

## Core Strategy Transport Mitigation

### SUMMARY

- 1.1 This report updates Members on the transport strategy testing that has been undertaken as part of the development of the Draft Core Strategy.
- 1.2 Members will recall that, in order to meet Derby's overall growth requirement, a number of strategic sites have been allocated *within* the City and on the edge of the City in South Derbyshire and Amber Valley. The sites have been chosen for a range of planning reasons including education and linkages to the existing urban structure such as existing district centres, employment and amenities and their ability to be delivered.
- 1.3 The options available to the three Councils to meet these needs within the 'Derby Urban Area' are relatively limited. Therefore, while the development of a transport strategy has been an important part of the process and has influenced the selection of sites, decisions have had to be made taking a variety of issues into account. In some cases, there may be negative transport impacts associated with the development of a site, but in meeting the City's growth requirement, some difficult decisions have had to be made. In the main, therefore, consideration has been given to determining a package of measures to mitigate the impacts of the housing development as far as possible. This is within the boundaries of affordability and deliverability.
- 1.4 Testing of transport options to mitigate the impact of the Core Strategy sites has been undertaken using the Derby Area Transport Model (DATM). The modelling was carried out in the summer of 2012 against all the emerging strategic housing sites at the time. This included sites that were not ultimately chosen for the final strategies for the three HMA authorities. What has been tested so far is, therefore, is a 'worst case scenario'. Out of the initial mitigation testing, the combination of local highway mitigation, new public transport services and smarter choices was the best performing package overall. A significant contributor to the performance of this package was the South Derby Integrated Transport Link, SDITL, joining Rykneld Road to T12.
- 1.5 There is potentially considerable improvement in the performance of the network through the mitigation package, especially in terms of congested route kilometres. However the model predicts there will be parts of the local highway network that will still see a reduction in performance, in particular, Stenson Road. This has been balanced, however, by the benefits development has in this area in terms of proximity to local services and employment and the opportunity it provides for network wide

mitigation.

The extent of this impact will be better understood through the analysis of modelling that is currently being undertaken of the final Plan's proposals.

- 1.6 It should be noted that between now and 2026 that background growth and the delivery of existing housing and employment commitments will result in overall peak hour highway trip growth. It is anticipated that network conditions will deteriorate even without the additional Core Strategy growth.
- 1.7 With anticipated available funding being limited and deliverability being a key consideration, the most likely mitigation package represents the minimum requirements for transport intervention. This level of intervention will not fully mitigate the impact of the Preferred Growth Strategy but should allow the local transport network to continue to function.

## **RECOMMENDATION**

- 2.1 To note the findings of this report and the transport mitigation package that has been developed to support the Preferred Growth Strategy and in particular, the results associated with the Southern Derby Integrated Transport Link, or SDITL, and to make any appropriate comments and recommendations.

## **REASONS FOR RECOMMENDATION**

- 3.1 The report on long term transport options was requested by the board at their March 2014 meeting. The report allows members to be updated on this work and to discuss and make recommendations on the information presented.

## **SUPPORTING INFORMATION**

- 4.1 The significant housing growth proposed on the southern outskirts of Derby has marked implications for the management of the transport network. This is exacerbated not just by the volume of required new development but the lack of suitable or available sites left within Derby, resulting in the consideration of sites beyond the City's administrative boundary in South Derbyshire and Amber Valley.
- 4.2 Opportunities for housing sites in and around Derby are constrained by Green Belt, Green Wedges and the availability of brownfield land coming forward for development. In this regard most sites are located either between the A50 and Derby to the south or sites west of Derby that are south of the A52.
- 4.3 The strategic housing sites that have emerged in the Draft Core Strategy have been chosen for a range of planning reasons including education and linkages to the existing urban structure such as existing district centres, employment and amenities. Importantly, South Derbyshire and Amber Valley also have their own priorities in promoting certain sites, which effectively sit within their administrative areas. Overall, there is not a significant amount of choice in strategic sites to meet the collective housing demands of the Derby HMA.

- 4.4 To this end constraints in the transport network are not necessarily the overarching priority in determining the preferred housing growth plan. That being said, reducing the need to travel by integrating sites into the existing urban structure does have significant transport benefits.
- 4.5 The development of a transport strategy has sought to determine a package of measures to mitigate the impacts of the housing development as far as possible. This is within the boundaries of affordability and deliverability. However, due to the location of the strategic housing sites on the outskirts of the City, they are not always in locations that are particularly well integrated with the existing transport network. As a consequence there is not one strategic housing site that in existing transport terms is clearly better than another.
- 4.6 Testing of the transport strategy has been undertaken using the Derby Area Transport Model (DATM). The modelling was carried out in October 2012 against all the emerging strategic housing sites at the time, a total of 11,600 houses. The Draft Core Strategy development plan includes around only 6,800 of these houses. Further transport modelling is currently being undertaken to test the Draft Core Strategy. **Figure 1** provides the current Draft Core Strategy and identifies the strategic housing sites and transport schemes.
- 4.7 The following provides a summary of the transport modelling carried out in 2012 and the initial findings of the results that helped in developing the transport strategy.

#### **Strategic Transport Testing of the Core Strategy Sites Using DATM**

- 4.8 DATM is a multi-modal variable demand transport model. It can model several different types of transport mode and assess how these interact with each other. Unlike many traditional fixed matrix transport models, DATM can model changes in trip demand as a result of spatial destination through land use changes, time of day, journey purpose and mode of travel. The forecast model is based on a 2026 future year.
- 4.9 The model was used to test the impact of all of the potential strategic core strategy allocations, identified at the time, against a committed only reference case. The purpose of the testing was to develop and understand the benefits of a number of transport mitigation schemes that had been put forward in order to identify the best transport strategy to minimise the impact of the combined Core Strategy developments.
- 4.10 The transport mitigation testing was undertaken in a staged process. The rationale for adopting this approach was to ensure that the full potential of multi-modal solutions was explored prior to the investigation of highway options. The initial scenarios that were tested focused on the following themes.
1. Core Strategy sites no mitigation.
  2. Smarter Choices and Public Transport Improvements (*residential travel planning; integration of new bus services into sites; bus priority improvements; park and ride; and a new rail station near Stenson Road*)

*serving Sinfín).*

3. Local Highway Mitigation (*completion of the Southern Derby Link Road; and widening of Stenson Road railway bridge*).
4. A50 access improvements (*new junction on the A50 west of A514*).
5. Local Highway Mitigation and A50 access improvements (*Themes 3 and 4 combined*).
6. A38 Derby Junctions grade separation.

- 4.11 Out of the initial mitigation testing, the combination of local highway mitigation, new public transport services and smarter choices was the best performing package overall. A significant contributor to the performance of this package was the South Derby Integrated Transport Link, SDITL, joining Rykneld Road to T12, which led to improvements in severity index and congested route km when compared to the reference case.
- 4.12 However, although the mitigation package can provide improvement in the performance of the network, the model predicts there will be parts of the local highway network that will see a reduction in performance. The other benefits of development in this part of the City are considered to balance this impact, in particular the proximity of major employment opportunities and access to local facilities. It should also be recognised that the level of growth needed across the City, an impact on the performance of parts of the network is inevitable. It is considered that the approach selected will provide the best opportunity for network wide mitigation.

The full extent of this impact will, however, be further understood through analysis of outputs from the modelling of the updated Draft Core Strategy. This does not include previous potential strategic housing sites that are now not going to be included in the current plan period.

Subsequent testing considered a phased approach to delivery of SDITL and identified that Phase One of the South Derby Integrated Transport Link, from Stenson Road to T12 could provide the majority of the benefits in the period to 2028. Much of the improvement is attributable to the alternative route choices and valuable linkages to the Infinity Park employment site provided by this option, particularly from trips originating in the Sinfín and Wragley Way area. Phase Two would be a logical next step to provide additional benefits and allow consideration of further potential development sites between Stenson Road and Rykneld Road. **Figure 2** provides an output from DATM, which shows the change in traffic flows as a result of the highway and public transport mitigation and Phase One of the SDITL. The green lines show a reduction in traffic and the red lines show an increase in traffic.

- 4.13 Delivery of Phase One of SDITL will make it possible to develop the potential site at Wragley Way. However, modelling has shown that the road will also have wider network benefits and will also support other development, employment growth and regeneration, underpinning the strategic planning of a growing city. It can therefore be considered that the road is required to deliver the Wragley Way development but also to support the Preferred Growth Strategy as a whole. Alongside this, it will be

essential to maximise the role of public transport, locking in the benefits with smarter choices enhancements to complement the integration of mixed land use provided through the Preferred Growth Strategy.

- 4.14 The provision of Phase One of SDITL partially addresses the need for radial transport route improvements by optimising route choices. Other interventions considered included the widening of Stenson Road Bridge, a new rail station in the Sinfen/Stenson Fields area and the provision of a new A50 junction. The modelling indicated that widening of Stenson Road Bridge would provide limited overall benefits but delivery costs were high so this does not form part of the most likely mitigation package for the area. However, there are indications from the modelling that, alongside additional or future development beyond 2028, completion of SDITL, a new rail station in the Sinfen/Stenson Fields area and potential provision of a new junction with the A50 could be pursued to provide additional network improvements.
- 4.15 In particular, on-going investigation into the opportunities provided by a new A50 junction, to the south of the Wragley Way site will provide a better understanding of the level of development at which it may become both desirable and deliverable. However, the Highways Agency are unlikely to support a new A50 junction without linkages to new employment growth post 2028.
- 4.16 With anticipated available funding being limited and deliverability being a key consideration, the most likely mitigation package represents the minimum requirements for transport intervention. This level of intervention will not fully mitigate the impact of the Preferred Growth Strategy but should allow the local transport network to continue to function.
- 4.17 In addition, the anticipated A38 junctions grade separation is expected to provide overall benefits to the network but relies on delivery by the Highways Agency.
- 4.18 The full transport mitigation modelling report can be found using the following link.

<http://www.derby.gov.uk/media/derbycitycouncil/contentassets/documents/reports/localdevelopmentframework/DerbyCityCouncil-Urban-Area-Modelling-Final-Report-Sept-2012-Sections-1-5.pdf>

## OTHER OPTIONS CONSIDERED

- 5.1 None, this report is for information only.

**This report has been approved by the following officers:**

<b>Legal officer</b>	N/A
<b>Financial officer</b>	N/A
<b>Human Resources officer</b>	N/A
<b>Estates/Property officer</b>	N/A
<b>Service Director(s)</b>	Christine Durrant
<b>Other(s)</b>	Paul Clarke Rachel Harvey

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Background papers: List of appendices:	None
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<b>IMPLICATIONS</b>
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**Financial and Value for Money**

1.1 None, this report is for information only.

**Legal**

2.1 None, this report is for information only.

**Personnel**

3.1 None, this report is for information only.

**IT**

4.1 None, this report is for information only.

**Equalities Impact**

5.1 None, this report is for information only.

**Health and Safety**

6.1 None, this report is for information only.

**Environmental Sustainability**

7.1 None, this report is for information only.

**Property and Asset Management**

8.1 None, this report is for information only.

**Risk Management**

9.1 None, this report is for information only.

**Corporate objectives and priorities for change**

10.1 None, this report is for information only.

