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the BDP and BORLP4

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Dear Mr Hetherington,

RE: EXAMINATIONS OF THE BROMSGROVE DISTRICT PLAN (BDP) and BOROUGH OF REDDITCH LOCAL PLAN No. 4 (BORLP4)

The Highways Agency (HA) has reviewed the Inspector's Note to the Councils, dated 10th April 2014, which raises matters of concern in relation to the transport evidence base.

In response to this, we can provide an updated position. This seeks to clarify the transport work undertaken to date, which has sought to define the impacts of planned growth over the Plan period, any associated requirements for mitigation on the Strategic Road Network (SRN) and also our understanding of the current outstanding issues.

This position reflects work which has been undertaken, in conjunction with the Local Planning Authorities (LPAs) and Worcestershire County Council (WCC) as the highway authority since February 2013.

Assessment of Impacts on the SRN - 'Do-Minimum' Network

The HA's assessment of traffic impacts has been based on data provided from WCC with respect to trip generation, distribution and assignment of traffic within Bromsgrove and Redditch over the plan periods i.e. 2011-2031. The use of this data has enabled both highway authorities to work from a common base, and to facilitate joint analysis of impacts and any potential requirements for mitigation.

For clarification, the data on which the HA's analysis has taken place reflects the provisions which were embodied in the Submission versions of the Local Plans (2013). For Bromsgrove, this includes the fact that provision for around 2,400 dwellings has not yet been made – and that sites will not be identified, until after the Plan's adoption, following a full Green Belt review. On this basis, this residual number has not been included in the assessment work to date.

To confirm, the transport assessment work has been based on the following assumptions in relation to housing land provision:

- Redditch Local Plan – 6,380 dwellings (to 2031)
- Bromsgrove Local Plan – 4,600 dwellings (to 2021)

The HA has utilised the data within an existing microsimulation model to examine the impacts of traffic growth on the main SRN junctions around Bromsgrove and Redditch, these being:

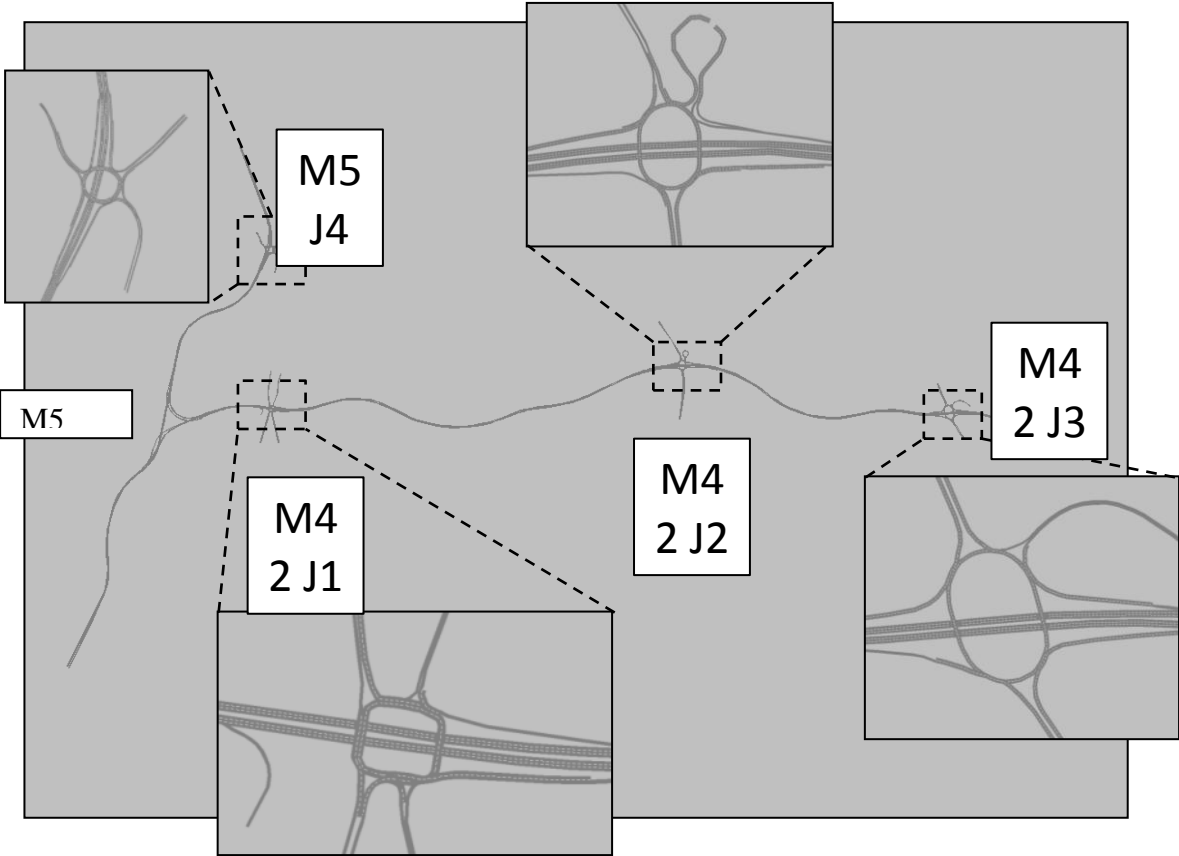
- M5 Junction 4 (A38/Lydiat Ash)
- M5 Junction 4a (M5/M42)
- M42 Junction 1 (A38/Bromsgrove)
- M42 Junction 2 (A441/Hopwood)
- M42 Junction 3 (A435/Redditch)

Whilst the M5 Junction 5 (Droitwich) may also be affected by the development over the Plan period this junction has been excluded for the purpose of the Redditch and Bromsgrove transport assessment work, on the basis that any impacts are considered to be secondary to the key junctions identified above. For information, M5, junction 5 is however being considered as part of separate studies into its performance, in the context of developments coming forward within Wychavon District and a scheme of improvement has been identified. The HA may, in the future seek financial contributions from developments in Bromsgrove towards works at this junction, (depending on any future detailed assessment of their impacts.)

The model utilised to examine the impacts on the SRN junctions was developed in 2009 and has been calibrated and validated. It covers the peak periods 0800-0900 and 1700-1800, and minor alterations have been undertaken to reflect changes in the highway layout since 2009. The model remains, in our view, the best tool for examining the impacts on the SRN, of development plan growth.

Figure 1 below shows the extents of the model.

Figure 1 – Highways Agency Strategic Road Network Model: M5 J4 and M42 Junctions 1-3



The methodology for assessing the impacts of the planned growth on the SRN has used demand flows provided by WCC and these have been added to the base year demand flows to create future forecast demand for the years 2021 and 2031. These demand flows were then placed on a ‘do minimum’ network - which effectively remains largely unaltered from that which exists today, with the exception of improvements at M5 J4, which are committed and scheduled to be delivered this year (2014).

Having established the traffic demand based on forecast growth over the Plan period, on the basis of the defined dates/quantum and the characteristics of the do minimum network the implications of the planned growth on the current network have been identified.

The results of this analysis for 2021 are summarised below.

2021 AM Peak:

- The model generally handled only 88% of the demand flows (i.e. there were significant volumes of traffic that did not make it in and out of the model during the period)
- There were major flow deficits (greater than 500 vehicles) in the following locations: M5 J4; A38 south and A491 approach.
- M42 J1; A38 south and north approaches and the A38 north exit
- Mainline queuing (i.e. traffic queuing onto the main carriageway from the slip road) at the M5 J4 north off-slip and the M42 J3 east off-slip

2021 PM Peak:

- 82% of demand flows processed through the model
- Major flow deficits at M5 J4; A38 south approach and exit in addition to mainline flow disruption, at M42 J1 A38 north exit and south approach, M42 J3; A435 south approach
- Mainline queues form at the M5 J4 north off slip, and M42 J1 off slip.

The results of the modelling have also identified that the above situation worsens in the 2031 forecast, with between 18-26% of demand flow unmet within the modelled peak, and with mainline queues and flow deficits increasing.

Development of 'Do-something' Network improvements

The above analysis has confirmed the requirement to investigate potential options for mitigation in order to maintain the safety and efficiency of the SRN through reducing congestion in the peak hours and tackling the locations where mainline queues off the slip roads were forming.

The key locations where mitigation was considered most necessary were:

- M5 J4 – to increase throughput of the junction to clear the north off-slip
- M42 J1 – to reduce delays through this junction and alleviate off slip queuing. This junction viewed as being of critical importance locally as it represents the main crossing point for residents of Bromsgrove to access locations to the north - the M42 itself being a barrier.
- M42 J3 – to improve throughput/off slip to remove mainline queues
- There is also a requirement to consider some smaller form of mitigation at Junction 2; though the off slips in this location were not shown to be an issue queues on the A441 were increasing and as such further signalisation of this junction may be required.

The HA has actively sought to determine whether suitable and effective mitigation measures can be identified to address these constraints.

This process has confirmed that the issues at M42 J3 could be resolved through widening of the slip road to three lanes. Given that this scheme is already under consideration by the HA's Managing Agent Contractor (MAC) that has responsibility for the current operation of the network, it is a scheme which can be considered to be both necessary and deliverable to enable the Plan's growth to be accommodated satisfactorily.

M42 J1 and M5 J4 are more problematic.

At M5 J4 the existing junction has been signalised in the past, enlarged, and is shortly to be enlarged again. Whilst it may be possible to perform further alterations to the junction, the effectiveness and value of any such improvements is considered to be limited – primarily because the capacity of the surrounding local networks, particularly the A38 (Halesowen Road) that provides the link to Bromsgrove is currently constrained. Whilst junction 4 is capable of putting two lanes of traffic in this direction, the A38 only has a short merge section before it becomes a single lane. This capacity constraint means that throughput through the junction cannot easily be overcome through any works to the junction itself.

With respect to the M42 J1; the dominant flow is north/south along the A38. Testing of reconfiguration of the junction, has shown that it could provide additional capacity and that congestion issues could be improved. However, this improvement is only effective in the short to medium term, and would become ineffective prior to 2031. Capacity constraints on the A38 (again single lane carriageway with short merges off the junction) are considered to be the overriding factor.

In order to understand the identified issues of A38 capacity on the operation of SRN junctions, the HA has performed tests that have assumed longer dual sections on the constrained parts of the local highways network - i.e. on the Halesowen Road towards Bromsgrove from M5 J4, and from M42 J1 in both directions along the A38.

These tests identify that A38 improvements at J4 of the M5 and J1 of the M42 would have a beneficial effect on the operation of these junctions and whilst not completely removing the issues that they may bring them to manageable levels.

On the basis of these conclusions, the HA has sought to discuss with WCC the opportunity for widening of the A38, as the long term solution to enabling the delivery of the planned growth. It has been the HA's objective to seek to investigate the options for the identification and delivery of A38 improvements, on the basis that these may, in our view, represent the most effective and prudent long term solution to ensuring that the level of growth envisaged in the Submission draft local plans can be accommodated on the SRN over the Plan period.

Current Situation

For a number of reasons, WCC have been unable to undertake any further investigation of A38 improvements, over and above that already analysed. Given this constraint, and with the agreement of WCC, the HA has now carried out its own investigation of the scope for improvements on the A38 (accepting that this highway lies outside its responsibility).

The initial outputs of the work to date indicate that there may be scope for widening works within the highway boundary, such as would facilitate traffic movement and increase highways capacity, to the benefit of the SRN junctions. This work has recently been shared with the local and highways authorities and will need to be subject to further validation and analysis prior to any firm conclusion or consensus being reached between the parties with regard to its effectiveness or deliverability.

At this stage it is the HA's view that, if the improvements on the A38 Halesowen Road at Junction 4 can be shown to be capable of delivery within the highway boundary and of an acceptable design then it would be appropriate for them to be included within the IDP, this will allow a view to be taken with respect to planned growth impacts at junction 4.

With respect to Junction 1 of the M42 there is further model testing required to see what solution may be feasible, cost effective and provide long term benefit. As already discussed, the current scope for works at this junction are limited in terms of both effectiveness and longevity and, at best would only deliver a short term solution.

The current situation can therefore be summarised as:

Based on the testing undertaken to date (4,600 homes in Bromsgrove to 2021 and 6,380 in Redditch to 2031) the HA have identified three locations where there is a clear risk of mainline queuing and significant deterioration of performance:

- M42 junction 1
- M5 Junction 4
- M42 Junction 3

In the case of the first two bullet points, as traffic volumes grow, the main constraint becomes exit capacities onto the A38 as several lanes on the junctions reduce to a single lane on the A38. This makes further junction enhancements on the SRN increasingly less effective.

In the case of the M42 Junction 1; a number of options are under consideration, including additional merge sections in the existing highway boundary. However, it must be acknowledged that these options may be limited, and as such further testing of other potential measures related to signalisation will also be undertaken.

Depending upon the outcome of this on-going work, the possibility must be recognised that there may be a requirement to consider a more radical solution, involving Compulsory Purchase, post 2021 to deliver improved capacity in order to enable the full development plan growth to be delivered.

With respect to M5 Junction 4; it is considered that there is better potential to improve the merge sections and to control queues on the off-slips in order to accommodate forecast traffic growth. As a result the HA consider that, subject to completion of additional testing and a commitment to delivering this improvement within the IDP by all parties, this obstacle could potentially be removed.

Junction 3 of the M42, also identified as an area of concern, is already under consideration for improvement and is considered to have a reasonable chance of being delivered through existing HA funding programmes. As such, while the scheme should be included in the IDP it may be reasonable to assume that its cost will be met by the HA. This again, provides comfort that the growth, as currently tested, can be delivered.

Bromsgrove Post 2021 Requirement

Earlier in this letter we set out the housing levels that had been tested by the HA and WCC to date. This includes the full Plan requirement for Redditch and 4,600 (plus relatively small employment growth) for Bromsgrove.

Given that, at the time of responding, there was no certainty with respect to the location of further housing in Bromsgrove, (circa 2400 dwellings) or its traffic impacts, it is not possible to confirm whether or not this additional growth can be satisfactorily accommodated on the SRN, or what mitigation may be needed and included in the IDP.

On the basis of the constraints at M42 Junction 1 and M5 Junction 4, which have already been discussed in this note, the HA has outstanding concerns with respect to whether there is a solution which can cost effectively mitigate the traffic impacts associated with the planned

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growth to 2031. Mindful of this, it is anticipated that ongoing engagement between the local and highways authorities over the next few months will seek to determine broad locations for the post 2021 development and that this may provide an appropriate basis for further analysis and testing of traffic impacts. The HA are pleased to provide assistance in relation to this further analysis.

Further work and timescales

This note is intended to clarify the details of the traffic analysis to date and the results arising which have informed the HAs position with respect to the current soundness of the plan. There is still further work being undertaken by WCC and ourselves to consider the impacts to 2031 and whether there are acceptable forms of mitigation, such as will address the identified issues at M5 Junction 4 and M42 Junction 1. This further analysis is being progressed by the HA with an aim to report towards the end of June.

Additional work is also being undertaken to consider where the post 2021 growth in Bromsgrove can be accommodated; what mitigation on the highways network may be necessary and whether this is effective and deliverable to enable the total housing requirement over the Plan period to be met.

The primary focus of work over the coming month will be to understand whether there is anything further that can be done to manage impacts at M42 Junction 1 and to understand what other factors should be considered in estimating the risks of congestion at this junction and how a future scheme may come forward, recognising that the demand is mainly to north south demand across the junction.

The Highways Agency intend to provide updates to this note, as the transport evidence base progresses.

Yours sincerely



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