Lewes District Core Strategy - OPTIONS FOR DEVELOPMENT

COUNTY COUNCIL POSITION STATEMENT in relation to Transport September 2011

1. Town of Lewes

1.1 This section of the Statement summarises and interprets the results of assessments of potential development scenarios carried out using the updated Town of Lewes SATURN traffic model. The model has been updated and revalidated for this purpose and comprises a robust tool to assess the future highway impacts of a range of Development Scenarios and broad individual Scenario Site locations as specified by Lewes District Council. More detailed information is available in the Town of Lewes Transport Study Report prepared by consultants TPi for Lewes District Council.

Development Scenario Tests

1.2 Development Scenario Tests consisted of combinations of potential broad individual Scenario Sites as shown in Table 1. Scenario Sites were located in both the town of Lewes and in Ringmer.

Table 1 Town of Lewes study - Development Scenarios

		Development Scenario						
	SITE	***Scenario 1***	***Scenario 2***	***Scenario 3***	***Scenario 4***	***Scenario 5***	***Scenario 6***	***Scenario 7***
Lewes	**Old Malling Farm** (Residential - 270 dwellings)	✓	✓	✓	✓	✓		
	North Street (Residential - 600 dwellings)	✓	✓	✓	✓		✓	
	North Street (Employment - 10000m2 B1a)	✓	✓	✓	✓		✓	
Ringmer	**Lewes Road** (Residential - 154 dwellings)	✓	✓					✓
	Bishops Lane (Residential - 226 dwellings)	✓		✓				✓
	B2124/B2192 (Employment - 6000m2 B1c/B2)	✓	✓	✓	✓	✓	✓	✓

1.3 Development Scenario Tests were carried out to determine the cumulative impacts of a range of Scenario Site combinations, and thereby to identify the individual impacts on the highway network of each component Scenario Site.

1.4 The assessments considered the highway impacts of each Development Scenario and Scenario Site at year 2030, the Core Strategy forecast year. Growth from the 2010 base year comprised:

- the specific trip generations of each identified Scenario Site;
- other background growth within the study area arising from changes in real disposable incomes and the real price of fuel over the assessment period; and
- general background growth that would arise as a result of broad forecasts of changes in population and employment elsewhere outside the study area over the assessment period.

1.5 The two background growth estimates were derived using TEMPRO, the Department for Transport's national trip end model.

1.6 Sensitivity testing included:

- a reduction of 10% in the number of trips forecast for Development Scenario 1 as a proxy for the maximum effect of area wide implementation over the study area of 'Smarter Choices'[1] measures; and
- an assessment of the implications of recently authorised TEMPRO 6.2 growth forecasts which are lower than the TEMPRO 5.4 forecasts authorised for use in the main body of the study.

Development Scenario Test results

1.7 The number of vehicle trips within the study area is expected to grow from the base year 2010 up to the forecast year 2030 by between 30% and 44% depending on the scenario tested. All Development Scenarios will therefore lead to a significant increase in pressures on parts of the highway network.

1.8 In light of that overall growth, the 10% proxy Smarter Choices sensitivity Scenario would not, by itself, provide a solution to the scale or location of highway issues that would arise in the study area. Implementation of such measures, at least as part of each future development, should nonetheless be pursued as part of an overall approach to demand management.

1Smarter Choices are a variety of initiatives which reduce the negative impacts of travel on congestion, carbon emissions, the environment and health. They support factors which influence people's travel choices such as public transport, cycling and walking information together with directly informing people about alternative modes of travel through personalised travel planning schemes: Smarter Choices include workplace and school travel plans; personalised travel planning; travel awareness campaigns; car clubs/car sharing schemes; teleworking, teleconferencing and home shopping.

1.9 The TEMPRO revisions do not, by themselves, alter the overall assessment conclusions of the impacts of the proposed Development Scenarios.

Critical junctions

1.10 Critical junctions are those where one or more arms experiences a ratio of demand flow to capacity of 1.00 or more. This does not imply that all arms will be over capacity, nor that the junction necessarily requires attention or improvement if the 'critical arm' is of relatively minor importance, but is an indication of where the network stresses lie.

1.11 The transport study identified junctions experiencing such stress within the town of Lewes as currently (and increasingly in the future):

- A26/B2192 Earwig Corner
- A26/Church Lane
- A26/Phoenix Causeway (Snail) roundabout
- A277/A275 Prison crossroads.

1.12 The transport study also identified A27/A277 Ashcombe roundabout as a critical junction. However, the study modelling of through traffic on the A27 is relatively weak and this junction's identification as critical is therefore less robust.

1.13 There is little that can be done to improve the traffic capacity of Prison Crossroads, although minor adjustments made recently to provide short right turn spaces in the middle of the junction whilst enabling traffic to continue straight through the junction has provided some improvement to capacity. However, it is relatively remote from the Scenario Sites under investigation, which are in the centre or north of the town, and therefore additional traffic flows from those proposed sites may not have a significant detrimental impact at this junction. Nevertheless, the potential impact at Prison Crossroads should be considered as part of the overall assessment of the sites when a planning application is submitted.

1.14 The remaining identified individual critical junctions are all on the A26 Malling Hill. In the PM peak, there are also currently queuing interactions between A27/A26 Southerham roundabout, A26 / Phoenix Causeway (Snail) roundabout and Malling Hill / Earwig Corner in the PM peak that can result in significant northbound queuing down Malling Hill from Earwig Corner and impacting on the operation of Snail roundabout, and queuing back from A27/A26 Southerham junction through the Cuilfail Tunnel. Neither aspect can be replicated by the model. The highway authority's experience of these has been taken into account in its interpretation of the study results.

1.15 The identified problems on the section of A26 between Earwig Corner and Snail roundabout arise principally as a result of capacity limitations at Earwig Corner. Currently, there are no proposals to improve that junction. The identified queuing problems on the A26 at Southerham arise as a result of

capacity limitations at the recently improved A27/A26 Southerham roundabout. The Highways Agency, who are responsible for the trunk road network, has no proposals for further improvement of that junction.

1.16 These identified highway issues will impact on the acceptability of Scenario Sites in central and northern parts of the town, and in Ringmer.

Scenario Sites

North Street

1.17 This Scenario Site is centrally located and could be expected to take maximum advantage of sustainable transport opportunities and thereby minimise its potential traffic impacts. At the scale and type investigated, a development here could be accommodated by the local transport networks, but would require:

- a new access to Phoenix Causeway west of the river;
- appropriate changes to the one-way system including the junction of Phoenix Causeway with Eastgate Street;
- measures to effectively build in and enhance high levels of sustainable accessibility; and
- mitigation of any air quality impacts in light of the adjoining Air Quality Management Area

Malling Farm

1.18 This Scenario Site is located on the northern fringes of the urban area with the potential for good pedestrian and cycle linkages to the town centre but more limited opportunities for bus accessibility. Any development in this location would impact on the identified critical A26 junctions. At the scale and type investigated, a development here could only be accommodated by the local transport networks with mitigation measures at:

- Earwig Corner;
- the Church Lane / Malling Hill junction; and
- the Brooks Road / Phoenix Causeway roundabout.

1.19 There are no current proposals for providing increased capacity at the Phoenix Causeway / Brooks Road roundabout. Any proposals would have to work in conjunction with its neighbour junctions which would imply retention of a roundabout with increased size.

1.20 Any proposals for improvement to the Church Lane / Malling Hill junction would have to build in a requirement to limit the attractiveness to traffic avoiding Malling Hill, via the Church Lane / Mayhew Way / Brooks Road

route, between Earwig Corner and Phoenix Causeway, and should therefore include:

- traffic calming along the route; and
- junction signals timed to under-provide for any use of Church Lane by other than local traffic (including any new generations from the Malling Farm Scenario Site).

1.21 Opportunities for improvements at Earwig Corner are explored in the following section.

Ringmer

1.22 Enhanced cycle and bus connections between Ringmer and Lewes could deliver improved sustainable accessibility for non-local trips generated by the identified Scenario Sites. Whilst only about a half of all traffic generated by new development in Ringmer may use and impact on the town of Lewes highway network, Earwig Corner would represent a particular constraint on any development that would significantly increase demand, particularly on the B2192 Ringmer Road arm, at this junction.

1.23 At the scale and type investigated, new development in Ringmer would significantly increase demand at Earwig Corner as described. It could be acceptable with the completion of the Ringmer / Lewes cycle route, as part of an approach to encourage greater use of sustainable modes, and with provision of appropriate highway mitigation improvements at Earwig Corner.

1.24 The main problems at Earwig Corner differ by peak hour. In the AM peak hour the volume of southbound traffic on the A26 is such that delays and queues on the B2192 Ringmer Road can be large. In practice this is currently part mitigated by driver behaviour where drivers on the A26 let drivers into the main traffic flow from the B2192 arm. In the PM peak, right turning traffic from Lewes has few gaps in the opposing southbound flow and a limited length of sub-standard dedicated lane in which to wait. Blocking of northbound traffic is common. Although again part mitigated by driver behaviour, the consequence is traffic queuing back down Malling Hill to Snail roundabout, also impacting on the operation of the intermediate Church Lane / Malling Hill junction.

1.25 Any highway improvement at Earwig Corner would be within the National Park. A roundabout improvement would be likely to have a direct impact on the allotments, and the turning flows at the junction are not sufficiently balanced for a roundabout to be clearly applicable. Signals would also require additional land, and would impose delays at other times of the day when the junction as it stands can be expected to operate satisfactorily. Lengthening and widening of the right turn lane may provide a way forward in addressing the PM peak northbound blocking / queuing issue, but this would also impact on non-highway land and is currently only a concept approach.

Overall Conclusions

1.26 None of the Development Scenarios tested are unacceptable in terms of transport impacts but all rely on mitigation measures, many of which are common across the range of Development Scenarios. All the mitigation measures identified are considered to be deliverable.

1.27 At the scale and type investigated, the transport impacts and consequences of the North Street Scenario Site should be capable of being satisfactorily accommodated by the local transport networks with the following access and mitigation measures:

- a new access to Phoenix Causeway west of the river;
- appropriate changes to the one-way system including the junction of Phoenix Causeway with Eastgate Street;
- measures to effectively build in and enhance high levels of sustainable accessibility; and
- mitigation of any air quality impacts in light of the adjoining Air Quality Management Area.

1.28 At the scale and type investigated, a development at Malling Farm could only be accommodated by the local transport networks with highway mitigation measures at:

- Earwig Corner;
- the Church Lane / Malling Hill junction;
- the Brooks Road / Phoenix Causeway roundabout; and
- traffic calming along the Church Lane / Mayhew Way / Brooks Road route

1.29 At the scale and type investigated, new development in Ringmer would significantly increase demand at Earwig Corner. It could be acceptable with the following mitigation measures:

- completion of the Ringmer / Lewes cycle route, as part of an approach to encourage greater use of sustainable modes; and
- highway mitigation improvements at Earwig Corner.

2. Newhaven

2.1 This section of the Statement summarises and interprets the results of assessments of potential development scenarios carried out using the updated Newhaven SATURN traffic model. The model has been updated and revalidated for this purpose and comprises a robust tool to assess the future highway impacts of a range of Development Scenarios and broad individual Scenario Site locations as specified by Lewes District Council. More detailed information is available in the Newhaven Transport Study Report prepared by consultants Mott MacDonald for Lewes District Council.

Scenario Tests

2.2 Development Scenario Tests consisted of combinations of potential broad individual Scenario Sites as shown in Table 2. Scenario Sites were located in both Newhaven and Peacehaven.

Table 2 Newhaven study - Development Scenarios

		Development Scenario				
	SITE	***Scenario 1***	***Scenario 2***	***Scenario 3***	***Scenario 4***	***Scenario 5***
Newhaven	**Meeching Quarry** (Residential - 700 dwellings**)**	✓		✓	✓	✓
	Eastside (Residential – 300 dwellings)	✓	✓		✓	✓
	Eastside (Employment - 3000m2 B1)	✓	✓		✓	✓
	Eastside (food store 6000m2 A1)	✓	✓		✓	✓
Peacehaven	**Valley Road** (Residential – 657 dwellings)				✓	✓
	Lower Hoddern Farm (Residential – 600 dwellings)				✓	

2.3 Development Scenario Tests were carried out to determine the cumulative impacts of a range of Scenario Site combinations, and thereby to identify the individual impacts on the highway network of each component Scenario Site. The assessments considered the highway impacts of each Development

Scenario and Scenario Site at year 2030, the Core Strategy forecast year. Growth from the 2010 base year comprised:

- the specific trip generations of each identified Scenario Site;
- other background growth within the study area arising from changes in real disposable incomes and the real price of fuel over the assessment period; and
- general background growth that would arise as a result of broad forecasts of changes in population and employment elsewhere outside the study area over the assessment period.

2.4 The two background growth estimates were derived using TEMPRO, the Department for Transport's national trip end model.

2.5 Sensitivity testing included a reduction of 10-12% in the number of trips generated by the new Scenario Sites in Scenario 1 as a proxy for high intensity implementation of 'Smarter Choices' measures centred on those new developments; and an assessment of the implications of recently authorised TEMPRO 6.2 growth forecasts which are lower than the TEMPRO 5.4 forecasts authorised for use in the main body of the study.

Development Scenario Test results

2.6 The number of vehicle trips within the study area is expected to grow from the base year 2010 up to the forecast year 2030 by between 26% and 36% depending on the scenario tested. All Development Scenarios will lead to a significant increase in pressures on parts of the highway network.

2.7 In light of that overall growth, the proxy Smarter Choices sensitivity Scenario would not, by itself, provide a solution to the scale or location of highway issues that would arise in the study area. Implementation of such measures, at least as part of each future development, should nonetheless be pursued as part of an overall approach to demand management.

2.8 The TEMPRO revisions do not, by themselves, alter the overall assessment conclusions of the impacts of the proposed Development Scenarios.

Critical junctions

2.9 Critical junctions are those where one or more arms experiences a ratio of demand flow to capacity of 1.00 or more. This does not imply that all arms will be over capacity, nor that the junction necessarily requires attention or improvement if the 'critical arm' is of relatively minor importance, but is an indication of where the network stresses lie.

2.10 The modelling shows that the town network can currently just accommodate existing traffic demands in both AM and PM peaks. Potentially in the future, any of the junctions on the A259 as it passes through the town may become

critical and experience stress, including all junctions on the Ring Road, and along the A259 to the east of the river.

Scenario Sites

Eastside

2.11 For development of this Scenario Site, access would need to be via an extension of the existing access road connecting the A259 at The Drove roundabout with the adjoining retail area, which may be along the route of the first phase of the proposed Port Access Road. At the scale and type of development tested, there would also be a need for mitigation improvements at the A259 The Drove roundabout. Depending on the scale of the development, there may also be a need for other improvements to other junctions elsewhere on the A259, particularly going towards the town centre and A26 junction. Particular attention should be given to delivering effective accessibility by sustainable transport (bus, cycle and walk).

Meeching Quarry

2.12 Any development in this location would have an impact on access junctions on the southern part of the Ring Road that may require improvement as a result and may generate the consequential need for improvements to other junctions elsewhere on the Ring Road to ensure the Ring Road as a whole continues to function effectively. At the scale and type of development tested at this Scenario Site, a comprehensive set of improvements would be required to the whole Ring Road, including as a minimum new and enhanced pedestrian and vehicle signals, with no clear deliverability.

2.13 The principal issue relates to the limitations of the existing town distributor network. The Ring Road must be used for nearly all access to/from the west by traffic to/from areas in southwest Newhaven. The study has not considered a new access between the A259 and the general Harbour Heights area, which might theoretically provide a suitable alternative connection. The costs of such a scheme would be very significant and require funding well in excess of potential development contributions. There are no current proposals for such a scheme, and its technical feasibility is unproven.

Peacehaven

2.14 Strategic trips to and from Peacehaven have a much stronger linkage with Brighton and the west than with Newhaven and the east. The study has assumed a continuation of that current bias towards Brighton, and of the relative attractiveness of high frequency public transport serving the A259 corridor.

2.15 The principal highway impacts on Newhaven of the Scenario Sites in Peacehaven would be on the operation of junctions on the Ring Road, and the same concerns could arise as have been raised in the previous section dealing with Meeching Quarry. However, in practice, because of the bias of Peacehaven trips to/from the west, a proportionally larger number of new dwellings in Peacehaven would be needed to produce the same level of impact and issues on the Ring Road as would be generated by the Meeching Quarry site. The study results indicate that the smaller of the two Peacehaven Development Scenarios is likely to represent a general limit to the practical delivery of appropriate mitigation measures to affected Ring Road junctions.

2.16 Although no particular problems internal to Peacehaven are foreseen with the Scenario Sites tested, any new development in Peacehaven would also have to demonstrate that its impacts on the local Peacehaven road network was acceptable or capable of mitigation, and that it enabled advantage to be taken of the competitiveness of the high frequency bus service in providing for travel between the town and Brighton. The potential impact within Peacehaven should be considered as part of the overall assessment of the sites when a planning application is submitted.

Overall Conclusions

2.17 The transport impacts and consequences of the Newhaven Eastside Scenario Site should be capable of being satisfactorily accommodated by the local transport networks with the following access and mitigation measures:

- a new access to the A259 The Drove roundabout which may be along the route of the first phase of the proposed Port Access Road;
- mitigation improvements at the A259 The Drove roundabout;
- depending on the scale of the development, other improvements to other junctions elsewhere on the A259, particularly going towards the town centre and A26 junction; and
- measures to effectively build in and enhance sustainable accessibility (bus, cycle and walk).

2.18 At the scale and type of development tested, the transport impacts and consequences of the Meeching Quarry Scenario Site would be such that a comprehensive set of improvements would be required to the Ring Road, including as a minimum new and enhanced pedestrian and vehicle signals, with no clear deliverability. There may be scope for a substantially smaller development, requiring more modest highway mitigation but the scale will be dependent on the extent of development also proposed within Peacehaven.

2.19 The study results indicate that the smaller of the two Development Scenarios for Peacehaven (about 650 homes) is likely to represent a general limit to the practical delivery of appropriate mitigation to affected Ring Road junctions. Within that limitation, any substitution of housing in southwest Newhaven for

provision in Peacehaven should be at a ratio of about 1:4, reflecting the broader pattern of strategic bias towards Brighton of sites in Peacehaven.

2.20 Any new development in Peacehaven would also have to demonstrate that its impacts on the local Peacehaven road network were acceptable or capable of mitigation, and that it enabled advantage to be taken of the competitiveness of the high frequency bus service in providing for travel between the town and Brighton. The potential impact within Peacehaven should be considered as part of the overall assessment of the sites when a planning application is submitted.

3. Wivelsfield

3.1 The Highway Authority has considered the acceptability of a notional allocation of about 700 new housing units at Wivelsfield Green.

3.2 Any new development in this area would lead to additional traffic on the B2112 through Ditchling. No significant increase would be acceptable. The County Council has already raised this concern with Mid Sussex District Council in respect of potential new housing allocations in Burgess Hill and Haywards Heath. Any significant development at Wivelsfield should be conditional on effective measures being in place to improve the balance of attractiveness between the A273/A23 and the B2112 for north/south movements, in favour of increased use of the A273/A23.

3.3 Potential sites nearer to planned or potential highway improvements supporting that objective (e.g. Haywards Heath Relief Road) could therefore be more supportable than other sites more remote from the A273/A23 corridor, such as Wivelsfield Green.

GLOSSARY

Air Quality Management Area
An Air Quality Management Area has been declared in Lewes town centre because it fails to meet national air quality targets in respect of nitrogen dioxide levels. The major source of pollution in the town centre is traffic.

Demand management
A range of measures aimed at reducing the adverse impacts of car use. They include workplace and school travel plans, car clubs, car sharing schemes, public transport information, marketing and ticketing incentives, travel awareness campaigns, and tele-working, tele-conferencing and home shopping.

Development Scenarios
A Development Scenario is a combination of 'Scenario Sites'. Scenario Sites are alternative LDF housing and employment development options between 2010 and 2030 selected by Lewes District Council for the purposes of the Transport Studies.

SATURN Traffic Model
A local area traffic model developed using SATURN computer software in order to simulate the likely traffic network impacts of the development scenarios.

Scenario Site
See 'Development Scenario' above.

Sensitivity Testing
Sensitivity tests to changes in modelling and forecasting assumptions (e.g. in terms of transport costs and economic growth) were required to test the robustness of the traffic model.

TEMPRO
TEMPRO (Trip End Model Presentation Program) is a computer program designed to allow detailed analysis of pre-processed trip-end, journey mileage, car ownership and population/workforce planning data projections. The pre-processed data is itself the output from a series of models developed and run by the Department for Transport. TEMPRO 6.2 is a more recent version using updated forecasts and has now replaced TEMPRO 5.4.