

8 Final Assessment

8.1 Multiple Criteria Appraisal and Comparisons

- 8.1.1 Whilst the above appraisal of the mitigation options is led by their transport benefits in terms of minimising traffic growth and increases in congestion- the first LTP objective- consideration of each scheme or package of measures is also required in order to provide a cost-effective, and robust strategy, integrated into a local and national policy context.
- 8.1.2 Of equal importance is that a *locally specific appraisal* structure, bespoke to Charnwood is derived within the methodology, in order to compare the performance of options from the perspective of what is desired by Charnwood and the local community. In other words, full implementation of an 'off the shelf' appraisal methodology such as the New Approach to Appraisal (NATA) does not necessarily lead to objective and multi- modal transport solutions, appropriate to the local community and concerns (e.g. Alternatives to the A418 bypass, SDG, 2007).
- 8.1.3 As a result, appropriate local weights for Charnwood have been derived from key stakeholders and participants within the appraisal process, particularly at stakeholder meeting and consultation. From this process the key issues in relation to the wider objectives and needs of the local community were:
- Traffic impact;
 - Accessibility to local services;
 - Accessibility by public transport; and,
 - Integration with the rail station and employment opportunities.
- 8.1.4 Each assessment framework output will also show the cost of- and schemes required- in order to mitigate traffic impact associated with the scenario, with costs split into capital as well as operating costs. Quantitative scores are directly taken from the model, qualitative scores are based on a similar process to NATA, i.e. a 1-7 weighted scale (-3 to +3), with a neutral option (0).
- 8.1.5 The six assessment tables that follow are presented as follows:
- Table 8.1 – Cotes 4,200 dwellings and 12ha Employment with Full Outer EDR
 - Table 8.2 – Cotes 4,200 dwellings and 12ha Employment with Partial Inner EDR
 - Table 8.3 – Cotes 8,000 dwellings and 25ha Employment with Full Outer EDR
 - Table 8.4 – SSW 5,000 dwellings and 20ha Employment
 - Table 8.5 – West 3,500 dwellings and 20ha Employment
 - Table 8.6 – SSWW 8,500 dwellings and 40ha employment

8.1.6 In terms of the appraisal results, the following observations are noted for each non-modelled criteria:

- **Agglomeration Benefits:** Likely to be higher where the provision of employment is in the vicinity of either existing employment areas, or where the employment is situated next to strategic trunk roads, such as at motorway and trunk road exits.
- **Pollution and CO₂ Emissions:** Are linked to total numbers of trips generated and mean trip distances derived from the model.
- **Town, Landscape and Heritage impacts;** Have been analysed from relevant GIS information held by Charnwood Borough Council. These impacts are primarily related to the potential road mitigation suggested as part of the overall mitigation packages, which on the eastern side involves mitigation of (or avoiding) an SSSI, flood plain, and 2 railway lines. The Western route must also avoid environmentally sensitive areas, including the Outwoods area, as well as the heritage sites in Garendon Park.
- **Accessibility and Integration:** Defined as accessibility to local, suitable services and employment opportunities, including the rail station.
- **New Land and Structure Acquisition:** Land acquisition is primarily dependent upon the length of road to potentially be delivered as part of the mitigation package. Costs account for bridge and associated structures over floodplains, where applicable.
- **Risk and Practicality:** Are likely to be sub-dependent upon the above, but allow for the provision (or likelihood of success) of the combined mitigation package as an integrated entity. This is particularly related to the cost-benefit ratios of the packages because a number of more costly schemes are likely to require on significant levels of public contributions to the schemes, which brings particular funding and delivery risk in the future where levels of overall cost-benefit are either modest or low. Indeed, additional public funding is not certain, even where cost-benefit is high.

Table 8.1 Cotes Full Outer EDR Assessment Table (4,200 dwellings + 12ha Employment)

National Objective	Local Targets	Indicator	Appraisal	
ECONOMY	Minimise traffic growth and increases in congestion	Car Trips Generated (persons)	Quantitative	2296
		Averaged Congestion Impact per dwelling	Quantitative	-0.50
	Support sustainable growth of the local economy	Agglomeration Benefits	Score	+ 2
ENVIROMENT	Minimise negative impacts on communities	Pollution and CO ₂ impact	Score	- 1
		Town and landscape impact	Score	-2
		Heritage Impact	Score	- 1
	Minimise negative impacts on the environment	Reduced Severance	Score	-2
		Minimise Carbon Impact	Increased number of bus/rail users	Quantitative
ACCESSIBILITY	Maximise accessibility to jobs, services and facilities by non-car modes	Improved Integration	Score	+ 2
		Deliverability Of Mitigation	Cost (Cap+5yrOp)/HH	Quantitative £26,261
		New Land or Structure Acquisition?	Score	- 3
		Practicality	Score	- 2
		Risk	Score	- 2
Mitigation Achieved- Full Outer, Part Dualled EDR Package			Percentage	130%

Table 8.2 Cotes Partial EDR Assessment Table (4,200 dwellings + 12ha employment)

National Objective	Local Targets	Indicator	Appraisal	
ECONOMY	Minimise traffic growth and increases in congestion	Car Trips Generated (persons)	Quantitative	2296
		Averaged Congestion Impact per dwelling	Quantitative	1.35
	Support sustainable growth of the local economy	Agglomeration Benefits	Score	+ 2
ENVIROMENT	Minimise negative impacts on communities	Pollution and CO ₂ impact	Score	- 1
		Town and landscape impact	Score	-1
		Heritage Impact	Score	- 1
	Minimise negative impacts on the environment	Reduced Severance	Score	-1
		Minimise Carbon Impact	Increased number of bus/rail users	Quantitative
ACCESSIBILITY	Maximise accessibility to jobs, services and facilities by non-car modes	Improved Integration	Score	+ 1
		Deliverability Of Mitigation	Cost (Cap+5yrOp)/HH	Quantitative £14,119
		New Land or Structure Acquisition?	Score	- 1
		Practicality	Score	- 3
		Risk	Score	- 2
Mitigation Achieved- Partial Inner EDR Package			Percentage	41%

Table 8.3 Cotes Large Assessment Table (8,000 dwellings + 25ha employment)

National Objective	Local Targets	Indicator	Appraisal	
ECONOMY	Minimise traffic growth and increases in congestion	Car Trips Generated (persons)	Quantitative	4470
		Averaged Congestion Impact per dwelling	Quantitative	0.25
	Support sustainable growth of the local economy	Agglomeration Benefits	Score	+ 2
ENVIROMENT	Minimise negative impacts on communities	Pollution and CO ₂ impact	Score	- 3
		Town and landscape impact	Score	-2
	Minimise negative impacts on the environment	Heritage Impact	Score	- 2
		Reduced Severance	Score	-2
ACCESSIBILITY	Minimise Carbon Impact	Increased number of bus/rail users	Quantitative	402
	Maximise accessibility to jobs, services and facilities by non-car modes	Improved Integration	Score	+ 2
		Deliverability Of Mitigation	Cost (Cap+5yrOp)/HH	Quantitative
		New Land or Structure Acquisition?	Score	- 3
		Practicality	Score	- 2
	Risk	Score	- 2	
Mitigation Achieved- Full Outer EDR Package, Dualled to Dishley			Percentage	87%

Table 8.4 SSW Assessment with Partial WDR (5,000 dwellings + 20ha employment)

National Objective	Local Targets	Indicator	Appraisal	
ECONOMY	Minimise traffic growth and increases in congestion	Car Trips Generated (persons)	Quantitative	2976
		Averaged Congestion Impact per dwelling	Quantitative	0.27
	Support sustainable growth of the local economy	Agglomeration Benefits	Score	+ 2
ENVIROMENT	Minimise negative impacts on communities	Pollution and CO ₂ impact	Score	- 2
		Town and landscape impact	Score	-2
	Minimise negative impacts on the environment	Heritage Impact	Score	- 1
		Reduced Severance	Score	-1
ACCESSIBILITY	Minimise Carbon Impact	Increased number of bus/rail users	Quantitative	537
	Maximise accessibility to jobs, services and facilities by non-car modes	Improved Integration	Score	+ 2
		Deliverability Of Mitigation	Cost (Cap+5yrOp)/HH	Quantitative
		New Land or Structure Acquisition?	Score	- 1
		Practicality	Score	-1
	Risk	Score	-1	
Mitigation Achieved- Part WDR Package, A6 South to A512			Percentage	80%

Table 8.5 West Loughborough Assessment Table (3,500 dwellings + 20ha employment)

National Objective	Local Targets	Indicator	Appraisal	
ECONOMY	Minimise traffic growth and increases in congestion	Car Trips Generated (persons)	Quantitative	2350
		Averaged Congestion Impact per dwelling	Quantitative	-1.36
	Support sustainable growth of the local economy	Agglomeration Benefits	Score	+ 2
ENVIROMENT	Minimise negative impacts on communities	Pollution and CO ₂ impact	Score	- 1
		Town and landscape impact	Score	-2
	Minimise negative impacts on the environment	Heritage Impact	Score	- 2
		Reduced Severance	Score	-1
ACCESSIBILITY	Minimise Carbon Impact	Increased number of bus/rail users	Quantitative	377
	Maximise accessibility to jobs, services and facilities by non-car modes	Improved Integration	Score	+ 2
		Deliverability Of Mitigation	Cost (Cap+5yrOp)/HH	Quantitative
		New Land or Structure Acquisition?	Score	-1
		Practicality	Score	-1
	Risk	Score	-1	
Mitigation Achieved- Part WDR Package, A6 North to Nanpantan Rd			Percentage	126%

Table 8.6 SSWW Assessment Table- Full WDR (8,500 dwellings + 40 ha employment)

National Objective	Local Targets	Indicator	Appraisal	
ECONOMY	Minimise traffic growth and increases in congestion	Car Trips Generated (persons)	Quantitative	5326
		Averaged Congestion Impact per dwelling	Quantitative	-0.37
	Support sustainable growth of the local economy	Agglomeration Benefits	Score	+ 3
ENVIROMENT	Minimise negative impacts on communities	Pollution and CO ₂ impact	Score	- 2
		Town and landscape impact	Score	-2
	Minimise negative impacts on the environment	Heritage Impact	Score	- 2
		Reduced Severance	Score	-1
ACCESSIBILITY	Minimise Carbon Impact	Increased number of bus/rail users	Quantitative	914
	Maximise accessibility to jobs, services and facilities by non-car modes	Improved Integration	Score	+ 2
		Deliverability Of Mitigation	Cost (Cap+5yrOp)/HH	Quantitative
		New Land or Structure Acquisition?	Score	- 2
		Practicality	Score	-1
	Risk	Score	-1	
Mitigation Achieved- Full WDR package, dualled A512- Nanpantan Rd			Percentage	114%

8.1.7 Three main bypass options have therefore been tested, and are proposed as part of the above mitigation packages. For Cotes Options, the **Outer Route EDR** has the following advantages and disadvantages:

Advantages:

- Route would bring wider benefits to the town, notably in the town centre and eastern parts of the town;
- Provides full mitigation for a 4,200 development at Cotes, and 87% mitigation for a 8,000 dwelling option;
- The route does not sever parts of the town, and continues to allow easy access for bus operators and interchange at the rail station; and,
- Cost-benefit analysis shows the scheme has potential to achieve very good value for money (in DfT terms), and therefore chance of further funding is greater.

Disadvantages:

- The route runs through parts of the Soar valley floodplain with unique landscape character and high biodiversity interest , notably the Big Meadow SSSI;
- The scheme requires 6/7 large structures to bridge the canal, river Soar and railway lines;
- Requires dualling of the A60 to Epinal Way section, if the Cotes option is greater than 5000-6000 dwellings;
- The development is separate from the related development area east of the river valley, local interlinkages and agglomerations benefits with the Science Park are lost; and,
- Measures to mitigate the impact of this route on the floodplain expected to introduce unnatural landscape features.

8.1.8 The **Inner Route EDR** for the Cotes Option has the following advantages and disadvantages:

Advantages:

- Lower cost than the outer route, as the railway line and SSSI in particular are avoided; and,
- Reduces land take, and potential environmental and flooding concerns associated with an outer route.

Disadvantages:

- The route brings limited wider benefits to the town compared with an outer route;
- It results in significant severance of parts of the town notably around the rail station to the detriment of effective multi-modal interchange;
- The scheme fits the requirements of a particular development, rather than principally aimed at providing a future growth platform for Loughborough in the first instance;

- The scheme requires 2/3 large structures to bridge the canal, railway line and divert around existing sewage and employment land;
- The scheme is likely to involve significant demolition, including of existing businesses, and passes through landfill site. There may be possible conflict with future improvements to Great Central Railway facilities under consideration for landfill site;
- The development is separate from the related development area east of the river valley, local interlinkages and agglomerations benefits with the Science Park are lost;
- The route runs through the edge of the Soar valley floodplain with unique landscape character and biodiversity interest; and,
- The route has still not been shown to fully mitigate any development at Cotes, and thus a number of additional junction upgrades are also required, which given building constraints, are either likely to be very expensive, or impracticable to implement.

8.1.9 With all other development options under consideration, the **Western Distributor Road** forms part of the overall multi-modal mitigation package, and has the following advantages and disadvantages:

Advantages:

- The route can be designed as the perimeter of the SUE's and most of the extended Science Park, and fully mitigates each of the western developments under consideration;
- The route would bring wider benefits to the town notably in areas west of the town centre and Epinal Way;
- The route does not sever parts of the town;
- The route provides direct interlinkages between residential and employment areas, particularly in terms of potential agglomerations benefits with the Science Park; and,
- The route is cheaper, and provides significantly greater levels of cost-benefit than eastern based routes, maximising the chances of obtaining further funding for delivery of the scheme.

Disadvantages:

- The section through the Garendon Park historic park raises significant concerns for English Heritage;
- The section through the valley of the Black Brook crosses floodplain land;
- The section south of Nanpantan Road runs through the fringe of the Outwoods, an area of significant landscape value;
- A bridge is needed across the Great Central Railway, with dualling of the section between Nanpantan Lane and the A512 if the full SSWW Option is pursued; and,
- A short bypass around Nanpantan for the full route would require some CPO, although this is relatively limited compared to the EDR.