

Traffic Signals – Network Management

Purpose

- 1.1 To update the Board on traffic signals and network management in Derby.

Recommendation

- 2.1 To note the details in the report.

Reason

- 3.1 The board requested information to be presented as part of the work programme.

Supporting information

- 4.1 The Council has a statutory duty under the Traffic Management Act S16(1) to manage the road network with a view to achieving, so far as may be reasonably practicable having regard to other obligations, policies and objectives, to secure the expeditious movement of traffic on the Authority's road network.

The duty does not prevent the prioritisation of any mode of transport on a particular route and requires consideration of road safety, vulnerable road users and cost.

- 4.2 Traffic signals at critical junctions primarily manage competing traffic demands and flows. They usually include facilities for pedestrians, cyclists and vulnerable road users. Signals allow for route prioritisation at peak times and for the management of planned or unplanned events that have impacts on road traffic.
- 4.3 Within the city there are 68 traffic signal controlled junctions and 133 signal controlled pedestrian crossings. The total asset value is in excess of £5m. The annual operating cost is approximately £200,000 (including routine maintenance, electricity and technical management systems). Approximately £15-£300,000 each year is required from the Local Transport Plan Capital programme for asset improvement.
- 4.4 The majority of traffic controlled junctions now operate on low voltage systems, which has reduced operating costs. The majority are also linked to an automated fault reporting system, where the signal controller will send a fault message to the maintenance provider to report minor faults or failure.

- 4.5 The traffic signals on the inner ring road and the critical junctions on the outer ring road are linked to an Urban Traffic Management and Control System. This equipment manages flow within predetermined parameters, by taking real-time data from monitoring systems to allocate green light time. This is designed to manage queue development and clearance, based on the actual demand, rather than simple time plans. It is not capable of preventing congestion, but it mitigates traffic build up by delaying the point of junction saturation and improves the recovery time of the network to free flow conditions.
- 4.6 The allocation of green light time is often constrained by the road capacity (how far away it is and how many lanes of traffic) on the road link to the next junction.
- 4.7 The control of complex and large volumes of traffic is not done by programming each junction in isolation, the systems operate as regions, which means junctions communicate to manage the flow along a route.
- 4.8 The technology and capability of traffic signals and the management systems has become essential to the management of urban environments and to the development of land for many commercial or housing uses. At these locations the impact of additional traffic can be mitigated to some extent by the use of signals.

Public/stakeholder engagement

- 5.1 Most major junctions in the city have been signalised for many years. From time-to-time major junction improvements will be carried out, usually as a result of changes to accommodate development or through major highway changes. These schemes will usually require consultation. Neighbourhood Boards will often make requests for signals at junctions or for pedestrian crossings, the service will investigate and assess if signals are an appropriate or affordable solution on a case-by-case basis.

Other options

- 6.1 None

Financial and value for money issues

- 7.1 None

Legal implications

- 8.1 The Council is has various legal duties for road management and safety. Traffic signals and controlled crossing assist the Council to meet these duties. The implementation of traffic signals is a regulated area.

Other significant implications

- 9.1 Not applicable.

This report has been approved by the following people:

Role	Name	Date of sign-off
Legal		
Finance		
Service Director(s)		
Report sponsor	Verna Bayliss – Acting Director of Planning and Transportation	
Other(s)		

Background papers:
List of appendices: