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## Report of the Director of City Development

### Scrutiny Board (City Development)

Date: 18<sup>th</sup> December 2007

### Subject: TRAFFIC CONGESTION – KEY LOCATIONS

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#### Electoral Wards Affected: All

Ward Members consulted  
(referred to in report)

#### Specific Implications For:

Equality and Diversity

Community Cohesion

Narrowing the Gap

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## Executive Summary

This report provides information about key locations of congestion on the major highway network. It outlines the process for identifying the locations of such congestion and advises on the programmes being followed to meet the policy objectives of the Local Transport Plan to address congestions issues.

### 1.0 Purpose Of This Report

1.1 This report has been prepared in response to the Board's request for information concerning the locations of traffic congestion on the major highway network.

### 2.0 Background Information

2.1 The Local Transport Plan 2006-11 contains policies to tackle congestion in line with Government policies and guidance as follows:

C1 Encourage the switch to public transport – by encouraging more travel by bus and rail and improving ticketing and information

C2 Manage the demand for travel – by the management of car parking and reallocation of road space

C3 Make best use of existing capacity – by urban traffic management and control and the provision of information

C4 Improve the highway network – by selective improvements and general highway maintenance

C5 Encourage more cycling and walking – by dealing with existing barriers, promoting the benefits and integration with public transport

C6 Promote Smarter Choices – by workplace travel planning measures and car club schemes

C7 Promote sustainable land use planning policies and practices

- 2.2 The ability to understand and quantify the extent of congestion has until quite recently relied upon the ability to collect reliable network wide information on vehicle journey speeds. This task is both difficult and expensive since data collection usually involves individuals driving along road sections, with a passenger measuring journey times between junctions using a stop watch. Where the detail of events at specific junctions is concerned data is supplemented by queue surveys and analysis by Urban Traffic Control.
- 2.3 Recently the Department of Transport (DfT) has made journey time data available to the local authority derived from a “data warehouse” of Global Positioning System (GPS) data held by a commercial company, iTIS holdings. These data are typically collected from vehicles equipped with tracker devices and in-car, real-time, navigation systems . The information in the data warehouse is then matched to an electronic map representation of the road network to provide average journey times along road sections.
- 2.4 This new data has allowed a more detailed comparative analysis to be made of congestion and for the purposes of this report has been used to illustrate the main locations of congestion on the major road network. This has been further amplified in terms of specific locations by reference to inputs and data provide by Urban Traffic Management and Control Section. A more targeted examination of delays and congestion on the bus network is also being undertaken as part of the Performance Improvement Partnership joint working with Metro and bus operators.
- 2.5 There are limitations to the GPS based approach insofar as it cannot reliably identify points of congestion on minor roads, because in lower traffic flow conditions there are insufficient GPS equipped vehicles to allow a robust figure for journey speeds and delays to be calculated.
- 2.6 An important aspect of any examination of congestion is to understand how congestion can be defined. Unfortunately there is no universal standard definition and indeed it may be considered that congestion is a relative matter relating to the drivers acceptance of delays on their journey which relates to the nature, time and location of their journey.
- 2.7 Congestion occurs in several ways:
- At junctions, either signalised or priority, were the rate of traffic arriving exceeds the capacity of the junction thus causing queues to accumulate. This is usually measured using traffic and queue surveys for which there is no automated process and as such is not done on a routine basis.
  - On lengths of road where the level of flow exceeds the capacity of the road which may be either in terms of its width (and lane configuration) or due to layout of the road and incidence of junctions and often both. Congestion can be measured by manual techniques using time journeys and as described above GPS technology is now allowing a more automated systematic approach.

- Road user behavioural issues are also a cause of congestion due to poor lane discipline, injudicious or inconsiderate turning movements, illegal or inappropriate parking, for example on bus clearways. These issues are not observed in any wider systematic manner and are usually identified by specific observations of individual locations.

2.8 Measurement of congestion is made on the following basis:

- By observations of the time taken to travel along a length of road (moving observer method) over a period of time during the peak and off-peak periods to give a figure for vehicle delay.
- On-site measurement of queue lengths at junctions. This approach tends to be specific to local conditions rather than allowing for comparison with other sites, since it is also a function of the design of the junction and timing of the traffic signals. As part of the UTMC approach is to manage the distribution and length of queues so achieve the optimal movement of traffic therefore this is an unreliable measure of congestion.
- Use of GPS travel data to allow journey times or delays to be plotted. This is the method that has been used to provide the data in this report and is used by the DfT.

2.9 Potential interventions to address the sources of congestion are of course wide ranging, but principally will involve:

- Local interventions such as waiting restrictions, road marking and traffic signing changes
- Enforcement through either the Council's parking service which is able to target known trouble spots or through the intervention of the police particularly where incidents have occurred
- Improvement schemes based on the policies and principles set out in the Local Transport Plan
- Measures to influence travel choice and behaviour such as through the TravelWise programme and road safety awareness programmes.

### 3.0 Main Issues

3.1 Section 2 of this report has provided the context for the measurement of congestion and the identification of hotspot locations. This section of the report therefore presents an overview of congestion on the major road network. A focus on the major road network has been taken because these are the roads that determine the speeds of journeys on the network, since even where journeys are being made on the secondary or minor road networks all these roads lead ultimately into the major road network. It is also worth pointing out that the analysis and interpretation of congestion data is a complex and time consuming matter.

3.2 Figure 1 illustrates the A and B class road network and highlights all those locations or lengths of route where peak period journey times exceed 1 minute per kilometre longer than the same journey undertaken in the off-peak period. That is to say the journey is very approximately half the speed that it would be outside the peak

period, although the actual speed this will of course vary according to the road and speed limit.

3.3 Appendix 1 of this report provides a tabulation and commentary of all the routes identified in Figure 1 and includes an analysis of the issues and details the programmes and actions being undertaken along the routes concerned.

3.4 The key locations identified in this report are:

A58M Leeds Inner Ring Road  
A58 Roundhay Road at Harehills Corner  
A58 Whitehall Road at Wortley  
A64 York Road at Harehills Lane  
A63 Selby Road at Halton  
A65 Kirkstall Road between the city centre and Kirkstall  
A643 Bruntcliffe Lane at Morley  
A647 Armley Road at Armley and at Galloway Lane, Pudsey  
A653 Dewsbury Road at the junction with the Ring Road, Beeston  
A658 Harrogate Road/Victoria Avenue at Yeadon  
A660 Headingley Lane/Otley Road from Hyde Park to Weetwood  
A6110 Ring Road at Wortley and Beeston  
A6120 Ring Road, junctions with the A58, A61, A63, A65 and A657  
B6154 Tong Road at Wortley  
B6157 Leeds and Bradford Road at Kirkstall  
B6481 Pontefract Road at Stourton

#### **4.0 Legal And Resource Implications**

4.1 This report raises no specific legal and resource implications.

#### **5.0 Conclusions**

5.1 This report has identified the locations of congestion on the major road network based on the available data. Information has also been provided on the approach being taken in line with the LTP objectives for congestion to improve the movement of people using the highway.

#### **6.0 Recommendations**

6.1 Members are requested to note and comment on the contents of this report.