

Bowes LTN Monitoring – TfL Network Performance Delivery

29 April 2021

Since the implementation of the Bowes Low Traffic Neighbourhood (LTN), TfL Network Performance Delivery have used a variety of tools to monitor the impacts of the scheme. Several new dashboards were created in response to lockdown measures to increase remote monitoring capability, and to help with the number of LTNs being implemented simultaneously across London.

This note briefly outlines the observations from a TfL Network Performance perspective on the impact of the Bowes LTN scheme.

Urban Traffic Control (UTC) Data

TfL's Operational Analysis team have recently developed a tool which shows changes in flow recorded by the vast number of SCOOT detectors on the network, which power the UTC system controlling the traffic signals. The SCOOT Digital Twin dashboard shows relative flow changes compared to the previous year, which has been particularly useful for understanding changes in traffic volumes in pre- and post-pandemic conditions. It is important to note that the UTC data does not represent the exact numbers of vehicles on the network: the system uses detector occupancy to model vehicles, and is therefore sensitive to a number of factors such as the time vehicles are stationary over these detectors in queued conditions.

Early analysis of the SCOOT Digital Twin in mid-September was discussed with the London Borough of Enfield. The analysis showed that flows within the LTN and in the surrounding area had reduced compared to September 2019 by between 10% and 40%. The analysis also showed significant reductions on Warwick Road northbound (up to 60-70%), which could have been expected due to the closures implemented by the scheme. The primary cause of this change is believed to be the lockdown restrictions rather than the LTN, as there is a reduction in traffic across the wider network with no relative increases around the scheme. It is possible that local reassignment has occurred, however this impact has been masked by the overall traffic reduction. While the reduction on Warwick Road is greater, it is likely to be a combination of the LTN closures and reduced overall flow.

Analysis of UTC congestion data also shows that changes in congestion at key locations typically varies in line with lockdown restrictions, rather than showing an obvious change as a result of the scheme. Congestion is currently returning to pre-pandemic levels in some places around the LTN, rather than exceeding them, and therefore we are continuing to monitor the effects of this.

Bus Journey Time Data



iBus data has been used to analyse bus journey times for a number of routes in various directions through and around the LTN. Understanding changes in traffic volumes, as detailed above, has been a key step in this analysis: by demonstrating that there are fewer vehicles on the network overall, we can effectively rule out additional congestion as a main cause of additional bus delay.

Detailed analysis of bus journey times was undertaken for a two-week period in September 2020, comparing to two weeks in September 2019. The impacts of lockdown were excluded from this analysis as much as possible i.e. schools were open as normal in both data sets. The analysis showed a range of delayed and improved journey times across the study area. While improvements in bus journey times were typically less than 45 seconds, there was some increase in delay of nearly two minutes to buses on Bounds Green Road. TfL Network Performance Delivery met with colleagues from Bus Operations, as well as Borough Officers from the London Borough of Enfield to discuss these results. Possible causes of the delays were discussed, however there were no specific issues raised by Bus Operations. TfL Network Performance Delivery proposed that Borough Officers could undertake route walks to try and better understand possible causes of delay between individual bus stops, where delay was seen to be highest in the analysis.

Since the scheme was implemented, TfL have continued to routinely monitor the bus impacts using dashboards which map iBus data. This includes live data showing bus performance in real time (NIMBUS), and the iBus Map, which is updated weekly to show journey time change against a range of base dates e.g. the month before or the year before. This has been an extremely useful tool for understanding short and long-term changes to bus journey times. Overall bus performance around the Bowes LTN has shown very few patterns, which means bus performance is not consistently better or worse, and the impacts could therefore be described as neutral. These dashboards continue to be monitored and discussed on a daily and weekly basis for various TfL meetings, and therefore we are constantly reviewing any changes that could be associated with the scheme.

Network Management Control Centre Observations

The Network Management Control Centre continues to monitor key areas of the TLRN and wider network for significant delays and disruption. The section of the A406 around the LTN has historically been very congested in pre-pandemic conditions, however no significant concerns about additional disruption have been raised from the Control Centre.

Extensive monitoring of the junction of Bowes Road / Telford Road / Wilmer Way was undertaken in early February 2021, following Network Performance's receipt of a customer enquiry about vehicles blocking the pedestrian crossing at the junction. Congestion and exit blocking in this area were a common issue in pre-pandemic conditions, and the original enquiry referred to incidents in early October when the network was considerably busier due to lighter lockdown restrictions. Observations in February showed that congestion had significantly eased, and CCTV monitoring across all times of day showed no prolonged blocking of pedestrian crossings or safety risks. The conclusion was that the LTN was not having an adverse impact on congestion in this area as congestion had been seen to reduce. Instead, the primary factor affecting this was the volume of traffic on the network in response to lockdown measures. The Control Centre continues to

monitor these key locations, and it is only when lockdown measures have finally eased while the LTN remains in place that any clearer impacts of the LTN will become apparent.

Changes to the signal operation at the junction of Bowes Road / Warwick Road

The changes in flow patterns at this junction resulted in the UTC system controlling the signals making an appropriate change to the signal timings: with less traffic now exiting Warwick Road, the green time for this approach was automatically reduced. However, because Warwick Road and the pedestrian crossing across Bowes Road eastbound run simultaneously, this also meant a shorter green time for the crossing, and therefore northbound pedestrian progression through the junction was adversely affected: pedestrians would arrive at the Bowes Road eastbound crossing after the green signal had expired. To compensate for this, an additional signal stage was added to the sequence, which allowed Bowes Road eastbound to continue for longer, and made Bowes Road westbound finish earlier. This meant the crossing on Bowes Road westbound could therefore receive an earlier green, meaning pedestrians could cross earlier and reach the eastbound crossing in time for the next green signal. This change has been implemented for the AM peak hours to best suit the tidal patterns of school pedestrians, as this was observed to be the busiest time for this movement.

Another benefit of this change is that there is now an increased gap for right turners into Warwick Road. It has regularly been discussed that this movement is quite intimidating given the number of high-speed lanes to cross in the westbound carriageway. This change helps to reduce the amount of traffic opposing the right turners and to therefore make the movement slightly easier.

Conclusions

A constant theme in the monitoring undertaken for this scheme is that the variations in network performance have typically aligned with lockdown restrictions, rather than the LTN. It has therefore been challenging to see the impacts of the LTN alone. Nevertheless, the LTN does not appear to have had a prolonged impact on the network in the regular monitoring undertaken by TfL.

This report was produced in late April 2021, shortly after Step 2 of the lockdown roadmap. A number of restrictions are therefore predicted to be lifted in the coming weeks and months, and it is likely that more traffic will return to the network as a result. We will continue to monitor network performance changes to determine if the LTN starts to show a greater impact. We are also collaborating with the London Borough of Enfield who are analysing traffic counts within the LTN area to gain a better understanding of the impacts.