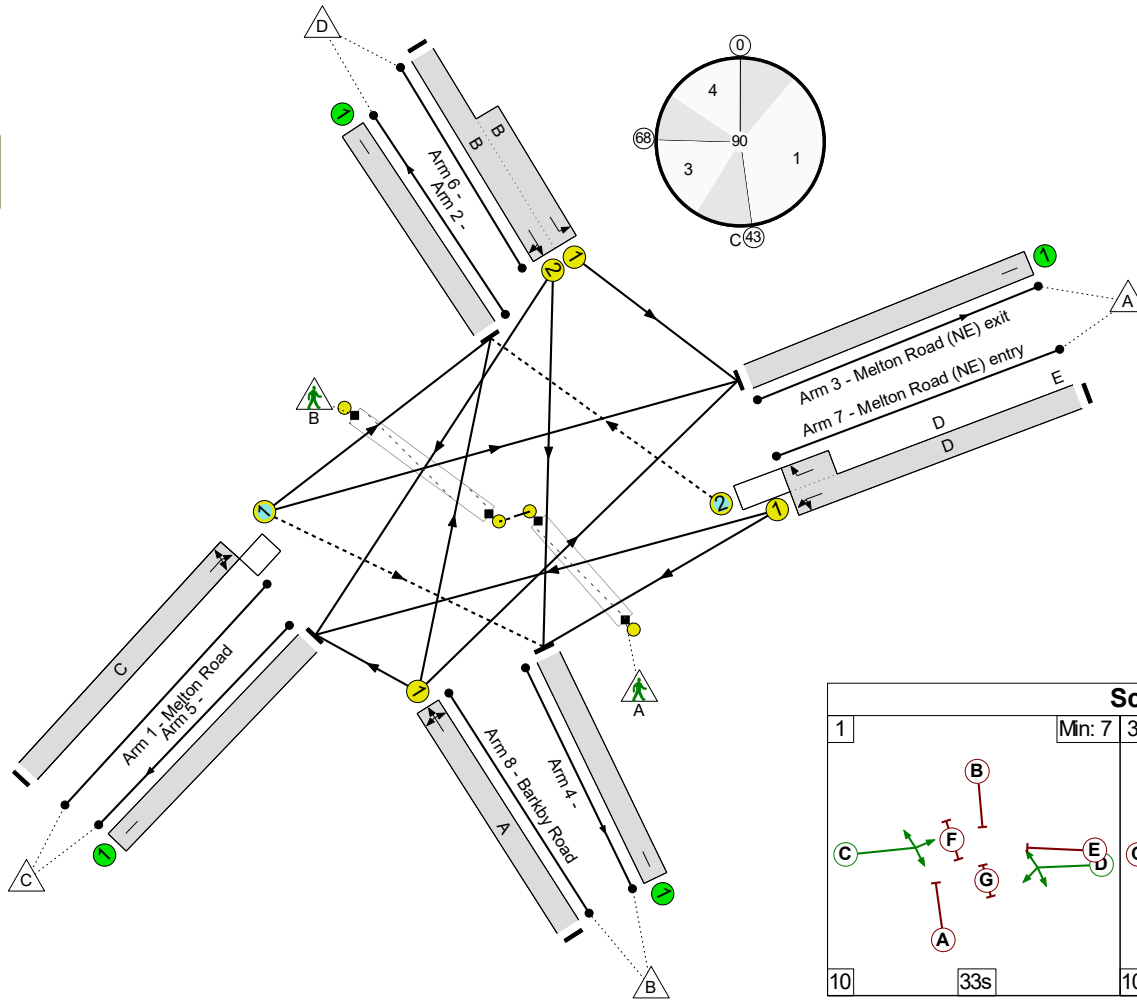
Stage	1	3	4
Duration	33	15	14
Change Point	0	43	68

Signal Timings Diagram



Full Input Data And Results
Network Layout Diagram


 Unnamed Junction
 PRC: 2.2 %
 Total Traffic Delay: 28.6 pcuHr
 Ave. Route Delay Per Ped: 0.0 s/Ped



Scenario '2027 + Dev PM'

1	Min: 7	3	Min: 5	4	Min: 7
10	33s	10	15s	8	14s

Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	N/A	-	-		-	-	-	-	-	-	88.0%
Unnamed Junction	-	-	N/A	-	-		-	-	-	-	-	-	88.0%
1/1	Melton Road Left Ahead Right	O	N/A	N/A	C		1	35	-	569	1943	694	82.0%
2/1		U	N/A	N/A	-		-	-	-	435	Inf	Inf	0.0%
3/1	Melton Road (NE) exit	U	N/A	N/A	-		-	-	-	766	Inf	Inf	0.0%
4/1		U	N/A	N/A	-		-	-	-	421	Inf	Inf	0.0%
5/1		U	N/A	N/A	-		-	-	-	516	Inf	Inf	0.0%
6/2+6/1	Left Ahead Right	U	N/A	N/A	B		1	19	-	619	1764:1687	364+370	84.4 : 84.4%
7/1+7/2	Melton Road (NE) entry Right Left Ahead	U+O	N/A	N/A	D	E	1	33	0	625	1800:1940	529+209	84.5 : 85.0%
8/1	Barkby Road Ahead Right Left	U	N/A	N/A	A		1	18	-	325	1749	369	88.0%
Ped Link: P1	Unnamed Ped Link	-	N/A	-	G		1	15	-	0	-	12000	0.0%
Ped Link: P2	Unnamed Ped Link	-	N/A	-	F		1	16	-	0	-	12800	0.0%

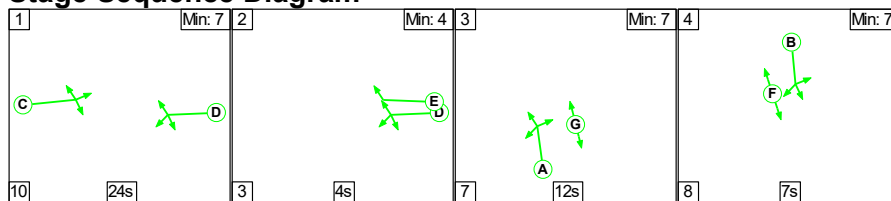
Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	-	-	219	0	50	16.8	10.6	1.2	28.6	-	-	-	-
Unnamed Junction	-	-	219	0	50	16.8	10.6	1.2	28.6	-	-	-	-
1/1	569	569	89	0	2	3.6	2.2	0.4	6.2	39.4	12.2	2.2	14.4
2/1	435	435	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
3/1	766	766	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
4/1	421	421	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	516	516	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/2+6/1	619	619	-	-	-	5.7	2.6	-	8.3	48.2	7.4	2.6	10.0
7/1+7/2	625	625	130	0	48	4.3	2.6	0.8	7.8	44.6	12.9	2.6	15.5
8/1	325	325	-	-	-	3.1	3.2	-	6.3	69.9	7.9	3.2	11.1
Ped Link: P1	0	0	-	-	-	-	-	-	0.0	0.0	-	-	0.0
Ped Link: P2	0	0	-	-	-	-	-	-	0.0	0.0	-	-	0.0
C1			PRC for Signalled Lanes (%):		2.2	Total Delay for Signalled Lanes (pcuHr):		28.58	Cycle Time (s):		90		
			PRC Over All Lanes (%):		2.2	Total Delay Over All Lanes(pcuHr):		28.58					

Full Input Data And Results

Scenario 7: '2037 AM' (FG7: '2037 AM', Plan 1: 'Network Control Plan 1')

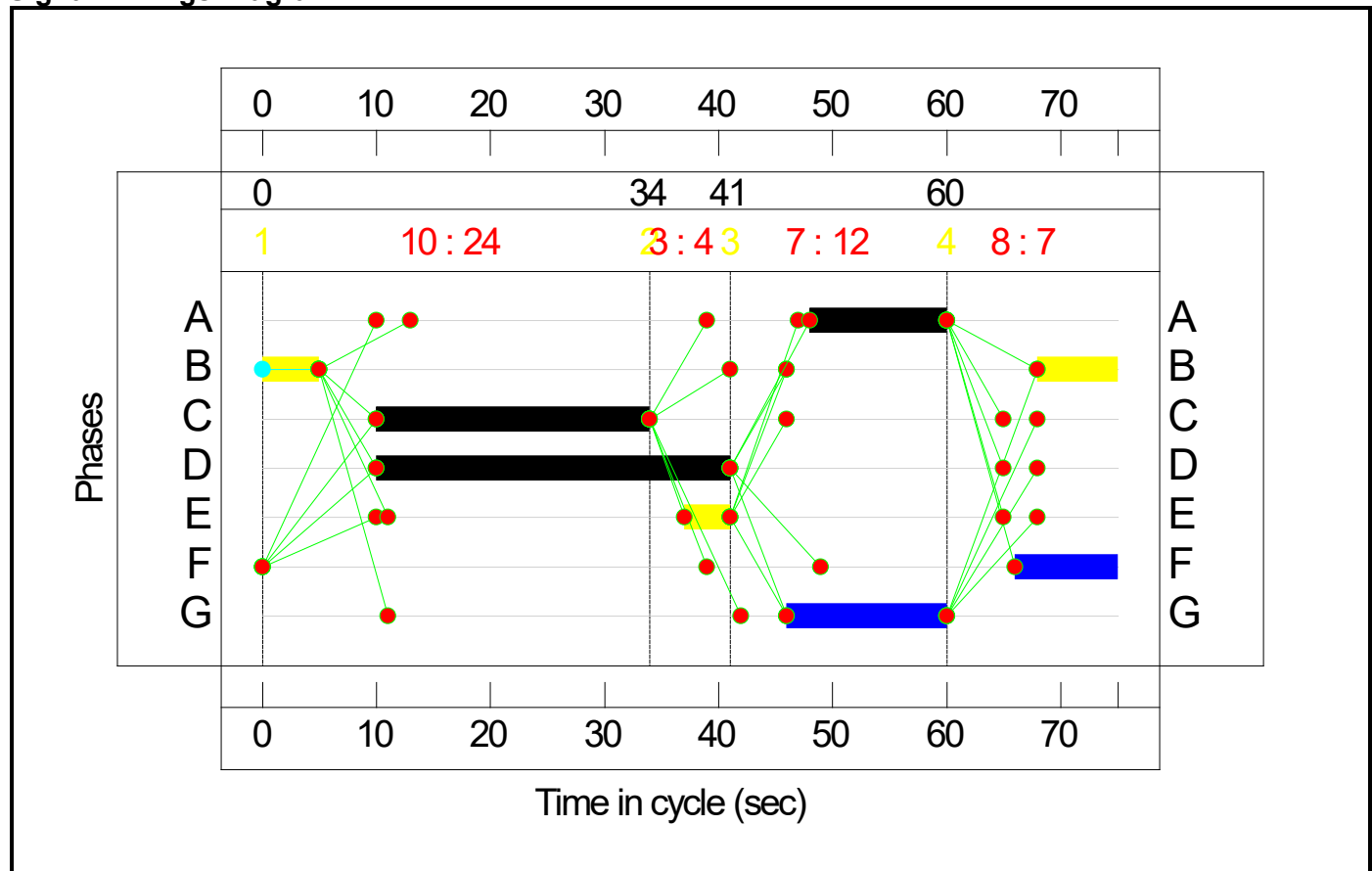
Stage Sequence Diagram




Stage Timings

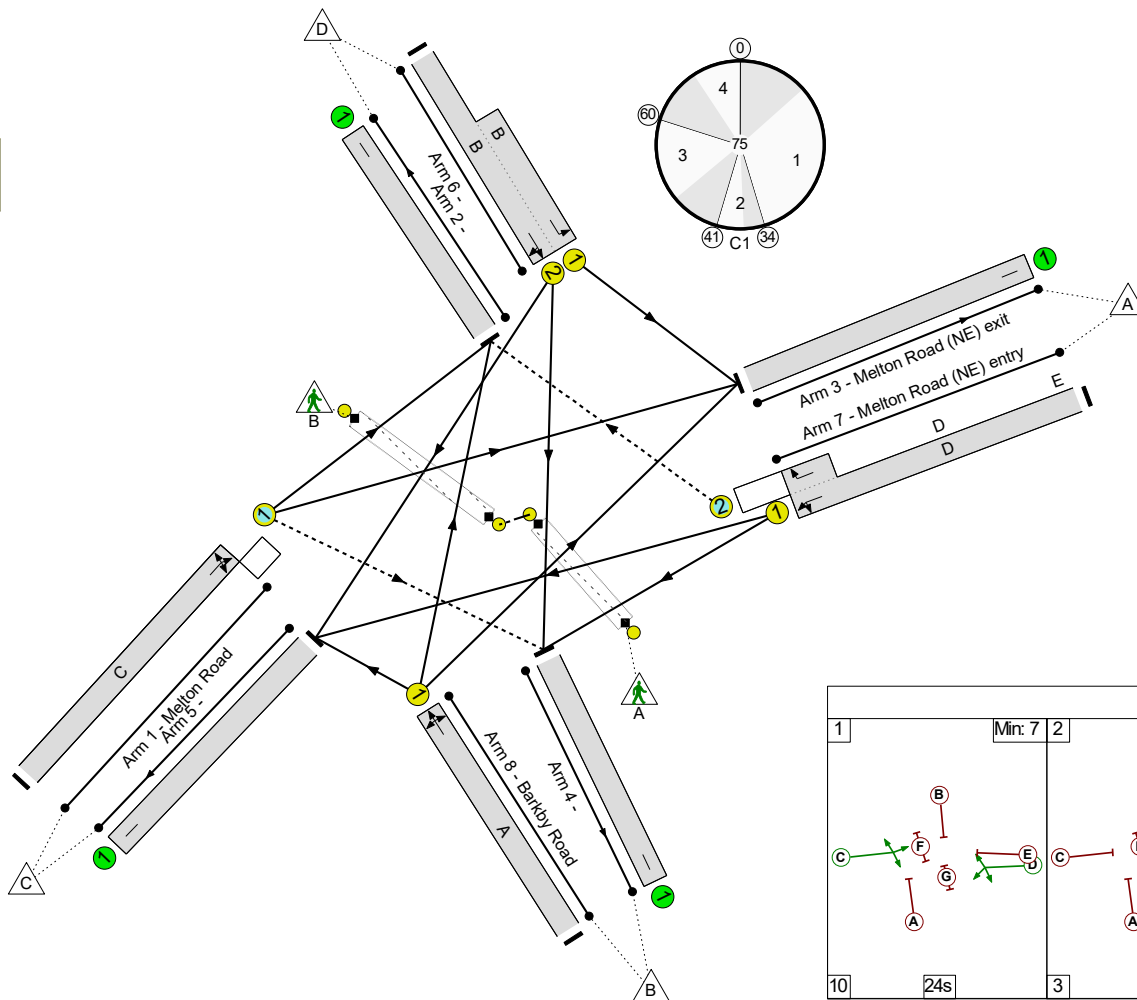
Stage	1	2	3	4
Duration	24	4	12	7
Change Point	0	34	41	60

Signal Timings Diagram



Full Input Data And Results
Network Layout Diagram


 Unnamed Junction
 PRC: 10.5 %
 Total Traffic Delay: 19.0 pcuHr
 Ave. Route Delay Per Ped: 0.0 s/Ped



Scenario '2037 AM'

1	Min: 7	2	Min: 4	3	Min: 7	4	Min: 7
10	24s	3	4s	7	12s	8	7s

Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	N/A	-	-		-	-	-	-	-	-	81.5%
Unnamed Junction	-	-	N/A	-	-		-	-	-	-	-	-	81.5%
1/1	Melton Road Left Ahead Right	O	N/A	N/A	C		1	24	-	482	1959	653	73.8%
2/1		U	N/A	N/A	-		-	-	-	427	Inf	Inf	0.0%
3/1	Melton Road (NE) exit	U	N/A	N/A	-		-	-	-	637	Inf	Inf	0.0%
4/1		U	N/A	N/A	-		-	-	-	246	Inf	Inf	0.0%
5/1		U	N/A	N/A	-		-	-	-	533	Inf	Inf	0.0%
6/2+6/1	Left Ahead Right	U	N/A	N/A	B		1	12	-	443	1764:1687	306+292	75.2 : 72.8%
7/1+7/2	Melton Road (NE) entry Right Left Ahead	U+O	N/A	N/A	D	E	1	31	4	674	1800:1940	621+206	81.5 : 81.5%
8/1	Barkby Road Ahead Right Left	U	N/A	N/A	A		1	12	-	244	1858	322	75.8%
Ped Link: P1	Unnamed Ped Link	-	N/A	-	G		1	14	-	0	-	13440	0.0%
Ped Link: P2	Unnamed Ped Link	-	N/A	-	F		1	9	-	0	-	8640	0.0%

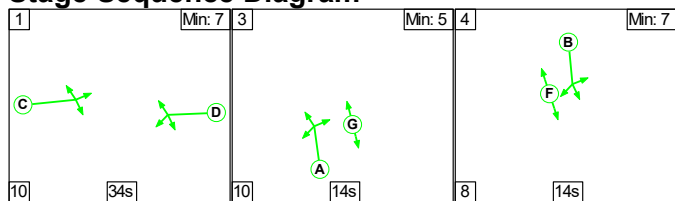
Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	-	-	152	52	7	11.9	6.4	0.6	19.0	-	-	-	-
Unnamed Junction	-	-	152	52	7	11.9	6.4	0.6	19.0	-	-	-	-
1/1	482	482	43	0	0	3.0	1.4	0.2	4.5	33.7	8.8	1.4	10.2
2/1	427	427	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
3/1	637	637	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
4/1	246	246	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	533	533	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/2+6/1	443	443	-	-	-	3.6	1.4	-	5.0	40.8	4.5	1.4	5.9
7/1+7/2	674	674	109	52	7	3.4	2.1	0.5	6.0	31.9	11.2	2.1	13.3
8/1	244	244	-	-	-	2.0	1.5	-	3.5	51.7	4.8	1.5	6.3
Ped Link: P1	0	0	-	-	-	-	-	-	0.0	0.0	-	-	0.0
Ped Link: P2	0	0	-	-	-	-	-	-	0.0	0.0	-	-	0.0
C1			PRC for Signalled Lanes (%):		10.5	Total Delay for Signalled Lanes (pcuHr):		19.01	Cycle Time (s):		75		
			PRC Over All Lanes (%):		10.5	Total Delay Over All Lanes(pcuHr):		19.01					

Full Input Data And Results

Scenario 8: '2037 PM' (FG8: '2037 PM', Plan 2: 'Network Control Plan 2')

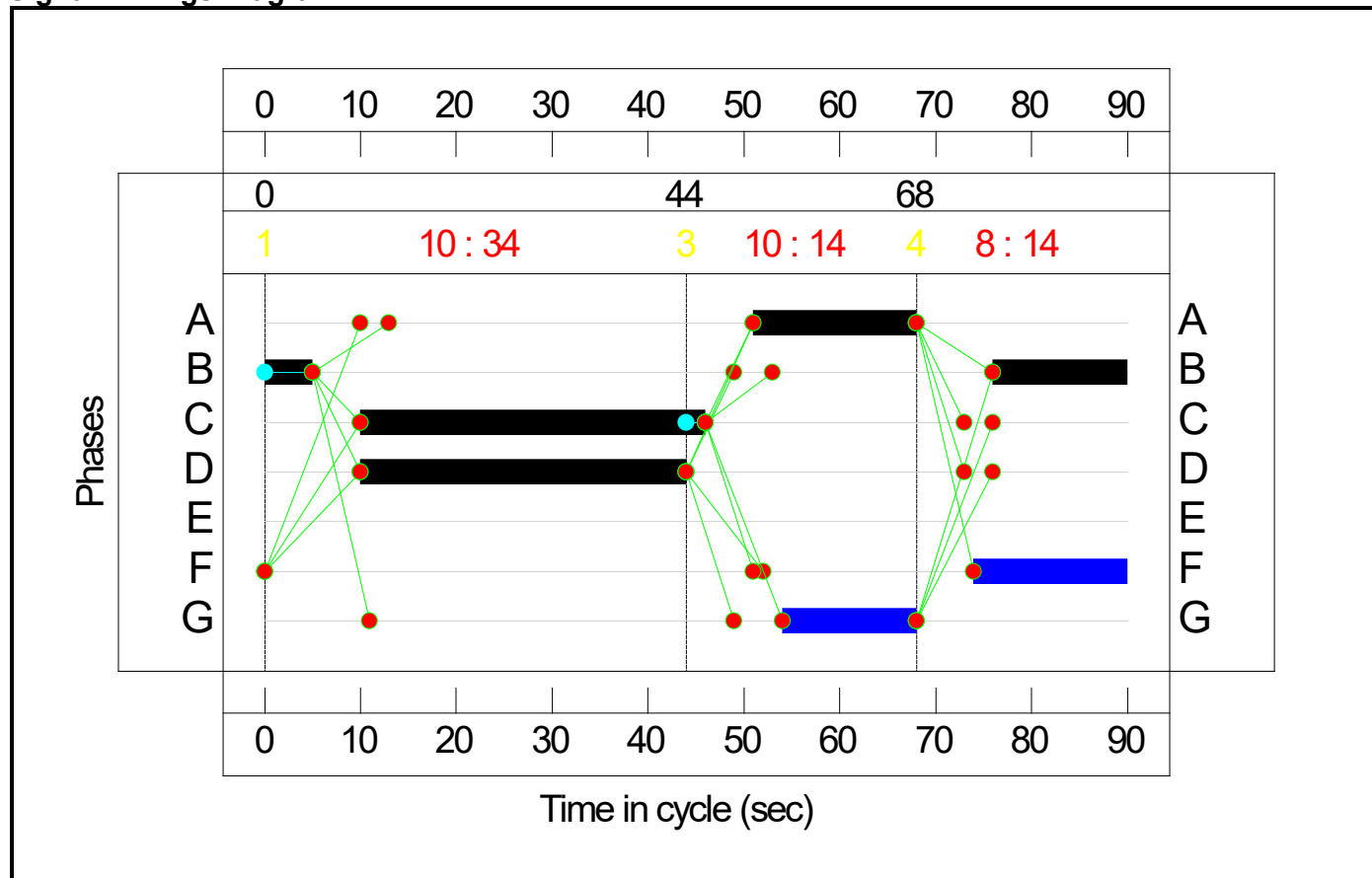
Stage Sequence Diagram




Stage Timings

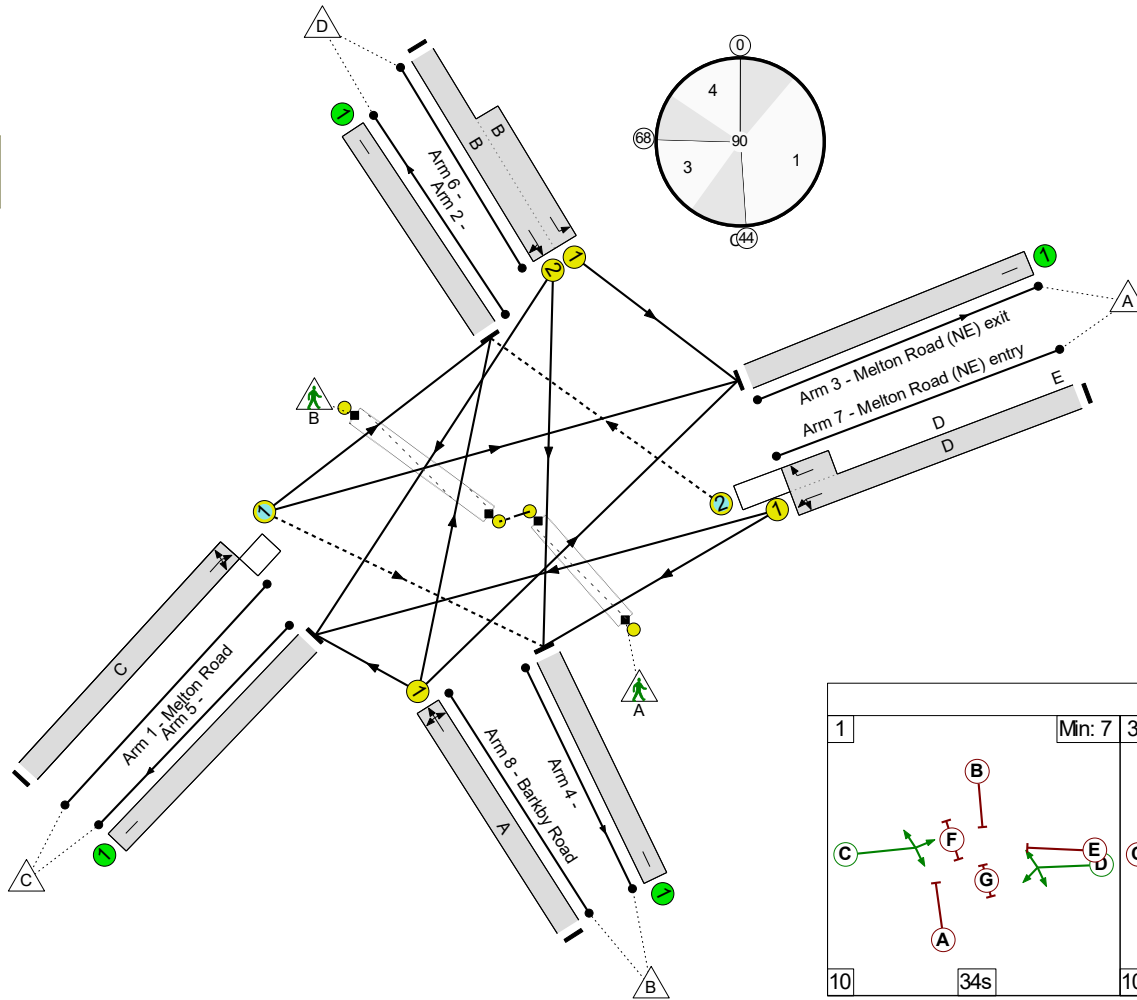
Stage	1	3	4
Duration	34	14	14
Change Point	0	44	68

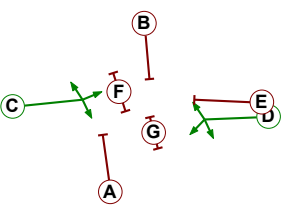
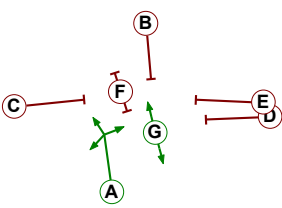
Signal Timings Diagram



Full Input Data And Results
Network Layout Diagram


Unnamed Junction
 PRC: -7.5 %
 Total Traffic Delay: 43.7 pcuHr
 Ave. Route Delay Per Ped: 0.0 s/Ped



Scenario '2037 PM'					
1	Min: 7	3	Min: 5	4	Min: 7
					
10	34s	10	14s	8	14s

Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	N/A	-	-		-	-	-	-	-	-	96.8%
Unnamed Junction	-	-	N/A	-	-		-	-	-	-	-	-	96.8%
1/1	Melton Road Left Ahead Right	O	N/A	N/A	C		1	36	-	622	1944	645	96.4%
2/1		U	N/A	N/A	-		-	-	-	458	Inf	Inf	0.0%
3/1	Melton Road (NE) exit	U	N/A	N/A	-		-	-	-	841	Inf	Inf	0.0%
4/1		U	N/A	N/A	-		-	-	-	428	Inf	Inf	0.0%
5/1		U	N/A	N/A	-		-	-	-	566	Inf	Inf	0.0%
6/2+6/1	Left Ahead Right	U	N/A	N/A	B		1	19	-	648	1764:1687	331+370	92.4 : 92.4%
7/1+7/2	Melton Road (NE) entry Right Left Ahead	U+O	N/A	N/A	D	E	1	34	0	686	1800:1940	544+216	90.3 : 90.3%
8/1	Barkby Road Ahead Right Left	U	N/A	N/A	A		1	17	-	337	1741	348	96.8%
Ped Link: P1	Unnamed Ped Link	-	N/A	-	G		1	14	-	0	-	11200	0.0%
Ped Link: P2	Unnamed Ped Link	-	N/A	-	F		1	16	-	0	-	12800	0.0%

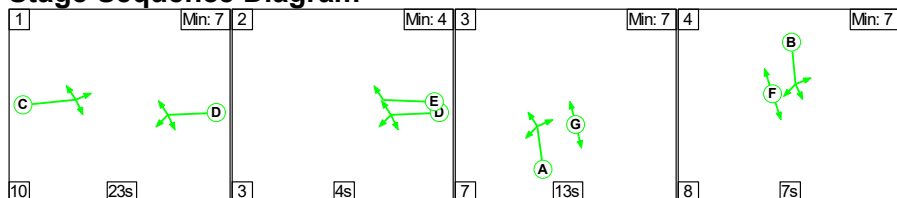
Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	-	-	169	0	123	18.3	24.1	1.4	43.7	-	-	-	-
Unnamed Junction	-	-	169	0	123	18.3	24.1	1.4	43.7	-	-	-	-
1/1	622	622	59	0	38	4.1	8.0	0.5	12.5	72.6	15.2	8.0	23.2
2/1	458	458	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
3/1	841	841	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
4/1	428	428	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	566	566	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/2+6/1	648	648	-	-	-	6.0	5.1	-	11.1	61.9	8.3	5.1	13.4
7/1+7/2	686	686	110	0	85	4.8	4.2	0.9	9.9	51.8	14.8	4.2	19.0
8/1	337	337	-	-	-	3.3	6.8	-	10.1	108.3	8.3	6.8	15.1
Ped Link: P1	0	0	-	-	-	-	-	-	0.0	0.0	-	-	0.0
Ped Link: P2	0	0	-	-	-	-	-	-	0.0	0.0	-	-	0.0
C1			PRC for Signalled Lanes (%):		-7.5	Total Delay for Signalled Lanes (pcuHr):		43.70	Cycle Time (s):		90		
			PRC Over All Lanes (%):		-7.5	Total Delay Over All Lanes(pcuHr):		43.70					

Full Input Data And Results

Scenario 9: '2037 + Dev AM' (FG9: '2037+ Dev AM', Plan 1: 'Network Control Plan 1')

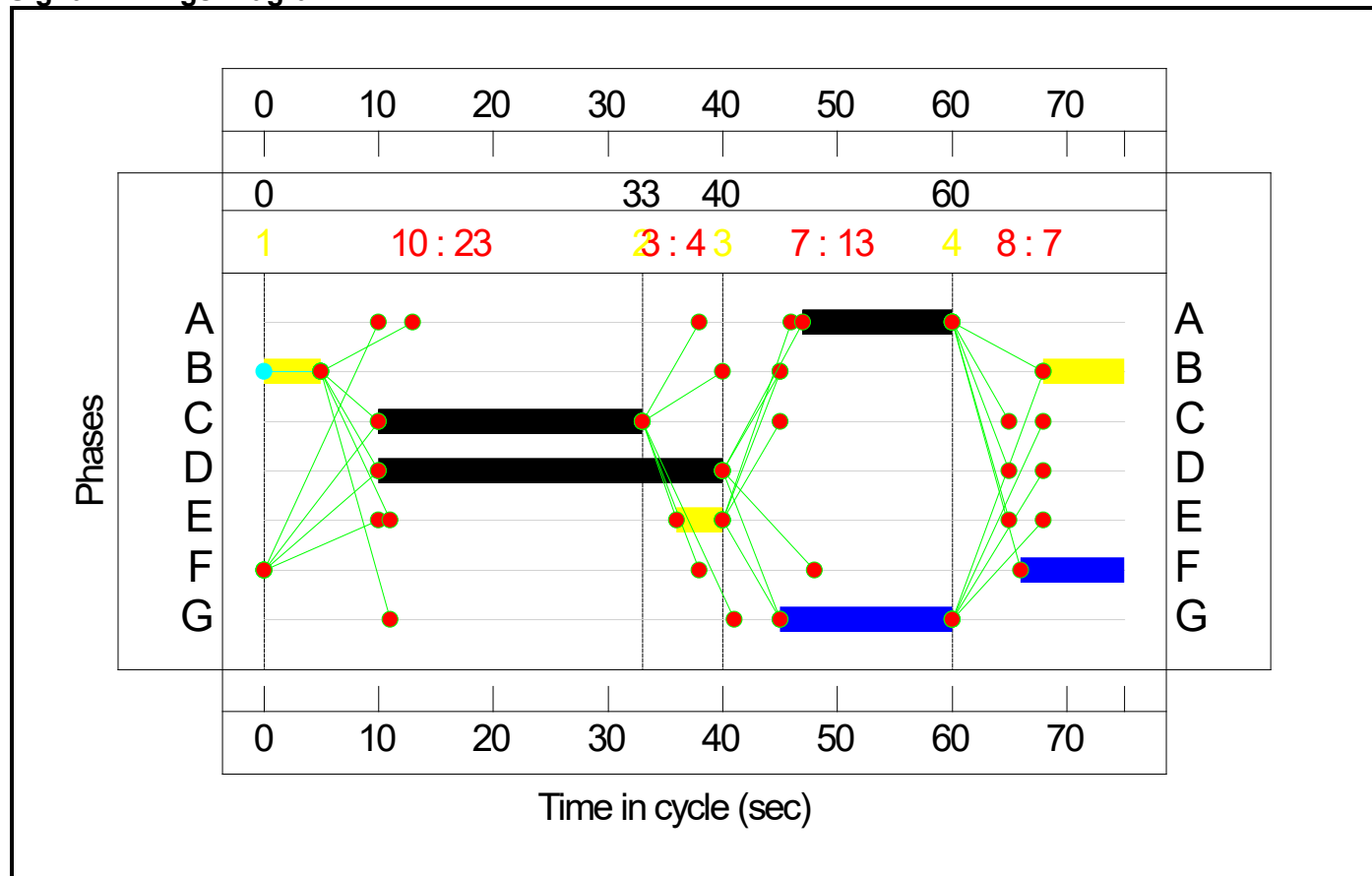
Stage Sequence Diagram




Stage Timings

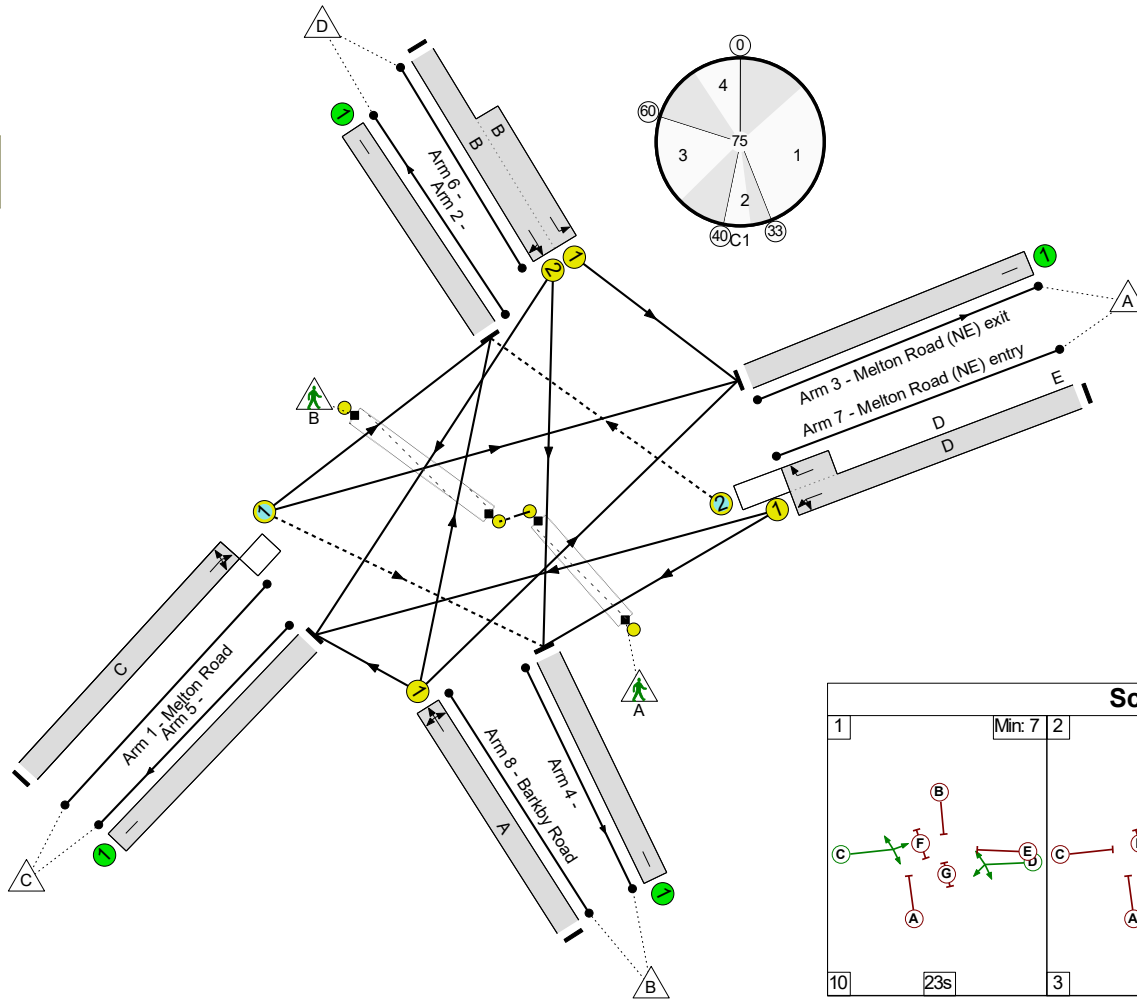
Stage	1	2	3	4
Duration	23	4	13	7
Change Point	0	33	40	60

Signal Timings Diagram



Full Input Data And Results
Network Layout Diagram


 Unnamed Junction
 PRC: 7.2 %
 Total Traffic Delay: 20.9 pcuHr
 Ave. Route Delay Per Ped: 0.0 s/Ped



Scenario '2037 + Dev AM'

1	Min: 7	2	Min: 4	3	Min: 7	4	Min: 7
10	23s	3	4s	7	13s	8	7s

Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	N/A	-	-		-	-	-	-	-	-	84.0%
Unnamed Junction	-	-	N/A	-	-		-	-	-	-	-	-	84.0%
1/1	Melton Road Left Ahead Right	O	N/A	N/A	C		1	23	-	484	1958	627	77.2%
2/1		U	N/A	N/A	-		-	-	-	456	Inf	Inf	0.0%
3/1	Melton Road (NE) exit	U	N/A	N/A	-		-	-	-	637	Inf	Inf	0.0%
4/1		U	N/A	N/A	-		-	-	-	262	Inf	Inf	0.0%
5/1		U	N/A	N/A	-		-	-	-	536	Inf	Inf	0.0%
6/2+6/1	Left Ahead Right	U	N/A	N/A	B		1	12	-	457	1764:1687	306+292	79.8 : 72.8%
7/1+7/2	Melton Road (NE) entry Right Left Ahead	U+O	N/A	N/A	D	E	1	30	4	674	1800:1940	603+200	84.0 : 84.0%
8/1	Barkby Road Ahead Right Left	U	N/A	N/A	A		1	13	-	276	1859	347	79.5%
Ped Link: P1	Unnamed Ped Link	-	N/A	-	G		1	15	-	0	-	14400	0.0%
Ped Link: P2	Unnamed Ped Link	-	N/A	-	F		1	9	-	0	-	8640	0.0%

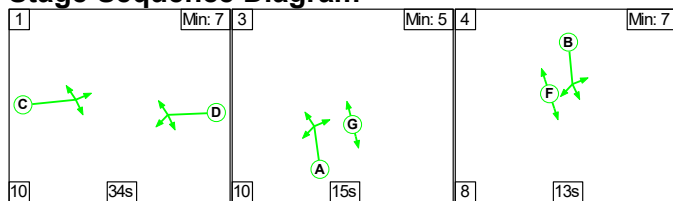
Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	-	-	135	72	7	12.6	7.6	0.7	20.9	-	-	-	-
Unnamed Junction	-	-	135	72	7	12.6	7.6	0.7	20.9	-	-	-	-
1/1	484	484	45	0	0	3.1	1.7	0.2	4.9	36.8	9.0	1.7	10.7
2/1	456	456	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
3/1	637	637	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
4/1	262	262	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	536	536	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/2+6/1	457	457	-	-	-	3.8	1.6	-	5.3	42.0	4.8	1.6	6.4
7/1+7/2	674	674	90	72	7	3.5	2.5	0.5	6.5	34.8	11.4	2.5	13.9
8/1	276	276	-	-	-	2.2	1.8	-	4.1	53.2	5.4	1.8	7.3
Ped Link: P1	0	0	-	-	-	-	-	-	0.0	0.0	-	-	0.0
Ped Link: P2	0	0	-	-	-	-	-	-	0.0	0.0	-	-	0.0
C1			PRC for Signalled Lanes (%):		7.2	Total Delay for Signalled Lanes (pcuHr):		20.88	Cycle Time (s):		75		
			PRC Over All Lanes (%):		7.2	Total Delay Over All Lanes(pcuHr):		20.88					

Full Input Data And Results

Scenario 10: '2037 + Dev PM' (FG10: '2037+ Dev PM', Plan 2: 'Network Control Plan 2')

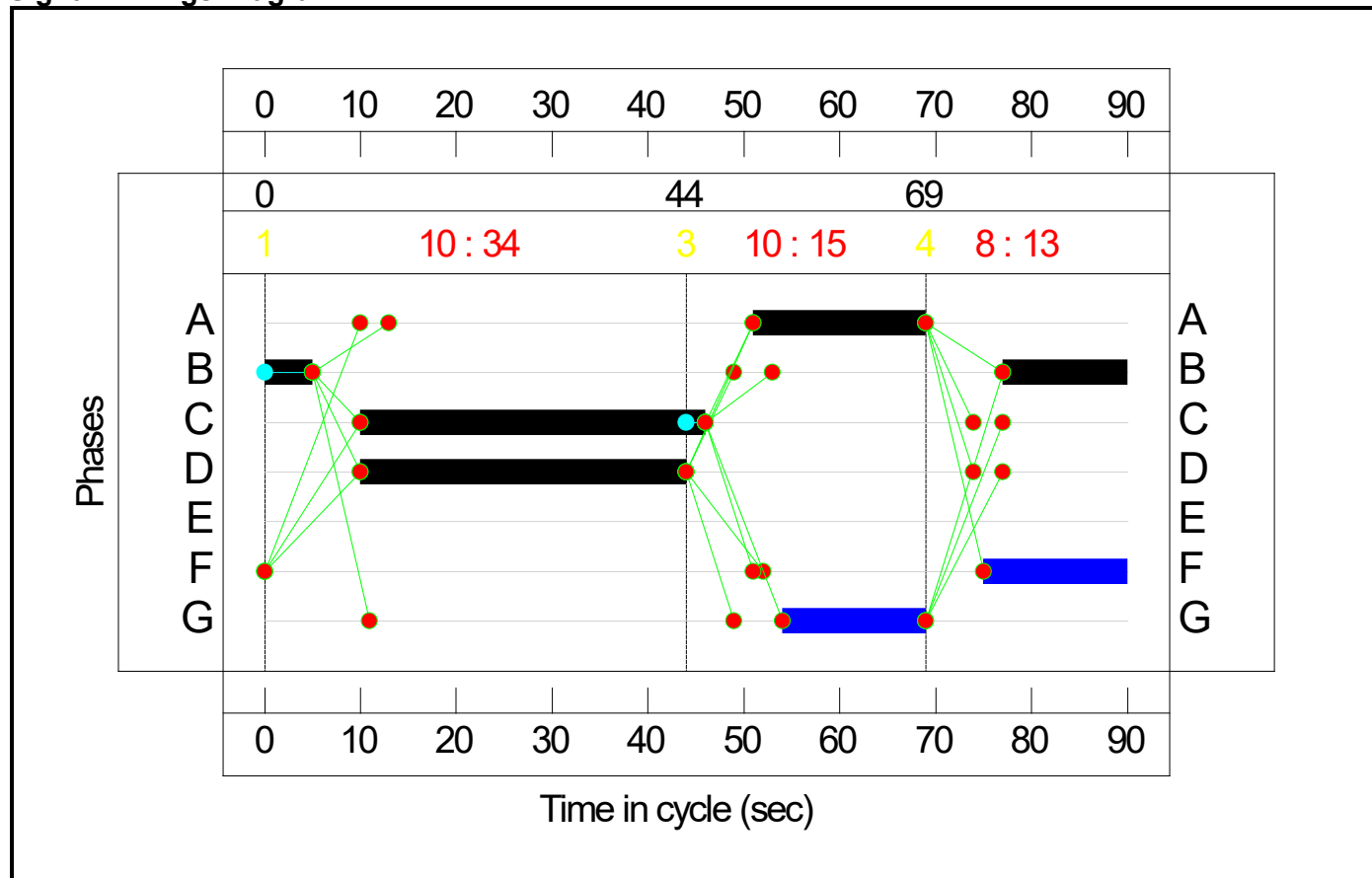
Stage Sequence Diagram




Stage Timings

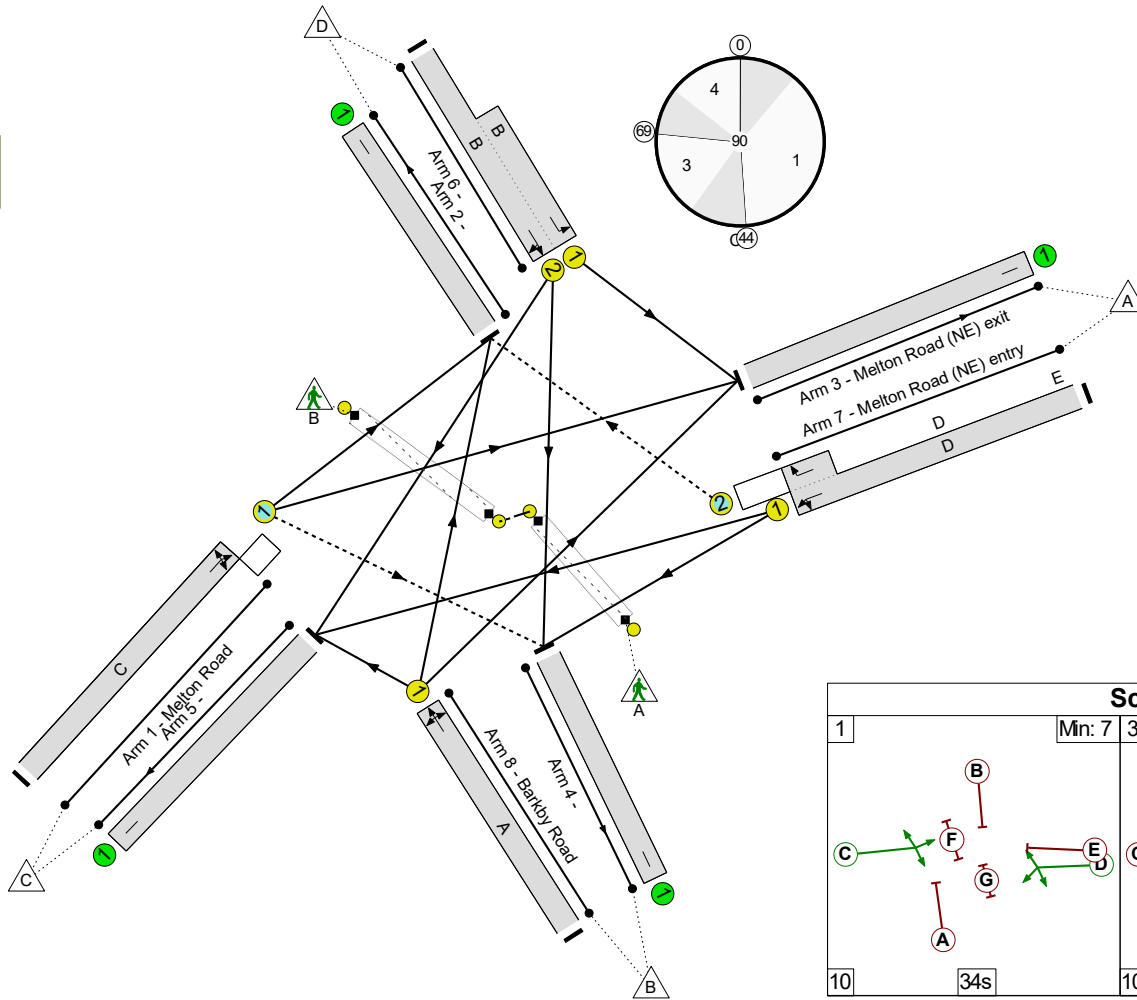
Stage	1	3	4
Duration	34	15	13
Change Point	0	44	69

Signal Timings Diagram



Full Input Data And Results
Network Layout Diagram


Unnamed Junction
 PRC: -9.9 %
 Total Traffic Delay: 49.6 pcuHr
 Ave. Route Delay Per Ped: 0.0 s/Ped



Scenario '2037 + Dev PM'

1	Min: 7	3	Min: 5	4	Min: 7
10	34s	10	15s	8	13s

Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	N/A	-	-		-	-	-	-	-	-	98.9%
Unnamed Junction	-	-	N/A	-	-		-	-	-	-	-	-	98.9%
1/1	Melton Road Left Ahead Right	O	N/A	N/A	C		1	36	-	625	1943	632	98.9%
2/1		U	N/A	N/A	-		-	-	-	474	Inf	Inf	0.0%
3/1	Melton Road (NE) exit	U	N/A	N/A	-		-	-	-	841	Inf	Inf	0.0%
4/1		U	N/A	N/A	-		-	-	-	458	Inf	Inf	0.0%
5/1		U	N/A	N/A	-		-	-	-	567	Inf	Inf	0.0%
6/2+6/1	Left Ahead Right	U	N/A	N/A	B		1	18	-	675	1764:1687	347+356	96.0 : 96.0%
7/1+7/2	Melton Road (NE) entry Right Left Ahead	U+O	N/A	N/A	D	E	1	34	0	686	1800:1940	544+216	90.3 : 90.3%
8/1	Barkby Road Ahead Right Left	U	N/A	N/A	A		1	18	-	354	1747	369	96.0%
Ped Link: P1	Unnamed Ped Link	-	N/A	-	G		1	15	-	0	-	12000	0.0%
Ped Link: P2	Unnamed Ped Link	-	N/A	-	F		1	15	-	0	-	12000	0.0%

Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	-	-	168	0	127	19.0	29.3	1.3	49.6	-	-	-	-
Unnamed Junction	-	-	168	0	127	19.0	29.3	1.3	49.6	-	-	-	-
1/1	625	625	59	0	41	4.2	10.9	0.5	15.6	89.9	15.5	10.9	26.4
2/1	474	474	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
3/1	841	841	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
4/1	458	458	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	567	567	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/2+6/1	675	675	-	-	-	6.5	7.8	-	14.3	76.3	8.5	7.8	16.2
7/1+7/2	686	686	109	0	86	4.8	4.2	0.8	9.8	51.6	14.8	4.2	19.0
8/1	354	354	-	-	-	3.5	6.4	-	9.9	100.3	8.8	6.4	15.2
Ped Link: P1	0	0	-	-	-	-	-	-	0.0	0.0	-	-	0.0
Ped Link: P2	0	0	-	-	-	-	-	-	0.0	0.0	-	-	0.0
C1			PRC for Signalled Lanes (%):		-9.9	Total Delay for Signalled Lanes (pcuHr):		49.60	Cycle Time (s):		90		
			PRC Over All Lanes (%):		-9.9	Total Delay Over All Lanes (pcuHr):		49.60					



Appendix D



Stage 1 Road Safety Audit

Melton Road-High Street Junction, Syston

Proposed Traffic Signals

Date: 30/05/2023

Report produced for: Taylor Wimpey

Report requested by: DTA Transport Planning Consultants

On behalf of: Leicestershire County Council

Report prepared by: Elaine Bingham, Road Safety Consulting Ltd

Reference: RSC/EB/DL/22143

Document Control Sheet

Project Title Melton Road-High Street Junction, Syston
Proposed Traffic Signals

Report Title Stage 1 Road Safety Audit
Reference: RSC/EB/DL/22143

Revision -

Status Final

Control Date 30/05/2023

Record of Issue

Issue	Author	Date	Check	Date	Authorised	Date
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Distribution

Organisation	Contact	Copies
DTA Transport Planning Consultants	Simon Tucker	Ecopy

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Leicestershire
LE8 6EY
Registered in England and Wales
Company Number 5225549

1. Introduction

- 1.1. This report results from a Stage 1 Road Safety Audit carried out on the proposed improvements to the Melton Road-High Street junction in association with a residential development on land north of Barkby Road in Syston. The Audit was carried out during May 2023.
- 1.2. This Road Safety Audit was produced for (client organisation): Taylor Wimpey, requested by (design organisation): DTA Transport Planning Consultants, on behalf of (overseeing organisation): Leicestershire County Council.
- 1.3. The Audit Team membership was as follows:

Audit Team Leader
Elaine Bingham
B Eng (Hons), MCIHT, MSoRSA
Certificate of Competence (Road Safety Audit)

Audit Team Member
Duncan Lord,
IEng, FIHE, Certificate of Competence (Road Safety Audit)
- 1.4. The audit took place at the offices of Road Safety Consulting Ltd between 23rd and 30th May 2023. The audit was undertaken in accordance with the email instruction from Simon Tucker at DTA Transport Planning Consultants. The report has been prepared with reference to DMRB – GG 119 – Road Safety Audit, with exceptions set out in paragraph 2.4
- 1.5. The Audit Team visited the site together on the 23rd May 2023 at 2.00pm. Weather at the time of the audit was sunny and dry. The road surface was dry. Traffic flows were moderate. Pedestrian activity in the area was moderate including pedestrians and a few cyclists were observed.
- 1.6. The audit comprised an examination of the information provided by the Design Organisation and listed in Appendix 1.
- 1.7. The Audit Team has examined and reported only on the road safety implications of the scheme as presented and has not examined or verified the compliance of the designs to any other criteria.
- 1.8. All comments and recommendations are referenced to the design drawing and the locations have been indicated on plans in Appendix 2.

2. Items Considered

2.1. Scheme Proposals

2.1.1. The proposed residential development consists of up to 196 dwellings on land on the northern side of Barkby Lane to the east of Empingham Drive.

2.1.2. The proposed improvements to the Melton Road-High Street junction consists of:

- Converting the existing mini roundabout junction to a traffic signal controlled junction with uncontrolled crossing facilities on all 4 approaches;
- Removing the zebra crossing on Melton Road and providing a controlled crossing within the traffic signal arrangement; and
- Removing the Pelican crossing on Melton Road

2.1.3. The proposals are shown on DTA drawing 20060-03

2.2. Information Provided to the Audit Team

2.2.1. Information that has been provided to the Audit Team, for the purpose of this audit, is as outlined within Appendix 1 of this report.

2.3. Departures from Standards (Design)

2.3.1. The Audit Team has not been advised of any Departures from Standard

2.4. Departures from Standards (Road Safety Audit)

2.4.1. This Road Safety Audit has been produced, with reference to DMRB – GG 119 – Road Safety Audit with the following exception.

- A formally approved Road Safety Audit brief has not been provided by Leicestershire County Council to the Audit Team, however the Audit Team received a supporting email with relevant background data and information, and therefore did not consider that the lack of a formal brief would compromise the production of a Road Safety Audit for these proposals.

3. Items Raised at Previous Road Safety Audits

- 3.1. The Audit Team is not aware of any previous Road Safety Audits being carried on these proposals.

4. Items Raised by this Stage 1 Road Safety Audit

4.1. Walking, Cycling & Horse Riding

4.1.1. Problem

Location: General

Summary: Risk of vulnerable pedestrian collisions with vehicles

The junction falls within the shopping area in Syston, where pedestrian movements and the need to cross at the junction is likely to be high.

The proposal removes the existing staggered zebra crossing and Pelican crossing on Melton Road and replaces them with uncontrolled pedestrian facilities on all arms of the junction and a staggered controlled crossing within the centre of the junction across Melton Road.

A lack of formal facilities requires pedestrians to judge for themselves when to cross while vehicles are stopped at the stop lines, which pedestrians particularly visually impaired, young pedestrians, elderly pedestrians or those with mentally impairments may find it difficult to judge and this may lead to them stepping out into the path of a turning vehicle and being hit and injured.

The staging arrangement of the traffic signals provides little opportunity for pedestrians to cross Barkby Road arm of junction and the size of pedestrian refuge island on the High Street is too narrow to allow pedestrians particularly those with pushchairs, wheelchairs or mobility scooters to shelter whilst they wait to cross.

Recommendation:

It is recommended that appropriate pedestrian facilities should be provided on all arms of the junction, measures may include but not limited to providing a full pedestrian stage, or suitable size pedestrian refuge islands (preferably 2m or 3m wide) to allow walk with traffic.

4.1.2. Problem

Location: High Street and Melton Road(E) approaches

Summary: Risk of overshooting vehicles colliding with pedestrians leading to pedestrian injuries

The short distance between the stop line and pedestrian crossing points on the High Street and Melton Road(E) approaches may increase the risk of vehicles colliding with pedestrians if the overshoot the stop line. In addition drivers of large vehicles can have difficulty in seeing pedestrians and pedestrians can feel intimidated by the proximity of vehicles.

Recommendation:

It is recommended that the distance between stop line and crossing points is increased. TSM Chapter 6 recommends a minimum distance of 3m.

4.1.3. Problem

Location: General

Summary: Risk of collisions involving cyclists leading to rider injury.

No provision for cyclists has been incorporated in the layout of the traffic signal junction. Cyclists are particularly vulnerable when making right turns at the junction.

Cyclists may also be vulnerable if the nearside lane is allocated as a left turn lane on the High Street approach. This is because if they are travelling ahead or turning right, they will have to cycle between lanes with traffic overtaking on both sides.

The lack of cycle facilities at the junction may increase the risk of collisions between cyclists and vehicles leading to rider injury.

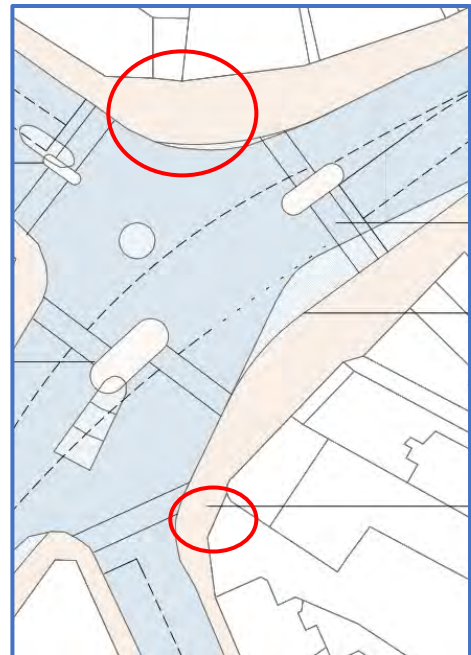
Recommendation:

It is recommended that suitable provision for cyclists should be provided at the traffic signal junction.

4.1.4. Problem

Location: Public House car park and residential access

Summary: Risk of collisions between vehicles exiting the car park and vehicles and pedestrians



The Public House car park access on the north corner of the junction and the residential access on the southeast corner of the junction falls within the junction mouth, and drivers exiting the access may find it difficult to identify a gap in traffic when to exit the car park. This may lead to vehicle to vehicle collisions.

There is also a potential risk of them hitting pedestrians, if they see vehicles stopped at the stop lines and they pull out when the controlled crossing within the centre of junction is green for pedestrians.

Recommendation:

It is recommended that measures are included to allow drivers to safely exit their accesses.

4.2. Alignment

4.2.1. Problem

Location: General

Summary: Insufficient carriageway space for large vehicles to negotiate may lead to vehicle to vehicle collisions or vehicle to pedestrian collisions

No swept path information has been provided to the Audit Team for assessment. Large vehicles may have trouble negotiating the junction. Large vehicles may over-run footways or refuge islands with consequent risk of vehicle to pedestrian collisions, colliding and damage traffic signal equipment or hit other vehicles.

Recommendation:

It is recommended that swept path analysis is checked to ensure that anticipated vehicles can safely negotiate the junction.

4.2.2. Problem

Location: Melton Road - southwest bound approach

Summary: Risk of vehicles hitting CCTV column



The CCTV equipment in the footway may be affected by the revised junction layout. The widening of the carriageway may bring the kerb line closer to the CCTV column. If there is insufficient edge clearance to the column, it may lead to vehicles striking the column and losing control.

Recommendation:

It is recommended that at the detail design stage the edge clearance is checked to ensure that sufficient distance is provided between the kerb edge and the column.

4.2.3. Problem

Location: Melton Road – southern side
Summary: Service covers in carriageway could be a hazard to road users and maintenance personnel



Example location

There are large service covers and a gully located in the existing footway on the southern side of Melton Road, which may be affected by the proposals and be in the new carriageway. This is not ideal as ironwork in the carriageway can be a slip hazard for motorcyclists and cyclists.

Recommendation:

It is recommended that all service covers that will be affected by the highway works should be identified at an early stage, with a view to relocating services into the footway. Where this is not feasible, the need to provide additional strengthening and heavy duty covers with high grip coatings, should be taken into account.

4.2.4. Problem

Location: High Street approach
Summary: Risk of side swipe type collisions



The High Street consists of a two lane approach and it is unclear if drivers travelling straight ahead should use lane 1 or lane 2. If drivers are in the wrong lane when travelling straight ahead into Barkby Road, this could result in side-swipe type collisions.

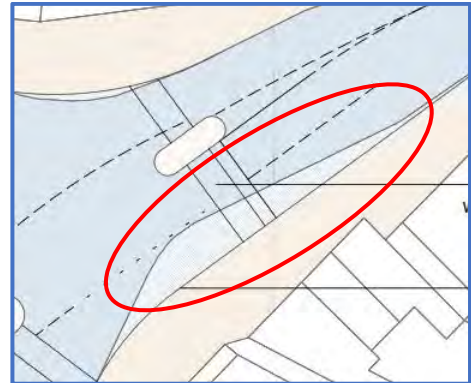
Recommendation:

It is recommended that lane direction arrows are provided on the High Street approach

4.2.5. Problem

Location: Melton Road westbound approach

Summary: Steep crossfall potential hazard for motorcyclists and cyclists leading to fall type injuries



There is a level difference between the carriageway and footway on the south side of Melton Road on the eastern approach. This may result in a steep crossfall in the nearside lane. Steep crossfall may destabilise a motorcyclist or pedal cyclist if they lose their footing when stopping at the stop line, leading to fall type injuries.

Recommendation:

It is recommended that appropriate cross falls are provided.

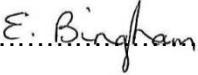
End of Safety Comments

5. Audit Team Statement

We certify that this Stage 1 Road Safety Audit has been carried with reference to GG 119.

Audit Team Leader


Elaine Bingham,
B Eng (Hons), MCIHT, MSoRSA
NH Certificate of Competence (Road Safety Audit)

Signed:  Dated 26th May 2023

Director of Road Safety Consulting Ltd

Audit Team Member

Duncan Lord,
IEng, FIHE
NH Certificate of Competence (Road Safety Audit)

Signed:  Dated 26th May 2023

Consultant working on behalf of Road Safety Consulting Ltd

Road Safety Consulting Ltd
4 Paramore Close
Whetstone
Leicestershire
LE8 6EY

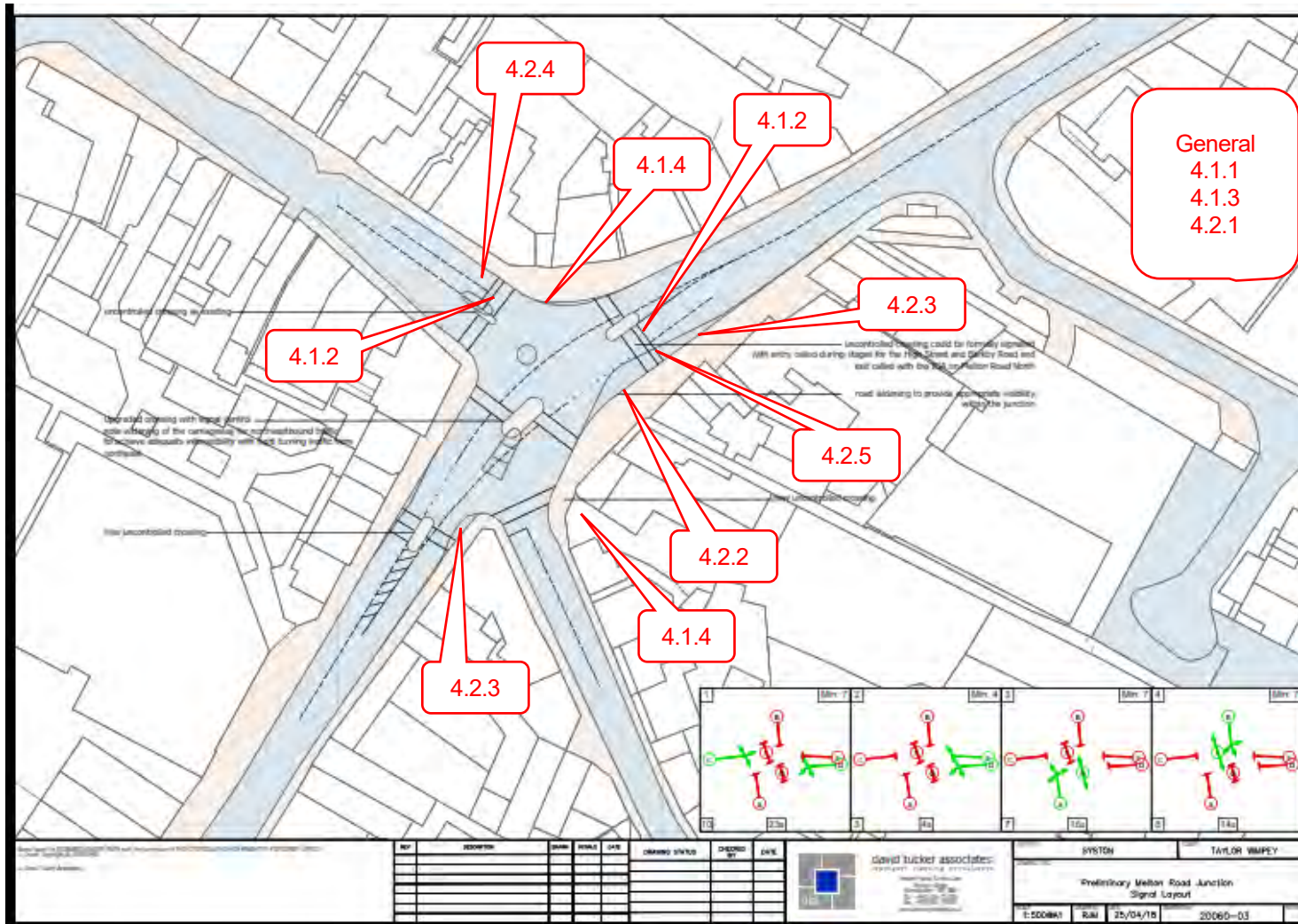
APPENDIX 1: Information Provided

List of Information Provided

Drawing Reference Number	Revision	Title
20060-03	-	Preliminary Melton Road Junction Signal Layout

APPENDIX 2: Drawing Showing Problem Locations

Problem numbers shown on the attached drawing refer to Problem numbers within the report.





Appendix E

SITE:

1

LOCATION:

MELTON ROAD



DATE:

17TH & 18 MAY 2023

DAY:

WEDNESDAY & THURSDAY



JOB TITLE:

SYSTON

JOB NUMBER:

12332
31

SITE:

2

LOCATION:

MELTON ROAD



DATE:

17TH & 18 MAY 2023

DAY:

WEDNESDAY & THURSDAY



JOB TITLE:

SYSTON

JOB NUMBER:

12332

ACTIVITY SURVEY



JOB REF: 12332

JOB NAME: SYSTON

SITE: 1

DATE: 17/05/2023

LOCATION: MELTON ROAD

DAY: WEDNESDAY

ZONE	ARRIVAL TIME (HH:MM:SS)	DEPARTURE TIME (HH:MM:SS)	DWELL TIME	VEHICLE TYPE
1	06:55:14	06:55:32	00:00:18	CAR
1	07:20:18	07:25:56	00:05:38	CAR
1	09:32:49	09:34:41	00:01:52	CAR
1	09:42:17	09:49:42	00:07:25	CAR
1	09:47:23	10:22:43	00:35:20	CAR
1	09:59:08	10:05:13	00:06:05	OG1
1	10:10:11	10:13:01	00:02:50	CAR
1	10:37:20	10:41:25	00:04:05	CAR
1	12:30:02	16:08:12	03:38:10	CAR
1	13:04:28	14:26:00	01:21:32	CAR
1	14:22:10	14:23:25	00:01:15	CAR
1	15:23:13	15:23:34	00:00:21	CAR
1	15:39:18	15:55:12	00:15:54	CAR
1	15:40:25	16:50:00	01:09:35	CAR
1	16:23:08	16:33:38	00:10:30	CAR
1	16:25:37	16:26:12	00:00:35	CAR
1	16:43:50	17:07:34	00:23:44	CAR
1	16:55:57	17:01:48	00:05:51	CAR
1	18:53:15	AT END	N/A	CAR

ACTIVITY SURVEY



JOB REF: 12332

JOB NAME: SYSTON

SITE: 1

DATE: 18/05/2023

LOCATION: MELTON ROAD

DAY: THURSDAY

ZONE	ARRIVAL TIME (HH:MM:SS)	DEPARTURE TIME (HH:MM:SS)	DWELL TIME	VEHICLE TYPE
1	07:06:51	07:07:22	00:00:31	CAR
1	07:36:29	07:36:41	00:00:12	CAR
1	09:20:25	10:03:43	00:43:18	CAR
1	10:02:45	10:06:21	00:03:36	CAR
1	10:10:56	10:16:54	00:05:58	CAR
1	10:19:29	10:43:37	00:24:08	CAR
1	10:38:40	10:45:16	00:06:36	CAR
1	10:50:06	10:57:21	00:07:15	CAR
1	10:54:11	10:56:36	00:02:25	CAR
1	12:00:29	13:20:30	01:20:01	CAR
1	12:23:52	12:57:18	00:33:26	CAR
1	13:21:41	13:22:25	00:00:44	LGV
1	13:30:33	13:31:09	00:00:36	CAR
1	16:02:59	16:19:28	00:16:29	CAR
1	16:03:00	16:06:22	00:03:22	CAR
1	16:31:50	16:32:51	00:01:01	CAR
1	17:51:15	18:17:04	00:25:49	CAR

ACTIVITY SURVEY



JOB REF: 12332

JOB NAME: SYSTON

SITE: 2

DATE: 17/05/2023

LOCATION: MELTON ROAD

DAY: WEDNESDAY

ZONE	ARRIVAL TIME (HH:MM:SS)	DEPARTURE TIME (HH:MM:SS)	DWELL TIME	VEHICLE TYPE
2	07:02:43	07:03:09	00:00:26	CAR
2	08:40:21	08:45:05	00:04:44	CAR
2	09:33:39	09:43:30	00:09:51	CAR
2	09:37:16	09:52:27	00:15:11	CAR
2	10:05:46	10:09:45	00:03:59	LGV
2	11:18:49	11:22:42	00:03:53	LGV
2	11:35:32	11:51:11	00:15:39	CAR
2	11:45:22	11:49:59	00:04:37	CAR
2	11:54:06	12:09:15	00:15:09	CAR
2	11:56:08	12:14:58	00:18:50	CAR
2	13:19:09	13:30:55	00:11:46	CAR
2	13:43:36	13:47:58	00:04:22	CAR
2	13:51:32	13:54:46	00:03:14	CAR
2	15:46:15	15:53:00	00:06:45	CAR
2	16:16:27	16:16:39	00:00:12	CAR
2	16:20:40	17:34:32	01:13:52	CAR
2	16:25:45	16:45:30	00:19:45	CAR
2	16:48:59	16:54:30	00:05:31	CAR
2	16:52:44	17:42:32	00:49:48	CAR
2	17:52:18	17:56:43	00:04:25	CAR
2	17:53:14	17:57:23	00:04:09	CAR
2	18:02:57	18:38:15	00:35:18	CAR
2	18:19:27	18:36:53	00:17:26	CAR
2	18:37:04	18:38:34	00:01:30	CAR

ACTIVITY SURVEY



JOB REF: 12332

JOB NAME: SYSTON

SITE: 2

DATE: 18/05/2023

LOCATION: MELTON ROAD

DAY: THURSDAY

ZONE	ARRIVAL TIME (HH:MM:SS)	DEPARTURE TIME (HH:MM:SS)	DWELL TIME	VEHICLE TYPE
2	08:37:13	09:01:40	00:24:27	CAR
2	09:22:12	09:34:55	00:12:43	CAR
2	09:47:53	09:51:15	00:03:22	LGV
2	09:49:32	10:03:59	00:14:27	CAR
2	09:51:50	09:55:01	00:03:11	LGV
2	10:24:14	10:44:45	00:20:31	CAR
2	10:43:12	10:46:57	00:03:45	CAR
2	10:57:21	11:01:36	00:04:15	LGV
2	11:21:11	13:06:02	01:44:51	CAR
2	11:25:44	11:26:43	00:00:59	CAR
2	12:23:34	12:44:01	00:20:27	CAR
2	12:24:09	12:51:28	00:27:19	LGV
2	13:46:11	13:52:36	00:06:25	CAR
2	13:46:31	13:50:28	00:03:57	CAR
2	14:47:48	14:51:10	00:03:22	CAR
2	14:49:33	15:55:38	01:06:05	CAR
2	14:55:02	15:05:10	00:10:08	OG1
2	15:32:45	15:39:59	00:07:14	LGV
2	15:50:10	15:54:41	00:04:31	CAR
2	15:59:09	16:32:06	00:32:57	CAR
2	15:59:24	16:12:11	00:12:47	CAR
2	16:00:15	16:20:46	00:20:31	CAR
2	16:16:16	16:36:45	00:20:29	CAR
2	16:41:55	16:47:31	00:05:36	CAR
2	16:52:48	17:14:17	00:21:29	CAR
2	17:29:01	17:35:40	00:06:39	CAR
2	17:34:50	17:37:46	00:02:56	CAR
2	18:01:59	18:17:44	00:15:45	CAR
2	18:03:54	18:19:06	00:15:12	CAR
2	18:17:29	18:21:50	00:04:21	CAR



Appendix F

Junctions 10
PICADY 10 - Priority Intersection Module
Version: 10.0.4.1693 © Copyright TRL Software Limited, 2021
For sales and distribution information, program advice and maintenance, contact TRL Software: +44 (0)1344 379777 software@trl.co.uk trlsoftware.com
The users of this computer program for the solution of an engineering problem are in no way relieved of their responsibility for the correctness of the solution

Filename: Melton - Goodes Assessment RevB LCC Geometry Comment.j10
Path: P:\20000's\20060\Technical\Junction Modelling\2023 Assessments\Feb 2023
Report generation date: 27/06/2023 17:34:17

- »2022, AM
- »2022, PM
- »2027, AM
- »2027, PM
- »2027 + Development, AM
- »2027 + Development, PM
- »2022 CF, AM
- »2022 CF, PM
- »2027 CF, AM
- »2027 CF, PM
- »2027 + Development CF, AM
- »2027 + Development CF, PM
- »2037, AM
- »2037, PM
- »2037 + Dev, AM
- »2037 + Dev, PM

Summary of junction performance

	AM			PM		
	Q (PCU)	Delay (s)	RFC	Q (PCU)	Delay (s)	RFC
2022						
Stream B-C	1.9	21.18	0.66	0.4	10.28	0.30
Stream B-A	0.2	21.31	0.19	0.1	18.93	0.09
Stream C-AB	1.2	7.68	0.40	5.9	21.71	0.79
2027						
Stream B-C	2.3	24.58	0.70	0.5	10.74	0.32
Stream B-A	0.3	25.08	0.22	0.1	20.87	0.11
Stream C-AB	1.4	8.00	0.43	8.4	30.37	0.85
2027 + Development						
Stream B-C	3.0	30.63	0.76	0.5	11.35	0.35
Stream B-A	0.4	31.28	0.26	0.1	23.02	0.12
Stream C-AB	1.6	8.63	0.47	15.8	58.67	0.94
2022 CF						
Stream B-C	1.3	14.38	0.57	0.4	10.51	0.31
Stream B-A	0.2	13.83	0.13	0.1	19.88	0.10
Stream C-AB	0.9	6.59	0.36	7.0	25.54	0.82
2027 CF						
Stream B-C	2.5	26.41	0.72	0.5	11.01	0.33
Stream B-A	0.3	27.13	0.24	0.1	22.13	0.11
Stream C-AB	1.4	8.14	0.44	10.7	38.48	0.89
2027 + Development CF						
Stream B-C	3.4	33.49	0.78	0.6	11.62	0.36
Stream B-A	0.4	35.01	0.28	0.1	24.76	0.12
Stream C-AB	1.7	8.85	0.49	20.0	75.13	0.97
2037						
Stream B-C	4.5	44.68	0.84	0.6	12.59	0.38
Stream B-A	0.7	54.77	0.41	0.2	32.64	0.17
Stream C-AB	2.0	9.27	0.52	34.4	123.36	1.03
2037 + Dev						
Stream B-C	7.0	65.74	0.91	0.7	13.61	0.42
Stream B-A	1.5	122.86	0.64	0.3	39.73	0.20
Stream C-AB	2.4	10.25	0.57	52.6	183.22	1.09

There are warnings associated with one or more model runs - see the 'Data Errors and Warnings' tables for each Analysis or Demand Set.

Values shown are the highest values encountered over all time segments. Delay is the maximum value of Av. delay per arriving vehicle.

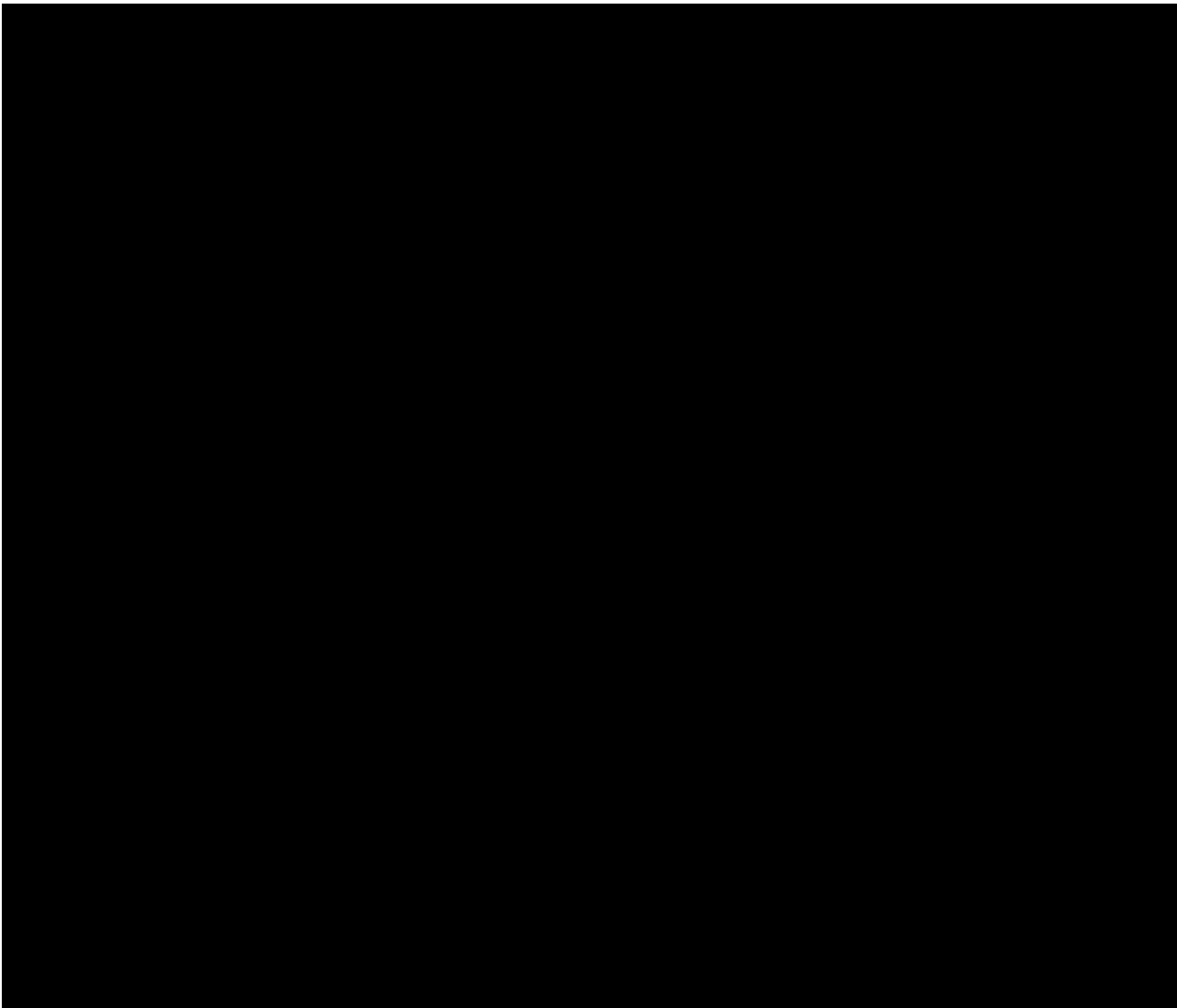
File summary

File Description

Title	(untitled)
Location	
Site number	
Date	11/04/2018
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	DTA\Arcady
Description	

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Av. delay units	Total delay units	Rate of delay units
m	kph	PCU	PCU	perHour	s	-Min	perMin



The junction diagram reflects the last run of Junctions.

Analysis Options

Vehicle length (m)	Calculate Q Percentiles	Calculate detailed queueing delay	Show lane queues in feet / metres	Show all PICADY stream intercepts	Calculate residual capacity	RFC Threshold	Av. Delay threshold (s)	Q threshold (PCU)	Use iterations with HCM roundabouts	Max number of iterations for roundabouts
5.75						0.85	36.00	20.00		500

Demand Set Summary

ID	Scenario name	Time Period name	Description	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2022	AM		ONE HOUR	07:45	09:15	15	✓
D2	2022	PM		ONE HOUR	16:45	18:15	15	✓
D5	2027	AM		ONE HOUR	07:45	09:15	15	✓
D6	2027	PM		ONE HOUR	16:45	18:15	15	✓
D7	2027 + Development	AM		ONE HOUR	07:45	09:15	15	✓
D8	2027 + Development	PM		ONE HOUR	16:45	18:15	15	✓
D9	2022 CF	AM	Covid Factor	ONE HOUR	07:45	09:15	15	✓
D10	2022 CF	PM	Covid Factor	ONE HOUR	16:45	18:15	15	✓
D11	2027 CF	AM	Covid Factor	ONE HOUR	07:45	09:15	15	✓
D12	2027 CF	PM	Covid Factor	ONE HOUR	16:45	18:15	15	✓
D13	2027 + Development CF	AM	Covid Factor	ONE HOUR	07:45	09:15	15	✓
D14	2027 + Development CF	PM	Covid Factor	ONE HOUR	16:45	18:15	15	✓
D15	2037	AM	Covid Factor	ONE HOUR	07:45	09:15	15	✓
D16	2037	PM	Covid Factor	ONE HOUR	16:45	18:15	15	✓
D17	2037 + Dev	AM	Covid Factor	ONE HOUR	07:45	09:15	15	✓
D18	2037 + Dev	PM	Covid Factor	ONE HOUR	16:45	18:15	15	✓

Analysis Set Details

ID	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	✓	100.000	100.000

2022, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Major arm width	Arm C - Major arm geometry	For two-way major roads, please interpret results with caution if the total major carriageway width is less than 6m.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	Two-way	Two-way		6.49	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	6.49	A

Arms

Arms

Arm	Name	Description	Arm type
A	Melton Road N		Major
B	Goodes Lane		Minor
C	Melton Road S		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right-turn storage	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C	5.80			114.0	✓	0.00

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relevant) are measured opposite Arm D.

Minor Arm Geometry

Arm	Minor arm type	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate flare length	Flare length (PCU)	Visibility to left (m)	Visibility to right (m)
B	One lane plus flare	10.00	4.26	2.98	2.94	2.89		1.00	53	23

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
B-A	607	0.112	0.282	0.177	0.403
B-C	678	0.105	0.265	-	-
C-B	640	0.250	0.250	-	-

The slopes and intercepts shown above include custom intercept adjustments only.

Streams may be combined, in which case capacity will be adjusted.

Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2022	AM	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Av. Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	532	100.000
B		ONE HOUR	✓	339	100.000
C		ONE HOUR	✓	551	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
	A	B	C	
From	A	0	24	508
	B	38	0	301
	C	418	133	0

Vehicle Mix

HV %s

	To			
	A	B	C	
From	A	0	3	4
	B	8	0	1
	C	6	4	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.66	21.18	1.9	C	276	414
B-A	0.19	21.31	0.2	C	35	52
C-AB	0.40	7.68	1.2	A	245	367
C-A					261	391
A-B					22	33
A-C					466	699

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	227	57	563	0.402	224	0.0	0.7	10.637	B
B-A	29	7	378	0.076	28	0.0	0.1	11.111	B
C-AB	171	43	760	0.225	169	0.0	0.5	6.378	A
C-A	244	61			244				
A-B	18	5			18				
A-C	382	96			382				

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	271	68	539	0.502	269	0.7	1.0	13.418	B
B-A	34	9	319	0.107	34	0.1	0.1	13.638	B
C-AB	230	57	788	0.292	229	0.5	0.7	6.764	A
C-A	266	66			266				
A-B	22	5			22				
A-C	457	114			457				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	331	83	503	0.659	328	1.0	1.8	20.424	C
B-A	42	10	227	0.184	41	0.1	0.2	20.896	C
C-AB	332	83	828	0.401	330	0.7	1.2	7.610	A
C-A	275	69			275				
A-B	26	7			26				
A-C	559	140			559				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	331	83	502	0.660	331	1.8	1.9	21.183	C
B-A	42	10	224	0.187	42	0.2	0.2	21.315	C
C-AB	333	83	829	0.401	333	1.2	1.2	7.675	A
C-A	274	68			274				
A-B	26	7			26				
A-C	559	140			559				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	271	68	538	0.503	274	1.9	1.0	13.916	B
B-A	34	9	316	0.108	35	0.2	0.1	13.839	B
C-AB	231	58	789	0.292	233	1.2	0.7	6.847	A
C-A	265	66			265				
A-B	22	5			22				
A-C	457	114			457				

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	227	57	563	0.403	228	1.0	0.7	10.905	B
B-A	29	7	376	0.076	29	0.1	0.1	11.214	B
C-AB	172	43	761	0.226	173	0.7	0.5	6.446	A
C-A	243	61			243				
A-B	18	5			18				
A-C	382	96			382				

2022, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Major arm width	Arm C - Major arm geometry	For two-way major roads, please interpret results with caution if the total major carriageway width is less than 6m.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	Two-way	Two-way		9.25	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	9.25	A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D2	2022	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Av. Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	582	100.000
B		ONE HOUR	✓	156	100.000
C		ONE HOUR	✓	713	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	54	528
	B	19	0	137
	C	472	241	0

Vehicle Mix

HV %s

		To		
		A	B	C
From	A	0	3	4
	B	8	0	1
	C	6	4	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.30	10.28	0.4	B	126	189
B-A	0.09	18.93	0.1	C	17	26
C-AB	0.79	21.71	5.9	C	492	739
C-A					162	243
A-B					50	74
A-C					485	727

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	103	26	562	0.183	102	0.0	0.2	7.890	A
B-A	14	4	353	0.041	14	0.0	0.0	11.481	B
C-AB	333	83	781	0.426	328	0.0	1.1	8.314	A
C-A	204	51			204				
A-B	41	10			41				
A-C	398	99			398				

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	123	31	539	0.229	123	0.2	0.3	8.736	A
B-A	17	4	301	0.057	17	0.0	0.1	13.697	B
C-AB	456	114	815	0.560	453	1.1	2.0	10.478	B
C-A	185	46			185				
A-B	49	12			49				
A-C	475	119			475				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	151	38	505	0.299	150	0.3	0.4	10.244	B
B-A	21	5	230	0.091	21	0.1	0.1	18.595	C
C-AB	677	169	864	0.783	663	2.0	5.4	18.938	C
C-A	108	27			108				
A-B	59	15			59				
A-C	581	145			581				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	151	38	504	0.299	151	0.4	0.4	10.283	B
B-A	21	5	226	0.092	21	0.1	0.1	18.934	C
C-AB	687	172	870	0.789	685	5.4	5.9	21.713	C
C-A	98	25			98				
A-B	59	15			59				
A-C	581	145			581				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	123	31	538	0.229	124	0.4	0.3	8.775	A
B-A	17	4	296	0.058	17	0.1	0.1	13.958	B
C-AB	465	116	824	0.565	480	5.9	2.2	11.686	B
C-A	176	44			176				
A-B	49	12			49				
A-C	475	119			475				

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	103	26	562	0.184	103	0.3	0.2	7.932	A
B-A	14	4	350	0.041	14	0.1	0.0	11.588	B
C-AB	337	84	784	0.429	341	2.2	1.2	8.666	A
C-A	200	50			200				
A-B	41	10			41				
A-C	398	99			398				

2027, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Major arm width	Arm C - Major arm geometry	For two-way major roads, please interpret results with caution if the total major carriageway width is less than 6m.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	Two-way	Two-way		7.43	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	7.43	A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D5	2027	AM	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Av. Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	555	100.000
B		ONE HOUR	✓	354	100.000
C		ONE HOUR	✓	575	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	25	530
	B	40	0	314
	C	436	139	0

Vehicle Mix

HV %s

		To		
		A	B	C
From	A	0	3	4
	B	8	0	1
	C	6	4	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.70	24.58	2.3	C	288	432
B-A	0.22	25.08	0.3	D	37	55
C-AB	0.43	8.00	1.4	A	265	397
C-A					263	395
A-B					23	34
A-C					486	730

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	236	59	558	0.424	233	0.0	0.7	11.115	B
B-A	30	8	366	0.082	30	0.0	0.1	11.566	B
C-AB	183	46	766	0.239	181	0.0	0.5	6.446	A
C-A	250	62			250				
A-B	19	5			19				
A-C	399	100			399				

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	282	71	532	0.531	281	0.7	1.1	14.379	B
B-A	36	9	302	0.119	36	0.1	0.1	14.575	B
C-AB	248	62	796	0.311	247	0.5	0.8	6.897	A
C-A	269	67			269				
A-B	22	6			22				
A-C	476	119			476				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	346	86	493	0.701	341	1.1	2.2	23.328	C
B-A	44	11	203	0.217	43	0.1	0.3	24.306	C
C-AB	361	90	838	0.431	359	0.8	1.3	7.917	A
C-A	272	68			272				
A-B	28	7			28				
A-C	584	146			584				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	346	86	492	0.702	345	2.2	2.3	24.582	C
B-A	44	11	199	0.221	44	0.3	0.3	25.079	D
C-AB	362	91	840	0.432	362	1.3	1.4	8.001	A
C-A	271	68			271				
A-B	28	7			28				
A-C	584	146			584				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	282	71	531	0.531	287	2.3	1.2	15.105	C
B-A	36	9	298	0.121	37	0.3	0.2	14.885	B
C-AB	249	62	797	0.312	251	1.4	0.8	6.991	A
C-A	268	67			268				
A-B	22	6			22				
A-C	476	119			476				

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	236	59	557	0.424	238	1.2	0.8	11.443	B
B-A	30	8	363	0.083	30	0.2	0.1	11.695	B
C-AB	184	46	767	0.240	185	0.8	0.5	6.523	A
C-A	248	62			248				
A-B	19	5			19				
A-C	399	100			399				

2027, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Major arm width	Arm C - Major arm geometry	For two-way major roads, please interpret results with caution if the total major carriageway width is less than 6m.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	Two-way	Two-way		13.00	B

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	13.00	B

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D6	2027	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Av. Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	606	100.000
B		ONE HOUR	✓	163	100.000
C		ONE HOUR	✓	743	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	56	550
	B	20	0	143
	C	492	251	0

Vehicle Mix

HV %s

		To		
		A	B	C
From	A	0	3	4
	B	8	0	1
	C	6	4	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.32	10.74	0.5	B	131	197
B-A	0.11	20.87	0.1	C	18	28
C-AB	0.85	30.37	8.4	D	535	802
C-A					147	220
A-B					51	77
A-C					505	757

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	108	27	557	0.193	107	0.0	0.2	8.054	A
B-A	15	4	342	0.044	15	0.0	0.0	11.884	B
C-AB	357	89	788	0.452	351	0.0	1.3	8.620	A
C-A	203	51			203				
A-B	42	11			42				
A-C	414	104			414				

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	129	32	533	0.241	128	0.2	0.3	8.985	A
B-A	18	4	288	0.063	18	0.0	0.1	14.408	B
C-AB	492	123	824	0.597	488	1.3	2.3	11.304	B
C-A	176	44			176				
A-B	50	13			50				
A-C	494	124			494				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	157	39	496	0.317	157	0.3	0.5	10.691	B
B-A	22	6	213	0.103	22	0.1	0.1	20.288	C
C-AB	738	184	876	0.842	718	2.3	7.3	23.916	C
C-A	80	20			80				
A-B	62	15			62				
A-C	606	151			606				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	157	39	496	0.318	157	0.5	0.5	10.744	B
B-A	22	6	208	0.106	22	0.1	0.1	20.873	C
C-AB	754	188	886	0.851	750	7.3	8.4	30.373	D
C-A	64	16			64				
A-B	62	15			62				
A-C	606	151			606				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	129	32	532	0.242	129	0.5	0.3	9.034	A
B-A	18	4	280	0.064	18	0.1	0.1	14.838	B
C-AB	507	127	838	0.605	530	8.4	2.7	13.555	B
C-A	161	40			161				
A-B	50	13			50				
A-C	494	124			494				

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	108	27	557	0.193	108	0.3	0.2	8.104	A
B-A	15	4	339	0.044	15	0.1	0.1	12.020	B
C-AB	361	90	792	0.456	367	2.7	1.4	9.074	A
C-A	198	49			198				
A-B	42	11			42				
A-C	414	104			414				

2027 + Development, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Major arm width	Arm C - Major arm geometry	For two-way major roads, please interpret results with caution if the total major carriageway width is less than 6m.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	Two-way	Two-way		9.45	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	9.45	A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D7	2027 + Development	AM	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Av. Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	555	100.000
B		ONE HOUR	✓	380	100.000
C		ONE HOUR	✓	588	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	25	530
	B	40	0	340
	C	436	152	0

Vehicle Mix

HV %s

		To		
		A	B	C
From	A	0	3	4
	B	8	0	1
	C	6	4	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.76	30.63	3.0	D	312	468
B-A	0.26	31.28	0.4	D	37	55
C-AB	0.47	8.63	1.6	A	289	434
C-A					250	375
A-B					23	34
A-C					486	730

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	256	64	558	0.459	253	0.0	0.8	11.801	B
B-A	30	8	355	0.085	30	0.0	0.1	11.953	B
C-AB	200	50	766	0.261	198	0.0	0.6	6.635	A
C-A	242	61			242				
A-B	19	5			19				
A-C	399	100			399				

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	306	76	532	0.575	304	0.8	1.3	15.824	C
B-A	36	9	285	0.126	36	0.1	0.2	15.571	C
C-AB	271	68	796	0.340	270	0.6	0.9	7.197	A
C-A	258	64			258				
A-B	22	6			22				
A-C	476	119			476				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	374	94	492	0.762	368	1.3	2.9	28.118	D
B-A	44	11	174	0.253	43	0.2	0.4	29.490	D
C-AB	395	99	839	0.471	392	0.9	1.6	8.511	A
C-A	253	63			253				
A-B	28	7			28				
A-C	584	146			584				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	374	94	491	0.763	374	2.9	3.0	30.632	D
B-A	44	11	168	0.262	44	0.4	0.4	31.276	D
C-AB	396	99	840	0.472	396	1.6	1.6	8.626	A
C-A	251	63			251				
A-B	28	7			28				
A-C	584	146			584				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	306	76	531	0.576	312	3.0	1.4	17.082	C
B-A	36	9	279	0.129	37	0.4	0.2	16.108	C
C-AB	272	68	798	0.342	275	1.6	0.9	7.322	A
C-A	256	64			256				
A-B	22	6			22				
A-C	476	119			476				

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	256	64	557	0.459	258	1.4	0.9	12.249	B
B-A	30	8	351	0.086	30	0.2	0.1	12.123	B
C-AB	202	50	767	0.263	203	0.9	0.6	6.728	A
C-A	241	60			241				
A-B	19	5			19				
A-C	399	100			399				

2027 + Development, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Major arm width	Arm C - Major arm geometry	For two-way major roads, please interpret results with caution if the total major carriageway width is less than 6m.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	Two-way	Two-way		25.90	D

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	25.90	D

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D8	2027 + Development	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Av. Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	606	100.000
B		ONE HOUR	✓	178	100.000
C		ONE HOUR	✓	768	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	56	550
	B	20	0	158
	C	492	276	0

Vehicle Mix

HV %s

		To		
		A	B	C
From	A	0	3	4
	B	8	0	1
	C	6	4	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.35	11.35	0.5	B	145	217
B-A	0.12	23.02	0.1	C	18	28
C-AB	0.94	58.67	15.8	F	594	890
C-A					111	167
A-B					51	77
A-C					505	757

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	119	30	557	0.214	118	0.0	0.3	8.260	A
B-A	15	4	333	0.045	15	0.0	0.1	12.195	B
C-AB	392	98	788	0.498	386	0.0	1.5	9.350	A
C-A	186	47			186				
A-B	42	11			42				
A-C	414	104			414				

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	142	36	532	0.267	142	0.3	0.4	9.303	A
B-A	18	4	277	0.065	18	0.1	0.1	14.991	B
C-AB	541	135	824	0.657	536	1.5	2.9	13.170	B
C-A	149	37			149				
A-B	50	13			50				
A-C	494	124			494				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	174	43	495	0.351	173	0.4	0.5	11.266	B
B-A	22	6	200	0.110	22	0.1	0.1	21.823	C
C-AB	813	203	877	0.927	777	2.9	11.8	36.428	E
C-A	33	8			33				
A-B	62	15			62				
A-C	606	151			606				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	174	43	494	0.352	174	0.5	0.5	11.347	B
B-A	22	6	191	0.115	22	0.1	0.1	23.018	C
C-AB	843	211	894	0.943	827	11.8	15.8	58.669	F
C-A	2	0.59			2				
A-B	62	15			62				
A-C	606	151			606				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	142	36	531	0.267	143	0.5	0.4	9.371	A
B-A	18	4	263	0.068	18	0.1	0.1	15.915	C
C-AB	573	143	851	0.673	622	15.8	3.6	20.755	C
C-A	117	29			117				
A-B	50	13			50				
A-C	494	124			494				

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	119	30	557	0.214	119	0.4	0.3	8.319	A
B-A	15	4	329	0.046	15	0.1	0.1	12.378	B
C-AB	399	100	794	0.502	407	3.6	1.6	10.077	B
C-A	179	45			179				
A-B	42	11			42				
A-C	414	104			414				

2022 CF, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Major arm width	Arm C - Major arm geometry	For two-way major roads, please interpret results with caution if the total major carriageway width is less than 6m.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	Two-way	Two-way		5.79	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	5.79	A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Description	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D9	2022 CF	AM	Covid Factor	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Av. Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	242	100.000
B		ONE HOUR	✓	346	100.000
C		ONE HOUR	✓	563	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	24	218
	B	39	0	307
	C	427	136	0

Vehicle Mix

HV %s

		To		
		A	B	C
From	A	0	3	4
	B	8	0	1
	C	6	4	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.57	14.38	1.3	B	282	423
B-A	0.13	13.83	0.2	B	36	54
C-AB	0.36	6.59	0.9	A	238	357
C-A					279	418
A-B					22	33
A-C					200	300

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	231	58	621	0.372	229	0.0	0.6	9.207	A
B-A	29	7	439	0.067	29	0.0	0.1	9.470	A
C-AB	170	42	810	0.210	168	0.0	0.4	5.875	A
C-A	254	64			254				
A-B	18	5			18				
A-C	164	41			164				

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	276	69	609	0.453	275	0.6	0.8	10.855	B
B-A	35	9	395	0.089	35	0.1	0.1	10.798	B
C-AB	225	56	845	0.266	224	0.4	0.6	6.091	A
C-A	281	70			281				
A-B	22	5			22				
A-C	196	49			196				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	338	85	591	0.572	336	0.8	1.3	14.170	B
B-A	43	11	326	0.132	43	0.1	0.2	13.732	B
C-AB	317	79	894	0.355	316	0.6	0.9	6.551	A
C-A	302	76			302				
A-B	26	7			26				
A-C	240	60			240				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	338	85	590	0.572	338	1.3	1.3	14.382	B
B-A	43	11	324	0.132	43	0.2	0.2	13.825	B
C-AB	318	80	895	0.355	318	0.9	0.9	6.588	A
C-A	302	75			302				
A-B	26	7			26				
A-C	240	60			240				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	276	69	609	0.453	278	1.3	0.9	11.050	B
B-A	35	9	393	0.089	35	0.2	0.1	10.870	B
C-AB	226	56	846	0.267	227	0.9	0.6	6.141	A
C-A	280	70			280				
A-B	22	5			22				
A-C	196	49			196				

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	231	58	621	0.372	232	0.9	0.6	9.371	A
B-A	29	7	438	0.067	29	0.1	0.1	9.529	A
C-AB	171	43	810	0.211	171	0.6	0.4	5.925	A
C-A	253	63			253				
A-B	18	5			18				
A-C	164	41			164				

2022 CF, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Major arm width	Arm C - Major arm geometry	For two-way major roads, please interpret results with caution if the total major carriageway width is less than 6m.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	Two-way	Two-way		10.89	B

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	10.89	B

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Description	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D10	2022 CF	PM	Covid Factor	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Av. Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	596	100.000
B		ONE HOUR	✓	159	100.000
C		ONE HOUR	✓	729	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
	A	B	C	
From	A	0	55	541
	B	19	0	140
	C	483	246	0

Vehicle Mix

HV %s

	To			
	A	B	C	
From	A	0	3	4
	B	8	0	1
	C	6	4	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.31	10.51	0.4	B	128	193
B-A	0.10	19.88	0.1	C	17	26
C-AB	0.82	25.54	7.0	D	514	771
C-A					155	232
A-B					50	76
A-C					496	745

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	105	26	559	0.188	104	0.0	0.2	7.975	A
B-A	14	4	347	0.041	14	0.0	0.0	11.687	B
C-AB	345	86	785	0.440	340	0.0	1.2	8.468	A
C-A	204	51			204				
A-B	41	10			41				
A-C	407	102			407				

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	126	31	535	0.235	126	0.2	0.3	8.866	A
B-A	17	4	294	0.058	17	0.0	0.1	14.056	B
C-AB	475	119	820	0.579	471	1.2	2.2	10.887	B
C-A	181	45			181				
A-B	49	12			49				
A-C	486	122			486				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	154	39	500	0.308	154	0.3	0.4	10.469	B
B-A	21	5	221	0.095	21	0.1	0.1	19.430	C
C-AB	708	177	870	0.814	692	2.2	6.3	21.275	C
C-A	94	24			94				
A-B	61	15			61				
A-C	596	149			596				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	154	39	500	0.308	154	0.4	0.4	10.514	B
B-A	21	5	216	0.097	21	0.1	0.1	19.878	C
C-AB	721	180	879	0.821	718	6.3	7.0	25.544	D
C-A	81	20			81				
A-B	61	15			61				
A-C	596	149			596				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	126	31	535	0.235	126	0.4	0.3	8.909	A
B-A	17	4	288	0.059	17	0.1	0.1	14.392	B
C-AB	487	122	831	0.586	505	7.0	2.4	12.532	B
C-A	169	42			169				
A-B	49	12			49				
A-C	486	122			486				

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	105	26	559	0.188	106	0.3	0.2	8.022	A
B-A	14	4	344	0.042	14	0.1	0.0	11.804	B
C-AB	350	87	789	0.443	354	2.4	1.3	8.867	A
C-A	199	50			199				
A-B	41	10			41				
A-C	407	102			407				

2027 CF, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Major arm width	Arm C - Major arm geometry	For two-way major roads, please interpret results with caution if the total major carriageway width is less than 6m.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	Two-way	Two-way		7.91	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	7.91	A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Description	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D11	2027 CF	AM	Covid Factor	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Av. Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	566	100.000
B		ONE HOUR	✓	360	100.000
C		ONE HOUR	✓	586	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	26	540
	B	40	0	320
	C	445	141	0

Vehicle Mix

HV %s

		To		
		A	B	C
From	A	0	3	4
	B	8	0	1
	C	6	4	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.72	26.41	2.5	D	294	440
B-A	0.24	27.13	0.3	D	37	55
C-AB	0.44	8.14	1.4	A	273	409
C-A					265	397
A-B					24	36
A-C					496	743

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	241	60	556	0.434	238	0.0	0.8	11.341	B
B-A	30	8	360	0.084	30	0.0	0.1	11.763	B
C-AB	188	47	769	0.245	186	0.0	0.5	6.467	A
C-A	253	63			253				
A-B	20	5			20				
A-C	407	102			407				

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	288	72	529	0.543	286	0.8	1.2	14.843	B
B-A	36	9	295	0.122	36	0.1	0.1	14.995	B
C-AB	255	64	799	0.319	254	0.5	0.8	6.941	A
C-A	272	68			272				
A-B	23	6			23				
A-C	485	121			485				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	352	88	489	0.720	347	1.2	2.4	24.829	C
B-A	44	11	192	0.230	43	0.1	0.3	26.109	D
C-AB	374	93	843	0.443	371	0.8	1.4	8.042	A
C-A	272	68			272				
A-B	29	7			29				
A-C	595	149			595				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	352	88	488	0.721	352	2.4	2.5	26.407	D
B-A	44	11	187	0.235	44	0.3	0.3	27.135	D
C-AB	375	94	845	0.444	375	1.4	1.4	8.136	A
C-A	270	68			270				
A-B	29	7			29				
A-C	595	149			595				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	288	72	529	0.544	293	2.5	1.2	15.708	C
B-A	36	9	290	0.124	37	0.3	0.2	15.381	C
C-AB	257	64	801	0.320	259	1.4	0.8	7.045	A
C-A	270	68			270				
A-B	23	6			23				
A-C	485	121			485				

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	241	60	555	0.434	243	1.2	0.8	11.701	B
B-A	30	8	357	0.084	30	0.2	0.1	11.905	B
C-AB	189	47	770	0.246	191	0.8	0.5	6.550	A
C-A	252	63			252				
A-B	20	5			20				
A-C	407	102			407				

2027 CF, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Major arm width	Arm C - Major arm geometry	For two-way major roads, please interpret results with caution if the total major carriageway width is less than 6m.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	Two-way	Two-way		16.49	C

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	16.49	C

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Description	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D12	2027 CF	PM	Covid Factor	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Av. Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	621	100.000
B		ONE HOUR	✓	166	100.000
C		ONE HOUR	✓	759	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
	A	B	C	
From	A	0	57	564
	B	20	0	146
	C	503	256	0

Vehicle Mix

HV %s

	To			
	A	B	C	
From	A	0	3	4
	B	8	0	1
	C	6	4	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.33	11.01	0.5	B	134	201
B-A	0.11	22.13	0.1	C	18	28
C-AB	0.89	38.48	10.7	E	559	839
C-A					137	206
A-B					52	78
A-C					518	776

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	110	27	554	0.198	109	0.0	0.2	8.147	A
B-A	15	4	336	0.045	15	0.0	0.1	12.114	B
C-AB	369	92	792	0.467	364	0.0	1.4	8.800	A
C-A	202	50			202				
A-B	43	11			43				
A-C	425	106			425				

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	131	33	529	0.248	131	0.2	0.3	9.128	A
B-A	18	4	280	0.064	18	0.1	0.1	14.822	B
C-AB	512	128	829	0.618	507	1.4	2.5	11.825	B
C-A	170	43			170				
A-B	51	13			51				
A-C	507	127			507				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	161	40	492	0.327	160	0.3	0.5	10.949	B
B-A	22	6	204	0.108	22	0.1	0.1	21.327	C
C-AB	773	193	883	0.875	747	2.5	8.9	27.791	D
C-A	63	16			63				
A-B	63	16			63				
A-C	621	155			621				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	161	40	491	0.327	161	0.5	0.5	11.011	B
B-A	22	6	198	0.111	22	0.1	0.1	22.135	C
C-AB	794	198	895	0.887	787	8.9	10.7	38.480	E
C-A	42	10			42				
A-B	63	16			63				
A-C	621	155			621				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	131	33	528	0.248	132	0.5	0.3	9.184	A
B-A	18	4	271	0.066	18	0.1	0.1	15.409	C
C-AB	532	133	847	0.629	563	10.7	3.0	15.231	C
C-A	150	37			150				
A-B	51	13			51				
A-C	507	127			507				

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	110	27	554	0.198	110	0.3	0.3	8.199	A
B-A	15	4	332	0.045	15	0.1	0.1	12.265	B
C-AB	375	94	797	0.471	381	3.0	1.5	9.329	A
C-A	196	49			196				
A-B	43	11			43				
A-C	425	106			425				

2027 + Development CF, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Major arm width	Arm C - Major arm geometry	For two-way major roads, please interpret results with caution if the total major carriageway width is less than 6m.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	Two-way	Two-way		10.23	B

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	10.23	B

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Description	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D13	2027 + Development CF	AM	Covid Factor	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Av. Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	566	100.000
B		ONE HOUR	✓	386	100.000
C		ONE HOUR	✓	600	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	26	540
	B	40	0	346
	C	445	155	0

Vehicle Mix

HV %s

		To		
		A	B	C
From	A	0	3	4
	B	8	0	1
	C	6	4	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.78	33.49	3.4	D	317	476
B-A	0.28	35.01	0.4	E	37	55
C-AB	0.49	8.85	1.7	A	300	450
C-A					250	376
A-B					24	36
A-C					496	743

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	260	65	555	0.469	257	0.0	0.9	12.054	B
B-A	30	8	348	0.086	30	0.0	0.1	12.185	B
C-AB	207	52	769	0.269	204	0.0	0.6	6.677	A
C-A	245	61			245				
A-B	20	5			20				
A-C	407	102			407				

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	311	78	529	0.588	309	0.9	1.4	16.386	C
B-A	36	9	277	0.130	36	0.1	0.2	16.116	C
C-AB	281	70	800	0.351	279	0.6	0.9	7.278	A
C-A	259	65			259				
A-B	23	6			23				
A-C	485	121			485				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	381	95	488	0.781	374	1.4	3.1	30.231	D
B-A	44	11	162	0.272	43	0.2	0.4	32.462	D
C-AB	411	103	844	0.487	408	0.9	1.7	8.721	A
C-A	250	62			250				
A-B	29	7			29				
A-C	595	149			595				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	381	95	487	0.783	380	3.1	3.4	33.487	D
B-A	44	11	155	0.285	44	0.4	0.4	35.011	E
C-AB	413	103	845	0.488	412	1.7	1.7	8.854	A
C-A	248	62			248				
A-B	29	7			29				
A-C	595	149			595				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	311	78	528	0.589	318	3.4	1.5	17.927	C
B-A	36	9	269	0.133	37	0.4	0.2	16.788	C
C-AB	282	71	802	0.352	285	1.7	1.0	7.416	A
C-A	257	64			257				
A-B	23	6			23				
A-C	485	121			485				

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	260	65	555	0.469	263	1.5	0.9	12.548	B
B-A	30	8	345	0.087	30	0.2	0.1	12.375	B
C-AB	208	52	771	0.270	210	1.0	0.6	6.774	A
C-A	243	61			243				
A-B	20	5			20				
A-C	407	102			407				

2027 + Development CF, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Major arm width	Arm C - Major arm geometry	For two-way major roads, please interpret results with caution if the total major carriageway width is less than 6m.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	Two-way	Two-way		33.34	D

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	33.34	D

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Description	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D14	2027 + Development CF	PM	Covid Factor	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Av. Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	621	100.000
B		ONE HOUR	✓	180	100.000
C		ONE HOUR	✓	784	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
	A	B	C	
From	A	0	57	564
	B	20	0	160
	C	503	281	0

Vehicle Mix

HV %s

	To			
	A	B	C	
From	A	0	3	4
	B	8	0	1
	C	6	4	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.36	11.62	0.6	B	147	220
B-A	0.12	24.76	0.1	C	18	28
C-AB	0.97	75.13	20.0	F	617	925
C-A					103	154
A-B					52	78
A-C					518	776

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	120	30	554	0.217	119	0.0	0.3	8.343	A
B-A	15	4	327	0.046	15	0.0	0.1	12.435	B
C-AB	406	101	792	0.512	399	0.0	1.6	9.574	A
C-A	185	46			185				
A-B	43	11			43				
A-C	425	106			425				

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	144	36	529	0.272	143	0.3	0.4	9.432	A
B-A	18	4	270	0.067	18	0.1	0.1	15.429	C
C-AB	562	141	829	0.678	556	1.6	3.2	13.920	B
C-A	143	36			143				
A-B	51	13			51				
A-C	507	127			507				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	176	44	490	0.359	175	0.4	0.6	11.516	B
B-A	22	6	190	0.116	22	0.1	0.1	23.020	C
C-AB	850	213	884	0.962	804	3.2	14.8	43.867	E
C-A	13	3			13				
A-B	63	16			63				
A-C	621	155			621				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	176	44	489	0.360	176	0.6	0.6	11.620	B
B-A	22	6	179	0.123	22	0.1	0.1	24.761	C
C-AB	863	216	892	0.968	842	14.8	20.0	75.131	F
C-A	0	0			0				
A-B	63	16			63				
A-C	621	155			621				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	144	36	528	0.273	145	0.6	0.4	9.512	A
B-A	18	4	251	0.072	18	0.1	0.1	16.712	C
C-AB	606	151	864	0.701	669	20.0	4.2	26.841	D
C-A	99	25			99				
A-B	51	13			51				
A-C	507	127			507				

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	120	30	554	0.218	121	0.4	0.3	8.406	A
B-A	15	4	323	0.047	15	0.1	0.1	12.650	B
C-AB	413	103	799	0.518	423	4.2	1.7	10.464	B
C-A	177	44			177				
A-B	43	11			43				
A-C	425	106			425				

2037, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Major arm width	Arm C - Major arm geometry	For two-way major roads, please interpret results with caution if the total major carriageway width is less than 6m.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	Two-way	Two-way		12.91	B

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	12.91	B

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Description	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D15	2037	AM	Covid Factor	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Av. Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	620	100.000
B		ONE HOUR	✓	395	100.000
C		ONE HOUR	✓	642	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
	A	B	C	
From	A	0	28	592
	B	44	0	351
	C	487	155	0

Vehicle Mix

HV %s

	To			
	A	B	C	
From	A	0	3	4
	B	8	0	1
	C	6	4	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.84	44.68	4.5	E	322	483
B-A	0.41	54.77	0.7	F	40	61
C-AB	0.52	9.27	2.0	A	326	488
C-A					264	395
A-B					26	39
A-C					543	815

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	264	66	543	0.487	261	0.0	0.9	12.717	B
B-A	33	8	329	0.101	33	0.0	0.1	13.077	B
C-AB	219	55	783	0.280	217	0.0	0.6	6.660	A
C-A	264	66			264				
A-B	21	5			21				
A-C	446	111			446				

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	316	79	513	0.615	313	0.9	1.5	17.980	C
B-A	40	10	253	0.157	39	0.1	0.2	18.199	C
C-AB	302	76	817	0.370	301	0.6	1.0	7.335	A
C-A	275	69			275				
A-B	25	6			25				
A-C	532	133			532				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	386	97	464	0.832	377	1.5	4.0	37.693	E
B-A	48	12	129	0.375	47	0.2	0.6	46.284	E
C-AB	452	113	867	0.521	448	1.0	2.0	9.089	A
C-A	255	64			255				
A-B	31	8			31				
A-C	652	163			652				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	386	97	462	0.836	385	4.0	4.5	44.682	E
B-A	48	12	118	0.409	48	0.6	0.7	54.766	F
C-AB	454	114	869	0.523	454	2.0	2.0	9.274	A
C-A	252	63			252				
A-B	31	8			31				
A-C	652	163			652				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	316	79	511	0.618	327	4.5	1.7	20.769	C
B-A	40	10	242	0.164	41	0.7	0.2	19.581	C
C-AB	305	76	820	0.371	308	2.0	1.1	7.506	A
C-A	273	68			273				
A-B	25	6			25				
A-C	532	133			532				

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	264	66	542	0.487	267	1.7	1.0	13.349	B
B-A	33	8	325	0.102	33	0.2	0.1	13.340	B
C-AB	221	55	785	0.282	223	1.1	0.7	6.773	A
C-A	262	66			262				
A-B	21	5			21				
A-C	446	111			446				

2037, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Major arm width	Arm C - Major arm geometry	For two-way major roads, please interpret results with caution if the total major carriageway width is less than 6m.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	Two-way	Two-way		55.03	F

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	55.03	F

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Description	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D16	2037	PM	Covid Factor	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Av. Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	683	100.000
B		ONE HOUR	✓	182	100.000
C		ONE HOUR	✓	835	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
	A	B	C	
From	A	0	63	620
	B	22	0	160
	C	553	282	0

Vehicle Mix

HV %s

	To			
	A	B	C	
From	A	0	3	4
	B	8	0	1
	C	6	4	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.38	12.59	0.6	B	147	220
B-A	0.17	32.64	0.2	D	20	30
C-AB	1.03	123.36	34.4	F	676	1013
C-A					91	136
A-B					58	87
A-C					569	853

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	120	30	541	0.222	119	0.0	0.3	8.590	A
B-A	17	4	308	0.054	16	0.0	0.1	13.322	B
C-AB	437	109	809	0.540	430	0.0	1.8	9.905	A
C-A	191	48			191				
A-B	47	12			47				
A-C	467	117			467				

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	144	36	513	0.280	143	0.3	0.4	9.831	A
B-A	20	5	246	0.080	20	0.1	0.1	17.143	C
C-AB	618	154	852	0.725	609	1.8	4.1	15.680	C
C-A	133	33			133				
A-B	57	14			57				
A-C	557	139			557				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	176	44	468	0.376	175	0.4	0.6	12.367	B
B-A	24	6	161	0.150	24	0.1	0.2	28.184	D
C-AB	919	230	895	1.027	843	4.1	23.1	62.905	F
C-A	0	0			0				
A-B	69	17			69				
A-C	683	171			683				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	176	44	465	0.379	176	0.6	0.6	12.589	B
B-A	24	6	143	0.169	24	0.2	0.2	32.642	D
C-AB	919	230	897	1.025	874	23.1	34.4	123.358	F
C-A	0	0			0				
A-B	69	17			69				
A-C	683	171			683				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	144	36	511	0.282	145	0.6	0.4	9.958	A
B-A	20	5	214	0.092	20	0.2	0.1	20.095	C
C-AB	709	177	916	0.774	818	34.4	7.0	65.974	F
C-A	42	10			42				
A-B	57	14			57				
A-C	557	139			557				

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	120	30	541	0.223	121	0.4	0.3	8.663	A
B-A	17	4	301	0.055	17	0.1	0.1	13.704	B
C-AB	451	113	822	0.548	471	7.0	2.1	11.563	B
C-A	178	44			178				
A-B	47	12			47				
A-C	467	117			467				

2037 + Dev, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Major arm width	Arm C - Major arm geometry	For two-way major roads, please interpret results with caution if the total major carriageway width is less than 6m.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	Two-way	Two-way		20.13	C

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	20.13	C

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Description	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D17	2037 + Dev	AM	Covid Factor	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Av. Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	620	100.000
B		ONE HOUR	✓	421	100.000
C		ONE HOUR	✓	655	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
	A	B	C	
From	A	0	28	592
	B	44	0	377
	C	487	168	0

Vehicle Mix

HV %s

	To			
	A	B	C	
From	A	0	3	4
	B	8	0	1
	C	6	4	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.91	65.74	7.0	F	346	519
B-A	0.64	122.86	1.5	F	40	61
C-AB	0.57	10.25	2.4	B	353	530
C-A					248	372
A-B					26	39
A-C					543	815

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	284	71	543	0.523	280	0.0	1.1	13.616	B
B-A	33	8	317	0.105	33	0.0	0.1	13.655	B
C-AB	238	59	783	0.304	235	0.0	0.7	6.880	A
C-A	255	64			255				
A-B	21	5			21				
A-C	446	111			446				

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	339	85	512	0.662	336	1.1	1.9	20.259	C
B-A	40	10	232	0.170	39	0.1	0.2	20.076	C
C-AB	328	82	818	0.401	326	0.7	1.1	7.713	A
C-A	261	65			261				
A-B	25	6			25				
A-C	532	133			532				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	415	104	462	0.898	399	1.9	5.8	48.955	E
B-A	48	12	95	0.508	45	0.2	1.0	74.353	F
C-AB	490	123	867	0.565	485	1.1	2.3	9.978	A
C-A	231	58			231				
A-B	31	8			31				
A-C	652	163			652				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	415	104	458	0.907	410	5.8	7.0	65.739	F
B-A	48	12	76	0.640	46	1.0	1.5	122.857	F
C-AB	493	123	870	0.567	493	2.3	2.4	10.248	B
C-A	228	57			228				
A-B	31	8			31				
A-C	652	163			652				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	339	85	508	0.668	358	7.0	2.2	26.970	D
B-A	40	10	212	0.187	44	1.5	0.3	23.855	C
C-AB	330	83	821	0.403	335	2.4	1.2	7.935	A
C-A	258	65			258				
A-B	25	6			25				
A-C	532	133			532				

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	284	71	542	0.524	288	2.2	1.1	14.538	B
B-A	33	8	311	0.106	34	0.3	0.1	14.032	B
C-AB	240	60	785	0.306	242	1.2	0.8	7.011	A
C-A	253	63			253				
A-B	21	5			21				
A-C	446	111			446				

2037 + Dev, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Major arm width	Arm C - Major arm geometry	For two-way major roads, please interpret results with caution if the total major carriageway width is less than 6m.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	Two-way	Two-way		84.76	F

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	84.76	F

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Description	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D18	2037 + Dev	PM	Covid Factor	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Av. Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	683	100.000
B		ONE HOUR	✓	197	100.000
C		ONE HOUR	✓	859	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
	A	B	C	
From	A	0	63	620
	B	22	0	175
	C	553	306	0

Vehicle Mix

HV %s

	To			
	A	B	C	
From	A	0	3	4
	B	8	0	1
	C	6	4	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.42	13.61	0.7	B	161	241
B-A	0.20	39.73	0.3	E	20	30
C-AB	1.09	183.22	52.6	F	722	1083
C-A					66	99
A-B					58	87
A-C					569	853

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	132	33	541	0.243	130	0.0	0.3	8.825	A
B-A	17	4	300	0.055	16	0.0	0.1	13.705	B
C-AB	474	119	809	0.586	466	0.0	2.2	10.917	B
C-A	172	43			172				
A-B	47	12			47				
A-C	467	117			467				

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	157	39	512	0.307	157	0.3	0.4	10.214	B
B-A	20	5	236	0.084	20	0.1	0.1	17.965	C
C-AB	671	168	852	0.787	658	2.2	5.4	19.575	C
C-A	101	25			101				
A-B	57	14			57				
A-C	557	139			557				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	193	48	466	0.413	192	0.4	0.7	13.194	B
B-A	24	6	148	0.164	24	0.1	0.2	31.303	D
C-AB	946	236	871	1.086	839	5.4	32.0	87.256	F
C-A	0	0			0				
A-B	69	17			69				
A-C	683	171			683				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	193	48	459	0.419	193	0.7	0.7	13.613	B
B-A	24	6	122	0.199	24	0.2	0.3	39.726	E
C-AB	946	236	873	1.084	863	32.0	52.6	183.219	F
C-A	0	0			0				
A-B	69	17			69				
A-C	683	171			683				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	157	39	508	0.310	158	0.7	0.5	10.428	B
B-A	20	5	185	0.107	20	0.3	0.1	23.629	C
C-AB	772	193	917	0.842	888	52.6	23.5	151.888	F
C-A	0	0			0				
A-B	57	14			57				
A-C	557	139			557				

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	132	33	540	0.244	132	0.5	0.3	8.924	A
B-A	17	4	276	0.060	17	0.1	0.1	15.031	C
C-AB	523	131	853	0.613	606	23.5	2.7	21.716	C
C-A	124	31			124				
A-B	47	12			47				
A-C	467	117			467				

<h1>Junctions 10</h1>
<h2>PICADY 10 - Priority Intersection Module</h2>
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Filename: Melton - Goodes RevB LCC Geometry Comment improved layout.j10

Path: P:\20000's\20060\Technical\Junction Modelling\2023 Assessments\Feb 2023\Improvement schemes

Report generation date: 17/03/2023 15:57:41

-
- »2022, AM
 - »2022, PM
 - »2027, AM
 - »2027, PM
 - »2027 + Development, AM
 - »2027 + Development, PM
 - »2022 CF, AM
 - »2022 CF, PM
 - »2027 CF, AM
 - »2027 CF, PM
 - »2027 + Development CF, AM
 - »2027 + Development CF, PM
 - »2037, AM
 - »2037, PM
 - »2037 + Dev, AM
 - »2037 + Dev, PM

Summary of junction performance

	AM			PM		
	Q (PCU)	Delay (s)	RFC	Q (PCU)	Delay (s)	RFC
2022						
Stream B-C	1.9	21.18	0.66	0.4	10.28	0.30
Stream B-A	0.2	21.27	0.19	0.1	18.65	0.09
Stream C-AB	0.6	8.42	0.30	2.0	11.07	0.55
2027						
Stream B-C	2.3	24.57	0.70	0.5	10.73	0.32
Stream B-A	0.3	25.01	0.22	0.1	20.36	0.10
Stream C-AB	0.6	8.52	0.31	2.4	11.62	0.58
2027 + Development						
Stream B-C	3.0	30.61	0.76	0.5	11.32	0.35
Stream B-A	0.4	31.17	0.26	0.1	21.94	0.11
Stream C-AB	0.7	8.72	0.34	3.1	13.14	0.64
2022 CF						
Stream B-C	1.3	14.38	0.57	0.4	10.51	0.31
Stream B-A	0.2	13.81	0.13	0.1	19.49	0.09
Stream C-AB	0.4	7.24	0.26	2.2	11.34	0.57
2027 CF						
Stream B-C	2.5	26.39	0.72	0.5	10.99	0.33
Stream B-A	0.3	27.05	0.23	0.1	21.42	0.11
Stream C-AB	0.6	8.56	0.32	2.6	11.96	0.60
2027 + Development CF						
Stream B-C	3.4	33.46	0.78	0.6	11.58	0.36
Stream B-A	0.4	34.87	0.28	0.1	23.16	0.12
Stream C-AB	0.8	8.78	0.35	3.5	13.66	0.66
2037						
Stream B-C	4.5	44.58	0.84	0.6	12.45	0.38
Stream B-A	0.7	54.38	0.41	0.2	28.41	0.15
Stream C-AB	0.8	8.84	0.36	4.2	14.43	0.69
2037 + Dev						
Stream B-C	7.0	65.52	0.91	0.7	13.31	0.41
Stream B-A	1.5	121.30	0.64	0.2	31.64	0.16
Stream C-AB	1.0	9.08	0.39	5.7	17.50	0.75

There are warnings associated with one or more model runs - see the 'Data Errors and Warnings' tables for each Analysis or Demand Set.

Values shown are the highest values encountered over all time segments. Delay is the maximum value of Av. delay per arriving vehicle.

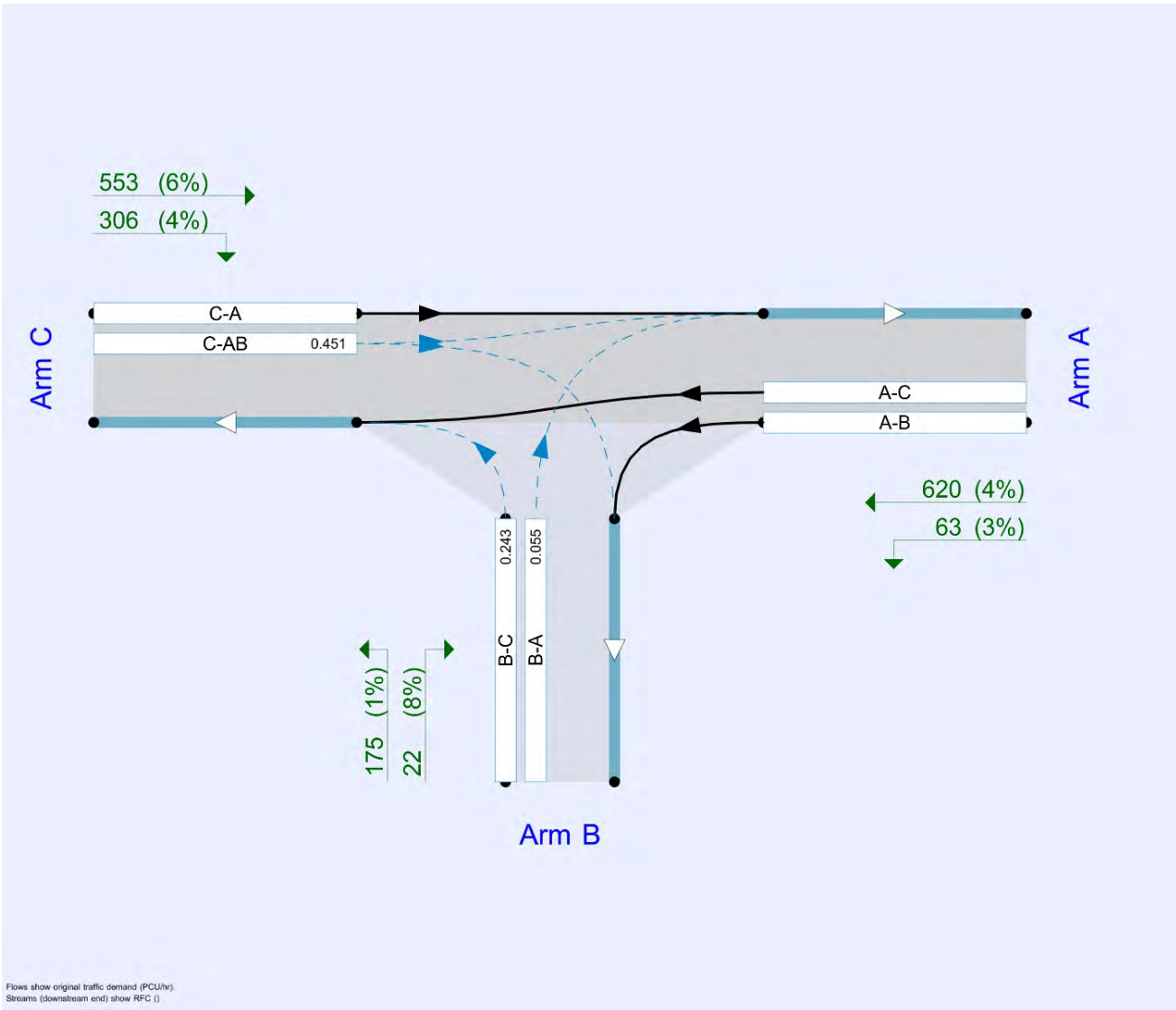
File summary

File Description

Title	(untitled)
Location	
Site number	
Date	11/04/2018
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	DTA\Arcady
Description	

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Av. delay units	Total delay units	Rate of delay units
m	kph	PCU	PCU	perHour	s	-Min	perMin



The junction diagram reflects the last run of Junctions.

Analysis Options

Vehicle length (m)	Calculate Q Percentiles	Calculate detailed queueing delay	Show lane queues in feet / metres	Show all PICADY stream intercepts	Calculate residual capacity	RFC Threshold	Av. Delay threshold (s)	Q threshold (PCU)	Use iterations with HCM roundabouts	Max number of iterations for roundabouts
5.75						0.85	36.00	20.00		500

Demand Set Summary

ID	Scenario name	Time Period name	Description	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2022	AM		ONE HOUR	07:45	09:15	15	✓
D2	2022	PM		ONE HOUR	16:45	18:15	15	✓
D5	2027	AM		ONE HOUR	07:45	09:15	15	✓
D6	2027	PM		ONE HOUR	16:45	18:15	15	✓
D7	2027 + Development	AM		ONE HOUR	07:45	09:15	15	✓
D8	2027 + Development	PM		ONE HOUR	16:45	18:15	15	✓
D9	2022 CF	AM	Covid Factor	ONE HOUR	07:45	09:15	15	✓
D10	2022 CF	PM	Covid Factor	ONE HOUR	16:45	18:15	15	✓
D11	2027 CF	AM	Covid Factor	ONE HOUR	07:45	09:15	15	✓
D12	2027 CF	PM	Covid Factor	ONE HOUR	16:45	18:15	15	✓
D13	2027 + Development CF	AM	Covid Factor	ONE HOUR	07:45	09:15	15	✓
D14	2027 + Development CF	PM	Covid Factor	ONE HOUR	16:45	18:15	15	✓
D15	2037	AM	Covid Factor	ONE HOUR	07:45	09:15	15	✓
D16	2037	PM	Covid Factor	ONE HOUR	16:45	18:15	15	✓
D17	2037 + Dev	AM	Covid Factor	ONE HOUR	07:45	09:15	15	✓
D18	2037 + Dev	PM	Covid Factor	ONE HOUR	16:45	18:15	15	✓

Analysis Set Details

ID	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	✓	100.000	100.000

2022, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Major arm width	Arm C - Major arm geometry	For two-way major roads, please interpret results with caution if the total major carriageway width is less than 6m.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	Two-way	Two-way		6.00	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	6.00	A

Arms

Arms

Arm	Name	Description	Arm type
A	Melton Road N		Major
B	Goodes Lane		Minor
C	Melton Road S		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right-turn storage	Width for right-turn storage (m)	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C	5.80		✓	2.20	114.0	✓	1.00

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relevant) are measured opposite Arm D.

Minor Arm Geometry

Arm	Minor arm type	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate flare length	Flare length (PCU)	Visibility to left (m)	Visibility to right (m)
B	One lane plus flare	10.00	4.26	2.98	2.94	2.89		1.00	53	23

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
B-A	607	0.112	0.282	0.177	0.403
B-C	678	0.105	0.265	-	-
C-B	640	0.250	0.250	-	-

The slopes and intercepts shown above include custom intercept adjustments only.

Streams may be combined, in which case capacity will be adjusted.

Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2022	AM	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Av. Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	532	100.000
B		ONE HOUR	✓	339	100.000
C		ONE HOUR	✓	551	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
	A	B	C	
From	A	0	24	508
	B	38	0	301
	C	418	133	0

Vehicle Mix

HV %s

	To			
	A	B	C	
From	A	0	3	4
	B	8	0	1
	C	6	4	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.66	21.18	1.9	C	276	414
B-A	0.19	21.27	0.2	C	35	52
C-AB	0.30	8.42	0.6	A	147	221
C-A					359	538
A-B					22	33
A-C					466	699

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	227	57	563	0.402	224	0.0	0.7	10.637	B
B-A	29	7	378	0.076	28	0.0	0.1	11.111	B
C-AB	112	28	602	0.185	111	0.0	0.3	7.621	A
C-A	303	76			303				
A-B	18	5			18				
A-C	382	96			382				

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	271	68	539	0.502	269	0.7	1.0	13.417	B
B-A	34	9	319	0.107	34	0.1	0.1	13.630	B
C-AB	141	35	611	0.230	140	0.3	0.4	7.962	A
C-A	355	89			355				
A-B	22	5			22				
A-C	457	114			457				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	331	83	503	0.659	328	1.0	1.8	20.420	C
B-A	42	10	227	0.184	41	0.1	0.2	20.872	C
C-AB	189	47	636	0.297	188	0.4	0.6	8.386	A
C-A	418	104			418				
A-B	26	7			26				
A-C	559	140			559				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	331	83	502	0.660	331	1.8	1.9	21.176	C
B-A	42	10	225	0.186	42	0.2	0.2	21.268	C
C-AB	189	47	637	0.297	189	0.6	0.6	8.416	A
C-A	418	104			418				
A-B	26	7			26				
A-C	559	140			559				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	271	68	539	0.502	274	1.9	1.0	13.914	B
B-A	34	9	316	0.108	35	0.2	0.1	13.819	B
C-AB	141	35	612	0.230	141	0.6	0.4	8.001	A
C-A	355	89			355				
A-B	22	5			22				
A-C	457	114			457				

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	227	57	563	0.403	228	1.0	0.7	10.905	B
B-A	29	7	376	0.076	29	0.1	0.1	11.205	B
C-AB	112	28	602	0.185	112	0.4	0.3	7.667	A
C-A	303	76			303				
A-B	18	5			18				
A-C	382	96			382				

2022, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Major arm width	Arm C - Major arm geometry	For two-way major roads, please interpret results with caution if the total major carriageway width is less than 6m.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	Two-way	Two-way		3.84	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	3.84	A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D2	2022	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Av. Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	582	100.000
B		ONE HOUR	✓	156	100.000
C		ONE HOUR	✓	713	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	54	528
	B	19	0	137
	C	472	241	0

Vehicle Mix

HV %s

		To		
		A	B	C
From	A	0	3	4
	B	8	0	1
	C	6	4	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.30	10.28	0.4	B	126	189
B-A	0.09	18.65	0.1	C	17	26
C-AB	0.55	11.07	2.0	B	316	474
C-A					338	507
A-B					50	74
A-C					485	727

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	103	26	562	0.183	102	0.0	0.2	7.890	A
B-A	14	4	353	0.041	14	0.0	0.0	11.481	B
C-AB	225	56	657	0.342	222	0.0	0.7	8.608	A
C-A	312	78			312				
A-B	41	10			41				
A-C	398	99			398				

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	123	31	539	0.229	123	0.2	0.3	8.736	A
B-A	17	4	301	0.057	17	0.0	0.1	13.677	B
C-AB	296	74	695	0.426	295	0.7	1.0	9.397	A
C-A	345	86			345				
A-B	49	12			49				
A-C	475	119			475				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	151	38	505	0.299	150	0.3	0.4	10.242	B
B-A	21	5	231	0.091	21	0.1	0.1	18.519	C
C-AB	428	107	773	0.554	424	1.0	2.0	10.839	B
C-A	357	89			357				
A-B	59	15			59				
A-C	581	145			581				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	151	38	505	0.299	151	0.4	0.4	10.277	B
B-A	21	5	229	0.091	21	0.1	0.1	18.648	C
C-AB	428	107	774	0.553	428	2.0	2.0	11.069	B
C-A	357	89			357				
A-B	59	15			59				
A-C	581	145			581				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	123	31	539	0.229	124	0.4	0.3	8.774	A
B-A	17	4	300	0.057	17	0.1	0.1	13.782	B
C-AB	296	74	697	0.425	300	2.0	1.1	9.647	A
C-A	345	86			345				
A-B	49	12			49				
A-C	475	119			475				

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	103	26	562	0.183	103	0.3	0.2	7.933	A
B-A	14	4	351	0.041	14	0.1	0.0	11.551	B
C-AB	225	56	658	0.342	226	1.1	0.7	8.780	A
C-A	312	78			312				
A-B	41	10			41				
A-C	398	99			398				

2027, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Major arm width	Arm C - Major arm geometry	For two-way major roads, please interpret results with caution if the total major carriageway width is less than 6m.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	Two-way	Two-way		6.85	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	6.85	A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D5	2027	AM	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Av. Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	555	100.000
B		ONE HOUR	✓	354	100.000
C		ONE HOUR	✓	575	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
	A	B	C	
From	A	0	25	530
	B	40	0	314
	C	436	139	0

Vehicle Mix

HV %s

	To			
	A	B	C	
From	A	0	3	4
	B	8	0	1
	C	6	4	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.70	24.57	2.3	C	288	432
B-A	0.22	25.01	0.3	D	37	55
C-AB	0.31	8.52	0.6	A	157	235
C-A					371	557
A-B					23	34
A-C					486	730

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	236	59	558	0.424	233	0.0	0.7	11.115	B
B-A	30	8	366	0.082	30	0.0	0.1	11.566	B
C-AB	118	29	604	0.195	117	0.0	0.3	7.693	A
C-A	315	79			315				
A-B	19	5			19				
A-C	399	100			399				

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	282	71	532	0.531	281	0.7	1.1	14.379	B
B-A	36	9	302	0.119	36	0.1	0.1	14.566	B
C-AB	149	37	615	0.243	149	0.3	0.4	8.047	A
C-A	368	92			368				
A-B	22	6			22				
A-C	476	119			476				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	346	86	493	0.701	341	1.1	2.2	23.322	C
B-A	44	11	203	0.217	43	0.1	0.3	24.271	C
C-AB	203	51	644	0.314	202	0.4	0.6	8.493	A
C-A	431	108			431				
A-B	28	7			28				
A-C	584	146			584				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	346	86	492	0.702	345	2.2	2.3	24.569	C
B-A	44	11	199	0.221	44	0.3	0.3	25.008	D
C-AB	203	51	645	0.314	203	0.6	0.6	8.524	A
C-A	431	108			431				
A-B	28	7			28				
A-C	584	146			584				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	282	71	532	0.531	287	2.3	1.2	15.099	C
B-A	36	9	299	0.120	37	0.3	0.2	14.854	B
C-AB	149	37	616	0.242	150	0.6	0.4	8.094	A
C-A	368	92			368				
A-B	22	6			22				
A-C	476	119			476				

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	236	59	557	0.424	238	1.2	0.8	11.443	B
B-A	30	8	363	0.083	30	0.2	0.1	11.682	B
C-AB	118	29	604	0.195	118	0.4	0.3	7.742	A
C-A	315	79			315				
A-B	19	5			19				
A-C	399	100			399				

2027, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Major arm width	Arm C - Major arm geometry	For two-way major roads, please interpret results with caution if the total major carriageway width is less than 6m.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	Two-way	Two-way		4.13	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	4.13	A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D6	2027	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Av. Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	606	100.000
B		ONE HOUR	✓	163	100.000
C		ONE HOUR	✓	743	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	56	550
	B	20	0	143
	C	492	251	0

Vehicle Mix

HV %s

		To		
		A	B	C
From	A	0	3	4
	B	8	0	1
	C	6	4	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.32	10.73	0.5	B	131	197
B-A	0.10	20.36	0.1	C	18	28
C-AB	0.58	11.62	2.4	B	340	510
C-A					341	512
A-B					51	77
A-C					505	757

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	108	27	557	0.193	107	0.0	0.2	8.054	A
B-A	15	4	342	0.044	15	0.0	0.0	11.884	B
C-AB	239	60	664	0.359	236	0.0	0.7	8.738	A
C-A	321	80			321				
A-B	42	11			42				
A-C	414	104			414				

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	129	32	533	0.241	128	0.2	0.3	8.985	A
B-A	18	4	288	0.062	18	0.0	0.1	14.383	B
C-AB	317	79	708	0.448	315	0.7	1.1	9.605	A
C-A	351	88			351				
A-B	50	13			50				
A-C	494	124			494				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	157	39	496	0.317	157	0.3	0.5	10.689	B
B-A	22	6	214	0.103	22	0.1	0.1	20.178	C
C-AB	465	116	795	0.585	460	1.1	2.3	11.310	B
C-A	353	88			353				
A-B	62	15			62				
A-C	606	151			606				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	157	39	496	0.317	157	0.5	0.5	10.732	B
B-A	22	6	213	0.103	22	0.1	0.1	20.363	C
C-AB	465	116	796	0.584	465	2.3	2.4	11.618	B
C-A	353	88			353				
A-B	62	15			62				
A-C	606	151			606				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	129	32	532	0.241	129	0.5	0.3	9.029	A
B-A	18	4	286	0.063	18	0.1	0.1	14.520	B
C-AB	317	79	709	0.447	322	2.4	1.2	9.930	A
C-A	351	88			351				
A-B	50	13			50				
A-C	494	124			494				

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	108	27	557	0.193	108	0.3	0.2	8.102	A
B-A	15	4	340	0.044	15	0.1	0.1	11.972	B
C-AB	239	60	665	0.359	241	1.2	0.8	8.938	A
C-A	321	80			321				
A-B	42	11			42				
A-C	414	104			414				

2027 + Development, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Major arm width	Arm C - Major arm geometry	For two-way major roads, please interpret results with caution if the total major carriageway width is less than 6m.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	Two-way	Two-way		8.74	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	8.74	A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D7	2027 + Development	AM	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Av. Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	555	100.000
B		ONE HOUR	✓	380	100.000
C		ONE HOUR	✓	588	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	25	530
	B	40	0	340
	C	436	152	0

Vehicle Mix

HV %s

		To		
		A	B	C
From	A	0	3	4
	B	8	0	1
	C	6	4	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.76	30.61	3.0	D	312	468
B-A	0.26	31.17	0.4	D	37	55
C-AB	0.34	8.72	0.7	A	174	261
C-A					365	548
A-B					23	34
A-C					486	730

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	256	64	558	0.459	253	0.0	0.8	11.801	B
B-A	30	8	355	0.085	30	0.0	0.1	11.953	B
C-AB	130	33	610	0.214	129	0.0	0.3	7.789	A
C-A	312	78			312				
A-B	19	5			19				
A-C	399	100			399				

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	306	76	532	0.575	304	0.8	1.3	15.823	C
B-A	36	9	285	0.126	36	0.1	0.2	15.562	C
C-AB	166	41	624	0.265	165	0.3	0.4	8.176	A
C-A	363	91			363				
A-B	22	6			22				
A-C	476	119			476				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	374	94	492	0.762	368	1.3	2.9	28.110	D
B-A	44	11	175	0.252	43	0.2	0.3	29.442	D
C-AB	226	57	659	0.344	225	0.4	0.7	8.682	A
C-A	421	105			421				
A-B	28	7			28				
A-C	584	146			584				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	374	94	491	0.763	374	2.9	3.0	30.608	D
B-A	44	11	169	0.261	44	0.3	0.4	31.171	D
C-AB	226	57	659	0.344	226	0.7	0.7	8.723	A
C-A	421	105			421				
A-B	28	7			28				
A-C	584	146			584				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	306	76	531	0.576	312	3.0	1.4	17.077	C
B-A	36	9	280	0.129	37	0.4	0.2	16.070	C
C-AB	166	41	625	0.265	167	0.7	0.5	8.233	A
C-A	363	91			363				
A-B	22	6			22				
A-C	476	119			476				

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	256	64	557	0.459	258	1.4	0.9	12.246	B
B-A	30	8	352	0.086	30	0.2	0.1	12.110	B
C-AB	130	33	610	0.214	131	0.5	0.3	7.847	A
C-A	312	78			312				
A-B	19	5			19				
A-C	399	100			399				

2027 + Development, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Major arm width	Arm C - Major arm geometry	For two-way major roads, please interpret results with caution if the total major carriageway width is less than 6m.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	Two-way	Two-way		4.99	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	4.99	A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D8	2027 + Development	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Av. Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	606	100.000
B		ONE HOUR	✓	178	100.000
C		ONE HOUR	✓	768	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	56	550
	B	20	0	158
	C	492	276	0

Vehicle Mix

HV %s

		To		
		A	B	C
From	A	0	3	4
	B	8	0	1
	C	6	4	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.35	11.32	0.5	B	145	217
B-A	0.11	21.94	0.1	C	18	28
C-AB	0.64	13.14	3.1	B	386	579
C-A					319	478
A-B					51	77
A-C					505	757

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	119	30	557	0.214	118	0.0	0.3	8.260	A
B-A	15	4	333	0.045	15	0.0	0.1	12.195	B
C-AB	268	67	678	0.395	264	0.0	0.8	9.057	A
C-A	310	78			310				
A-B	42	11			42				
A-C	414	104			414				

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	142	36	532	0.267	142	0.3	0.4	9.302	A
B-A	18	4	278	0.065	18	0.1	0.1	14.958	B
C-AB	358	90	727	0.493	356	0.8	1.4	10.165	B
C-A	332	83			332				
A-B	50	13			50				
A-C	494	124			494				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	174	43	495	0.351	173	0.4	0.5	11.262	B
B-A	22	6	201	0.110	22	0.1	0.1	21.659	C
C-AB	531	133	826	0.643	525	1.4	3.0	12.607	B
C-A	314	79			314				
A-B	62	15			62				
A-C	606	151			606				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	174	43	495	0.351	174	0.5	0.5	11.320	B
B-A	22	6	199	0.111	22	0.1	0.1	21.938	C
C-AB	531	133	827	0.642	531	3.0	3.1	13.135	B
C-A	314	79			314				
A-B	62	15			62				
A-C	606	151			606				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	142	36	532	0.267	143	0.5	0.4	9.359	A
B-A	18	4	275	0.065	18	0.1	0.1	15.154	C
C-AB	358	90	729	0.492	365	3.1	1.5	10.667	B
C-A	332	83			332				
A-B	50	13			50				
A-C	494	124			494				

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	119	30	557	0.214	119	0.4	0.3	8.317	A
B-A	15	4	331	0.045	15	0.1	0.1	12.302	B
C-AB	268	67	678	0.395	270	1.5	0.9	9.321	A
C-A	310	78			310				
A-B	42	11			42				
A-C	414	104			414				

2022 CF, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Major arm width	Arm C - Major arm geometry	For two-way major roads, please interpret results with caution if the total major carriageway width is less than 6m.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	Two-way	Two-way		5.30	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	5.30	A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Description	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D9	2022 CF	AM	Covid Factor	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Av. Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	242	100.000
B		ONE HOUR	✓	346	100.000
C		ONE HOUR	✓	563	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
	A	B	C	
From	A	0	24	218
	B	39	0	307
	C	427	136	0

Vehicle Mix

HV %s

	To			
	A	B	C	
From	A	0	3	4
	B	8	0	1
	C	6	4	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.57	14.38	1.3	B	282	423
B-A	0.13	13.81	0.2	B	36	54
C-AB	0.26	7.24	0.4	A	145	218
C-A					371	557
A-B					22	33
A-C					200	300

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	231	58	621	0.372	229	0.0	0.6	9.207	A
B-A	29	7	439	0.067	29	0.0	0.1	9.470	A
C-AB	113	28	654	0.172	112	0.0	0.2	6.899	A
C-A	311	78			311				
A-B	18	5			18				
A-C	164	41			164				

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	276	69	609	0.453	275	0.6	0.8	10.855	B
B-A	35	9	395	0.089	35	0.1	0.1	10.794	B
C-AB	140	35	670	0.209	140	0.2	0.3	7.068	A
C-A	366	92			366				
A-B	22	5			22				
A-C	196	49			196				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	338	85	591	0.572	336	0.8	1.3	14.169	B
B-A	43	11	326	0.132	43	0.1	0.2	13.722	B
C-AB	184	46	702	0.261	183	0.3	0.4	7.230	A
C-A	436	109			436				
A-B	26	7			26				
A-C	240	60			240				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	338	85	590	0.572	338	1.3	1.3	14.381	B
B-A	43	11	324	0.132	43	0.2	0.2	13.808	B
C-AB	184	46	703	0.261	183	0.4	0.4	7.244	A
C-A	436	109			436				
A-B	26	7			26				
A-C	240	60			240				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	276	69	609	0.453	278	1.3	0.9	11.048	B
B-A	35	9	394	0.089	35	0.2	0.1	10.858	B
C-AB	140	35	671	0.209	141	0.4	0.3	7.092	A
C-A	366	92			366				
A-B	22	5			22				
A-C	196	49			196				

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	231	58	621	0.372	232	0.9	0.6	9.369	A
B-A	29	7	438	0.067	29	0.1	0.1	9.523	A
C-AB	113	28	654	0.172	113	0.3	0.2	6.940	A
C-A	311	78			311				
A-B	18	5			18				
A-C	164	41			164				

2022 CF, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Major arm width	Arm C - Major arm geometry	For two-way major roads, please interpret results with caution if the total major carriageway width is less than 6m.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	Two-way	Two-way		3.98	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	3.98	A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Description	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D10	2022 CF	PM	Covid Factor	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Av. Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	596	100.000
B		ONE HOUR	✓	159	100.000
C		ONE HOUR	✓	729	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
	A	B	C	
From	A	0	55	541
	B	19	0	140
	C	483	246	0

Vehicle Mix

HV %s

	To			
	A	B	C	
From	A	0	3	4
	B	8	0	1
	C	6	4	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.31	10.51	0.4	B	128	193
B-A	0.09	19.49	0.1	C	17	26
C-AB	0.57	11.34	2.2	B	329	493
C-A					340	511
A-B					50	76
A-C					496	745

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	105	26	559	0.188	104	0.0	0.2	7.975	A
B-A	14	4	347	0.041	14	0.0	0.0	11.687	B
C-AB	232	58	661	0.351	229	0.0	0.7	8.677	A
C-A	317	79			317				
A-B	41	10			41				
A-C	407	102			407				

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	126	31	535	0.235	126	0.2	0.3	8.865	A
B-A	17	4	294	0.058	17	0.0	0.1	14.033	B
C-AB	307	77	701	0.437	305	0.7	1.1	9.503	A
C-A	349	87			349				
A-B	49	12			49				
A-C	486	122			486				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	154	39	500	0.308	154	0.3	0.4	10.467	B
B-A	21	5	222	0.094	21	0.1	0.1	19.338	C
C-AB	447	112	784	0.570	443	1.1	2.1	11.076	B
C-A	356	89			356				
A-B	61	15			61				
A-C	596	149			596				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	154	39	500	0.308	154	0.4	0.4	10.506	B
B-A	21	5	220	0.095	21	0.1	0.1	19.492	C
C-AB	447	112	785	0.569	447	2.1	2.2	11.341	B
C-A	356	89			356				
A-B	61	15			61				
A-C	596	149			596				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	126	31	535	0.235	126	0.4	0.3	8.906	A
B-A	17	4	292	0.058	17	0.1	0.1	14.150	B
C-AB	307	77	703	0.437	311	2.2	1.2	9.791	A
C-A	349	87			349				
A-B	49	12			49				
A-C	486	122			486				

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	105	26	559	0.188	106	0.3	0.2	8.020	A
B-A	14	4	345	0.041	14	0.1	0.0	11.765	B
C-AB	232	58	661	0.351	234	1.2	0.7	8.862	A
C-A	317	79			317				
A-B	41	10			41				
A-C	407	102			407				

2027 CF, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Major arm width	Arm C - Major arm geometry	For two-way major roads, please interpret results with caution if the total major carriageway width is less than 6m.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	Two-way	Two-way		7.29	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	7.29	A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Description	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D11	2027 CF	AM	Covid Factor	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Av. Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	566	100.000
B		ONE HOUR	✓	360	100.000
C		ONE HOUR	✓	586	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	26	540
	B	40	0	320
	C	445	141	0

Vehicle Mix

HV %s

		To		
		A	B	C
From	A	0	3	4
	B	8	0	1
	C	6	4	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.72	26.39	2.5	D	294	440
B-A	0.23	27.05	0.3	D	37	55
C-AB	0.32	8.56	0.6	A	160	240
C-A					377	566
A-B					24	36
A-C					496	743

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	241	60	556	0.434	238	0.0	0.8	11.341	B
B-A	30	8	360	0.084	30	0.0	0.1	11.763	B
C-AB	120	30	604	0.199	119	0.0	0.3	7.719	A
C-A	321	80			321				
A-B	20	5			20				
A-C	407	102			407				

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	288	72	529	0.543	286	0.8	1.2	14.843	B
B-A	36	9	295	0.122	36	0.1	0.1	14.985	B
C-AB	153	38	617	0.247	152	0.3	0.4	8.079	A
C-A	374	94			374				
A-B	23	6			23				
A-C	485	121			485				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	352	88	489	0.720	347	1.2	2.4	24.821	C
B-A	44	11	192	0.230	43	0.1	0.3	26.068	D
C-AB	208	52	648	0.321	207	0.4	0.6	8.528	A
C-A	437	109			437				
A-B	29	7			29				
A-C	595	149			595				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	352	88	489	0.721	352	2.4	2.5	26.390	D
B-A	44	11	188	0.235	44	0.3	0.3	27.049	D
C-AB	208	52	648	0.321	208	0.6	0.6	8.564	A
C-A	437	109			437				
A-B	29	7			29				
A-C	595	149			595				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	288	72	529	0.544	293	2.5	1.2	15.703	C
B-A	36	9	291	0.124	37	0.3	0.2	15.347	C
C-AB	153	38	618	0.247	153	0.6	0.4	8.126	A
C-A	374	94			374				
A-B	23	6			23				
A-C	485	121			485				

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	241	60	555	0.434	243	1.2	0.8	11.703	B
B-A	30	8	358	0.084	30	0.2	0.1	11.891	B
C-AB	120	30	605	0.199	121	0.4	0.3	7.771	A
C-A	321	80			321				
A-B	20	5			20				
A-C	407	102			407				

2027 CF, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Major arm width	Arm C - Major arm geometry	For two-way major roads, please interpret results with caution if the total major carriageway width is less than 6m.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	Two-way	Two-way		4.30	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	4.30	A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Description	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D12	2027 CF	PM	Covid Factor	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Av. Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	621	100.000
B		ONE HOUR	✓	166	100.000
C		ONE HOUR	✓	759	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	57	564
	B	20	0	146
	C	503	256	0

Vehicle Mix

HV %s

		To		
		A	B	C
From	A	0	3	4
	B	8	0	1
	C	6	4	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.33	10.99	0.5	B	134	201
B-A	0.11	21.42	0.1	C	18	28
C-AB	0.60	11.96	2.6	B	354	530
C-A					343	514
A-B					52	78
A-C					518	776

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	110	27	554	0.198	109	0.0	0.2	8.147	A
B-A	15	4	336	0.045	15	0.0	0.1	12.114	B
C-AB	246	62	668	0.368	243	0.0	0.8	8.813	A
C-A	325	81			325				
A-B	43	11			43				
A-C	425	106			425				

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	131	33	529	0.248	131	0.2	0.3	9.128	A
B-A	18	4	281	0.064	18	0.1	0.1	14.792	B
C-AB	329	82	714	0.460	327	0.8	1.2	9.729	A
C-A	354	88			354				
A-B	51	13			51				
A-C	507	127			507				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	161	40	492	0.327	160	0.3	0.5	10.946	B
B-A	22	6	205	0.107	22	0.1	0.1	21.191	C
C-AB	486	121	808	0.602	481	1.2	2.5	11.601	B
C-A	350	87			350				
A-B	63	16			63				
A-C	621	155			621				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	161	40	491	0.327	161	0.5	0.5	10.994	B
B-A	22	6	204	0.108	22	0.1	0.1	21.418	C
C-AB	486	121	808	0.601	486	2.5	2.6	11.963	B
C-A	350	87			350				
A-B	63	16			63				
A-C	621	155			621				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	131	33	529	0.248	132	0.5	0.3	9.177	A
B-A	18	4	278	0.065	18	0.1	0.1	14.954	B
C-AB	329	82	716	0.459	334	2.6	1.3	10.101	B
C-A	354	88			354				
A-B	51	13			51				
A-C	507	127			507				

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	110	27	554	0.198	110	0.3	0.3	8.199	A
B-A	15	4	334	0.045	15	0.1	0.1	12.206	B
C-AB	246	62	669	0.368	248	1.3	0.8	9.028	A
C-A	325	81			325				
A-B	43	11			43				
A-C	425	106			425				

2027 + Development CF, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Major arm width	Arm C - Major arm geometry	For two-way major roads, please interpret results with caution if the total major carriageway width is less than 6m.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	Two-way	Two-way		9.46	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	9.46	A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Description	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D13	2027 + Development CF	AM	Covid Factor	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Av. Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	566	100.000
B		ONE HOUR	✓	386	100.000
C		ONE HOUR	✓	600	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
	A	B	C	
From	A	0	26	540
	B	40	0	346
	C	445	155	0

Vehicle Mix

HV %s

	To			
	A	B	C	
From	A	0	3	4
	B	8	0	1
	C	6	4	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.78	33.46	3.4	D	317	476
B-A	0.28	34.87	0.4	D	37	55
C-AB	0.35	8.78	0.8	A	179	269
C-A					371	557
A-B					24	36
A-C					496	743

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	260	65	555	0.469	257	0.0	0.9	12.054	B
B-A	30	8	348	0.086	30	0.0	0.1	12.185	B
C-AB	134	33	611	0.219	132	0.0	0.3	7.823	A
C-A	318	80			318				
A-B	20	5			20				
A-C	407	102			407				

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	311	78	529	0.588	309	0.9	1.4	16.385	C
B-A	36	9	277	0.130	36	0.1	0.2	16.104	C
C-AB	170	43	627	0.272	170	0.3	0.5	8.219	A
C-A	369	92			369				
A-B	23	6			23				
A-C	485	121			485				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	381	95	488	0.781	374	1.4	3.1	30.225	D
B-A	44	11	162	0.271	43	0.2	0.4	32.400	D
C-AB	234	59	663	0.353	233	0.5	0.8	8.738	A
C-A	427	107			427				
A-B	29	7			29				
A-C	595	149			595				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	381	95	487	0.783	380	3.1	3.4	33.457	D
B-A	44	11	155	0.284	44	0.4	0.4	34.871	D
C-AB	234	59	664	0.353	234	0.8	0.8	8.782	A
C-A	427	107			427				
A-B	29	7			29				
A-C	595	149			595				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	311	78	528	0.589	318	3.4	1.5	17.923	C
B-A	36	9	270	0.133	37	0.4	0.2	16.739	C
C-AB	170	43	628	0.272	172	0.8	0.5	8.281	A
C-A	369	92			369				
A-B	23	6			23				
A-C	485	121			485				

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	260	65	555	0.469	263	1.5	0.9	12.549	B
B-A	30	8	345	0.087	30	0.2	0.1	12.358	B
C-AB	134	33	611	0.219	134	0.5	0.3	7.885	A
C-A	318	80			318				
A-B	20	5			20				
A-C	407	102			407				

2027 + Development CF, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Major arm width	Arm C - Major arm geometry	For two-way major roads, please interpret results with caution if the total major carriageway width is less than 6m.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	Two-way	Two-way		5.22	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	5.22	A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Description	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D14	2027 + Development CF	PM	Covid Factor	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Av. Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	621	100.000
B		ONE HOUR	✓	180	100.000
C		ONE HOUR	✓	784	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	57	564
	B	20	0	160
	C	503	281	0

Vehicle Mix

HV %s

		To		
		A	B	C
From	A	0	3	4
	B	8	0	1
	C	6	4	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.36	11.58	0.6	B	147	220
B-A	0.12	23.16	0.1	C	18	28
C-AB	0.66	13.66	3.5	B	400	600
C-A					319	479
A-B					52	78
A-C					518	776

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	120	30	554	0.217	119	0.0	0.3	8.343	A
B-A	15	4	327	0.046	15	0.0	0.1	12.435	B
C-AB	276	69	682	0.404	272	0.0	0.9	9.140	A
C-A	315	79			315				
A-B	43	11			43				
A-C	425	106			425				

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	144	36	529	0.272	143	0.3	0.4	9.432	A
B-A	18	4	270	0.067	18	0.1	0.1	15.391	C
C-AB	371	93	734	0.505	369	0.9	1.5	10.315	B
C-A	334	83			334				
A-B	51	13			51				
A-C	507	127			507				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	176	44	491	0.359	175	0.4	0.6	11.511	B
B-A	22	6	192	0.115	22	0.1	0.1	22.815	C
C-AB	554	139	839	0.660	547	1.5	3.3	13.023	B
C-A	309	77			309				
A-B	63	16			63				
A-C	621	155			621				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	176	44	490	0.359	176	0.6	0.6	11.578	B
B-A	22	6	190	0.116	22	0.1	0.1	23.160	C
C-AB	554	139	840	0.660	554	3.3	3.5	13.656	B
C-A	309	77			309				
A-B	63	16			63				
A-C	621	155			621				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	144	36	528	0.272	145	0.6	0.4	9.493	A
B-A	18	4	267	0.067	18	0.1	0.1	15.624	C
C-AB	371	93	736	0.504	378	3.5	1.6	10.897	B
C-A	334	83			334				
A-B	51	13			51				
A-C	507	127			507				

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	120	30	554	0.217	121	0.4	0.3	8.403	A
B-A	15	4	325	0.046	15	0.1	0.1	12.552	B
C-AB	276	69	682	0.404	278	1.6	1.0	9.428	A
C-A	315	79			315				
A-B	43	11			43				
A-C	425	106			425				

2037, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Major arm width	Arm C - Major arm geometry	For two-way major roads, please interpret results with caution if the total major carriageway width is less than 6m.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	Two-way	Two-way		11.96	B

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	11.96	B

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Description	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D15	2037	AM	Covid Factor	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Av. Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	620	100.000
B		ONE HOUR	✓	395	100.000
C		ONE HOUR	✓	642	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
	A	B	C	
From	A	0	28	592
	B	44	0	351
	C	487	155	0

Vehicle Mix

HV %s

	To			
	A	B	C	
From	A	0	3	4
	B	8	0	1
	C	6	4	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.84	44.58	4.5	E	322	483
B-A	0.41	54.38	0.7	F	40	61
C-AB	0.36	8.84	0.8	A	185	278
C-A					404	606
A-B					26	39
A-C					543	815

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	264	66	543	0.487	261	0.0	0.9	12.717	B
B-A	33	8	329	0.101	33	0.0	0.1	13.077	B
C-AB	136	34	610	0.223	135	0.0	0.3	7.883	A
C-A	347	87			347				
A-B	21	5			21				
A-C	446	111			446				

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	316	79	513	0.615	313	0.9	1.5	17.978	C
B-A	40	10	253	0.156	39	0.1	0.2	18.181	C
C-AB	175	44	628	0.279	174	0.3	0.5	8.277	A
C-A	402	101			402				
A-B	25	6			25				
A-C	532	133			532				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	386	97	465	0.832	377	1.5	4.0	37.664	E
B-A	48	12	130	0.374	47	0.2	0.6	46.153	E
C-AB	244	61	671	0.364	243	0.5	0.8	8.790	A
C-A	462	116			462				
A-B	31	8			31				
A-C	652	163			652				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	386	97	462	0.836	385	4.0	4.5	44.581	E
B-A	48	12	119	0.407	48	0.6	0.7	54.378	F
C-AB	244	61	672	0.364	244	0.8	0.8	8.841	A
C-A	462	116			462				
A-B	31	8			31				
A-C	652	163			652				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	316	79	511	0.617	327	4.5	1.7	20.753	C
B-A	40	10	243	0.163	41	0.7	0.2	19.499	C
C-AB	175	44	629	0.278	176	0.8	0.5	8.346	A
C-A	402	101			402				
A-B	25	6			25				
A-C	532	133			532				

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	264	66	542	0.487	267	1.7	1.0	13.350	B
B-A	33	8	326	0.102	33	0.2	0.1	13.321	B
C-AB	136	34	610	0.223	137	0.5	0.4	7.952	A
C-A	347	87			347				
A-B	21	5			21				
A-C	446	111			446				

2037, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Major arm width	Arm C - Major arm geometry	For two-way major roads, please interpret results with caution if the total major carriageway width is less than 6m.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	Two-way	Two-way		5.49	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	5.49	A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Description	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D16	2037	PM	Covid Factor	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Av. Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	683	100.000
B		ONE HOUR	✓	182	100.000
C		ONE HOUR	✓	835	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	63	620
	B	22	0	160
	C	553	282	0

Vehicle Mix

HV %s

		To		
		A	B	C
From	A	0	3	4
	B	8	0	1
	C	6	4	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.38	12.45	0.6	B	147	220
B-A	0.15	28.41	0.2	D	20	30
C-AB	0.69	14.43	4.2	B	427	640
C-A					339	509
A-B					58	87
A-C					569	853

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	120	30	541	0.222	119	0.0	0.3	8.590	A
B-A	17	4	308	0.054	16	0.0	0.1	13.322	B
C-AB	287	72	690	0.415	283	0.0	1.0	9.191	A
C-A	342	86			342				
A-B	47	12			47				
A-C	467	117			467				

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	144	36	513	0.280	143	0.3	0.4	9.830	A
B-A	20	5	247	0.080	20	0.1	0.1	17.084	C
C-AB	392	98	752	0.522	389	1.0	1.7	10.427	B
C-A	359	90			359				
A-B	57	14			57				
A-C	557	139			557				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	176	44	469	0.376	175	0.4	0.6	12.354	B
B-A	24	6	164	0.148	24	0.1	0.2	27.750	D
C-AB	602	151	875	0.688	593	1.7	4.0	13.549	B
C-A	317	79			317				
A-B	69	17			69				
A-C	683	171			683				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	176	44	468	0.376	176	0.6	0.6	12.453	B
B-A	24	6	161	0.150	24	0.2	0.2	28.409	D
C-AB	602	151	876	0.687	601	4.0	4.2	14.428	B
C-A	317	79			317				
A-B	69	17			69				
A-C	683	171			683				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	144	36	512	0.281	145	0.6	0.4	9.910	A
B-A	20	5	243	0.081	20	0.2	0.1	17.439	C
C-AB	392	98	753	0.520	401	4.2	1.8	11.186	B
C-A	359	90			359				
A-B	57	14			57				
A-C	557	139			557				

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	120	30	541	0.223	121	0.4	0.3	8.661	A
B-A	17	4	305	0.054	17	0.1	0.1	13.473	B
C-AB	287	72	691	0.415	290	1.8	1.0	9.522	A
C-A	342	86			342				
A-B	47	12			47				
A-C	467	117			467				

2037 + Dev, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Major arm width	Arm C - Major arm geometry	For two-way major roads, please interpret results with caution if the total major carriageway width is less than 6m.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	Two-way	Two-way		18.90	C

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	18.90	C

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Description	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D17	2037 + Dev	AM	Covid Factor	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Av. Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	620	100.000
B		ONE HOUR	✓	421	100.000
C		ONE HOUR	✓	655	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
	A	B	C	
From	A	0	28	592
	B	44	0	377
	C	487	168	0

Vehicle Mix

HV %s

	To			
	A	B	C	
From	A	0	3	4
	B	8	0	1
	C	6	4	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.91	65.52	7.0	F	346	519
B-A	0.64	121.30	1.5	F	40	61
C-AB	0.39	9.08	1.0	A	204	307
C-A					397	595
A-B					26	39
A-C					543	815

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	284	71	543	0.523	280	0.0	1.1	13.616	B
B-A	33	8	317	0.105	33	0.0	0.1	13.655	B
C-AB	149	37	617	0.242	148	0.0	0.4	7.983	A
C-A	344	86			344				
A-B	21	5			21				
A-C	446	111			446				

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	339	85	512	0.662	336	1.1	1.9	20.253	C
B-A	40	10	233	0.170	39	0.1	0.2	20.054	C
C-AB	193	48	639	0.302	192	0.4	0.6	8.415	A
C-A	396	99			396				
A-B	25	6			25				
A-C	532	133			532				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	415	104	462	0.898	399	1.9	5.8	48.907	E
B-A	48	12	96	0.507	46	0.2	1.0	74.057	F
C-AB	271	68	688	0.395	270	0.6	0.9	9.013	A
C-A	450	112			450				
A-B	31	8			31				
A-C	652	163			652				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	415	104	458	0.906	410	5.8	7.0	65.523	F
B-A	48	12	76	0.636	46	1.0	1.5	121.303	F
C-AB	271	68	688	0.394	271	0.9	1.0	9.079	A
C-A	450	112			450				
A-B	31	8			31				
A-C	652	163			652				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	339	85	508	0.667	358	7.0	2.2	26.908	D
B-A	40	10	213	0.186	44	1.5	0.3	23.699	C
C-AB	193	48	640	0.301	194	1.0	0.6	8.504	A
C-A	396	99			396				
A-B	25	6			25				
A-C	532	133			532				

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	284	71	542	0.524	288	2.2	1.1	14.535	B
B-A	33	8	312	0.106	34	0.3	0.1	14.006	B
C-AB	149	37	617	0.242	150	0.6	0.4	8.061	A
C-A	344	86			344				
A-B	21	5			21				
A-C	446	111			446				

2037 + Dev, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Major arm width	Arm C - Major arm geometry	For two-way major roads, please interpret results with caution if the total major carriageway width is less than 6m.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	Two-way	Two-way		6.98	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	6.98	A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Description	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D18	2037 + Dev	PM	Covid Factor	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Av. Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	683	100.000
B		ONE HOUR	✓	197	100.000
C		ONE HOUR	✓	859	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
	A	B	C	
From	A	0	63	620
	B	22	0	175
	C	553	306	0

Vehicle Mix

HV %s

	To			
	A	B	C	
From	A	0	3	4
	B	8	0	1
	C	6	4	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.41	13.31	0.7	B	161	241
B-A	0.16	31.64	0.2	D	20	30
C-AB	0.75	17.50	5.7	C	478	717
C-A					310	465
A-B					58	87
A-C					569	853

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	132	33	541	0.243	130	0.0	0.3	8.825	A
B-A	17	4	300	0.055	16	0.0	0.1	13.705	B
C-AB	317	79	705	0.451	313	0.0	1.1	9.556	A
C-A	329	82			329				
A-B	47	12			47				
A-C	467	117			467				

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	157	39	512	0.307	157	0.3	0.4	10.212	B
B-A	20	5	237	0.084	20	0.1	0.1	17.888	C
C-AB	438	109	773	0.566	434	1.1	2.0	11.158	B
C-A	335	84			335				
A-B	57	14			57				
A-C	557	139			557				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	193	48	467	0.413	192	0.4	0.7	13.167	B
B-A	24	6	151	0.161	24	0.1	0.2	30.572	D
C-AB	679	170	910	0.746	666	2.0	5.4	15.811	C
C-A	267	67			267				
A-B	69	17			69				
A-C	683	171			683				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	193	48	466	0.414	193	0.7	0.7	13.315	B
B-A	24	6	147	0.165	24	0.2	0.2	31.640	D
C-AB	679	170	911	0.746	678	5.4	5.7	17.503	C
C-A	267	67			267				
A-B	69	17			69				
A-C	683	171			683				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	157	39	512	0.307	158	0.7	0.5	10.319	B
B-A	20	5	232	0.085	20	0.2	0.1	18.415	C
C-AB	438	109	775	0.565	451	5.7	2.3	12.418	B
C-A	335	84			335				
A-B	57	14			57				
A-C	557	139			557				

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	132	33	541	0.244	132	0.5	0.3	8.907	A
B-A	17	4	297	0.056	17	0.1	0.1	13.890	B
C-AB	317	79	706	0.450	322	2.3	1.2	10.001	B
C-A	329	82			329				
A-B	47	12			47				
A-C	467	117			467				



Appendix G



Stage 1 Road Safety Audit

Melton Road – Goodes Lane Junction, Syston

Proposed Right Turn Lane

Date: 30/05/2023

Report produced for: Taylor Wimpey

Report requested by: DTA Transport Planning Consultants

On behalf of: Leicestershire County Council

Report prepared by: Elaine Bingham, Road Safety Consulting Ltd

Reference: RSC/EB/DL/22142

Document Control Sheet

Project Title Melton Road-Goodes Lane Junction, Syston
Proposed Right Turn Lane

Report Title Stage 1 Road Safety Audit
Reference: RSC/EB/DL/22142

Revision -

Status Final

Control Date 30/05/2023

Record of Issue

Issue	Author	Date	Check	Date	Authorised	Date
Final	EB	25/05/23	DL	26/05/23	EB	30/05/23

Distribution

Organisation	Contact	Copies
DTA Transport Planning Consultants	Simon Tucker	Ecopy

Road Safety Consulting Ltd
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Whetstone
Leicestershire
LE8 6EY
Registered in England and Wales
Company Number 5225549

1. Introduction

- 1.1. This report results from a Stage 1 Road Safety Audit carried out on the proposed improvements to the Melton Road-Goodes Lane junction in association with a residential development on land north of Barkby Road in Syston. The Audit was carried out during May 2023.
- 1.2. This Road Safety Audit was produced for (client organisation): Taylor Wimpey, requested by (design organisation): DTA Transport Planning Consultants, on behalf of (overseeing organisation): Leicestershire County Council.
- 1.3. The Audit Team membership was as follows:
 - Audit Team Leader
Elaine Bingham
B Eng (Hons), MCIHT, MSoRSA
Certificate of Competence (Road Safety Audit)
 - Audit Team Member
Duncan Lord,
IEng, FIHE, Certificate of Competence (Road Safety Audit)
- 1.4. The audit took place at the offices of Road Safety Consulting Ltd between 23rd and 30th May 2023. The audit was undertaken in accordance with the email instruction from Simon Tucker at DTA Transport Planning Consultants. The report has been prepared with reference to DMRB – GG 119 – Road Safety Audit, with exceptions set out in paragraph 2.4.
- 1.5. The Audit Team visited the site together on the 23rd May 2023 at 2.30pm. Weather at the time of the audit was sunny and dry. The road surface was dry. Traffic flows were moderate. No pedestrians or cyclists were observed.
- 1.6. The audit comprised an examination of the information provided by the Design Organisation and listed in Appendix 1.
- 1.7. The Audit Team has examined and reported only on the road safety implications of the scheme as presented and has not examined or verified the compliance of the designs to any other criteria.
- 1.8. All comments and recommendations are referenced to the design drawing and the locations have been indicated on plans in Appendix 2.

2. Items Considered

2.1. Scheme Proposals

2.1.1. The proposed residential development consists of up to 196 dwellings on land on the northern side of Barkby Lane to the east of Empingham Drive.

2.1.2. The proposed improvements to the Melton Road-Goodes Lane junction consists of:

- widening the southeast bound approach to provide carriageway space for a right turn lane on Melton Road and alterations to the kerb radii's into Goodes Lane.
- Removal of the parking spaces on the northeast bound side of Melton Road;
- the removal of the bus layby for the southeast bound bus service on Melton Road

2.1.3. The proposals are shown on DTA drawing 20060-08 Rev B.

2.2. Information Provided to the Audit Team

2.2.1. Information that has been provided to the Audit Team, for the purpose of this audit, is as outlined within Appendix 1 of this report.

2.3. Departures from Standards (Design)

2.3.1. The Audit Team has not been advised of any Departures from Standard

2.4. Departures from Standards (Road Safety Audit)

2.4.1. This Road Safety Audit has been produced, with reference to DMRB – GG 119 – Road Safety Audit with the following exception.

- A formally approved Road Safety Audit brief has not been provided by Leicestershire County Council to the Audit Team, however the Audit Team received a supporting email with relevant background data and information, and therefore did not consider that the lack of a formal brief would compromise the production of a Road Safety Audit for these proposals.
- Section 5 of this report provides additional Observations, that are outside of the scope of GG119 (which specifically excludes the provision of additional comments within Road Safety Audit report). These comments, whilst considered outside the scope of the audit, have been produced to assist the designer in providing a safe design where any safety comment may be conditional on receiving more detailed information.

3. Items Raised at Previous Road Safety Audits

- 3.1. The Audit Team is not aware of any previous Road Safety Audits being carried on these proposals.

4. Items Raised by this Stage 1 Road Safety Audit

4.1. Problem

Location: Melton Road- Goodes Lane

Summary: Pedestrian to vehicle collisions

The removal of the parking bays outside the Syston Day Nursery may result in the displaced parking to park on Goodes Lane. This may increase the number of pedestrians with small children needing to cross Melton Road. It is acknowledged that there is a controlled crossing approximately 250m to the south of Goodes Lane junction, however it is likely that pedestrians will not deviate off their route and may attempt to cross Melton Road within the right turn lane area. During busy periods pedestrians may wait in the hatched area for a gap in traffic. This may lead to an increased risk of pedestrian to vehicle collisions.

Recommendation:

It is recommended that an appropriate pedestrian facility is provided, measure may include but not limited to incorporating a pedestrian refuge within the hatched area of the junction.

End of Safety Comments

5. Issues identified during the Stage 1 Road Safety Audit that are outside the Terms of Reference

5.1. ISSUE

Location: Goodes Lane

Reason considered to be outside the Terms of Reference: Detail Design Issue

The alterations to the kerb lines into Goodes Lane effects the existing uncontrolled crossing dropped kerb and tactile paving provision. It is recommended that appropriate dropped kerbs and tactile paving is provided.

5.2. ISSUE

Location: Melton Road at Puffin Crossing

Reason considered to be outside the Terms of Reference: Design Clarification

Details of the kerb line tie in at the Puffin crossing has not been shown on the drawing. The alterations to the kerb line may affect the edge clearance between the kerb line and traffic signal heads. Insufficient edge clearance may lead to vehicles hitting and damaging the traffic signal equipment. It is recommended that at the detail design stage the edge clearance is checked to ensure that sufficient distance is provided between the kerb edge and the traffic signal heads.

5.3. ISSUE

Location: Melton Road at Puffin Crossing

Reason considered to be outside the Terms of Reference: Detail Design Issue

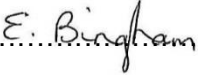
The zig zag lines for the Puffin crossing would need to be adjusted to suit the new layout, in accordance with Traffic Signs Manual Chapter 6.

6. Audit Team Statement

We certify that this Stage 1 Road Safety Audit has been carried with reference to GG 119.

Audit Team Leader


Elaine Bingham,
B Eng (Hons), MCIHT, MSoRSA
NH Certificate of Competence (Road Safety Audit)

Signed:  Dated 25th May 2023

Director of Road Safety Consulting Ltd

Audit Team Member

Duncan Lord,
IEng, FIHE
NH Certificate of Competence (Road Safety Audit)

Signed:  Dated 26th May 2023

Consultant working on behalf of Road Safety Consulting Ltd

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Whetstone
Leicestershire
LE8 6EY

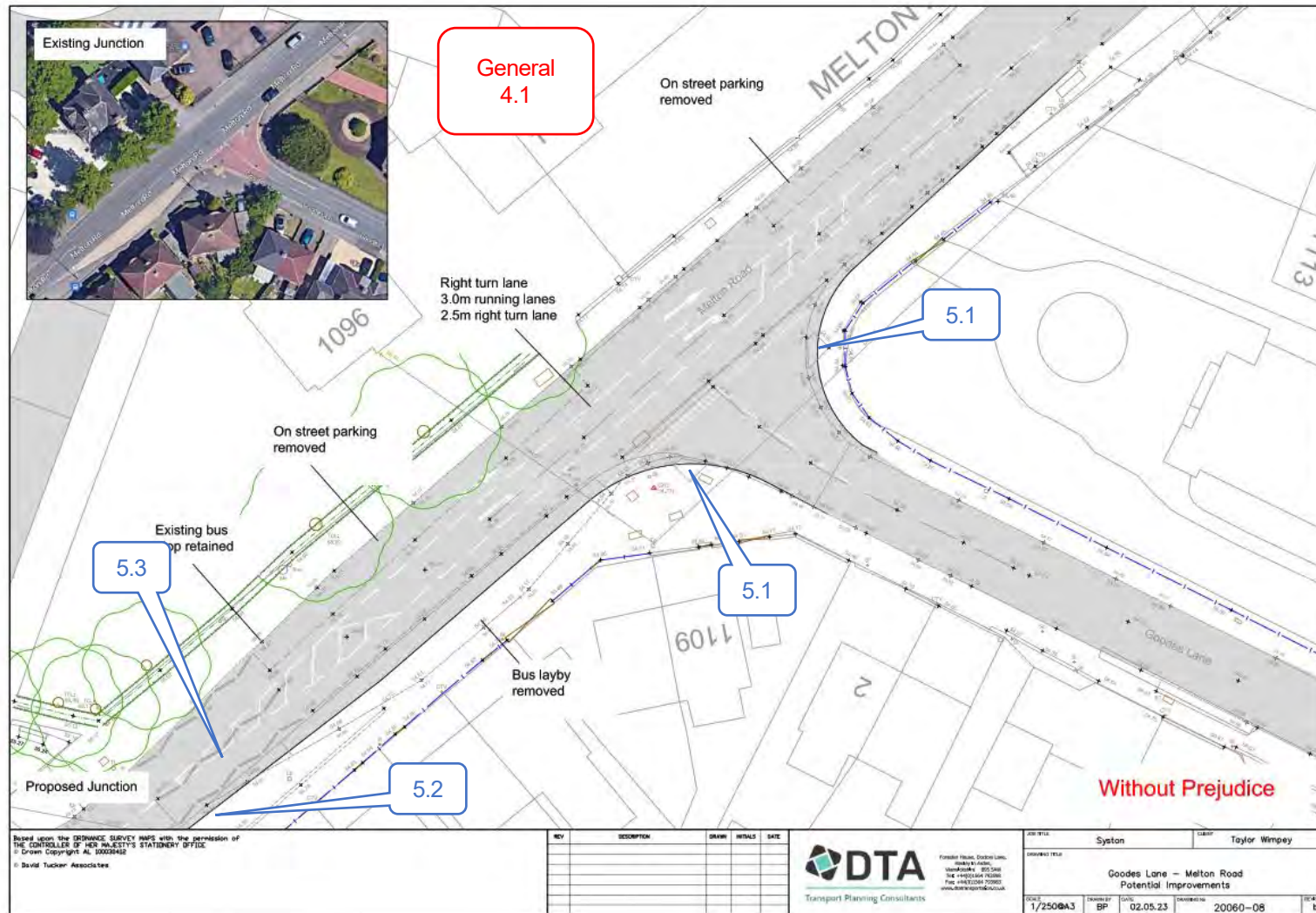
APPENDIX 1: Information Provided

List of Information Provided

Drawing Reference Number	Revision	Title
20060-08	B	Goodes Lane – Melton Road Potential Improvements

APPENDIX 2: Drawing Showing Problem Locations

Problem numbers shown on the attached drawing refer to Problem numbers within the report.





Appendix H

User and Project Details

Project:	
Title:	
Location:	Fosse Way_High Street, Syston
Additional detail:	
File name:	Fosse Way_High Street_RevD.lsg3x
Author:	
Company:	David Tucker Associates
Address:	

Phase Input Data

Phase Name	Phase Type	Assoc. Phase	Street Min	Cont Min
A	Traffic		7	7
B	Traffic		7	7
C	Ind. Arrow	B	4	4
D	Traffic		7	7

Phase Intergreens Matrix

		Starting Phase				
		A	B	C	D	
Terminating Phase	A					
	B					
	C					
	D					

Phase Delays

Term. Stage	Start Stage	Phase	Type	Value	Cont value
There are no Phase Delays defined					

Prohibited Stage Change

		To Stage		
		1	2	3
From Stage	1			
	2			
	3			

Phases in Stage

Stage No.	Phases in Stage
1	A B
2	B C
3	D

Give-Way Lane Input Data

Junction: Unnamed Junction											
Lane	Movement	Max Flow when Giving Way (PCU/Hr)	Min Flow when Giving Way (PCU/Hr)	Opposing Lane	Opp. Lane Coeff.	Opp. Mvmnts.	Right Turn Storage (PCU)	Non-Blocking Storage (PCU)	RTF	Right Turn Move up (s)	Max Turns in Intergreen (PCU)
1/1 (Fosse Way (south))	6/1 (Right)	1439	0	2/1	1.09	All	3.00	3.00	0.50	3	3.00

Lane Input Data

Junction: Unnamed Junction												
Lane	Lane Type	Phases	Start Disp.	End Disp.	Physical Length (PCU)	Sat Flow Type	Def User Saturation Flow (PCU/Hr)	Lane Width (m)	Gradient	Nearside Lane	Turns	Turning Radius (m)
1/1 (Fosse Way (south))	O	B C	2	3	60.0	Geom	-	4.00	0.00	Y	Arm 5 Ahead	Inf
											Arm 6 Right	16.00
2/1 (Fosse Way (north))	U	A	2	3	60.0	Geom	-	3.70	0.00	Y	Arm 4 Ahead	Inf
											Arm 6 Left	17.00
3/1 (High Street)	U	D	2	3	60.0	Geom	-	3.20	0.00	Y	Arm 4 Left	15.00
											Arm 5 Right	21.00
4/1 (Fosse Way (south))	U		2	3	60.0	Inf	-	-	-	-	-	-
5/1 (Fosse Way (north))	U		2	3	60.0	Inf	-	-	-	-	-	-
6/1 (High Street)	U		2	3	60.0	Inf	-	-	-	-	-	-

Lane Saturation Flows

Scenario 1: '2022 Base AM Peak' (FG1: '2022 Base AM Peak', Plan 1: 'Network Control Plan 1')

Junction: Unnamed Junction									
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)	
1/1 (Fosse Way (south))	4.00	0.00	Y	Arm 5 Ahead	Inf	24.7 %	1882	1882	
				Arm 6 Right	16.00	75.3 %			
2/1 (Fosse Way (north))	3.70	0.00	Y	Arm 4 Ahead	Inf	50.5 %	1902	1902	
				Arm 6 Left	17.00	49.5 %			
3/1 (High Street)	3.20	0.00	Y	Arm 4 Left	15.00	69.4 %	1773	1773	
				Arm 5 Right	21.00	30.6 %			
4/1 (Fosse Way (south) Lane 1)	Infinite Saturation Flow						Inf	Inf	
5/1 (Fosse Way (north) Lane 1)	Infinite Saturation Flow						Inf	Inf	
6/1 (High Street Lane 1)	Infinite Saturation Flow						Inf	Inf	

Scenario 2: '2022 Base PM Peak' (FG2: '2022 Base PM Peak', Plan 1: 'Network Control Plan 1')

Junction: Unnamed Junction								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (Fosse Way (south))	4.00	0.00	Y	Arm 5 Ahead	Inf	3.6 %	1848	1848
				Arm 6 Right	16.00	96.4 %		
2/1 (Fosse Way (north))	3.70	0.00	Y	Arm 4 Ahead	Inf	54.5 %	1908	1908
				Arm 6 Left	17.00	45.5 %		
3/1 (High Street)	3.20	0.00	Y	Arm 4 Left	15.00	65.6 %	1775	1775
				Arm 5 Right	21.00	34.4 %		
4/1 (Fosse Way (south) Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (Fosse Way (north) Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (High Street Lane 1)	Infinite Saturation Flow						Inf	Inf

Scenario 3: '2027 Base AM Peak' (FG3: '2027 AM Peak', Plan 1: 'Network Control Plan 1')

Junction: Unnamed Junction								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (Fosse Way (south))	4.00	0.00	Y	Arm 5 Ahead	Inf	24.5 %	1882	1882
				Arm 6 Right	16.00	75.5 %		
2/1 (Fosse Way (north))	3.70	0.00	Y	Arm 4 Ahead	Inf	50.1 %	1901	1901
				Arm 6 Left	17.00	49.9 %		
3/1 (High Street)	3.20	0.00	Y	Arm 4 Left	15.00	69.4 %	1773	1773
				Arm 5 Right	21.00	30.6 %		
4/1 (Fosse Way (south) Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (Fosse Way (north) Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (High Street Lane 1)	Infinite Saturation Flow						Inf	Inf

Scenario 4: '2027 Base PM Peak' (FG4: '2027 PM Peak', Plan 1: 'Network Control Plan 1')

Junction: Unnamed Junction								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (Fosse Way (south))	4.00	0.00	Y	Arm 5 Ahead	Inf	27.4 %	1887	1887
				Arm 6 Right	16.00	72.6 %		
2/1 (Fosse Way (north))	3.70	0.00	Y	Arm 4 Ahead	Inf	53.8 %	1907	1907
				Arm 6 Left	17.00	46.2 %		
3/1 (High Street)	3.20	0.00	Y	Arm 4 Left	15.00	65.8 %	1775	1775
				Arm 5 Right	21.00	34.2 %		
4/1 (Fosse Way (south) Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (Fosse Way (north) Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (High Street Lane 1)	Infinite Saturation Flow						Inf	Inf

Scenario 5: '2027 Base + Dev AM Peak' (FG5: '2027 + Dev AM Peak', Plan 1: 'Network Control Plan 1')

Junction: Unnamed Junction								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (Fosse Way (south))	4.00	0.00	Y	Arm 5 Ahead	Inf	23.9 %	1881	1881
				Arm 6 Right	16.00	76.1 %		
2/1 (Fosse Way (north))	3.70	0.00	Y	Arm 4 Ahead	Inf	49.9 %	1901	1901
				Arm 6 Left	17.00	50.1 %		
3/1 (High Street)	3.20	0.00	Y	Arm 4 Left	15.00	70.6 %	1773	1773
				Arm 5 Right	21.00	29.4 %		
4/1 (Fosse Way (south) Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (Fosse Way (north) Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (High Street Lane 1)	Infinite Saturation Flow						Inf	Inf

Scenario 6: '2027 Base + Dev PM Peak' (FG6: '2027+ Dev PM Peak', Plan 1: 'Network Control Plan 1')

Junction: Unnamed Junction								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (Fosse Way (south))	4.00	0.00	Y	Arm 5 Ahead	Inf	26.4 %	1885	1885
				Arm 6 Right	16.00	73.6 %		
2/1 (Fosse Way (north))	3.70	0.00	Y	Arm 4 Ahead	Inf	53.4 %	1907	1907
				Arm 6 Left	17.00	46.6 %		
3/1 (High Street)	3.20	0.00	Y	Arm 4 Left	15.00	66.3 %	1775	1775
				Arm 5 Right	21.00	33.7 %		
4/1 (Fosse Way (south) Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (Fosse Way (north) Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (High Street Lane 1)	Infinite Saturation Flow						Inf	Inf

Scenario 7: '2037 Base AM Peak' (FG7: '2037 AM Peak', Plan 1: 'Network Control Plan 1')

Junction: Unnamed Junction								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (Fosse Way (south))	4.00	0.00	Y	Arm 5 Ahead	Inf	24.5 %	1882	1882
				Arm 6 Right	16.00	75.5 %		
2/1 (Fosse Way (north))	3.70	0.00	Y	Arm 4 Ahead	Inf	50.1 %	1901	1901
				Arm 6 Left	17.00	49.9 %		
3/1 (High Street)	3.20	0.00	Y	Arm 4 Left	15.00	69.4 %	1773	1773
				Arm 5 Right	21.00	30.6 %		
4/1 (Fosse Way (south) Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (Fosse Way (north) Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (High Street Lane 1)	Infinite Saturation Flow						Inf	Inf

Scenario 8: '2037 Base PM Peak' (FG8: '2037 AM Peak', Plan 1: 'Network Control Plan 1')

Junction: Unnamed Junction								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (Fosse Way (south))	4.00	0.00	Y	Arm 5 Ahead	Inf	27.5 %	1887	1887
				Arm 6 Right	16.00	72.5 %		
2/1 (Fosse Way (north))	3.70	0.00	Y	Arm 4 Ahead	Inf	53.9 %	1907	1907
				Arm 6 Left	17.00	46.1 %		
3/1 (High Street)	3.20	0.00	Y	Arm 4 Left	15.00	65.8 %	1775	1775
				Arm 5 Right	21.00	34.2 %		
4/1 (Fosse Way (south) Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (Fosse Way (north) Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (High Street Lane 1)	Infinite Saturation Flow						Inf	Inf

Scenario 9: '2037 Base + Dev AM Peak' (FG9: '2037 + Dev AM Peak', Plan 1: 'Network Control Plan 1')

Junction: Unnamed Junction								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (Fosse Way (south))	4.00	0.00	Y	Arm 5 Ahead	Inf	24.0 %	1881	1881
				Arm 6 Right	16.00	76.0 %		
2/1 (Fosse Way (north))	3.70	0.00	Y	Arm 4 Ahead	Inf	50.0 %	1901	1901
				Arm 6 Left	17.00	50.0 %		
3/1 (High Street)	3.20	0.00	Y	Arm 4 Left	15.00	70.5 %	1773	1773
				Arm 5 Right	21.00	29.5 %		
4/1 (Fosse Way (south) Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (Fosse Way (north) Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (High Street Lane 1)	Infinite Saturation Flow						Inf	Inf

Scenario 10: '2037 Base + Dev PM Peak' (FG10: '2037 + Dev PM Peak', Plan 1: 'Network Control Plan 1')

Junction: Unnamed Junction								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (Fosse Way (south))	4.00	0.00	Y	Arm 5 Ahead	Inf	26.5 %	1885	1885
				Arm 6 Right	16.00	73.5 %		
2/1 (Fosse Way (north))	3.70	0.00	Y	Arm 4 Ahead	Inf	53.5 %	1907	1907
				Arm 6 Left	17.00	46.5 %		
3/1 (High Street)	3.20	0.00	Y	Arm 4 Left	15.00	66.4 %	1775	1775
				Arm 5 Right	21.00	33.6 %		
4/1 (Fosse Way (south) Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (Fosse Way (north) Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (High Street Lane 1)	Infinite Saturation Flow						Inf	Inf

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
1: '2022 Base AM Peak'	08:00	09:00	01:00	
2: '2022 Base PM Peak'	17:00	18:00	01:00	
3: '2027 AM Peak'	08:00	09:00	01:00	
4: '2027 PM Peak'	17:00	18:00	01:00	
5: '2027 + Dev AM Peak'	08:00	09:00	01:00	
6: '2027+ Dev PM Peak'	17:00	18:00	01:00	
7: '2037 AM Peak'	08:00	09:00	01:00	
8: '2037 PM Peak'	17:00	18:00	01:00	
9: '2037 + Dev AM Peak'	08:00	09:00	01:00	
10: '2037 + Dev PM Peak'	17:00	18:00	01:00	

Traffic Flows, Desired
FG1: '2022 Base AM Peak'
Desired Flow :

		Destination			
		A	B	C	Tot.
Origin	A	0	164	167	331
	B	132	0	299	431
	C	130	396	0	526
	Tot.	262	560	466	1288

FG2: '2022 Base PM Peak'
Desired Flow :

		Destination			
		A	B	C	Tot.
Origin	A	0	157	188	345
	B	195	0	372	567
	C	15	407	0	422
	Tot.	210	564	560	1334

FG3: '2027 AM Peak'
Desired Flow :

		Destination			
		A	B	C	Tot.
Origin	A	0	173	174	347
	B	142	0	322	464
	C	135	416	0	551
	Tot.	277	589	496	1362

FG4: '2027 PM Peak'
Desired Flow :

		Destination			
		A	B	C	Tot.
Origin	A	0	168	196	364
	B	205	0	394	599
	C	164	434	0	598
	Tot.	369	602	590	1561

FG5: '2027 + Dev AM Peak'

Desired Flow :

		Destination			
		A	B	C	Tot.
Origin	A	0	175	174	349
	B	145	0	348	493
	C	135	429	0	564
	Tot.	280	604	522	1406

FG6: '2027+ Dev PM Peak'

Desired Flow :

		Destination			
		A	B	C	Tot.
Origin	A	0	171	196	367
	B	207	0	408	615
	C	164	458	0	622
	Tot.	371	629	604	1604

FG7: '2037 AM Peak'

Desired Flow :

		Destination			
		A	B	C	Tot.
Origin	A	0	190	191	381
	B	155	0	352	507
	C	148	455	0	603
	Tot.	303	645	543	1491

FG8: '2037 AM Peak'

Desired Flow :

		Destination			
		A	B	C	Tot.
Origin	A	0	184	215	399
	B	225	0	432	657
	C	180	475	0	655
	Tot.	405	659	647	1711

FG9: '2037 + Dev AM Peak'

Desired Flow :

		Destination			
		A	B	C	Tot.
Origin	A	0	191	191	382
	B	158	0	378	536
	C	148	469	0	617
	Tot.	306	660	569	1535

FG10: '2037 + Dev PM Peak'

Desired Flow :

		Destination			
		A	B	C	Tot.
Origin	A	0	187	215	402
	B	226	0	446	672
	C	180	500	0	680
	Tot.	406	687	661	1754

Stage Timings

Scenario 1: '2022 Base AM Peak' (FG1: '2022 Base AM Peak', Plan 1: 'Network Control Plan 1')

Stage	1	2	3
Duration	48	12	41
Change Point	0	55	72

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	N/A	-	-		-	-	-	-	-	-	69.5%
Unnamed Junction	-	-	N/A	-	-		-	-	-	-	-	-	69.5%
1/1	Fosse Way (south) Ahead Right	O	N/A	N/A	B	C	1	65	12	526	1882	758	69.4%
2/1	Fosse Way (north) Ahead Left	U	N/A	N/A	A		1	48	-	331	1902	777	42.6%
3/1	High Street Left Right	U	N/A	N/A	D		1	41	-	431	1773	621	69.5%
4/1	Fosse Way (south)	U	N/A	N/A	-		-	-	-	466	Inf	Inf	0.0%
5/1	Fosse Way (north)	U	N/A	N/A	-		-	-	-	262	Inf	Inf	0.0%
6/1	High Street	U	N/A	N/A	-		-	-	-	560	Inf	Inf	0.0%
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	-	-	305	81	10	9.7	2.6	0.8	13.1	-	-	-	-
Unnamed Junction	-	-	305	81	10	9.7	2.6	0.8	13.1	-	-	-	-
1/1	526	526	305	81	10	3.4	1.1	0.8	5.3	36.3	14.0	1.1	15.2
2/1	331	331	-	-	-	2.3	0.4	-	2.7	29.5	7.8	0.4	8.2
3/1	431	431	-	-	-	4.0	1.1	-	5.1	42.9	12.3	1.1	13.5
4/1	466	466	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	262	262	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	560	560	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1			PRC for Signalled Lanes (%): 29.6		29.6		Total Delay for Signalled Lanes (pcuHr): 13.14		13.14		Cycle Time (s): 120		
			PRC Over All Lanes (%): 29.6		29.6		Total Delay Over All Lanes(pcuHr): 13.14		13.14				

Stage Timings

Scenario 2: '2022 Base PM Peak' (FG2: '2022 Base PM Peak', Plan 1: 'Network Control Plan 1')

Stage	1	2	3
Duration	30	21	50
Change Point	0	37	63

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	N/A	-	-		-	-	-	-	-	-	75.2%
Unnamed Junction	-	-	N/A	-	-		-	-	-	-	-	-	75.2%
1/1	Fosse Way (south) Ahead Right	O	N/A	N/A	B	C	1	56	21	422	1848	564	74.9%
2/1	Fosse Way (north) Ahead Left	U	N/A	N/A	A		1	30	-	345	1908	493	70.0%
3/1	High Street Left Right	U	N/A	N/A	D		1	50	-	567	1775	754	75.2%
4/1	Fosse Way (south)	U	N/A	N/A	-		-	-	-	560	Inf	Inf	0.0%
5/1	Fosse Way (north)	U	N/A	N/A	-		-	-	-	210	Inf	Inf	0.0%
6/1	High Street	U	N/A	N/A	-		-	-	-	564	Inf	Inf	0.0%
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	-	-	97	299	10	12.3	4.1	0.8	17.2	-	-	-	-
Unnamed Junction	-	-	97	299	10	12.3	4.1	0.8	17.2	-	-	-	-
1/1	422	422	97	299	10	3.8	1.5	0.8	6.1	51.8	12.7	1.5	14.1
2/1	345	345	-	-	-	3.9	1.1	-	5.0	52.3	10.3	1.1	11.5
3/1	567	567	-	-	-	4.6	1.5	-	6.1	38.6	15.9	1.5	17.4
4/1	560	560	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	210	210	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	564	564	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1			PRC for Signalled Lanes (%): 19.7		19.7		Total Delay for Signalled Lanes (pcuHr): 17.16		17.16		Cycle Time (s): 120		
			PRC Over All Lanes (%):		19.7		Total Delay Over All Lanes(pcuHr):		17.16				

Stage Timings

Scenario 3: '2027 Base AM Peak' (FG3: '2027 AM Peak', Plan 1: 'Network Control Plan 1')

Stage	1	2	3
Duration	48	12	41
Change Point	0	55	72

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	N/A	-	-		-	-	-	-	-	-	74.8%
Unnamed Junction	-	-	N/A	-	-		-	-	-	-	-	-	74.8%
1/1	Fosse Way (south) Ahead Right	O	N/A	N/A	B	C	1	65	12	551	1882	738	74.6%
2/1	Fosse Way (north) Ahead Left	U	N/A	N/A	A		1	48	-	347	1901	776	44.7%
3/1	High Street Left Right	U	N/A	N/A	D		1	41	-	464	1773	621	74.8%
4/1	Fosse Way (south)	U	N/A	N/A	-		-	-	-	496	Inf	Inf	0.0%
5/1	Fosse Way (north)	U	N/A	N/A	-		-	-	-	277	Inf	Inf	0.0%
6/1	High Street	U	N/A	N/A	-		-	-	-	589	Inf	Inf	0.0%
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	-	-	292	114	10	10.7	3.3	0.9	14.9	-	-	-	-
Unnamed Junction	-	-	292	114	10	10.7	3.3	0.9	14.9	-	-	-	-
1/1	551	551	292	114	10	3.8	1.4	0.9	6.1	39.8	15.6	1.4	17.1
2/1	347	347	-	-	-	2.5	0.4	-	2.9	29.9	8.3	0.4	8.7
3/1	464	464	-	-	-	4.4	1.5	-	5.9	45.6	13.5	1.5	15.0
4/1	496	496	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	277	277	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	589	589	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1			PRC for Signalled Lanes (%): 20.4		20.4		Total Delay for Signalled Lanes (pcuHr): 14.85		14.85		Cycle Time (s): 120		
			PRC Over All Lanes (%): 20.4				Total Delay Over All Lanes(pcuHr): 14.85						

Stage Timings

Scenario 4: '2027 Base PM Peak' (FG4: '2027 PM Peak', Plan 1: 'Network Control Plan 1')

Stage	1	2	3
Duration	47	9	45
Change Point	0	54	68

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	N/A	-	-		-	-	-	-	-	-	88.0%
Unnamed Junction	-	-	N/A	-	-		-	-	-	-	-	-	88.0%
1/1	Fosse Way (south) Ahead Right	O	N/A	N/A	B	C	1	61	9	598	1887	681	87.9%
2/1	Fosse Way (north) Ahead Left	U	N/A	N/A	A		1	47	-	364	1907	763	47.7%
3/1	High Street Left Right	U	N/A	N/A	D		1	45	-	599	1775	680	88.0%
4/1	Fosse Way (south)	U	N/A	N/A	-		-	-	-	590	Inf	Inf	0.0%
5/1	Fosse Way (north)	U	N/A	N/A	-		-	-	-	369	Inf	Inf	0.0%
6/1	High Street	U	N/A	N/A	-		-	-	-	602	Inf	Inf	0.0%
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	-	-	269	154	11	13.4	7.2	0.9	21.5	-	-	-	-
Unnamed Junction	-	-	269	154	11	13.4	7.2	0.9	21.5	-	-	-	-
1/1	598	598	269	154	11	5.0	3.4	0.9	9.2	55.6	18.6	3.4	22.0
2/1	364	364	-	-	-	2.7	0.5	-	3.2	31.2	8.9	0.5	9.4
3/1	599	599	-	-	-	5.7	3.4	-	9.1	54.8	18.5	3.4	21.9
4/1	590	590	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	369	369	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	602	602	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1			PRC for Signalled Lanes (%):	2.2	Total Delay for Signalled Lanes (pcuHr):			21.52	Cycle Time (s): 120				
			PRC Over All Lanes (%):	2.2	Total Delay Over All Lanes(pcuHr):			21.52					

Stage Timings

Scenario 5: '2027 Base + Dev AM Peak' (FG5: '2027 + Dev AM Peak', Plan 1: 'Network Control Plan 1')

Stage	1	2	3
Duration	40	19	42
Change Point	0	47	71

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	N/A	-	-		-	-	-	-	-	-	77.6%
Unnamed Junction	-	-	N/A	-	-		-	-	-	-	-	-	77.6%
1/1	Fosse Way (south) Ahead Right	O	N/A	N/A	B	C	1	64	19	564	1881	727	77.5%
2/1	Fosse Way (north) Ahead Left	U	N/A	N/A	A		1	40	-	349	1901	650	53.7%
3/1	High Street Left Right	U	N/A	N/A	D		1	42	-	493	1773	635	77.6%
4/1	Fosse Way (south)	U	N/A	N/A	-		-	-	-	522	Inf	Inf	0.0%
5/1	Fosse Way (north)	U	N/A	N/A	-		-	-	-	280	Inf	Inf	0.0%
6/1	High Street	U	N/A	N/A	-		-	-	-	604	Inf	Inf	0.0%
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	-	-	203	215	11	12.0	4.0	0.8	16.8	-	-	-	-
Unnamed Junction	-	-	203	215	11	12.0	4.0	0.8	16.8	-	-	-	-
1/1	564	564	203	215	11	4.3	1.7	0.8	6.8	43.2	16.5	1.7	18.1
2/1	349	349	-	-	-	3.1	0.6	-	3.7	37.8	9.3	0.6	9.9
3/1	493	493	-	-	-	4.7	1.7	-	6.4	46.6	14.5	1.7	16.2
4/1	522	522	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	280	280	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	604	604	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1			PRC for Signalled Lanes (%):	16.0	Total Delay for Signalled Lanes (pcuHr):			16.81	Cycle Time (s): 120				
			PRC Over All Lanes (%):	16.0	Total Delay Over All Lanes(pcuHr):			16.81					

Stage Timings

Scenario 6: '2027 Base + Dev PM Peak' (FG6: '2027+ Dev PM Peak', Plan 1: 'Network Control Plan 1')

Stage	1	2	3
Duration	52	5	44
Change Point	0	59	69

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	N/A	-	-		-	-	-	-	-	-	92.4%
Unnamed Junction	-	-	N/A	-	-		-	-	-	-	-	-	92.4%
1/1	Fosse Way (south) Ahead Right	O	N/A	N/A	B	C	1	62	5	622	1885	680	91.5%
2/1	Fosse Way (north) Ahead Left	U	N/A	N/A	A		1	52	-	367	1907	842	43.6%
3/1	High Street Left Right	U	N/A	N/A	D		1	44	-	615	1775	666	92.4%
4/1	Fosse Way (south)	U	N/A	N/A	-		-	-	-	604	Inf	Inf	0.0%
5/1	Fosse Way (north)	U	N/A	N/A	-		-	-	-	371	Inf	Inf	0.0%
6/1	High Street	U	N/A	N/A	-		-	-	-	629	Inf	Inf	0.0%
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	-	-	320	126	12	13.6	10.1	1.0	24.7	-	-	-	-
Unnamed Junction	-	-	320	126	12	13.6	10.1	1.0	24.7	-	-	-	-
1/1	622	622	320	126	12	5.1	4.6	1.0	10.7	62.2	19.7	4.6	24.3
2/1	367	367	-	-	-	2.4	0.4	-	2.7	26.9	8.4	0.4	8.7
3/1	615	615	-	-	-	6.1	5.1	-	11.2	65.5	19.5	5.1	24.5
4/1	604	604	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	371	371	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	629	629	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1			PRC for Signalled Lanes (%): -2.7		-2.7		Total Delay for Signalled Lanes (pcuHr): 24.68		24.68		Cycle Time (s): 120		
			PRC Over All Lanes (%): -2.7				Total Delay Over All Lanes(pcuHr): 24.68						

Stage Timings

Scenario 7: '2037 Base AM Peak' (FG7: '2037 AM Peak', Plan 1: 'Network Control Plan 1')

Stage	1	2	3
Duration	31	29	41
Change Point	0	38	72

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	N/A	-	-		-	-	-	-	-	-	82.7%
Unnamed Junction	-	-	N/A	-	-		-	-	-	-	-	-	82.7%
1/1	Fosse Way (south) Ahead Right	O	N/A	N/A	B	C	1	65	29	603	1882	729	82.7%
2/1	Fosse Way (north) Ahead Left	U	N/A	N/A	A		1	31	-	381	1901	507	75.2%
3/1	High Street Left Right	U	N/A	N/A	D		1	41	-	507	1773	621	81.7%
4/1	Fosse Way (south)	U	N/A	N/A	-		-	-	-	543	Inf	Inf	0.0%
5/1	Fosse Way (north)	U	N/A	N/A	-		-	-	-	303	Inf	Inf	0.0%
6/1	High Street	U	N/A	N/A	-		-	-	-	645	Inf	Inf	0.0%
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	-	-	85	359	11	14.2	5.9	0.7	20.8	-	-	-	-
Unnamed Junction	-	-	85	359	11	14.2	5.9	0.7	20.8	-	-	-	-
1/1	603	603	85	359	11	4.9	2.3	0.7	7.9	47.1	18.1	2.3	20.4
2/1	381	381	-	-	-	4.3	1.5	-	5.7	54.3	11.6	1.5	13.1
3/1	507	507	-	-	-	5.0	2.2	-	7.2	50.8	15.4	2.2	17.5
4/1	543	543	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	303	303	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	645	645	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1			PRC for Signalled Lanes (%): 8.8		8.8		Total Delay for Signalled Lanes (pcuHr): 20.79		20.79		Cycle Time (s): 120		
			PRC Over All Lanes (%): 8.8		8.8		Total Delay Over All Lanes(pcuHr): 20.79		20.79				

Stage Timings

Scenario 8: '2037 Base PM Peak' (FG8: '2037 AM Peak', Plan 1: 'Network Control Plan 1')

Stage	1	2	3
Duration	36	21	44
Change Point	0	43	69

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	N/A	-	-		-	-	-	-	-	-	98.7%
Unnamed Junction	-	-	N/A	-	-		-	-	-	-	-	-	98.7%
1/1	Fosse Way (south) Ahead Right	O	N/A	N/A	B	C	1	62	21	655	1887	672	97.5%
2/1	Fosse Way (north) Ahead Left	U	N/A	N/A	A		1	36	-	399	1907	588	67.9%
3/1	High Street Left Right	U	N/A	N/A	D		1	44	-	657	1775	666	98.7%
4/1	Fosse Way (south)	U	N/A	N/A	-		-	-	-	647	Inf	Inf	0.0%
5/1	Fosse Way (north)	U	N/A	N/A	-		-	-	-	405	Inf	Inf	0.0%
6/1	High Street	U	N/A	N/A	-		-	-	-	659	Inf	Inf	0.0%
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	-	-	126	327	22	17.0	21.2	0.8	38.9	-	-	-	-
Unnamed Junction	-	-	126	327	22	17.0	21.2	0.8	38.9	-	-	-	-
1/1	655	655	126	327	22	6.2	9.3	0.8	16.3	89.3	21.5	9.3	30.8
2/1	399	399	-	-	-	4.0	1.0	-	5.1	45.7	11.5	1.0	12.6
3/1	657	657	-	-	-	6.8	10.8	-	17.6	96.6	21.7	10.8	32.6
4/1	647	647	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	405	405	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	659	659	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1			PRC for Signalled Lanes (%): -9.7		-9.7		Total Delay for Signalled Lanes (pcuHr): 38.95		38.95		Cycle Time (s): 120		
			PRC Over All Lanes (%): -9.7				Total Delay Over All Lanes(pcuHr): 38.95						

Stage Timings

Scenario 9: '2037 Base + Dev AM Peak' (FG9: '2037 + Dev AM Peak', Plan 1: 'Network Control Plan 1')

Stage	1	2	3
Duration	39	21	41
Change Point	0	46	72

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	N/A	-	-		-	-	-	-	-	-	86.4%
Unnamed Junction	-	-	N/A	-	-		-	-	-	-	-	-	86.4%
1/1	Fosse Way (south) Ahead Right	O	N/A	N/A	B	C	1	65	21	617	1881	714	86.4%
2/1	Fosse Way (north) Ahead Left	U	N/A	N/A	A		1	39	-	382	1901	634	60.3%
3/1	High Street Left Right	U	N/A	N/A	D		1	41	-	536	1773	621	86.4%
4/1	Fosse Way (south)	U	N/A	N/A	-		-	-	-	569	Inf	Inf	0.0%
5/1	Fosse Way (north)	U	N/A	N/A	-		-	-	-	306	Inf	Inf	0.0%
6/1	High Street	U	N/A	N/A	-		-	-	-	660	Inf	Inf	0.0%
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	-	-	169	288	12	14.0	6.7	0.8	21.6	-	-	-	-
Unnamed Junction	-	-	169	288	12	14.0	6.7	0.8	21.6	-	-	-	-
1/1	617	617	169	288	12	5.1	3.0	0.8	8.9	51.9	18.9	3.0	21.8
2/1	382	382	-	-	-	3.5	0.8	-	4.3	40.5	10.6	0.8	11.4
3/1	536	536	-	-	-	5.4	3.0	-	8.4	56.2	16.5	3.0	19.5
4/1	569	569	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	306	306	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	660	660	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1			PRC for Signalled Lanes (%):	4.2	Total Delay for Signalled Lanes (pcuHr):			21.56	Cycle Time (s): 120				
			PRC Over All Lanes (%):	4.2	Total Delay Over All Lanes(pcuHr):			21.56					

Stage Timings

Scenario 10: '2037 Base + Dev PM Peak' (FG10: '2037 + Dev PM Peak', Plan 1: 'Network Control Plan 1')

Stage	1	2	3
Duration	33	24	44
Change Point	0	40	69

Network Results

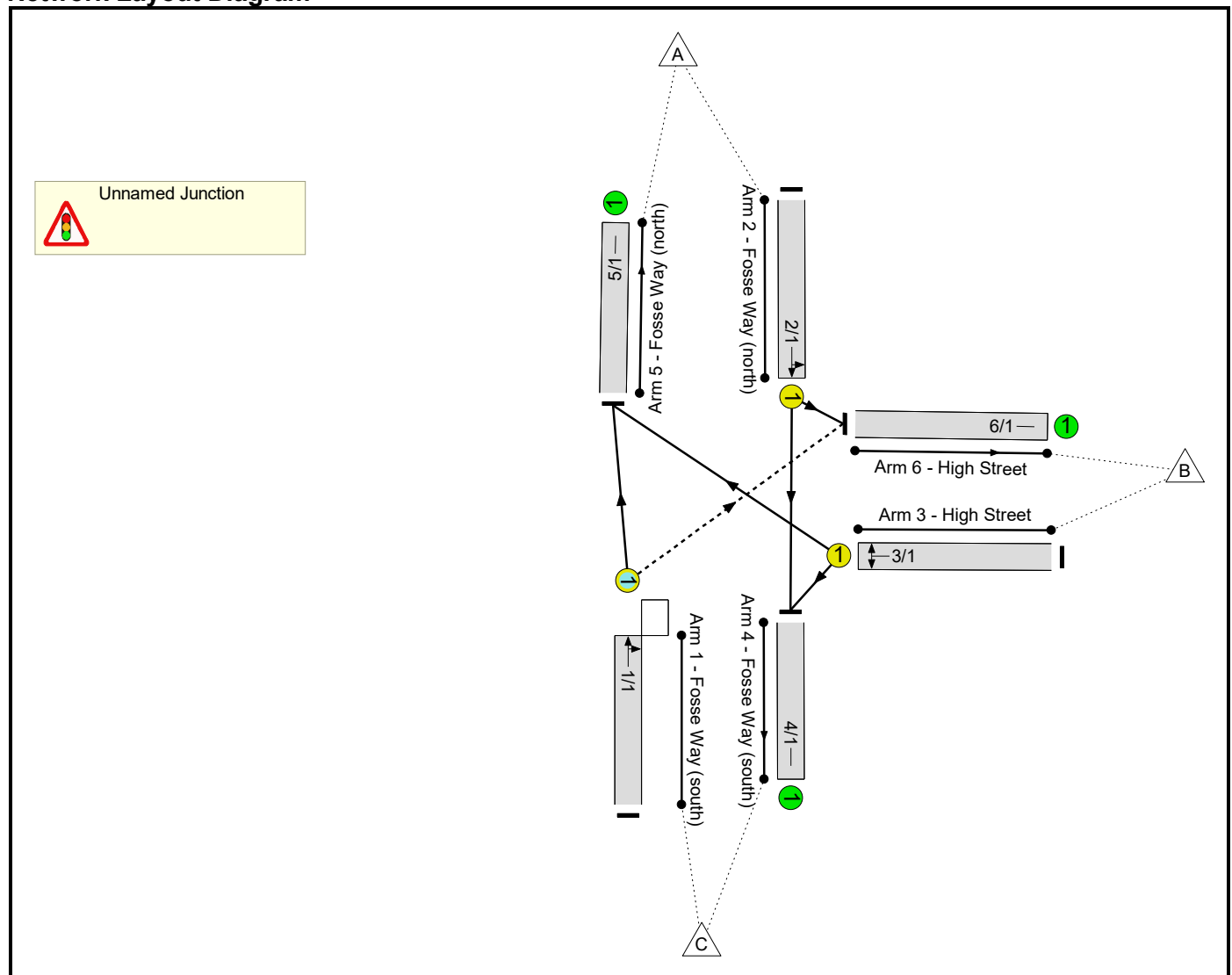
Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	N/A	-	-		-	-	-	-	-	-	101.8%
Unnamed Junction	-	-	N/A	-	-		-	-	-	-	-	-	101.8%
1/1	Fosse Way (south) Ahead Right	O	N/A	N/A	B	C	1	62	24	680	1885	668	101.8%
2/1	Fosse Way (north) Ahead Left	U	N/A	N/A	A		1	33	-	402	1907	540	74.4%
3/1	High Street Left Right	U	N/A	N/A	D		1	44	-	672	1775	666	101.0%
4/1	Fosse Way (south)	U	N/A	N/A	-		-	-	-	661	Inf	Inf	0.0%
5/1	Fosse Way (north)	U	N/A	N/A	-		-	-	-	406	Inf	Inf	0.0%
6/1	High Street	U	N/A	N/A	-		-	-	-	687	Inf	Inf	0.0%
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	-	-	92	365	35	19.1	32.5	0.7	52.3	-	-	-	-
Unnamed Junction	-	-	92	365	35	19.1	32.5	0.7	52.3	-	-	-	-
1/1	680	668	92	365	35	7.3	16.4	0.7	24.4	129.1	23.1	16.4	39.5
2/1	402	402	-	-	-	4.4	1.4	-	5.8	51.8	12.1	1.4	13.5
3/1	672	666	-	-	-	7.5	14.7	-	22.1	118.5	22.6	14.7	37.3
4/1	657	657	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	401	401	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	678	678	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1			PRC for Signalled Lanes (%): -13.1		Total Delay for Signalled Lanes (pcuHr): 52.29		Cycle Time (s): 120						
			PRC Over All Lanes (%): -13.1		Total Delay Over All Lanes(pcuHr): 52.29								

Full Input Data And Results
Full Input Data And Results

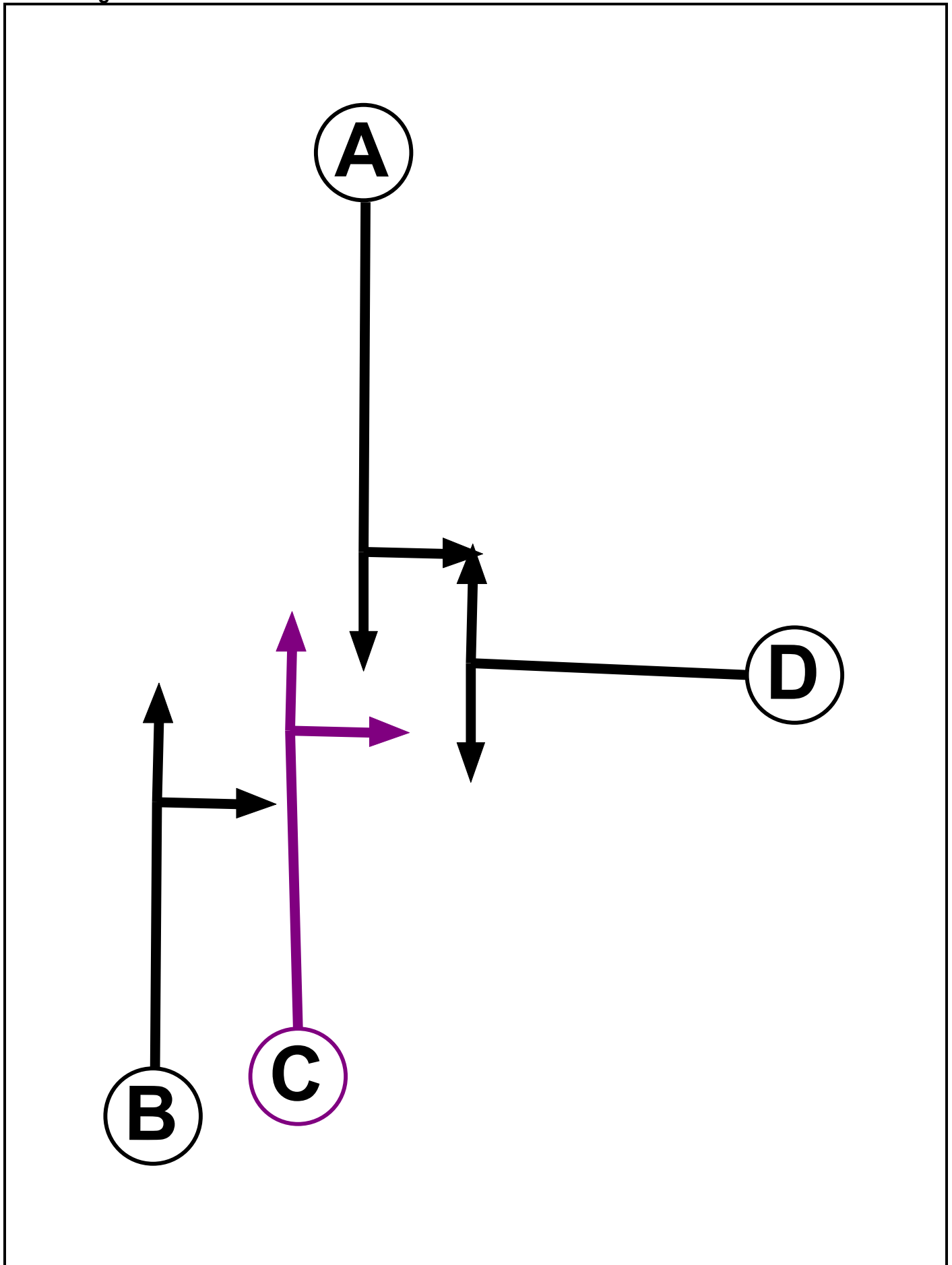
User and Project Details

Project:	
Title:	
Location:	Fosse Way_High Street, Syston
Additional detail:	
File name:	Fosse Way_High Street_RevD.lsg3x
Author:	
Company:	David Tucker Associates
Address:	

Network Layout Diagram



Phase Diagram



Full Input Data And Results

Phase Input Data

Phase Name	Phase Type	Assoc. Phase	Street Min	Cont Min
A	Traffic		7	7
B	Traffic		7	7
C	Ind. Arrow	B	4	4
D	Traffic		7	7

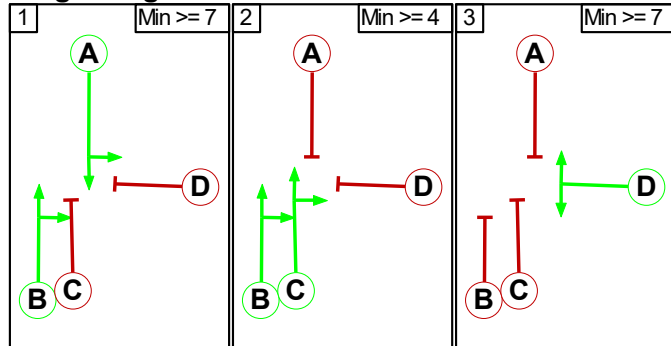
Phase Intergreens Matrix

		Starting Phase			
		A	B	C	D
Terminating Phase	A	-	-	5	5
	B	-	-	-	7
	C	5	-	-	7
	D	7	7	5	-

Phases in Stage

Stage No.	Phases in Stage
1	A B
2	B C
3	D

Stage Diagram



Phase Delays

Term. Stage	Start Stage	Phase	Type	Value	Cont value
There are no Phase Delays defined					

Prohibited Stage Change

		To Stage		
		1	2	3
From Stage	1	-	5	7
	2	5	-	7
	3	7	X	-

Full Input Data And Results

Give-Way Lane Input Data

Junction: Unnamed Junction											
Lane	Movement	Max Flow when Giving Way (PCU/Hr)	Min Flow when Giving Way (PCU/Hr)	Opposing Lane	Opp. Lane Coeff.	Opp. Mvmnts.	Right Turn Storage (PCU)	Non-Blocking Storage (PCU)	RTF	Right Turn Move up (s)	Max Turns in Intergreen (PCU)
1/1 (Fosse Way (south))	6/1 (Right)	1439	0	2/1	1.09	All	2.00	2.00	0.50	2	2.00

Full Input Data And Results

Lane Input Data

Junction: Unnamed Junction												
Lane	Lane Type	Phases	Start Disp.	End Disp.	Physical Length (PCU)	Sat Flow Type	Def User Saturation Flow (PCU/Hr)	Lane Width (m)	Gradient	Nearside Lane	Turns	Turning Radius (m)
1/1 (Fosse Way (south))	O	B C	2	3	60.0	Geom	-	3.30	0.00	Y	Arm 5 Ahead	Inf
											Arm 6 Right	16.00
2/1 (Fosse Way (north))	U	A	2	3	60.0	Geom	-	3.70	0.00	Y	Arm 4 Ahead	Inf
											Arm 6 Left	17.00
3/1 (High Street)	U	D	2	3	60.0	Geom	-	3.20	0.00	Y	Arm 4 Left	15.00
											Arm 5 Right	21.00
4/1 (Fosse Way (south))	U		2	3	60.0	Inf	-	-	-	-	-	-
5/1 (Fosse Way (north))	U		2	3	60.0	Inf	-	-	-	-	-	-
6/1 (High Street)	U		2	3	60.0	Inf	-	-	-	-	-	-

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
1: '2022 Base AM Peak'	08:00	09:00	01:00	
2: '2022 Base PM Peak'	17:00	18:00	01:00	
3: '2027 AM Peak'	08:00	09:00	01:00	
4: '2027 PM Peak'	17:00	18:00	01:00	
5: '2027 + Dev AM Peak'	08:00	09:00	01:00	
6: '2027+ Dev PM Peak'	17:00	18:00	01:00	

Scenario 1: '2022 Base AM Peak' (FG1: '2022 Base AM Peak', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

	Destination				
		A	B	C	Tot.
Origin	A	0	164	167	331
	B	132	0	299	431
	C	130	396	0	526
	Tot.	262	560	466	1288

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 1: 2022 Base AM Peak
Junction: Unnamed Junction	
1/1	526
2/1	331
3/1	431
4/1	466
5/1	262
6/1	560

Lane Saturation Flows

Junction: Unnamed Junction								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (Fosse Way (south))	3.30	0.00	Y	Arm 5 Ahead	Inf	24.7 %	1817	1817
				Arm 6 Right	16.00	75.3 %		
2/1 (Fosse Way (north))	3.70	0.00	Y	Arm 4 Ahead	Inf	50.5 %	1902	1902
				Arm 6 Left	17.00	49.5 %		
3/1 (High Street)	3.20	0.00	Y	Arm 4 Left	15.00	69.4 %	1773	1773
				Arm 5 Right	21.00	30.6 %		
4/1 (Fosse Way (south) Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (Fosse Way (north) Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (High Street Lane 1)	Infinite Saturation Flow						Inf	Inf

Scenario 2: '2022 Base PM Peak' (FG2: '2022 Base PM Peak', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

Origin	Destination			
	A	B	C	Tot.
A	0	157	188	345
B	195	0	372	567
C	15	407	0	422
Tot.	210	564	560	1334

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 2: 2022 Base PM Peak
Junction: Unnamed Junction	
1/1	422
2/1	345
3/1	567
4/1	560
5/1	210
6/1	564

Lane Saturation Flows

Junction: Unnamed Junction								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (Fosse Way (south))	3.30	0.00	Y	Arm 5 Ahead	Inf	3.6 %	1784	1784
				Arm 6 Right	16.00	96.4 %		
2/1 (Fosse Way (north))	3.70	0.00	Y	Arm 4 Ahead	Inf	54.5 %	1908	1908
				Arm 6 Left	17.00	45.5 %		
3/1 (High Street)	3.20	0.00	Y	Arm 4 Left	15.00	65.6 %	1775	1775
				Arm 5 Right	21.00	34.4 %		
4/1 (Fosse Way (south) Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (Fosse Way (north) Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (High Street Lane 1)	Infinite Saturation Flow						Inf	Inf

Scenario 3: '2027 Base AM Peak' (FG3: '2027 AM Peak', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

	Destination				
	A	B	C	Tot.	
Origin	A	0	173	174	347
	B	142	0	322	464
	C	135	416	0	551
	Tot.	277	589	496	1362

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 3: 2027 Base AM Peak
Junction: Unnamed Junction	
1/1	551
2/1	347
3/1	464
4/1	496
5/1	277
6/1	589

Lane Saturation Flows

Junction: Unnamed Junction								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (Fosse Way (south))	3.30	0.00	Y	Arm 5 Ahead	Inf	24.5 %	1816	1816
				Arm 6 Right	16.00	75.5 %		
2/1 (Fosse Way (north))	3.70	0.00	Y	Arm 4 Ahead	Inf	50.1 %	1901	1901
				Arm 6 Left	17.00	49.9 %		
3/1 (High Street)	3.20	0.00	Y	Arm 4 Left	15.00	69.4 %	1773	1773
				Arm 5 Right	21.00	30.6 %		
4/1 (Fosse Way (south) Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (Fosse Way (north) Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (High Street Lane 1)	Infinite Saturation Flow						Inf	Inf

Scenario 4: '2027 Base PM Peak' (FG4: '2027 PM Peak', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

	Destination				
	A	B	C	Tot.	
Origin	A	0	168	196	364
	B	205	0	394	599
	C	164	434	0	598
	Tot.	369	602	590	1561

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 4: 2027 Base PM Peak
Junction: Unnamed Junction	
1/1	598
2/1	364
3/1	599
4/1	590
5/1	369
6/1	602

Lane Saturation Flows

Junction: Unnamed Junction								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (Fosse Way (south))	3.30	0.00	Y	Arm 5 Ahead	Inf	27.4 %	1821	1821
				Arm 6 Right	16.00	72.6 %		
2/1 (Fosse Way (north))	3.70	0.00	Y	Arm 4 Ahead	Inf	53.8 %	1907	1907
				Arm 6 Left	17.00	46.2 %		
3/1 (High Street)	3.20	0.00	Y	Arm 4 Left	15.00	65.8 %	1775	1775
				Arm 5 Right	21.00	34.2 %		
4/1 (Fosse Way (south) Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (Fosse Way (north) Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (High Street Lane 1)	Infinite Saturation Flow						Inf	Inf

Scenario 5: '2027 Base + Dev AM Peak' (FG5: '2027 + Dev AM Peak', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

	Destination				
	A	B	C	Tot.	
Origin	A	0	175	174	349
	B	145	0	348	493
	C	135	429	0	564
	Tot.	280	604	522	1406

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 5: 2027 Base + Dev AM Peak
Junction: Unnamed Junction	
1/1	564
2/1	349
3/1	493
4/1	522
5/1	280
6/1	604

Lane Saturation Flows

Junction: Unnamed Junction								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (Fosse Way (south))	3.30	0.00	Y	Arm 5 Ahead	Inf	23.9 %	1816	1816
				Arm 6 Right	16.00	76.1 %		
2/1 (Fosse Way (north))	3.70	0.00	Y	Arm 4 Ahead	Inf	49.9 %	1901	1901
				Arm 6 Left	17.00	50.1 %		
3/1 (High Street)	3.20	0.00	Y	Arm 4 Left	15.00	70.6 %	1773	1773
				Arm 5 Right	21.00	29.4 %		
4/1 (Fosse Way (south) Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (Fosse Way (north) Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (High Street Lane 1)	Infinite Saturation Flow						Inf	Inf

Scenario 6: '2027 Base + Dev PM Peak' (FG6: '2027+ Dev PM Peak', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

	Destination				
	A	B	C	Tot.	
Origin	A	0	171	196	367
	B	207	0	408	615
	C	164	458	0	622
	Tot.	371	629	604	1604

Traffic Lane Flows

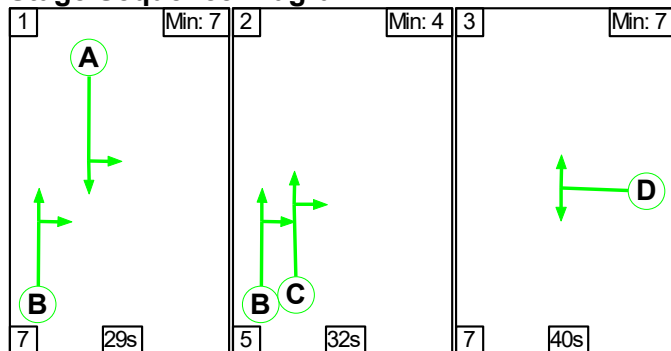
Lane	Scenario 6: 2027 Base + Dev PM Peak
Junction: Unnamed Junction	
1/1	622
2/1	367
3/1	615
4/1	604
5/1	371
6/1	629

Lane Saturation Flows

Junction: Unnamed Junction								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (Fosse Way (south))	3.30	0.00	Y	Arm 5 Ahead	Inf	26.4 %	1819	1819
				Arm 6 Right	16.00	73.6 %		
2/1 (Fosse Way (north))	3.70	0.00	Y	Arm 4 Ahead	Inf	53.4 %	1907	1907
				Arm 6 Left	17.00	46.6 %		
3/1 (High Street)	3.20	0.00	Y	Arm 4 Left	15.00	66.3 %	1775	1775
				Arm 5 Right	21.00	33.7 %		
4/1 (Fosse Way (south) Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (Fosse Way (north) Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (High Street Lane 1)	Infinite Saturation Flow						Inf	Inf

Scenario 1: '2022 Base AM Peak' (FG1: '2022 Base AM Peak', Plan 1: 'Network Control Plan 1')

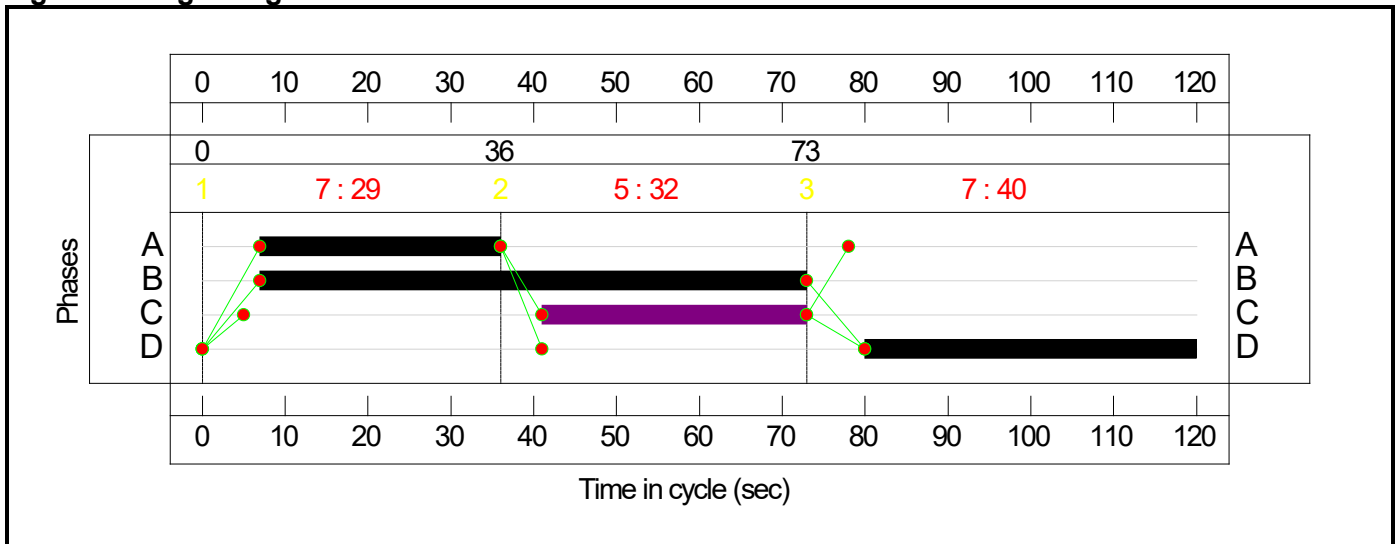
Stage Sequence Diagram




Stage Timings

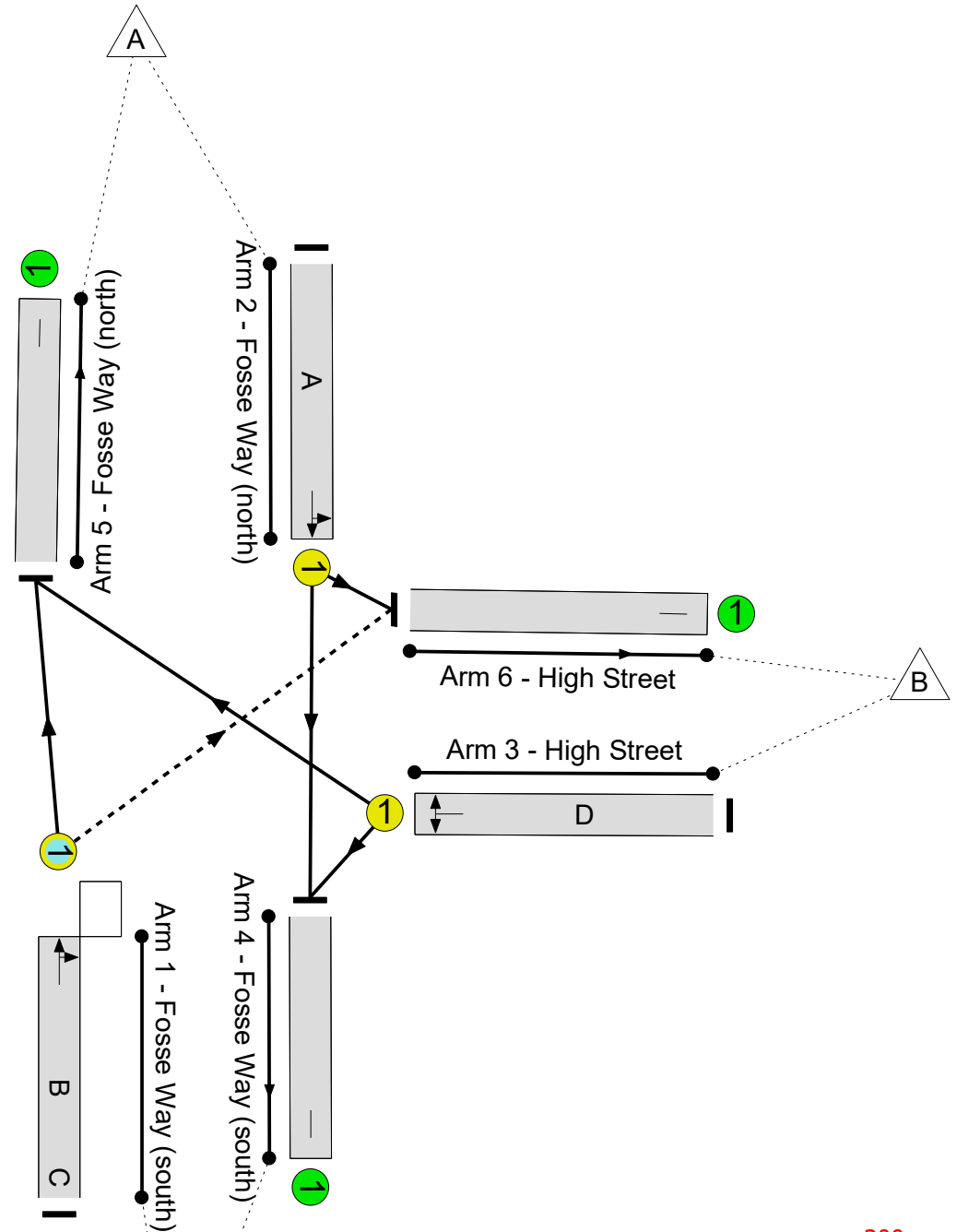
Stage	1	2	3
Duration	29	32	40
Change Point	0	36	73

Signal Timings Diagram



Full Input Data And Results
Network Layout Diagram

 **Unnamed Junction**
PRC: 26.3 %
Total Traffic Delay: 15.8 pcuHr



Full Input Data And Results

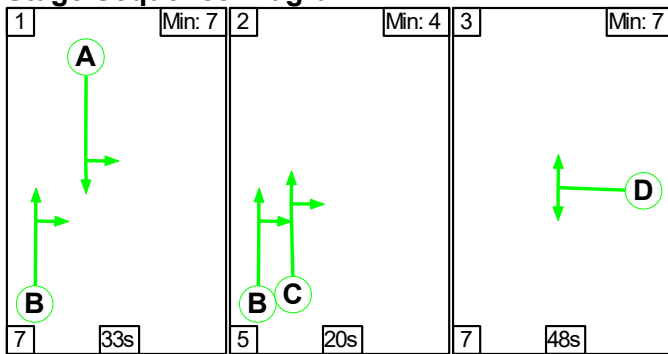
Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	N/A	-	-		-	-	-	-	-	-	71.3%
Unnamed Junction	-	-	N/A	-	-		-	-	-	-	-	-	71.3%
1/1	Fosse Way (south) Ahead Right	O	N/A	N/A	B	C	1	66	32	526	1817	738	71.3%
2/1	Fosse Way (north) Ahead Left	U	N/A	N/A	A		1	29	-	331	1902	475	69.6%
3/1	High Street Left Right	U	N/A	N/A	D		1	40	-	431	1773	606	71.1%
4/1	Fosse Way (south)	U	N/A	N/A	-		-	-	-	466	Inf	Inf	0.0%
5/1	Fosse Way (north)	U	N/A	N/A	-		-	-	-	262	Inf	Inf	0.0%
6/1	High Street	U	N/A	N/A	-		-	-	-	560	Inf	Inf	0.0%
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	-	-	99	291	7	11.8	3.6	0.4	15.8	-	-	-	-
Unnamed Junction	-	-	99	291	7	11.8	3.6	0.4	15.8	-	-	-	-
1/1	526	526	99	291	7	3.9	1.2	0.4	5.6	38.2	14.6	1.2	15.8
2/1	331	331	-	-	-	3.8	1.1	-	4.9	53.1	9.9	1.1	11.1
3/1	431	431	-	-	-	4.1	1.2	-	5.3	44.5	12.5	1.2	13.7
4/1	466	466	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	262	262	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	560	560	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1			PRC for Signalled Lanes (%): 26.3		26.3		Total Delay for Signalled Lanes (pcuHr): 15.80		15.80		Cycle Time (s): 120		
			PRC Over All Lanes (%): 26.3		26.3		Total Delay Over All Lanes(pcuHr): 15.80		15.80				

Full Input Data And Results

Scenario 2: '2022 Base PM Peak' (FG2: '2022 Base PM Peak', Plan 1: 'Network Control Plan 1')

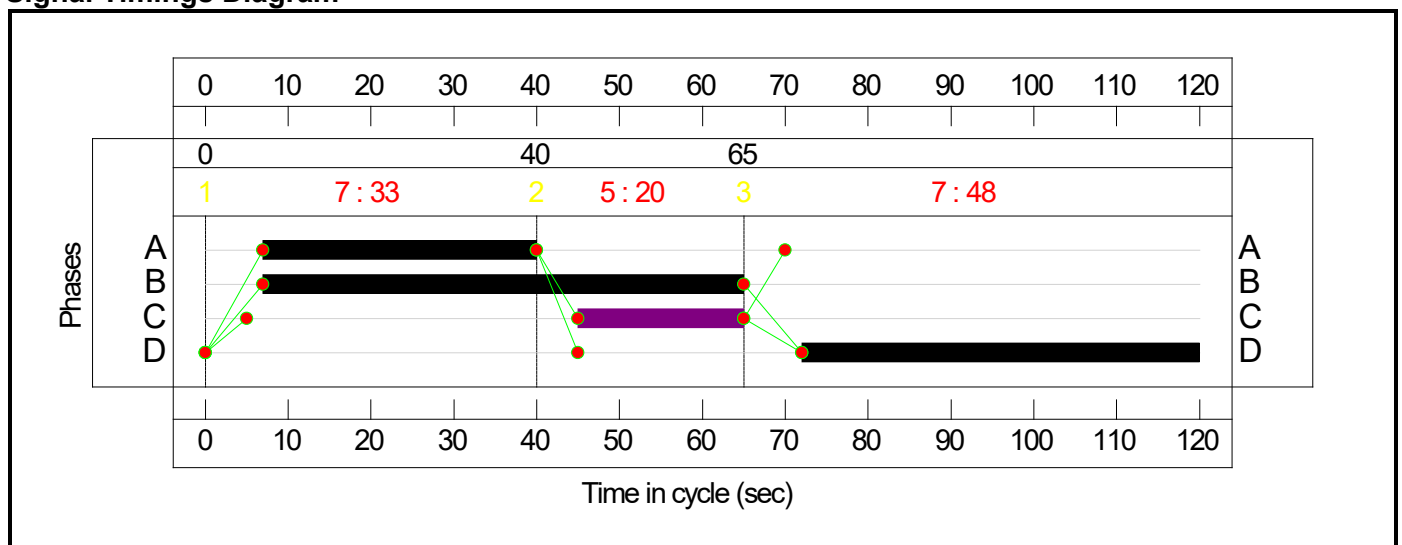
Stage Sequence Diagram




Stage Timings

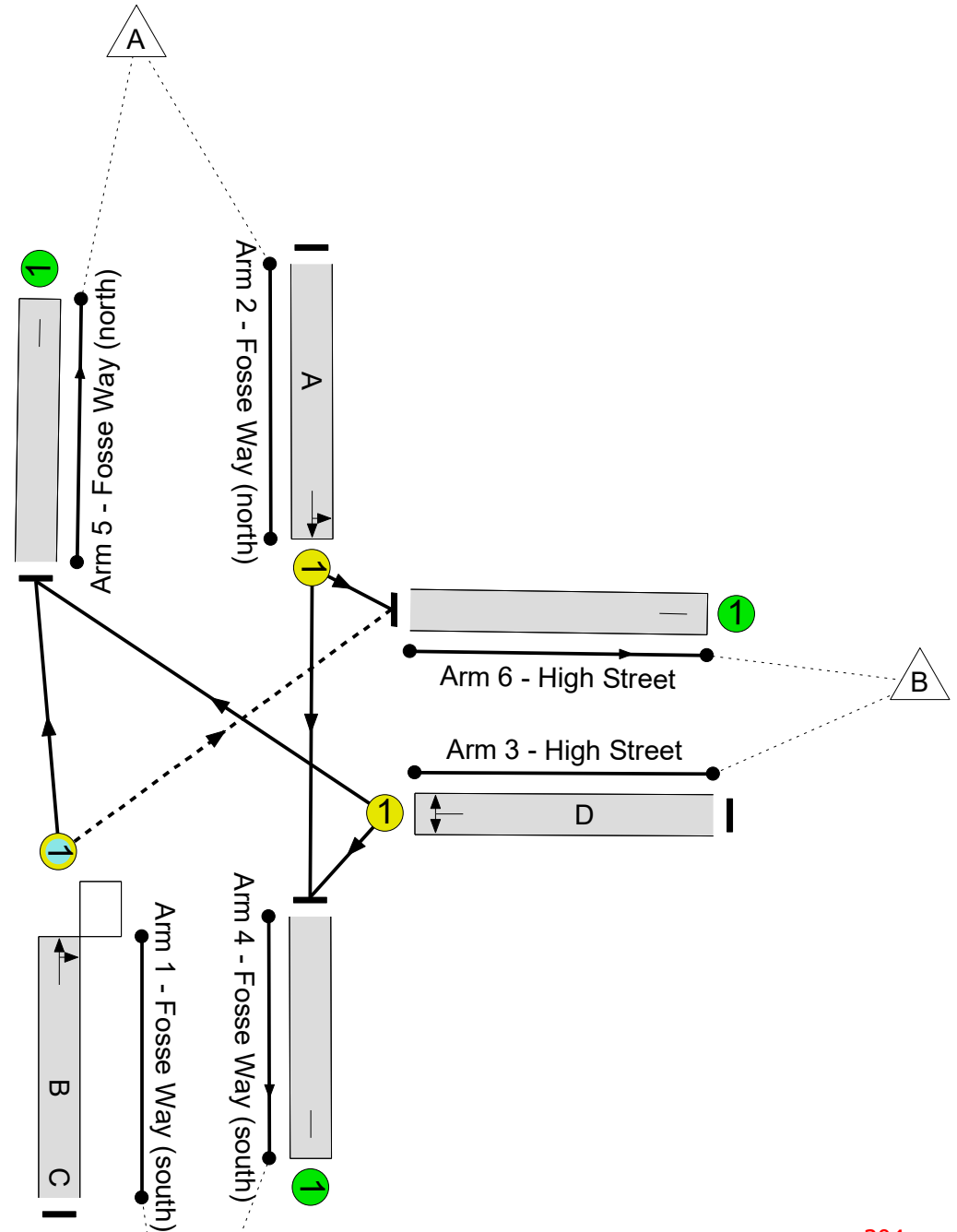
Stage	1	2	3
Duration	33	20	48
Change Point	0	40	65

Signal Timings Diagram



Full Input Data And Results
Network Layout Diagram

 **Unnamed Junction**
PRC: 15.0 %
Total Traffic Delay: 17.4 pcuHr



Full Input Data And Results

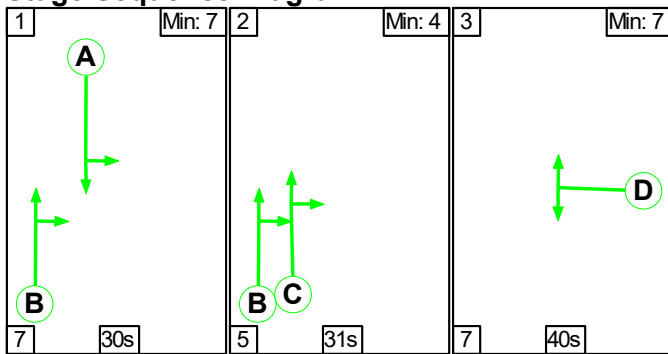
Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	N/A	-	-		-	-	-	-	-	-	78.2%
Unnamed Junction	-	-	N/A	-	-		-	-	-	-	-	-	78.2%
1/1	Fosse Way (south) Ahead Right	O	N/A	N/A	B	C	1	58	20	422	1784	542	77.9%
2/1	Fosse Way (north) Ahead Left	U	N/A	N/A	A		1	33	-	345	1908	541	63.8%
3/1	High Street Left Right	U	N/A	N/A	D		1	48	-	567	1775	725	78.2%
4/1	Fosse Way (south)	U	N/A	N/A	-		-	-	-	560	Inf	Inf	0.0%
5/1	Fosse Way (north)	U	N/A	N/A	-		-	-	-	210	Inf	Inf	0.0%
6/1	High Street	U	N/A	N/A	-		-	-	-	564	Inf	Inf	0.0%
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	-	-	133	267	7	12.4	4.3	0.6	17.4	-	-	-	-
Unnamed Junction	-	-	133	267	7	12.4	4.3	0.6	17.4	-	-	-	-
1/1	422	422	133	267	7	4.0	1.7	0.6	6.3	53.4	12.8	1.7	14.5
2/1	345	345	-	-	-	3.6	0.9	-	4.5	46.7	10.0	0.9	10.8
3/1	567	567	-	-	-	4.9	1.8	-	6.6	42.0	16.4	1.8	18.1
4/1	560	560	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	210	210	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	564	564	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1			PRC for Signalled Lanes (%): 15.0		PRC Over All Lanes (%): 15.0		Total Delay for Signalled Lanes (pcuHr): 17.36		Total Delay Over All Lanes(pcuHr): 17.36		Cycle Time (s): 120		

Full Input Data And Results

Scenario 3: '2027 Base AM Peak' (FG3: '2027 AM Peak', Plan 1: 'Network Control Plan 1')

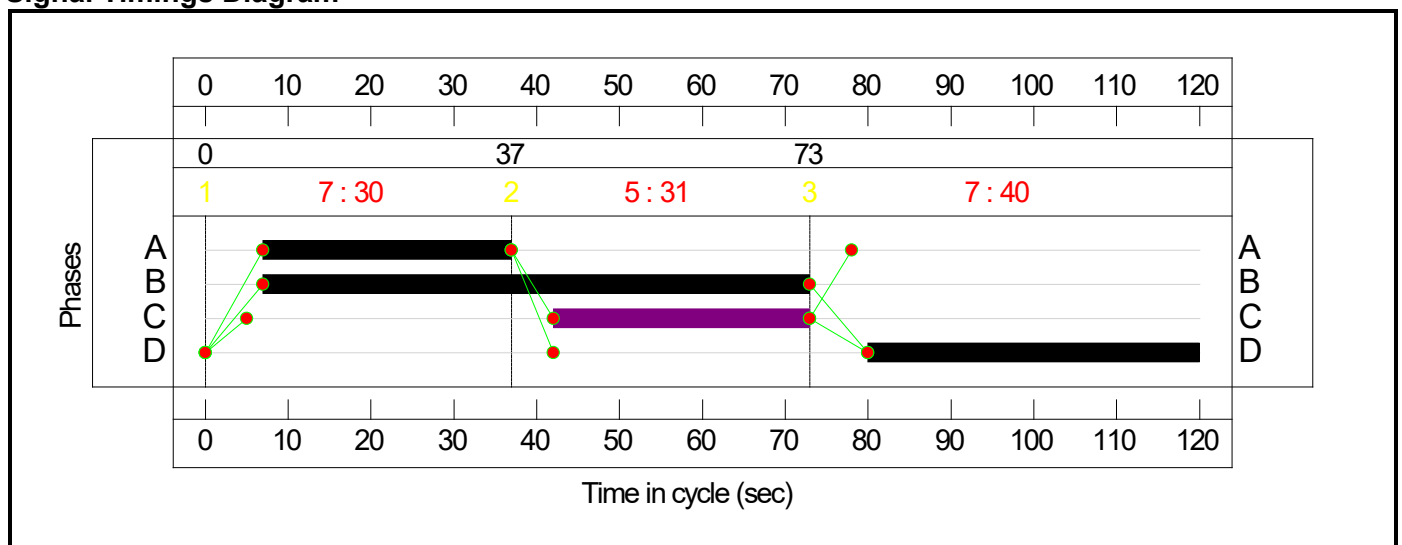
Stage Sequence Diagram




Stage Timings

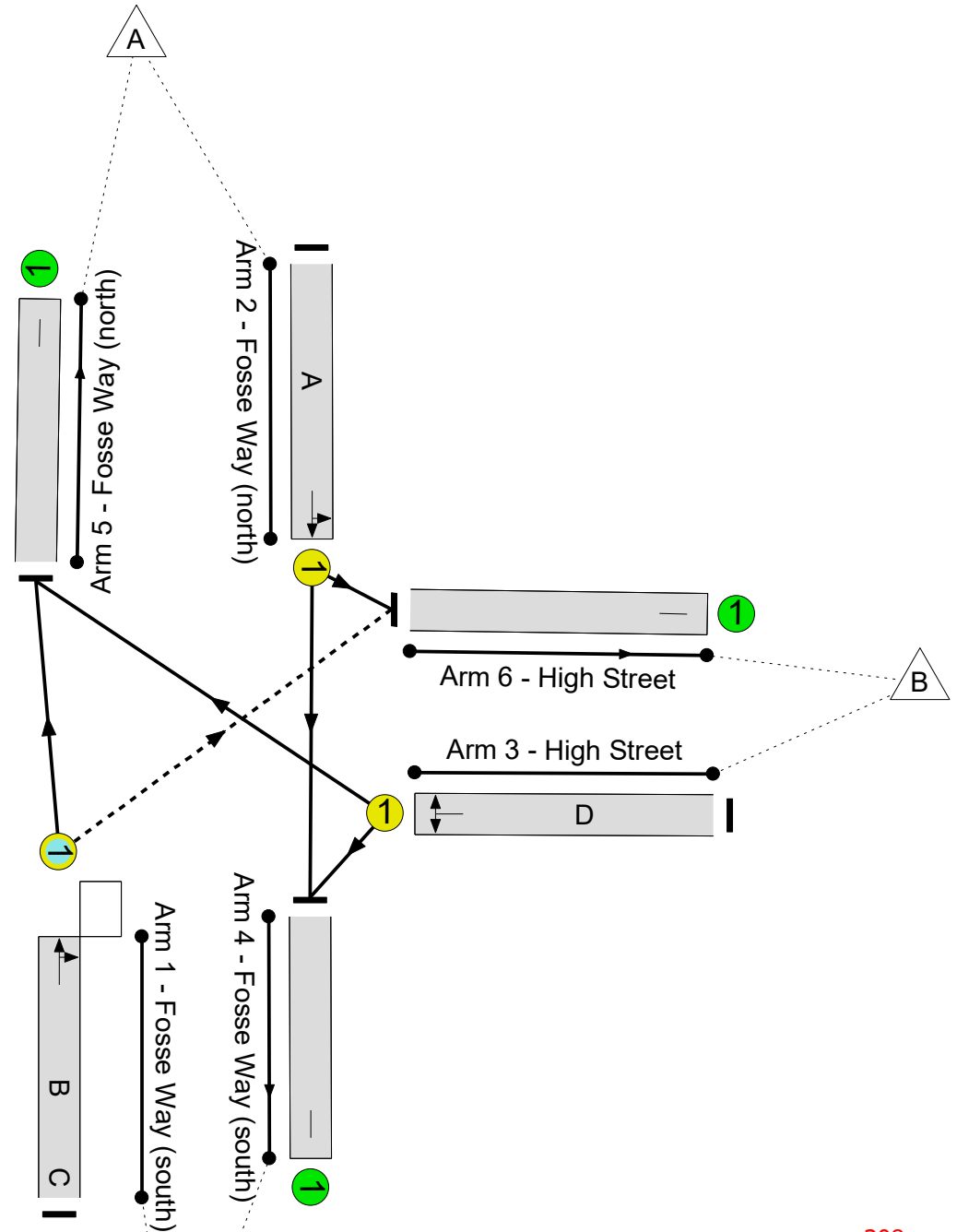
Stage	1	2	3
Duration	30	31	40
Change Point	0	37	73

Signal Timings Diagram



Full Input Data And Results
Network Layout Diagram

 **Unnamed Junction**
PRC: 17.5 %
Total Traffic Delay: 17.6 pcuHr



Full Input Data And Results

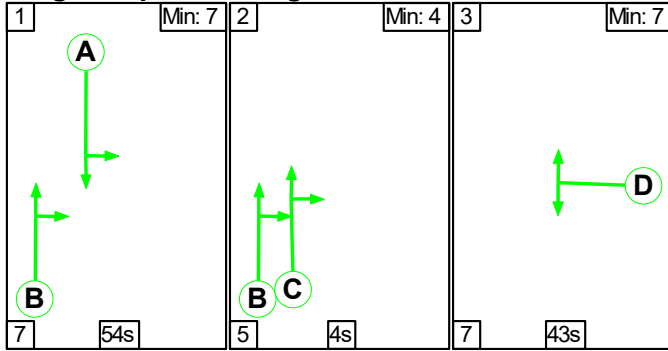
Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	N/A	-	-		-	-	-	-	-	-	76.6%
Unnamed Junction	-	-	N/A	-	-		-	-	-	-	-	-	76.6%
1/1	Fosse Way (south) Ahead Right	O	N/A	N/A	B	C	1	66	31	551	1816	720	76.5%
2/1	Fosse Way (north) Ahead Left	U	N/A	N/A	A		1	30	-	347	1901	491	70.7%
3/1	High Street Left Right	U	N/A	N/A	D		1	40	-	464	1773	606	76.6%
4/1	Fosse Way (south)	U	N/A	N/A	-		-	-	-	496	Inf	Inf	0.0%
5/1	Fosse Way (north)	U	N/A	N/A	-		-	-	-	277	Inf	Inf	0.0%
6/1	High Street	U	N/A	N/A	-		-	-	-	589	Inf	Inf	0.0%
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	-	-	97	312	7	12.8	4.4	0.4	17.6	-	-	-	-
Unnamed Junction	-	-	97	312	7	12.8	4.4	0.4	17.6	-	-	-	-
1/1	551	551	97	312	7	4.4	1.6	0.4	6.4	41.8	15.8	1.6	17.4
2/1	347	347	-	-	-	3.9	1.2	-	5.1	52.7	10.4	1.2	11.6
3/1	464	464	-	-	-	4.5	1.6	-	6.1	47.6	13.8	1.6	15.4
4/1	496	496	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	277	277	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	589	589	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1			PRC for Signalled Lanes (%):		17.5	Total Delay for Signalled Lanes (pcuHr):		17.62	Cycle Time (s): 120				
			PRC Over All Lanes (%):		17.5	Total Delay Over All Lanes(pcuHr):		17.62					

Full Input Data And Results

Scenario 4: '2027 Base PM Peak' (FG4: '2027 PM Peak', Plan 1: 'Network Control Plan 1')

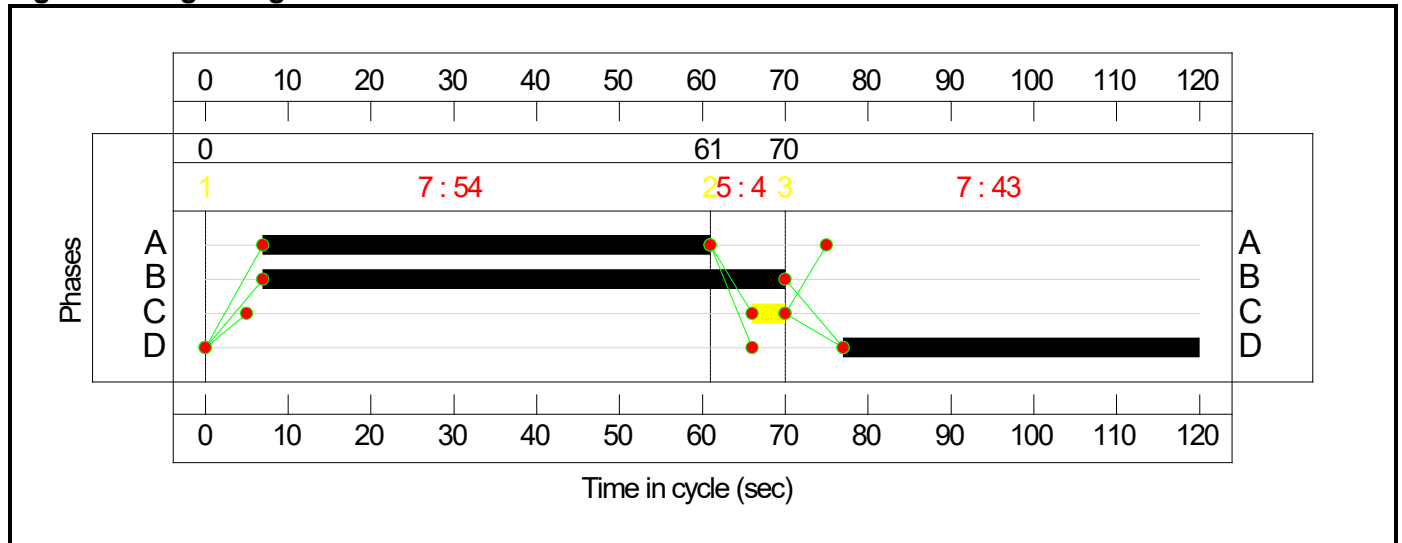
Stage Sequence Diagram



Stage Timings

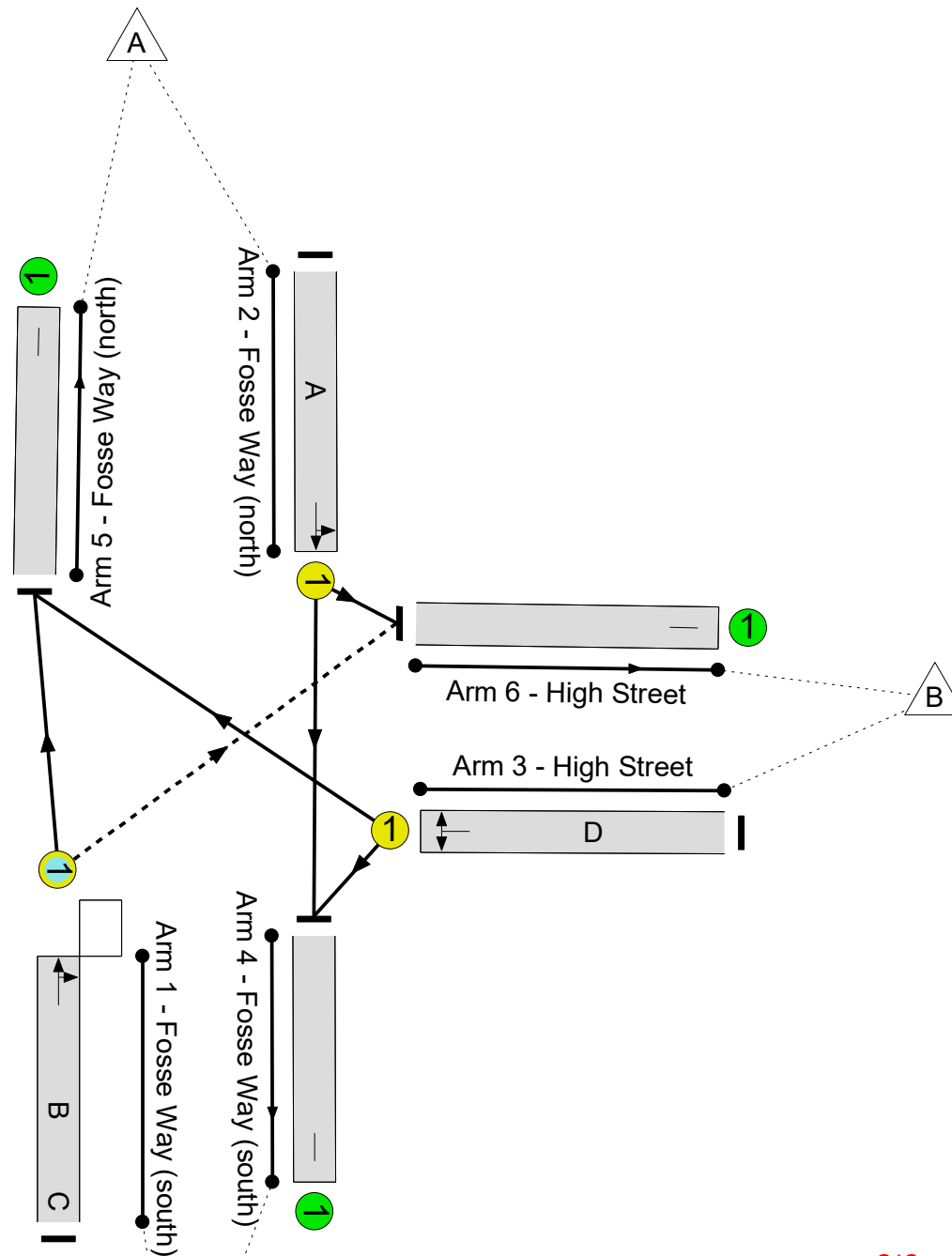

Stage	1	2	3
Duration	54	4	43
Change Point	0	61	70

Signal Timings Diagram



Full Input Data And Results
Network Layout Diagram

Unnamed Junction
PRC: -2.3 %
Total Traffic Delay: 23.6 pcuHr



Full Input Data And Results

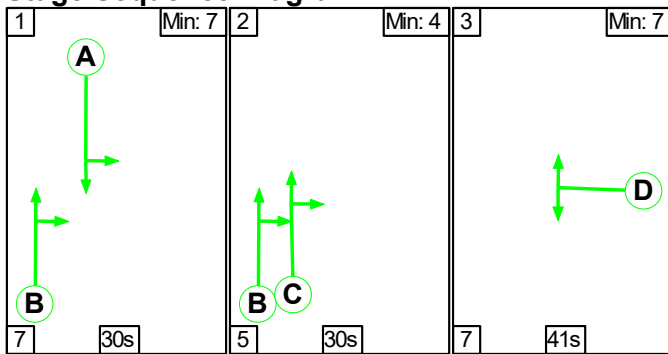
Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	N/A	-	-		-	-	-	-	-	-	92.0%
Unnamed Junction	-	-	N/A	-	-		-	-	-	-	-	-	92.0%
1/1	Fosse Way (south) Ahead Right	O	N/A	N/A	B	C	1	63	4	598	1821	658	90.9%
2/1	Fosse Way (north) Ahead Left	U	N/A	N/A	A		1	54	-	364	1907	874	41.6%
3/1	High Street Left Right	U	N/A	N/A	D		1	43	-	599	1775	651	92.0%
4/1	Fosse Way (south)	U	N/A	N/A	-		-	-	-	590	Inf	Inf	0.0%
5/1	Fosse Way (north)	U	N/A	N/A	-		-	-	-	369	Inf	Inf	0.0%
6/1	High Street	U	N/A	N/A	-		-	-	-	602	Inf	Inf	0.0%
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	-	-	343	84	7	13.3	9.6	0.7	23.6	-	-	-	-
Unnamed Junction	-	-	343	84	7	13.3	9.6	0.7	23.6	-	-	-	-
1/1	598	598	343	84	7	5.1	4.4	0.7	10.1	60.8	18.9	4.4	23.3
2/1	364	364	-	-	-	2.2	0.4	-	2.6	25.3	8.1	0.4	8.4
3/1	599	599	-	-	-	6.0	4.9	-	10.9	65.6	19.0	4.9	23.8
4/1	590	590	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	369	369	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	602	602	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1			PRC for Signalled Lanes (%):		-2.3	Total Delay for Signalled Lanes (pcuHr):		23.57	Cycle Time (s): 120				
			PRC Over All Lanes (%):		-2.3	Total Delay Over All Lanes(pcuHr):		23.57					

Full Input Data And Results

Scenario 5: '2027 Base + Dev AM Peak' (FG5: '2027 + Dev AM Peak', Plan 1: 'Network Control Plan 1')

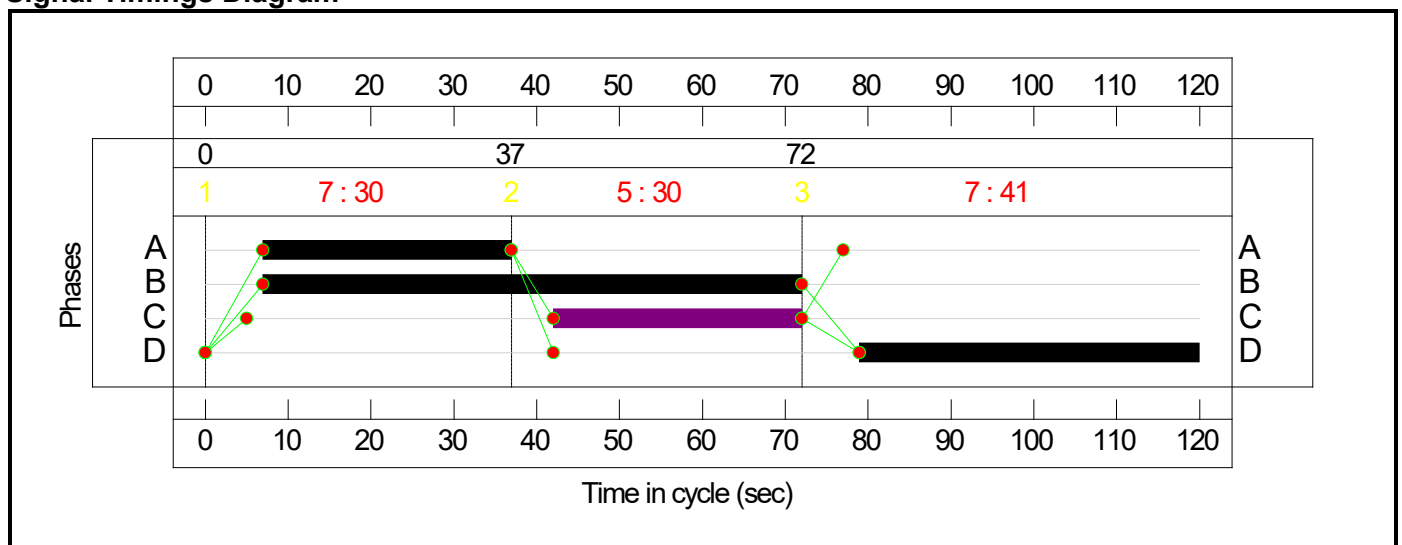
Stage Sequence Diagram




Stage Timings

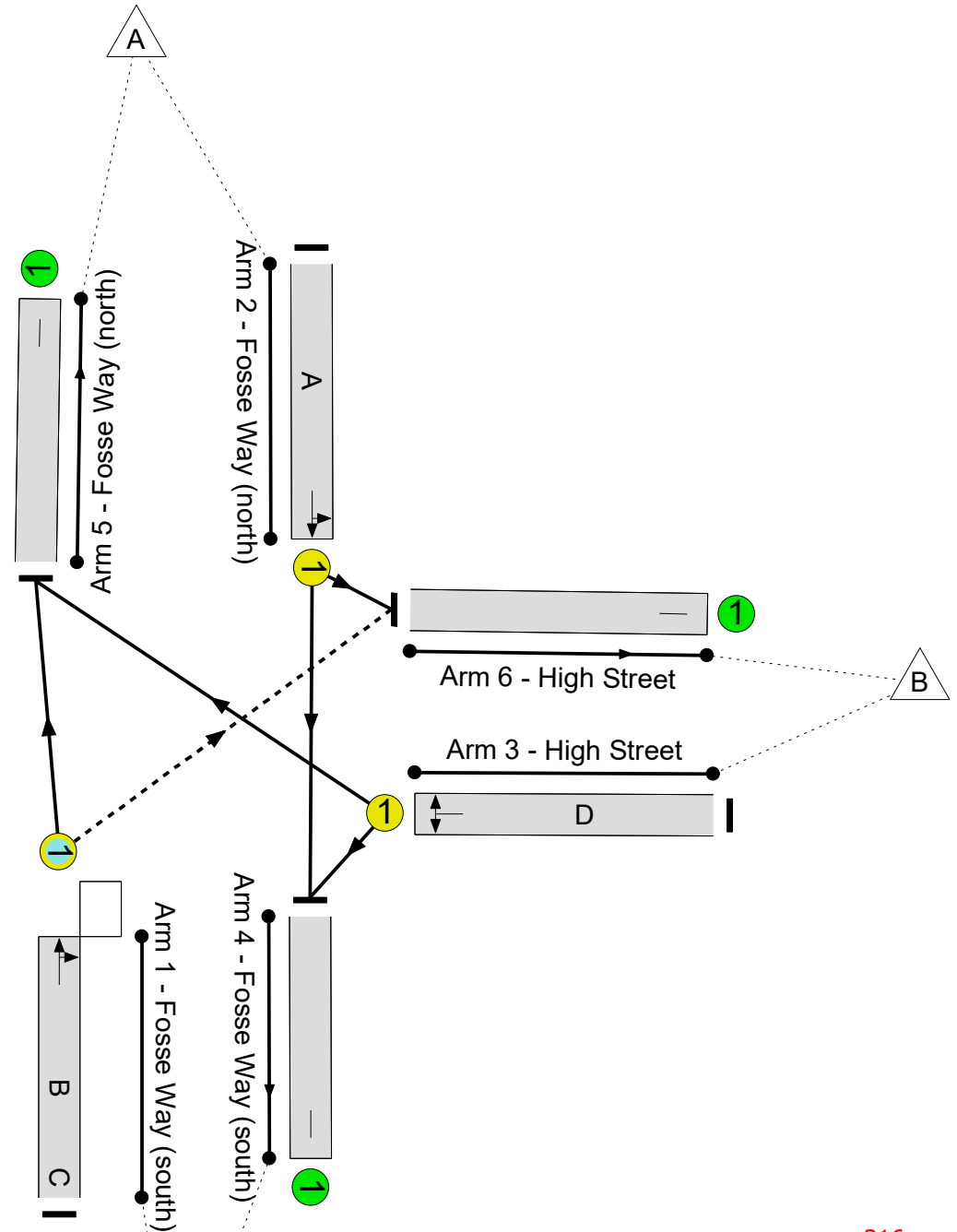
Stage	1	2	3
Duration	30	30	41
Change Point	0	37	72

Signal Timings Diagram



Full Input Data And Results
Network Layout Diagram

 **Unnamed Junction**
PRC: 12.2 %
Total Traffic Delay: 18.9 pcuHr



Full Input Data And Results

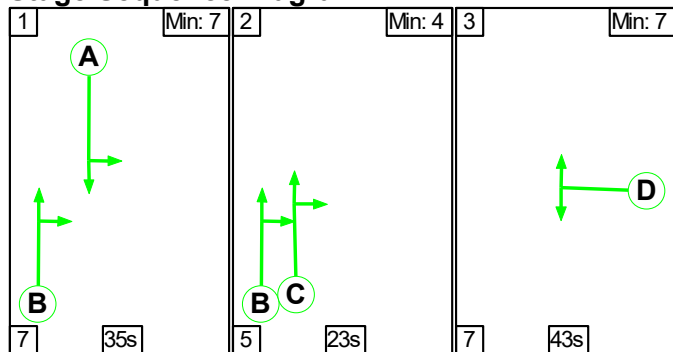
Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	N/A	-	-		-	-	-	-	-	-	80.2%
Unnamed Junction	-	-	N/A	-	-		-	-	-	-	-	-	80.2%
1/1	Fosse Way (south) Ahead Right	O	N/A	N/A	B	C	1	65	30	564	1816	703	80.2%
2/1	Fosse Way (north) Ahead Left	U	N/A	N/A	A		1	30	-	349	1901	491	71.1%
3/1	High Street Left Right	U	N/A	N/A	D		1	41	-	493	1773	621	79.4%
4/1	Fosse Way (south)	U	N/A	N/A	-		-	-	-	522	Inf	Inf	0.0%
5/1	Fosse Way (north)	U	N/A	N/A	-		-	-	-	280	Inf	Inf	0.0%
6/1	High Street	U	N/A	N/A	-		-	-	-	604	Inf	Inf	0.0%
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	-	-	97	325	7	13.4	5.1	0.5	18.9	-	-	-	-
Unnamed Junction	-	-	97	325	7	13.4	5.1	0.5	18.9	-	-	-	-
1/1	564	564	97	325	7	4.7	2.0	0.5	7.1	45.3	16.6	2.0	18.6
2/1	349	349	-	-	-	3.9	1.2	-	5.1	52.9	10.6	1.2	11.8
3/1	493	493	-	-	-	4.8	1.9	-	6.7	48.8	14.8	1.9	16.7
4/1	522	522	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	280	280	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	604	604	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1			PRC for Signalled Lanes (%):		12.2	Total Delay for Signalled Lanes (pcuHr):			18.91	Cycle Time (s): 120			
			PRC Over All Lanes (%):		12.2	Total Delay Over All Lanes(pcuHr):			18.91				

Full Input Data And Results

Scenario 6: '2027 Base + Dev PM Peak' (FG6: '2027+ Dev PM Peak', Plan 1: 'Network Control Plan 1')

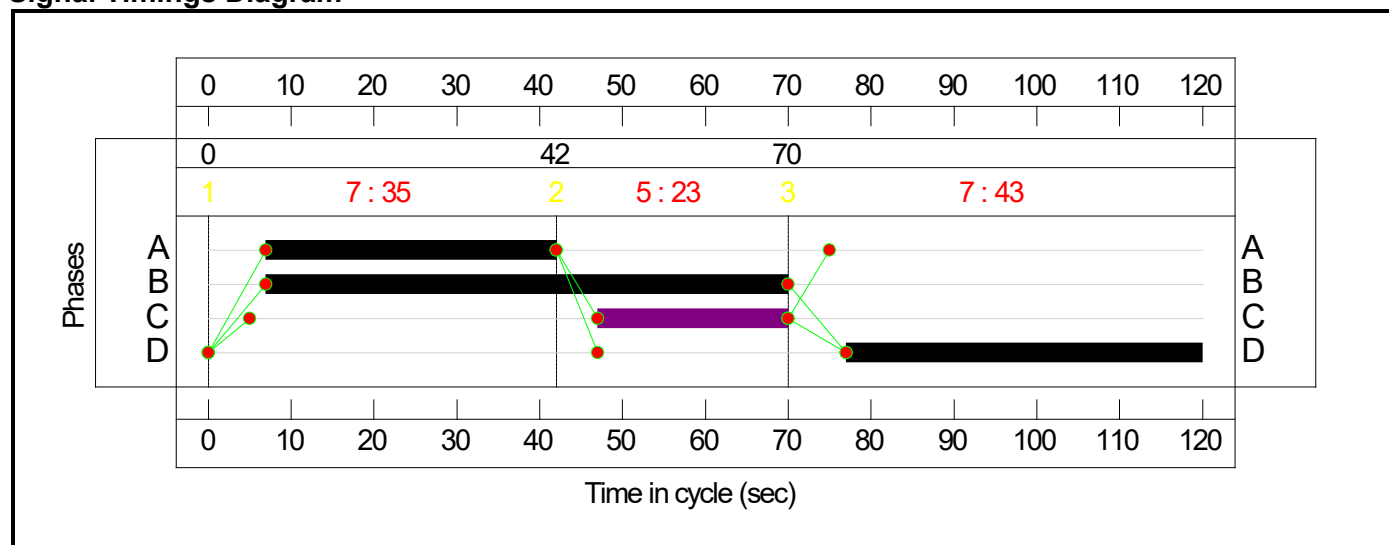
Stage Sequence Diagram



Stage Timings


Stage	1	2	3
Duration	35	23	43
Change Point	0	42	70

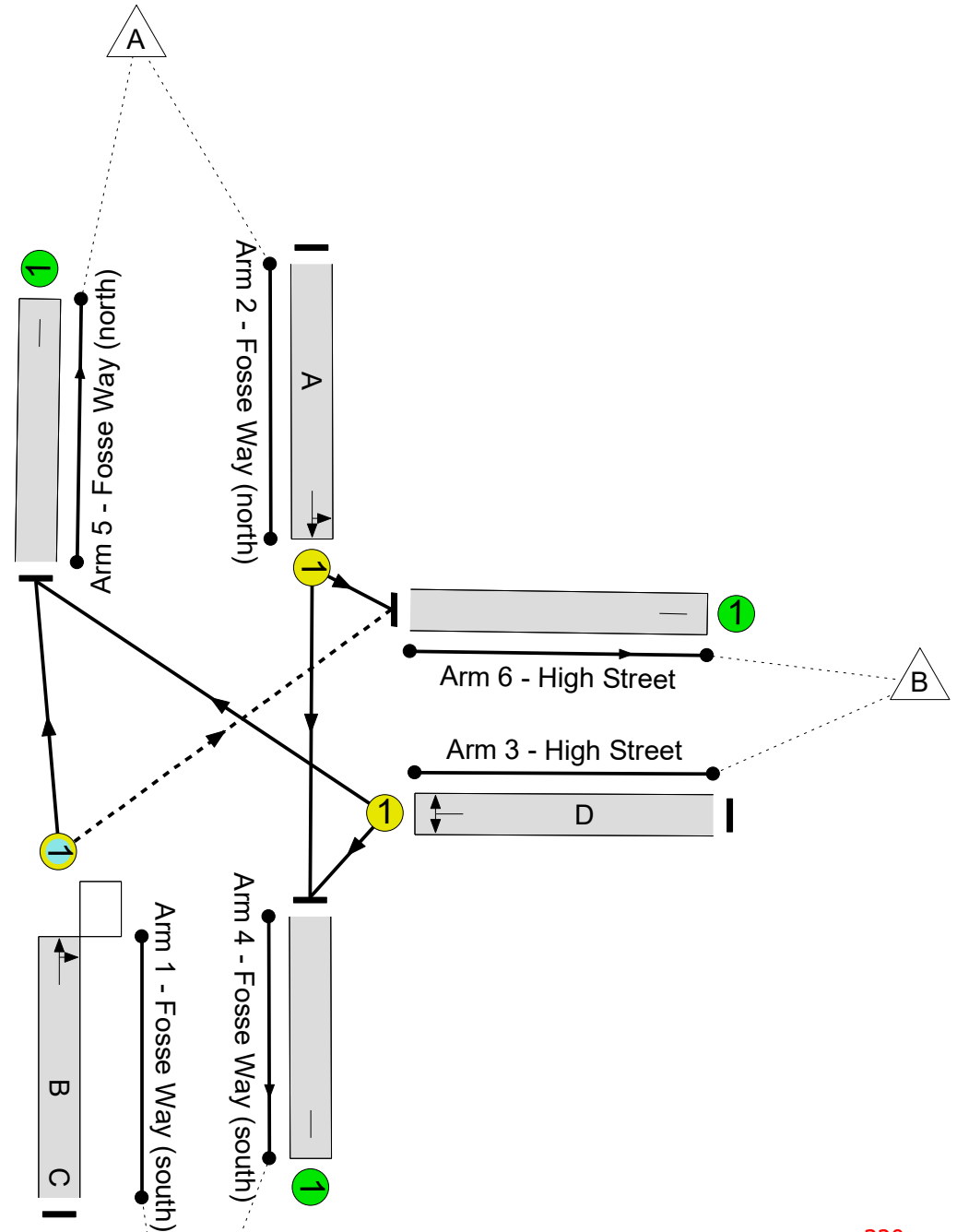
Signal Timings Diagram



Full Input Data And Results
Network Layout Diagram

Full Input Data And Results

 **Unnamed Junction**
PRC: -5.0 %
Total Traffic Delay: 29.7 pcuHr



Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	N/A	-	-		-	-	-	-	-	-	94.5%
Unnamed Junction	-	-	N/A	-	-		-	-	-	-	-	-	94.5%
1/1	Fosse Way (south) Ahead Right	O	N/A	N/A	B	C	1	63	23	622	1819	660	94.2%
2/1	Fosse Way (north) Ahead Left	U	N/A	N/A	A		1	35	-	367	1907	572	64.1%
3/1	High Street Left Right	U	N/A	N/A	D		1	43	-	615	1775	651	94.5%
4/1	Fosse Way (south)	U	N/A	N/A	-		-	-	-	604	Inf	Inf	0.0%
5/1	Fosse Way (north)	U	N/A	N/A	-		-	-	-	371	Inf	Inf	0.0%
6/1	High Street	U	N/A	N/A	-		-	-	-	629	Inf	Inf	0.0%
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	-	-	138	312	8	15.9	13.4	0.5	29.7	-	-	-	-
Unnamed Junction	-	-	138	312	8	15.9	13.4	0.5	29.7	-	-	-	-
1/1	622	622	138	312	8	5.9	6.1	0.5	12.5	72.4	20.0	6.1	26.2
2/1	367	367	-	-	-	3.7	0.9	-	4.6	45.1	10.6	0.9	11.5
3/1	615	615	-	-	-	6.3	6.3	-	12.6	73.9	19.8	6.3	26.2
4/1	604	604	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	371	371	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	629	629	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1			PRC for Signalled Lanes (%):		-5.0	Total Delay for Signalled Lanes (pcuHr):		29.74	Cycle Time (s): 120				
			PRC Over All Lanes (%):		-5.0	Total Delay Over All Lanes(pcuHr):		29.74					



Appendix I



Stage 1 Road Safety Audit
Fosse Way-High Street Junction, Syston
Proposed Improvements

Date: 30/05/2023

Report produced for: Taylor Wimpey

Report requested by: DTA Transport Planning Consultants

On behalf of: Leicestershire County Council

Report prepared by: Elaine Bingham, Road Safety Consulting Ltd

Reference: RSC/EB/DL/22140

Document Control Sheet

Project Title Fosse Way-High Street Junction, Syston
Proposed Improvements

Report Title Stage 1 Road Safety Audit
Reference: RSC/EB/DL/22140

Revision -

Status Final

Control Date 30/05/2023

Record of Issue

Issue	Author	Date	Check	Date	Authorised	Date
Final	EB	25/05/23	DL	26/05/23	EB	30/05/23

Distribution

Organisation	Contact	Copies
DTA Transport Planning Consultants	Simon Tucker	Ecopy

Road Safety Consulting Ltd
4 Paramore Close
Whetstone
Leicestershire
LE8 6EY
Registered in England and Wales
Company Number 5225549

1. Introduction

- 1.1. This report results from a Stage 1 Road Safety Audit carried out on the proposed improvements to the Fosse Way-High Street junction in association with a residential development on land north of Barkby Road in Syston. The Audit was carried out during May 2023.
- 1.2. This Road Safety Audit was produced for (client organisation): Taylor Wimpey, requested by (design organisation): DTA Transport Planning Consultants, on behalf of (overseeing organisation): Leicestershire County Council.
- 1.3. The Audit Team membership was as follows:

Audit Team Leader
Elaine Bingham
B Eng (Hons), MCIHT, MSoRSA
Certificate of Competence (Road Safety Audit)

Audit Team Member
Duncan Lord,
IEng, FIHE, Certificate of Competence (Road Safety Audit)
- 1.4. The audit took place at the offices of Road Safety Consulting Ltd between 23rd and 30th May 2023. The audit was undertaken in accordance with the email instruction from Simon Tucker at DTA Transport Planning Consultants. The report has been prepared with reference to DMRB – GG 119 – Road Safety Audit, with exceptions set out in paragraph 2.4.
- 1.5. The Audit Team visited the site together on the 23rd May 2023 at 1.30pm. Weather at the time of the audit was sunny and dry. The road surface was dry. Traffic flows were moderate. No pedestrians or cyclists were observed.
- 1.6. The audit comprised an examination of the information provided by the Design Organisation and listed in Appendix 1.
- 1.7. The Audit Team has examined and reported only on the road safety implications of the scheme as presented and has not examined or verified the compliance of the designs to any other criteria.
- 1.8. All comments and recommendations are referenced to the design drawing and the locations have been indicated on plans in Appendix 2.

2. Items Considered

2.1. Scheme Proposals

2.1.1. The proposed residential development consists of up to 196 dwellings on land on the northern side of Barkby Lane to the east of Empingham Drive.

2.1.2. The proposed improvements to the Fosse Way-High Street junction consists of:

- widening the northbound approach to provide carriageway space for a ahead vehicle to pass a vehicle waiting to turn right into the High Street;
- relaxing the radii kerb between the Fosse Way southbound approach and the High Street to ease the left turn into the High Street;
- the relocation of the stop lines on all three approaches; and
- extending the footway on the northeast side into the High Street to allow the uncontrolled pedestrian crossing on the High Street to be relocated further east.

2.1.3. The proposals are shown on DTA drawing 20060-08-2 Rev B.

2.2. Information Provided to the Audit Team

2.2.1. Information that has been provided to the Audit Team, for the purpose of this audit, is as outlined within Appendix 1 of this report.

2.3. Departures from Standards (Design)

2.3.1. The Audit Team has not been advised of any Departures from Standard

2.4. Departures from Standards (Road Safety Audit)

2.4.1. This Road Safety Audit has been produced, with reference to DMRB – GG 119 – Road Safety Audit with the following exception.

- A formally approved Road Safety Audit brief has not been provided by Leicestershire County Council to the Audit Team, however the Audit Team received a supporting email with relevant background data and information, and therefore did not consider that the lack of a formal brief would compromise the production of a Road Safety Audit for these proposals.

-
- Section 5 of this report provides additional Observations, that are outside of the scope of GG119 (which specifically excludes the provision of additional comments within Road Safety Audit report). These comments, whilst considered outside the scope of the audit, have been produced to assist the designer in providing a safe design where any safety comment may be conditional on receiving more detailed information.

3. Items Raised at Previous Road Safety Audits

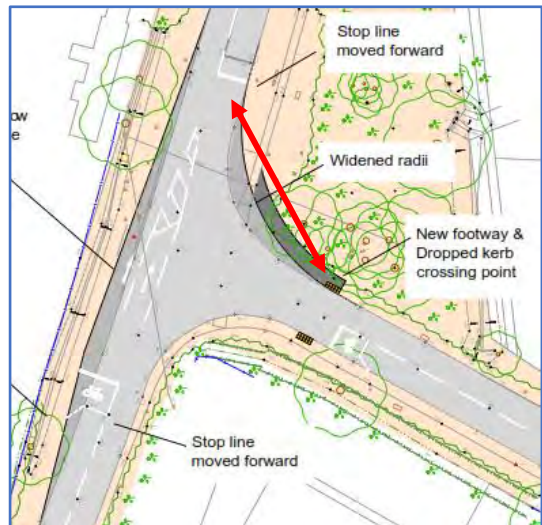
- 3.1. The Audit Team is not aware of any previous Road Safety Audits being carried on these proposals.

4. Items Raised by this Stage 1 Road Safety Audit

4.1. Problem

Location: Uncontrolled Crossing Point on the High Street

Summary: Risk of pedestrian / vehicle collisions



Vegetation may restrict inter-visibility between vehicles turning left into the High Street and pedestrians crossing from north to south at the relocated crossing point. This could result in pedestrians stepping out into the carriageway, to cross the High Street, and being struck and injured by vehicles turning left into the High Street from the Fosse Way.

Recommendation:

It is recommended that adequate inter-visibility is provided at all times. This may require the vegetation to be removed.

4.2. Problem

Location: Fosse Way – Northbound approach

Summary: Risk of late braking or fail to stop type collisions



The fir tree in advance of the stop line, may restrict forward visibility to the relocated nearside primary traffic signal head on this approach. The existing offside primary traffic signal head is currently overgrown by vegetation. Obscured visibility to the red aspects may result in late braking rear end shunt type collisions or fail to stop at a red signal type collisions.

Recommendation:

It is recommended that adequate visibility to the primary signal heads is provided at all times. This may require the vegetation to be cut back or removed.

End of Safety Comments

5. Issues identified during the Stage 1 Road Safety Audit that are outside the Terms of Reference

5.1. ISSUE

Location: Fosse Way - western side and north-eastern corner.

Reason considered to be outside the Terms of Reference: Detail Design Issue

There are existing signs, and a lighting column within the verge area. The widening of the carriageway will bring the kerb line closer to the signs. If there is insufficient edge clearance to the signs it may lead to vehicles clipping and damaging the signs. It is recommended that at the detail design stage the edge clearance is checked to ensure that sufficient distance is provided between the kerb edge and the signs.

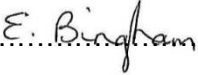


6. Audit Team Statement

We certify that this Stage 1 Road Safety Audit has been carried with reference to GG 119.

Audit Team Leader

Elaine Bingham,
B Eng (Hons), MCIHT, MSoRSA
NH Certificate of Competence (Road Safety Audit)

Signed:  Dated 25th May 2023

Director of Road Safety Consulting Ltd

Audit Team Member

Duncan Lord,
IEng, FIHE
NH Certificate of Competence (Road Safety Audit)

Signed:  Dated 26th May 2023

Consultant working on behalf of Road Safety Consulting Ltd

Road Safety Consulting Ltd
4 Paramore Close
Whetstone
Leicestershire
LE8 6EY

APPENDIX 1: Information Provided

List of Information Provided

Drawing Reference Number	Revision	Title
20060-08-2	B	Fosse Way – High Street Potential Improvements

APPENDIX 2: Drawing Showing Problem Locations

Problem numbers shown on the attached drawing refer to Problem numbers within the report.





Appendix J

ARCADIS REF	AGREEMENT / DATE	ITEM NO.	DESCRIPTION	Fosse Way - High St Junction	Goodes Lanes - Potential	Melton Rd Junction	COMMENTS
				Drawing ref: 20060-08-2 rev b	Drawing ref: 20060-08 rev b	Drawing ref: 20060-04	
200			SECTION 278 HIGHWAYS	£ 135,083	£ 81,793	£ 303,412	
			Sub-Total	£ 135,083	£ 81,793	£ 303,412	
			SUB-TOTAL DIRECT WORKS	£ 135,083	£ 81,793	£ 303,412	
			GENERAL OVERHEADS & PRELIMINARIES				
3200			FINANCE / LEGALS				
3200.1			Legal Costs - S278, S38, S104, easements	£ 12,500	£ 12,500	£ 12,500	Provisional allowance for legal fees for the respective agreements.
3200.2			Legal Cost - Consultant Appointments	£ 2,500	£ 2,500	£ 2,500	
3200.3			Part 1 Compensation Claims				Excluded
			Sub-Total	£ 15,000	£ 15,000	£ 15,000	
			SUB-TOTAL GENERAL OVERHEADS & PRELIMIARIES	£ 15,000	£ 15,000	£ 15,000	
			PROFESSIONAL/LOCAL AUTHORITY FEES				
4100			STRATEGIC PLANNING AND MASTERPLAN				
4100.1			Planning Fees @ 0.75% of Construction Costs	£ 1,013	£ 613	£ 2,276	
4100.2			Pre-application fees for highways	£ 2,500	£ 2,500	£ 2,500	
			Sub-Total	£ 3,513	£ 3,113	£ 4,776	
4300			ENGINEERING DESIGN				
4300.1			Engineering Design Fees for On-Site Works				
4300.2			Engineering Design Fees for Section 278 Works	£ 10,807	£ 6,543	£ 24,273	Allowance for off-site engineering design fees @ 8%
			Sub-Total	£ 10,807	£ 6,543	£ 24,273	
4600			SITE SUPERVISION				
4600.1			Infrastructure Site Supervision & Administration for Construction Works	£ 2,702	£ 1,636	£ 6,068	Allowance for site supervision and administration fees @ 2%
4600.2			CDM Management	£ 1,351	£ 818	£ 3,034	Allowance for CDM management fees @ 1%
			Sub-Total	£ 4,052	£ 2,454	£ 9,102	
4700			PROJECT MANAGEMENT				
4700.1			Project Management Fees for Construction Works	£ 1,891	£ 1,145	£ 4,248	Allowance for Project management fees @ 1.4%
			Sub-Total	£ 1,891	£ 1,145	£ 4,248	
4800			COST MANAGEMENT				
4800.1			Quantity Surveyor Fees for Construction Works	£ 1,756	£ 1,063	£ 3,944	Allowance for Cost management fees @ 1.3%
			Sub-Total	£ 1,756	£ 1,063	£ 3,944	



ARCADIS REF	AGREEMENT / DATE	ITEM NO.	DESCRIPTION	Fosse Way - High St Junction Drawing ref: 20060-08-2 rev b	Goodes Lanes - Potential Drawing ref: 20060-08 rev b	Melton Rd Junction Drawing ref: 20060-04	COMMENTS
4900			LOCAL AUTHORITY FEES				
4900.1			Local Authority Fees	£ 29,859	£ 23,997	£ 48,375	S38/S278/S104/landscaping inspection fees and allowance for S38/S278/S104 bonding costs
4900.2			Section 38 Commuted Sums				
4900.3			Section 278 Commuted Sums	£ 13,508	£ 8,179	£ 30,341	S278 commuted sum allowance for 15 year maintenance period
4900.4			Management Company Set Up Costs				
			Sub-Total	£ 43,367	£ 32,177	£ 78,717	
			SUB-TOTAL (PROFESSIONAL/LOCAL AUTHORITY FEES)	£ 65,387	£ 46,496	£ 125,060	
			CONTINGENCY	£ 43,094	£ 28,658	£ 88,694	20%
			GRAND TOTAL	£ 258,564	£ 171,946	£ 532,166	

Fosse Way – High Street Junction

Arcadis Ref 200.1

Ref	Work Item Description	Quantity	Unit	Rate £	Total £
SITE CLEARANCE					
A	General site clearance/breaking out existing material	1	item	5,000.00	5,000.00
B	Remove existing trees	0	nr	250.00	-
C	Remove Existing Kerbs	106	m	12.80	1,360.00
D	Remove Existing Edging	0	m	12.81	-
E	Remove existing lighting columns	1	nr	150.00	150.00
F	Remove existing telegraph pole	0	nr	150.00	-
G	Remove existing cabinet box	0	nr		-
H	Remove existing signs	6	nr	100.00	600.00
I	Remove Bollards	0	nr	100.00	-
J	Remove litter bin, taking and set aside, and reposition	0	nr	100.00	-
K	Remove existing post & wire fence	0	m	5.00	-
L	Remove existing manholes	0	nr	-	-
M	Remove existing road gully and backfill with concrete	2	nr	150.00	300.00
SURFACE TREATMENT					
N	Excavation ne 1.5m deep	113	m ³	15.00	1,694.01
O	Excavated material disposed off site	113	m ³	36.00	4,065.62
P	Completion of formation/sub formation	169	m ²	1.00	168.98
Q	Extra over for excavation in hard material	2	m ³	35.00	62.69
R	Excavation of soft spots; fill and compact with suitable material (allowed 5%)	6	m ³	40.00	240.00
Carried forward					13,641.29

Fosse Way – High Street Junction

Arcadis Ref 200.1

Ref	Work Item Description	Quantity	Unit	Rate £	Total £
		Brought forward			13,641.29
	<u>Road Widening</u>				
A	Compaction of fill	113	m ³	1.00	112.93
B	Capping	56	m ³	47.79	2,676.36
C	Type 1 Sub-Base	28	m ³	73.00	2,044.09
D	Tarmac comprising surface course; 45 mm thick; binder course; 80 mm thick; base course; 205 mm thick	135	m ²	92.65	12,477.18
E	EO Block Paving; in carriageway; 80mm thick, sharp sand 30mm thick; base course, 90mm thick AC20;	0	m ²	39.00	-
F	Granite setts; in carriageway; 80mm thick, sharp sand 30mm thick, mortar and concrete binder; base course, 200mm thick AC32	0	m ²	172.00	-
G	Conservation kerbs; straight, curved; complete with bed and surround	0	m	47.93	-
H	PCC kerbs; straight, curved; flush (K4,5)	104	m	36.00	3,744.36
I	Channels	0	m	30.00	-
J	Additional in-situ concrete mix for kerbs		m ³	115.00	-
K	Plane relay and regulate 40mm surface course	756	m ²	35.00	26,455.80
L	Over run strip carriageway around roundabout	0	m ²	118.34	-
M	Plane off and relay with new coloured asphalt surface course, approx. 70m2		item	2,500.00	-
	<u>Crossovers</u>				
N	Crossover comprising surface course; 40 mm thick HRA; binder course; 60 mm thick AC20; base course; 130 mm thick	0	m ²	86.80	-
		Carried forward			61,152.01

Fosse Way – High Street Junction

Arcadis Ref 200.1

Ref	Work Item Description	Quantity	Unit	Rate £	Total £
		Brought forward			61,152.01
	<u>Footway / Cycleway</u>				
A	Footway comprising 25mm AC6, 60mm thick AC20 binder course on 150mm thick Type 1 sub base (DBM)	34	m ²	52.34	1,795.79
B	Edging; straight, curved; complete with bed	21	m	19.26	397.91
C	Tactile paving	3	m ²	120.00	369.60
D	Extra over for tactile paving		m ²	43.15	-
E	Plane and Relay 25mm surface course	0	m ²	22.00	-
	STREET LIGHTING				
F	Lighting columns 6m high; every 25m	1	nr	1,750.00	1,750.00
G	Connections including draw pit and duct, and additional service trench	1	nr	1,457.78	1,457.78
H	Feeder Pillars		nr	1,457.78	-
	TRAFFIC SIGNS ETC AND MARKINGS				
I	Traffic signs mounted back to back on single post; non lit	6	nr	500.00	3,000.00
J	White lining and yellow lining to carriageway	1	item	1,500.00	1,500.00
K	Relocate traffic lights	2	nr	10,000.00	20,000.00
L	Bus Stop		nr	20,000.00	-
M	Flag pole for Bus Stop	0	nr		-
N	Pedestrian crossing	0	nr	25,000.00	-
O	New Fencing	0	m		-
P	Relocate concrete marker posts	3	nr	100.00	300.00
		Carried forward			91,723.09

Fosse Way – High Street Junction

Arcadis Ref 200.1

Ref	Work Item Description	Quantity	Unit	Rate £	Total £
		Brought forward			91,723.09
	FORMAL LANDSCAPING				
A	Street trees planted within verge or swales; pit - assume Acer x freemanii 'Autumn Blaze', SM, 20-25cm (RB), 500-550cm high, 3x, min 2.4m clear stem or similar	0	nr	2,000.00	-
B	Topsoil & seed to verge areas	0	m ²	5.00	-
C	Shrub planting to verge areas		m ²	20.00	-
D	12 months maintenance	12.50	%		-
	STATUTORY UTILITIES				
E	Allowance for utility diversions		item	100,000.00	-
	SW Drainage				
F	Gullies	2	nr	423.41	846.82
G	225mm carrier drain pipe n.e. 1.5m deep	0	m	91.93	-
H	150mm gulley drain connecting pipe	10	m	139.20	1,392.00
I	New SW manholes	0	nr	2,377.91	-
J	Connection to existing SW sewer	1	nr	5,000.00	5,000.00
K	Allowance for Swale		item	5,000.00	-
	Sub-Total				98,961.91
L	Unmeasured items / Design Development	5	%		4,948.10
	Sub-Total				103,910.01
M	Preliminaries - main contractor	30	%		31,173.00
	TOTAL			£	135,083.01
		To Summary			135,083.01

Goodes Lane – Melton Road Junction - Potential Improvements

Arcadis Ref 200.4

Ref	Work Item Description	Quantity	Unit	Rate £	Total £
SITE CLEARANCE					
A	General site clearance/breaking out existing material	1	item	5,000.00	5,000.00
B	Remove existing trees	0	nr	250.00	-
C	Remove Existing Kerbs	150	m	12.80	1,919.49
D	Remove Existing Edging	0	m	12.81	-
E	Remove existing lighting columns	0	nr	150.00	-
F	Remove existing telegraph pole	0	nr	150.00	-
G	Remove existing cabinet box	0	nr		-
H	Remove existing signs	0	nr	100.00	-
I	Remove Bollards	0	nr	100.00	-
J	Remove litter bin, taking and set aside, and reposition	0	nr	100.00	-
K	Remove existing post & wire fence	0	m	5.00	-
L	Remove existing manholes	0	nr		-
M	Remove existing road gully and backfill with concrete	3	nr	150.00	450.00
SURFACE TREATMENT					
N	Excavation ne 1.5m deep	29	m ³	15.00	438.52
O	Excavated material disposed off site	29	m ³	36.00	1,052.44
P	Completion of formation/sub formation	89	m ²	1.00	88.92
Q	Extra over for excavation in hard material	27	m ³	35.00	933.66
R	Excavation of soft spots; fill and compact with suitable material (allowed 5%)	1	m ³	40.00	40.00
Carried forward					9,923.02

Goodes Lane – Melton Road Junction - Potential Improvements

Arcadis Ref 200.4

Ref	Work Item Description	Quantity	Unit	Rate £	Total £
		Brought forward			9,923.02
	<u>Road Widening</u>				
A	Compaction of fill	29	m ³	1.00	29.23
B	Capping	26	m ³	47.79	1,257.35
C	Type 1 Sub-Base	13	m ³	73.00	960.32
D	Tarmac comprising surface course; 45 mm thick; binder course; 80 mm thick; base course; 205 mm thick	37	m ²	92.65	3,472.52
E	EO Block Paving screed	136	m ²	39.00	5,294.64
F	Granite setts; in carriageway; 80mm thick, sharp sand 30mm thick, mortar and concrete binder; base course, 200mm thick AC32	0	m ²	172.00	-
G	Conservation kerbs; straight, curved; complete with bed and surround	0	m	47.93	-
H	PCC kerbs; straight, curved; flush (K4,5)	100	m	36.00	3,615.84
I	Channels	0	m	30.00	-
J	Additional in-situ concrete mix for kerbs		m ³	115.00	-
K	Plane relay and regulate 40mm surface course	743	m ²	35.00	25,988.20
L	Over run strip carriageway around roundabout	0	m ²	118.34	-
M	Plane off and relay with new coloured asphalt surface course, approx. 70m ²		item	2,500.00	-
	<u>Crossovers</u>				
N	Crossover comprising surface course; 40 mm thick HRA; binder course; 60 mm thick AC20; base course; 130 mm thick	0	m ²	86.80	-
		Carried forward			50,541.13

Goodes Lane – Melton Road Junction - Potential Improvements

Arcadis Ref 200.4

Ref	Work Item Description	Quantity	Unit	Rate £	Total £
Brought forward					50,541.13
<u>Footway / Cycleway</u>					
A	Footway comprising 25mm AC6, 60mm thick AC20 binder course on 150mm thick Type 1 sub base (DBM)	51	m ²	52.34	2,692.37
B	Edging; straight, curved; complete with bed	0	m	19.26	-
C	Tactile paving	2	m ²	120.00	273.60
D	Extra over for tactile paving		m ²	43.15	-
E	Plane and Relay 25mm surface course	48	m ²	22.00	1,056.00
STREET LIGHTING					
F	Lighting columns 6m high; every 25m	0	nr	1,750.00	-
G	Connections including draw pit and duct, and additional service trench	0	nr	1,457.78	-
H	Feeder Pillars	0	nr	1,457.78	-
TRAFFIC SIGNS ETC AND MARKINGS					
I	Traffic signs mounted back to back on single post; non lit	0	nr	500.00	-
J	White lining and yellow lining to carriageway	2	item	1,000.00	2,000.00
K	3 way signalised junction	0	nr	50,000.00	-
L	Bus Stop	0	nr	20,000.00	-
M	Flag pole for Bus Stop	0	nr		-
N	Pedestrian crossing	0	nr	25,000.00	-
O	New Fencing	0	m		-
Carried forward					56,563.10

Goodes Lane – Melton Road Junction - Potential Improvements

Arcadis Ref 200.4

Ref	Work Item Description	Quantity	Unit	Rate £	Total £
		Brought forward			56,563.10
	FORMAL LANDSCAPING				
A	Street trees planted within verge or swales; pit - assume Acer x freemanii 'Autumn Blaze', SM, 20-25cm (RB), 500-550cm high, 3x, min 2.4m clear stem or similar	0	nr	2,000.00	-
B	Topsoil & seed to verge areas	0	m ²	5.00	-
C	Shrub planting to verge areas		m ²	20.00	-
D	12 months maintenance	12.50	%		-
	STATUTORY UTILITIES				
E	Allowance for utility diversions		item	100,000.00	-
	SW Drainage				
F	Gullies	3	nr	423.41	1,270.23
G	225mm carrier drain pipe n.e. 1.5m deep	0	m	91.93	-
H	150mm gully drain connecting pipe	15	m	139.20	2,088.00
I	New SW manholes	0	nr	2,377.91	-
J	Connection to existing SW sewer		nr	5,000.00	-
K	Allowance for Swale		item	5,000.00	-
	Sub-Total				59,921.33
L	Unmeasured items / Design Development	5	%		2,996.07
	Sub-Total				62,917.40
M	Preliminaries - main contractor	30	%		18,875.22
	TOTAL			£	81,792.62
		To Summary			81,792.62

Melton Road Junction

Arcadis Ref 200.3

Ref	Work Item Description	Quantity	Unit	Rate £	Total £
SITE CLEARANCE					
A	General site clearance/breaking out existing material	1	item	5,000.00	5,000.00
B	Remove existing trees	0	nr	250.00	-
C	Remove Existing Kerbs	124	m	12.80	1,589.89
D	Remove Existing Edging	0	m	12.81	-
E	Remove existing lighting columns	0	nr	150.00	-
F	Remove existing telegraph pole	0	nr	150.00	-
G	Remove existing cabinet box	0	nr		-
H	Remove existing signs	12	nr	100.00	1,200.00
I	Remove Bollards	4	nr	100.00	400.00
J	Remove litter bin, taking and set aside, and reposition	0	nr	100.00	-
K	Remove existing pedestrian guardrail	9	m	75.00	668.25
L	Remove existing manholes	0	nr		-
M	Remove existing road gulley and backfill with concrete	2	nr	150.00	300.00
SURFACE TREATMENT					
N	Excavation ne 1.5m deep	94	m ³	15.00	1,416.60
O	Excavated material disposed off site	94	m ³	36.00	3,399.85
P	Completion of formation/sub formation	133	m ²	1.00	133.41
Q	Extra over for excavation in hard material	40	m ³	35.00	1,400.81
R	Excavation of soft spots; fill and compact with suitable material (allowed 5%)	5	m ³	40.00	200.00
Carried forward					15,708.81

Melton Road Junction

Arcadis Ref 200.3

Ref	Work Item Description	Quantity	Unit	Rate £	Total £
		Brought forward			15,708.81
	<u>Road Widening</u>				
A	Compaction of fill	94	m ³	1.00	94.44
B	Capping	52	m ³	47.79	2,474.92
C	Type 1 Sub-Base	26	m ³	73.00	1,890.24
D	Tarmac comprising surface course; 45 mm thick; binder course; 80 mm thick; base course; 205 mm thick	116	m ²	92.65	10,739.99
E	EO Block Paving; in carriageway; 80mm thick, sharp sand 30mm thick; base course, 90mm thick AC20;	0	m ²	39.00	-
F	Granite setts; in carriageway; 80mm thick, sharp sand 30mm thick, mortar and concrete binder; base course, 200mm thick AC32	0	m ²	172.00	-
G	Conservation kerbs; straight, curved; complete with bed and surround	0	m	47.93	-
H	PCC kerbs; straight, curved; flush (K4,5)	113	m	36.00	4,082.76
I	Channels	0	m	30.00	-
J	Additional in-situ concrete mix for kerbs		m ³	115.00	-
K	Plane relay and regulate 40mm surface course	1027	m ²	35.00	35,933.10
L	Over run strip carriageway around roundabout	0	m ²	118.34	-
M	Plane off and relay with new coloured asphalt surface course, approx. 70m2		item	2,500.00	-
	<u>Crossovers</u>				
N	Crossover comprising surface course; 40 mm thick HRA; binder course; 60 mm thick AC20; base course; 130 mm thick	0	m ²	86.80	-
		Carried forward			70,924.26

Melton Road Junction


Arcadis Ref 200.3

Ref	Work Item Description	Quantity	Unit	Rate £	Total £
Brought forward					70,924.26
<u>Footway / Cycleway</u>					
A	Footway comprising 25mm AC6, 60mm thick AC20 binder course on 150mm thick Type 1 sub base (DBM)	17	m ²	52.34	915.43
B	Edging; straight, curved; complete with bed	0	m	19.26	-
C	Tactile paving	45	m ²	120.00	5,383.20
D	Extra over for tactile paving		m ²	43.15	-
E	Plane and Relay 25mm surface course	0	m ²	22.00	-
STREET LIGHTING					
F	Lighting columns 6m high; every 25m	0	nr	1,750.00	-
G	Connections including draw pit and duct, and additional service trench	0	nr	1,457.78	-
H	Feeder Pillars		nr	1,457.78	-
TRAFFIC SIGNS ETC AND MARKINGS					
I	Traffic signs mounted back to back on single post; non lit	12	nr	500.00	6,000.00
J	White lining and yellow lining to carriageway	2	item	1,500.00	3,000.00
K	4 way signalised junction	1	nr	125,000.00	125,000.00
L	Bus Stop		nr	20,000.00	-
M	Flag pole for Bus Stop	0	nr		-
N	Pedestrian crossing	0	nr	25,000.00	inc. above
O	1050mm x 2000mm Galvanised pedestrian guardrail in concrete	30	m	200.00	6,078.00
P	Road studs	548	nr	5.00	2,740.00
Carried forward					220,040.89

Melton Road Junction

Arcadis Ref 200.3

Ref	Work Item Description	Quantity	Unit	Rate £	Total £
		Brought forward			220,040.89
	FORMAL LANDSCAPING				
A	Street trees planted within verge or swales; pit - assume Acer x freemanii 'Autumn Blaze', SM, 20-25cm (RB), 500-550cm high, 3x, min 2.4m clear stem or similar	0	nr	2,000.00	-
B	Topsoil & seed to verge areas	0	m ²	5.00	-
C	Shrub planting to verge areas		m ²	20.00	-
D	12 months maintenance	12.50	%		-
	STATUTORY UTILITIES				
E	Allowance for utility diversions		item	100,000.00	-
	SW Drainage				
F	Gullies	2	nr	423.41	846.82
G	225mm carrier drain pipe n.e. 1.5m deep	0	m	91.93	-
H	150mm gully drain connecting pipe	10	m	139.20	1,392.00
I	New SW manholes	0	nr	2,377.91	-
J	Connection to existing SW sewer		nr	5,000.00	-
K	Allowance for Swale		item	5,000.00	-
	Sub-Total				222,279.71
L	Unmeasured items / Design Development	5	%		11,113.99
	Sub-Total				233,393.70
M	Preliminaries - main contractor	30	%		70,018.11
	TOTAL			£	303,411.81
		To Summary			303,411.81



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