



## Developments Affecting Trunk Roads and Special Roads

### Highways England Planning Response (HEPR 16-01)

### Formal Recommendation to an Application for Planning Permission

From: Alan Shepherd  
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North West Region

To: Warrington Borough Council – Alison Gough

CC: [transportplanning@dft.gsi.gov.uk](mailto:transportplanning@dft.gsi.gov.uk)  
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Council's Reference: 2019/34799

Referring to the planning application referenced above, dated 21<sup>st</sup> May 2019, for an outline application (all matters reserved except for access) comprising the construction of up to 287,909m<sup>2</sup> (gross internal) of employment floorspace (Use Class B8 and B1(a) offices) including change of use of Bradley Hall Farmhouse to B1 (a) office use (335m<sup>2</sup>) and associated servicing and infrastructure including car parking and vehicle and pedestrian circulation, alteration of existing access road into site including works to the M6 J20 dumbbell roundabouts and realignment of the existing A50 junction, noise mitigation, earthworks to create development platforms and bunds, landscaping including buffers, creation of drainage features, electrical substation, pumping station, and ecological works, accompanied by an Environmental Statement on land to the West of Junction 20 of the M6 Motorway, and Junction 9 of the M56 Motorway and to the south of, Grappenhall Lane/Cliff Lane (known as Six:56 Warrington) Grappenhall, Warrington, notice is hereby given that Highways England's formal recommendation is that we:

- a) ~~offer no objection;~~
- b) ~~recommend that conditions should be attached to any planning permission that may be granted (see Annex A – Highways England recommended Planning Conditions);~~

- c) recommend that planning permission not be granted for a specified period (see Annex A – further assessment required);
- d) recommend that the application be refused (see Annex A – Reasons for recommending Refusal).

Highways Act Section 175B is / is not relevant to this application.<sup>1</sup>

This represents Highways England formal recommendation and is copied to the Department for Transport as per the terms of our Licence.

Should you disagree with this recommendation you should consult the Secretary of State for Transport, as per the Town and Country Planning (Development Affecting Trunk Roads) Direction 2018, via [transportplanning@dft.gsi.gov.uk](mailto:transportplanning@dft.gsi.gov.uk).

<b>Signature:</b> 	<b>Date:</b> 12 <sup>th</sup> August 2019
<b>Name:</b> Benjamin Laverick	<b>Position:</b> Assistant Asset Manager
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<sup>1</sup> Where relevant, further information will be provided within Annex A.

**Annex A**    ~~Highways England recommended Planning Conditions /~~  
~~Highways England recommended further assessment required /~~  
~~Highways England recommended Refusal.~~

HIGHWAYS ENGLAND (“we”) has been appointed by the Secretary of State for Transport as strategic highway company under the provisions of the Infrastructure Act 2015 and is the highway authority, traffic authority and street authority for the Strategic Road Network (SRN). The SRN is a critical national asset and as such we work to ensure that it operates and is managed in the public interest, both in respect of current activities and needs as well as in providing effective stewardship of its long-term operation and integrity.

**Review of Environmental Statement**

The general principles and detail set out in the environmental assessment of traffic impact are considered acceptable. Notwithstanding this, commentary is provided below on the key aspects of the document under headings that match those in the document itself for ease of reading.

**Consultations**

This section of the report provides what appears to be an accurate record of meetings and correspondence including those with Highways England.

**Methodology and Approach**

The report sets out that environmental impacts will be considered in the Environmental Statement that cover both the construction and operational phases of the development. The methodology adopted in the Environmental Statement will follow IEMA methods set out in the document ‘Guidelines for the Environmental Assessment of Road Traffic’ (1993). The guidelines set rules for screening which parts of the highway network should be included in the assessment, these rules are:

- Include highway links where traffic flows will increase by more than 30% (or the number of heavy goods vehicles (HGV) will increase by more than 30%); and
- Include any other specifically sensitive areas where traffic flows have increased by 10%, or more.

Forecast traffic flows from the Transport Assessment will be used to determine which parts of the highway network fall within these thresholds.

Receptors are identified in order to assess the environmental impacts of the proposed development. The hierarchy of receptors are defined as:

- International;
- National;

- Regional;
- County;
- Borough/District; and
- Local/Neighbourhood

Existing traffic on the M6 and M56 motorways are designated as National.

The report goes on to discuss the approach to both the Transport Assessment and Travel Plan which is in line with current guidance and previous agreements.

### **Baseline Information**

The baseline information is as per previous documents as would be expected. Discussion with regards to accidents, trip generation, and trip distribution are provided noting that more detailed discussion is provided within the Transport Assessment itself. As such, these elements are discussed in more detail within our review of that document.

### **Potential Environmental Effects**

With regards to the impact of construction traffic, the report sets out that overall, it is envisaged that the construction traffic generated by the above activities will be well below the 30% increase that the IEA guidance suggests as a threshold for significance. On this basis, the impacts are unlikely to be significant and no detailed assessment of severance, driver delay, pedestrian delay, fear and intimidation and accidents are necessary. This appears to be a robust assessment.

With regards to the impact during the operational phase, the report sets out that the 30% threshold is predicted to be exceeded on six links:

- Grappenhall Lane;
- Cliff Lane;
- M6 Northbound On and Off Slip; and
- M6 Southbound On and Off Slip.

The report then sets out that there will likely be a moderate adverse impact on these links in terms of driver delay noting that there will already be capacity issues at M6 J20 regardless as to the development proposals.

The report sets out that there is nothing to suggest that the proposed development would exacerbate an existing highway safety issue. However, as the accident analysis notes a high accident rate on the On and Off Slips at M6 J20, it is not clear as to how this conclusion has been drawn and more information is requested.

## **Proposed Mitigation**

The document proposes a package of mitigation works at both the A50/Cliff Lane roundabout and M6 J20. The associated General Arrangement drawings are included within the submission as follows:

- 64076 CUR 00 XX DR TP 75011 P01 – illustrating access junctions
- 64076 CUR 00 XX DR TP 75011 P03 – illustrating mitigation to the A50/Grappenhall Lane roundabout & M6 J20

Given that Highways England are focussed on the Strategic Road Network, comments are only provided on the drawing that includes the M6 J20.

Focusing on the A50/Grappenhall Lane roundabout, it is noted that the proposals look to re-position the roundabout approximately 20m to the west of its current position. This allows for more space between the junction and the M6 J20 which is welcomed.

It is noted that all three approaches widen from one lane to two lanes with differing lengths of flaring. Two of the three exits are also two lanes with a downstream merge. It is noted that the exit onto the A50 northbound is a single lane in the drawing but is modelled as being two lanes and clarification is therefore sought.

The proposals include two circulatory lanes on all parts of the roundabout. However, as there is only a single lane exit onto A50 northbound, providing two circulatory lanes at the 'node' formed by the circulatory and the northbound approach appears to be unnecessary as the offside lane only provides for U-turning movements.

We would also have concerns over the very short stacking space provided on the roundabout before traffic queuing at an internal stopline blocks the upstream exit. Careful design of the signal phasing will therefore be needed.

Focusing on M6 J20, it is noted that the circulatory carriageway on the western side of the eastern roundabout is proposed to be closed off. As this only provides for vehicles moving from A50 (east) to B5158, it is felt that this proposal will have overall benefit noting the small number of vehicles that make this movement, the provision of an alternative route, and the increase in stacking space for other movements that it creates as well as the removal of a point of conflict.

It is noted that across the junction, lane markings are not clear immediately downstream of stoplines and that there is potential for 'crossing' movements to be made given this resulting in potential collisions. It is suggested that the lane markings are reviewed and updated.

We would also have concerns over the proposed signalisation of the A50 approach and circulatory carriageway at the western dumb-bell roundabout. It would need to be

clearly demonstrated that the proposal would not impact on upstream stop-lines, given the risk of queuing vehicles on the circulatory carriageway.

Focusing on the carriageway between the M6 J20 and A50/Grappenhall Lane roundabout, it is noted that the carriageway merges from two lanes to one and then flares from one to two lanes in both directions over a very short distance. It is noted that DMRB Vol 5 Section 1 provides guidance on the capacity of a single lane section and, assuming a designation of UAP1, a capacity in the region of 1600 vehicles per hour per direction would likely be likely dependent on lane width and other factors. It is noted that predicted future year flows with the development in place are predicted to be significantly above this in both directions across a typical weekday.

### **Potential Residual Effects**

Potential residual effects have been assessed taking into account of the impact of the travel planning measures and physical mitigation. Whilst the conclusion is that there would be no more than a minor adverse impact from the development, this is predicated on both the travel plan and proposed mitigation working as planned.

### **Additive Impacts**

The document sets out scenarios that include all committed development and the emerging Local Plan Allocations that are appropriate for each assessment year. The assessments also consider committed highway improvements, but no mitigation that is proposed as part of the Proposed Development. It is noted that Local Plan data was provided by WBC from their WMMTM strategic model and that the results are derived from said strategic model.

The results demonstrate that if the entire development came forward in 2021, impacts in the morning and evening peak periods would be in excess of 5% at six locations. This includes the M6 J20 and Cliff Lane Roundabout to the east of the development which is to be expected given the proximity of the site to the motorway. However, the other four locations are mainly to the West and this is deemed to be unexpected in text provided within the report.

It is noted that Curtins has discussed the results with WBC Highways and after a review of all information it would appear that:

- Some of the HGV restrictions to the west of the site have not been included in this version of the WMMTM;
- The loading point (Access) for the Proposed Development is located to the south of the Broad Lane roundabout on Barleycastle Lane. This is much further to the west than in reality with the actual access being located on Grappenhall Lane to the east of then Broad Lane roundabout; and
- The model does not include consideration of any mitigation at the M6 J20.

The above is of concern as it is possible that the overestimation of flows to the west are reciprocated by an underestimation of flows to other locations including to destinations that require the use of the SRN. It is therefore thought reasonable that the modelling work be corrected and re-provided.

It is additionally noted in the conclusion to this chapter that the WMMTM data appears to confirm that utilisation of the conventional flow data contained in the TA and earlier in this report is a robust methodology that adequately considers cumulative impacts. Given the serious issues with the WMMTM assignment, it is clear that this is indeed the case.

### **Environmental Statement Conclusion**

The conclusion makes heavy reference to the associated Transport Assessment which is reviewed further down this letter. Notwithstanding this, it is noted that the conclusions regarding additive assessment analysis cannot be relied upon and should be re-done.

### **Review of Appendix – Transport Assessment (TA)**

Commentary is provided below on the key aspects of the document under headings that match those in the document itself for ease of reading.

#### **Existing Conditions**

The TA provides a description of the local road network that appears to be broadly accurate.

In addition to the description of the local road network, a review of Personal Injury Accident (PIA) data has been provided for the period from July 2013 to July 2018. This is deemed to be an acceptable and reasonably contemporary period.

It is clear from the analysis that there are potential clusters of accidents at the junction of A50/B5356, M6 Junction 20 and its slip roads. Detailed analysis of these junctions is provided and the document concludes that for all three junctions studied, there does not appear to be a common pattern of contributory factors of accidents recorded in this area.

#### **Transport Planning Policy**

The discussion on transport planning policy replicates that provided in the Environmental Statement and as such, there are no additional comments.

#### **Development Proposals**

The development proposals are as previously described and are in line with those set out in previous documentation.

The TA provides discussion on parking provision, including provision for electric vehicles, disabled users, and motor cycles, noting that this will be subject to Reserved Matters and in line with WBC standards. This is acceptable.

### **Accessibility by Sustainable Modes of Travel**

The accessibility of the site has been assessed using the TRACC software which is agreed as a sensible approach. The chapter sets out the accessibility by various modes and concludes that, with current infrastructure, the site is not ideally located to attract trips by non-car modes of transport.

This conclusion is noted and agreed.

### **Traffic Forecasting**

This part of the report initially sets out the trip generation forecasts using Trics. Trip generation numbers using this approach were highlighted in previous reviews as appearing to be low. As such, figures based on the nearby Omega site were suggested as a potential alternative.

It is noted that the Omega North site was surveyed by Curtins in July 2018 and the outturn numbers are provided as a trip rate and equivalent trips for the proposed Six:56 development. It is clear that these numbers are significantly higher than those generated using Trics and it is noted that these figures are subsequently used for the junction assessments.

The report presents peak hours from surveys in line with previous agreements. These are:

- Morning Peak – 0730 – 0830
- Evening Peak – 1630 – 1730

With regards to committed developments, four sites are included in line with previous agreements. Again, in line with previous agreements, the proposed site at Appleton Thorn is included as a sensitivity test.

The distribution of trips appears to be in line with previous agreements.

### **WMMTM Assessments**

The WMMTM assessments are set out in line with those previously commented upon in the Environmental Assessment. As such, no further review is provided.

### **Capacity Assessments**

Capacity assessments are provided for the key junctions that were identified previously. However, this review focuses on those junctions that are of interest to Highways England.



The M6 J20 has been modelled in LinSig along with the adjacent junctions. Despite the limitations in the use of LinSig for a network primarily under priority control, it is felt that the submitted base model could be made to be sufficiently robust that it could be used to draw broad conclusions as to the appropriateness of the proposed mitigation.

As it stands, we have a number of queries with regard to the base modelling as follows:

- Arm J1:13 is not modelled to accurately reflect the way it is fed by traffic given the presence of a segregated left turn lane
- Link J2:3/2 is modelled as giving-way to the wrong opposing link and this should be corrected
- A significant number of lanes are over capacity in the observed case and clarification is sought as to whether this is based on a model built on the basis of counted throughput or, on the basis of counted throughput plus latent demand from end of hour queues
- The modelled queues should be compared to observed queues for ratification of the suitability of the base modelling in a way that is cognoscente of the way that LinSig models and reports upon overcapacity queueing

We would welcome the opportunity to review the base models again once the above has been addressed and with appropriate supporting documentation.

With regards to the 'With Mitigation' LinSig, we have the following comments.

The following issues with regards to the link structure have been identified:

- Arm J2:4 is modelled with two lanes whilst the design only shows one lane
- Arm 2:1 is set out with a left only and ahead only lane whilst the design suggests it would be marked as left/ahead and ahead only
- Arm J2:2 is set out with a left only and ahead only lane whilst the design suggests it would be marked as left only and left/ahead
- Arm J1:7 has a downstream connector structure that is inconsistent with the proposed design
- Arm J1:9 is modelled as having two lanes whilst the proposed design has three lanes in this location
- Arm J1:10 should be modelled with the offside lane being a flare
- Arm J1:11 is modelled as having two lanes whilst the proposed design has three lanes in this location
- Arm J1:8 is not needed in the proposed scenario

The following issues with regards to the give-way modelling have been identified:

- There appear to be significant differences in the maximum flow whilst giving-way values use on Arm J1:2 between the base and proposed models without

obvious justification. In addition, traffic does not properly give-way to lane J1:10/1 in the proposed model

- There appear to be significant differences in the maximum flow whilst giving-way values use on Arm J1:3 between the base and proposed models without obvious justification.

The following issues with regards to the coding of the saturation flows have been noted:

- Link J2:10/1 and J1:17/1, and arm J1:8 and J2:6 are coded with saturation flows despite not having a stopline or giving-way.
- Given the nature of traffic flows on a roundabout, all lanes should be coded as being 'nearside' unless there is strong justification not to do so. Corrections should be made where this is not the case in the model
- Given the nature of the geometric layout of a roundabout, all lanes should be coded as having a radius. Corrections should be made where this is not the case in the model

We would welcome the supply of geometric take-offs in order to accurately check the coding of the saturation flows in the revised model.

Curtins have undertaken operation assessments at an opening year of 2021 and a design year of 2029. As stated previously, this does not meet Highways England criteria for an assessment of both opening year and 10 years hence. The assessments include the development only with a sensitivity test to also include the Appleton Thorne proposals.

Whilst deficiencies have been identified with regards to the base and proposed modelling, the following comments are made with regards to the operational assessment on a without prejudice basis:

- The model cannot accurately reflect the impact of the merges between the two junctions and we are concerned that blocking back from these merges will occur with knock-on consequences for the operation of M6 J20, including the northbound off-slip in particular;
- Traffic is being held at the A50 approach to the Grapenhall roundabout in the Morning Peak scenarios. Should this traffic be released through further mitigation, there would be a more severe impact on M6 J20 than is assumed in the model. The model may therefore be underestimating the impact of the development at the junction; and
- There are a number of locations where queuing on the circulatory carriageway is more than can be accommodated without blocking of the upstream exit. This could lead to an overestimation of the capacity of the network.

We therefore have some serious reservations about the modelling and the conclusions drawn from it.

The report additionally provides merge and diverge analysis although it is not clear as to why it has been provided at 2022 and 2032. In stating that, it is clear that the impact of the development increases the required standard of arrangement for the northbound on-slip.

Whilst the TA appears to miss this issue, mitigation should therefore be considered.

### **Summary & Recommendations**

Our review has focused on Part 2 of the Environmental Statement – Traffic and Transport which includes appendices which incorporate both a Transport Assessment and Travel Plan. Whilst the reports are generally robust, key issues with regards to the work and the conclusions drawn from it have been highlighted. As a summary, the key issues highlighted include:

- Issues with regards to the design of the proposed mitigation
- Issues with regards to the assessments based on the apparently flawed WMMTM strategic traffic model
- Issues with regards to the base and proposed modelling for M6 J20
- A failure to adequately identify and propose mitigation for the impact of the development on the merges and diverges at M6 J20

It is also recommended that the Highways England Vissim model for the M6 Junction 20 should be used to provide a design-check of the identified mitigation proposals.

**Consequently, to allow the applicant to address the issues identified, provide the required information and for Highways England to review the information, Highways England formally recommends that this application not be determined before 16<sup>th</sup> October 2019.**

This response represents our formal recommendation with regard to planning application 2019/34799 and has been prepared by Benjamin Laverick, the Assistant Asset Manager for Cheshire and Warrington within Highways England.