



# VALE OF WHITE HORSE DISTRICT COUNCIL LOCAL PLAN 2031 PART 2: EVALUATION OF TRANSPORT IMPACTS MODELLING REVIEW - TECHNICAL NOTE

PROJECT: SE 59 1718ATK      DATE: 15 NOVEMBER 2017

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## 1 INTRODUCTION

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The Vale of White Horse District Council (VoWHDC) and Oxfordshire County Council commissioned Atkins to undertake a preliminary Evaluation of Transport Impacts (ETI) in relation to the VoWHDC Local Plan Part 2 (LPP2). The results of the evaluation were reported in the report - *Vale of White Horse District Council Local Plan Part 2, Evaluation of Transport Impacts – Stage 2* (Oxfordshire County Council, October 2017). This report is henceforth referred to as the 'Evaluation Report'.

WSP has been commissioned by Highways England, under the Spatial Planning Framework, to review the Vale of White Horse Local Plan (Stage 2). This review follows the earlier review undertaken in May 2017 (Stage 1), focussing on the updates made to the analysis following the previous comments and also the new results from the updated Do-Minimum (DM) and Options scenarios.

This note is structured as follows:

- **Chapter 1** provides a summary of ETI Stages and a summary of capacity impacts of the proposed Local Plan Options - particularly those junctions and approaches that are at capacity (i.e. with volume to capacity ratio exceeding 95%)
- **Chapters 2** covers the modelling approach and outlines the modelling scenarios
- **Chapter 3** outlines the assumptions of the DM options including land-use, trip rates, transport supply (highway and public transport schemes)
- **Chapter 4** provides a summary of the developments considered in the Local Plan Stage 2 Options 1 and 3 mitigation scenario;
- **Chapter 5** summarises the results for the 2031 forecast year against the 2013 Base year and the Local Plan Options 1 to 3
- **Chapter 6** provides the Highway Network Performance for Options 1 to 3.
- **Chapter 7** summarises the Network Performance for Option 2 with a package of mitigation measures.
- **Chapter 8** provides a summary of overall network statistics and A34 corridor.

## 2 CHAPTER 1 (INTRODUCTION)

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Chapter 1 summarises the a) Growth & Infrastructure tested and b) conclusions of all the previous ETI stages.

The summary of the ETI modelling associated with the latest stage of work (Stage 2) is included in Table 1 in this section. This includes:



**Current updated Do-minimum [July 2017]** - The 2031 DM scenario includes homes delivered since 2013, current commitments (homes with planning approval) for the District as at March 2017 and growth plans in surrounding districts

**LPP2 preferred options: Stage 2: Development Options [July 2017]** - updated package of sites within LPP2 and assessment of three Options.

Tables under Section 1.1 summarises the network capacity impacts of the Options 1 to 3 in the morning and evening peak periods, highlighting those parts of the network which are likely to experience cumulative network capacity issues in the forecast years.

## **3 CHAPTER 2 (MODELLING APPROACH)**

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### **3.1 SECTION 2.1 TO 2.4**

In addition to the provision mentioned in Stage 1, Section 2.1 provides the housing and employment quantum that has been assumed for the updated DM scenario for Local Plan Part 2 Stage 2.

There is no other change to these sections from the previous report, and hence no additional comment other than the ones stated in the previous assessment.

### **3.2 SECTION 2.5 (MODELLED OPTION)**

Section 2.5 of Stage 2-ETI sets out the assumptions for an updated DM scenario, three updated Local Plan Options and a mitigation scenario. It also explains that the 2031 model forecast year was used to test the Local Plan development allocations up to 2033. The model tests therefore relate to a 2031 forecast year but with the full quantum of development up to 2033 assumed to have been delivered. The DM and four scenarios (three allocation options and a mitigation scenario test on Option 2) are set out in this section.

## **4 CHAPTER 3 (ASSUMPTIONS OF THE DM OPTION)**

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### **4.1 LAND-USE AND NETWORK ASSUMPTIONS**

All the land use and network DM assumptions are the same in this report compared to the previous report except Table 8, which provides an updated summary of the land use assumptions (number of dwellings).

## **5 CHAPTER 4 (ASSUMPTIONS OF DEVELOPMENT OPTIONS)**

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Three updated development scenarios were have been assessed as part of the LPP2, with the developments spread throughout VoWH District.

Each development scenario consists of a number of additional dwellings and has been modelled separately to assess its impact on the highway network.

Table 16 summarises the quantum of development in addition to those included in the DM scenario.

**Table 16 Local Plan Stage 2 – ETI Options**

Option	Site	Capacity (No. of dwellings)
<b>Option 1</b>	Dalton Barracks (Shippon)	1,200
	East of Kingston Bagpuize with Southmoor	600
	Marcham	520
	East Hanney	130
	Harwell Campus	1,000
	North West of Grove	400
	West of Harwell Village	100
	<b>Total</b>	<b>3,950</b>
<b>Option 2</b>	Dalton Barracks (Shippon)	1,200
	East of Kingston Bagpuize with Southmoor	600
	Marcham	120
	East Hanney	130
	Harwell Campus	1,000
	North West of Grove	400
	<b>Total</b>	<b>3,450</b>
	<b>Option 3</b>	Dalton Barracks (Shippon)
East of Kingston Bagpuize with Southmoor		600
Marcham		120
East Hanney		130
Harwell Campus		1,000
North West of Grove		400
<b>Total</b>		<b>2,850</b>

## 6 CHAPTER 5 (DEVELOPMENT OPTIONS: DEMAND MODEL RESULTS)

This chapter summarises the travel growth in demand for the 2031 DM (compared to the Base), and for all options compared to the DM for the modelled area (table below):

Comparison	Entire Modelled Area	VoWHDC
Base 2013 vs 2031 DM	36%	69% (Origin); 67% (Destination)
2031 DM vs Option 1	0.8%	3%
2031 DM vs Option 2	0.7%	3%
2031 DM vs Option 3	0.6%	2%



## 7 CHAPTER 6 (HIGHWAY NETWORK PERFORMANCE)

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Chapter 6 of Stage 2-ETI presents the highway network performance of the Local Plan scenario, and compares the impacts of each of the three scenario against those of the DM Case.

The network performance has been undertaken for the VoWH modelled area as well as the selected corridors including:

- A34 from Chilton to Botley
- A420 from Shrivenham to Botley
- A415 from A420 to Abingdon
- A4185 from Chilton to Rowstock

While the report includes few other corridors, the analysis below focuses on the above corridors only.

In Section 6.2.1, the results show that for the overall VoWH modelled area, the increase in delay is proportional to the quantum of the developments within each Option. Option 1, which has the greatest number of additional housing results in the greatest increase in delay. However the increase in delay/veh in all scenarios is less than 10 seconds.

Section 6.2.2 reports that the maximum increase in delay is seen on the A34 corridor in the morning and evening peak hours in Option 1 & 2 as a result of the Dalton Barracks development site which has the maximum dwellings in these two Options.

The greatest reduction in average speed (approx. 2 km/h) is on the A4185 corridor in both the morning and evening peak periods. The reduction in speed is likely as a result of the additional traffic from the Harwell Campus development (with 1000 dwellings in all three Options).

The results show that all the other corridors experiences negligible change in the network performance parameters in the morning and evening peak hour for all three Options.

Section 6.3.1 summarises the capacity and flow impacts for the DM scenario, and concludes that, apart from A4185 corridor (which performs below operational capacity), all the other corridors (A34, A420, A415) operate at capacity.

Section 6.3.2 summarises the capacity and flow for 2031 Options 1 to 3, and reports that, while A4185 continues to perform below the operational capacity in all options, A34, A415 and A420 are likely to have capacity issues on certain junctions compared to the DM scenario. On A34, this is primarily between Macham Road and Lodge Hill junctions.

## 8 CHAPTER 7 (TRANSPORT MITIGATION PERFORMANCE)

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Chapter 7 of Stage 2-ETI presents the highway network performance of Option 2 with a package of mitigation measures and compares the impacts against the scenario without mitigation measures.

The mitigation measures include:

- A34 bus lane northbound between Lodge Hill and Hinksey Hill junctions and associated improvements at Hinksey Hill;
- Park and Ride sites at Cumnor and Lodge Hill;



- Bus service frequency improvement between Abingdon and Oxford via Dalton Barracks, and
- New north-facing slips between the A34 and Milton Park to the north of the current Milton Interchange. New slip roads will be added to the network, joining the current priority junction at High Street/Park Drive. Network assumptions are:
  - i. The current priority junction will become a 5-arm roundabout
  - ii. The new slip roads will be one lane, with flared

At a district level, there is a slight a reduction of total delay for both morning and evening peak periods with the mitigation measures in place for Option 2.

However, at a corridor level, the A34 sees an increase in the overall delays in the morning and evening peak. The delay in both periods is around 26 seconds as a result of congestion caused by the additional traffic coming from the proposed slip road to the Milton Park access interchange.

This assessment requires more explanation as it is not clear as to the exact source for this drop in performance. The suggested congestion arising from the conflict between traffic accessing Milton Park from the proposed slip and the existing junction is dependent on the volume of traffic and further junction analysis is required to substantiate this. Issues including exit blocking needs to be demonstrated and additional capacity may then be considered for the proposed junction at the access of the business park.

The impact of the mitigation measures on all the other corridors (A4185 and A420) are not that significant.

There is a reduction in delay on A415 as a result of re-routing in both time periods. It is not clear how the proposed mitigation measure have impacted delays along A415.

## 9 SUMMARY AND CONCLUSIONS

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1. Stage 2-ETI was reviewed in the context of VoWHDC Local Plan 2031: Part 2 Stage 2 and its impact on the Strategic Road Network.
2. “Stage 2” updates essentially refers to:
  - i. The updated land use assumptions for the DM Option that include homes delivered since 2013, the latest committed development for Vale of White Horse and growth plans in surrounding districts and 2011 Core strategy allocation.
  - ii. Three development options (with no differences between the DM in terms of transport supply assumptions e.g. highway, park and ride and public transport):
    - Option 1: 3,940 dwellings focused on Harwell Campus and Dalton Barracks and five smaller sites
    - Option 2: 3,440 dwellings focused on Harwell Campus and Dalton Barracks and four smaller sites
    - Option 3: 2,840 dwellings focused on Harwell Campus and five smaller sites
  - iii. Mitigation scenario: Option 2 with transport mitigation schemes
3. In the DM, apart from A4185 corridor (which performs below operational capacity), all the other selected corridors (A34, A420, A415, A4185) operate at capacity
4. The proposed mitigation measure on A34 at the access of Milton Park is likely to cause congestion, with the traffic accessing the business park from the existing interchange. This needs more explanation as it is not clear using the information provided as to the reason for this drop in performance.



5. **Option 1**, with greatest number of dwellings, is forecast to have the biggest impact along the A34 corridor from Chilton to Botley with delays forecast to increase by 7% in the AM peak and 10% in the PM peak. These delay increases are forecast to be accompanied by a 1-2% decrease in speeds.

**From:** Blake, Patrick <Patrick.Blake@highwaysengland.co.uk>  
**Sent:** 21 November 2017 15:49  
**To:** Planning Policy Vale  
**Cc:** [REDACTED] Planning SE  
**Subject:** CONSULTATION ON VALE OF WHITE HORSE LOCAL PLAN 2031 PART 2  
PUBLICATION VERSION: DETAILED POLICIES AND ADDITIONAL SITES  
**Attachments:** 171115 - Vale of White Horse Local Plan Review\_Issued.docx

Dear Planning Policy

Thank you for consulting Highways England in relation to the Vale of White Horse Local Plan 2031 Part 2 Publication Version: Detailed Policies and Additional Sites.

Highways England has been appointed by the Secretary of State for Transport as a 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 Highways England works 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. In this case Highways England's interests relate to the potential impact of development on the A34 within the district of the Vale of White Horse, and to the M4 and M40 on its southern and eastern boundaries, respectively.

Overall, in accordance with national policy, we look to the Vale of White Horse District Council (VoWHDC) to promote strategies, policies and land allocations which will support alternatives to the car and the operation of a safe and reliable transport network. We would be concerned if any material increase in traffic were to occur on the SRN as a result of planned growth within the Vale of White Horse district without careful consideration of mitigation measures. It is important that the Local Plan provides the planning policy framework to ensure development cannot progress without the appropriate infrastructure in place. This correspondence follows on from our response on 4 May 2017, produced in response to the earlier 2017 Local Plan 2031 Part 2: Detailed Policies and Additional Sites Preferred Options consultation for which our comments remain. Only new/amended policy items are considered below.

We have undertaken a review of the latest information and have the following comments:

**CORE POLICY 8a: ADDITIONAL SITE ALLOCATIONS FOR ABINGDON-ON-THAMES AND OXFORD FRINGE SUB-AREA**

Noting the changes to this policy, with significantly less homes located in Marcham, Highways England's comments on this policy no longer apply.

**CORE POLICY 8b: DALTON BARRACKS COMPREHENSIVE DEVELOPMENT FRAMEWORK**

Highways England notes that the land at Dalton Barracks now has the potential to deliver in excess of 4,000 dwellings, from 3,000 dwellings noted in the last Local Plan.

The Infrastructure Delivery Plan (October 2017) suggests that access to the A34 is investigated. We would therefore welcome the opportunity to work with the site developers/VoWHDC in order to mitigate any traffic impacts that could impact the SRN. As proposals at Dalton Barracks are developed and further details are available, it is essential that they are supported by detailed transport modelling to understand and inform the level of growth that can be accommodated on the A34 and local roads in the vicinity of the site. It is understood that this essential work has not been done at this stage, therefore Highways England would be keen to work with site promoters to develop a robust transport evidence base. When considering proposals for growth, any impacts on the SRN will need to be identified and mitigated as far as reasonably possible. We will support proposals that

consider sustainable measures which manage down demand and reduce the need to travel. Proposed new growth will need to be considered in the context of the cumulative impact from already proposed development.

Highways England does recognise that impacts to the SRN have been qualified by the Development Template within Appendix A of the Local Plan which requires a transport assessment to be submitted with any planning application in order to identify *“the measures that will be taken to adequately mitigate or compensate for any harmful transport impacts”*. Highways England is supportive of the use of the Development Template which aligns with the principles of NPPF, its soundness requirements, and Circular 02/2013. Highways England’s other policy comments remain unchanged.

**CORE POLICY 15a: ADDITIONAL SITE ALLOCATIONS FOR SOUTH EAST VALE SUB-AREA**  
**CORE POLICY 15b: HARWELL CAMPUS COMPREHENSIVE DEVELOPMENT FRAMEWORK**

Highways England notes that 400 dwellings are now proposed in North West Grove, with 1,000 dwellings remaining in Harwell Campus. Highways England’s other policy comments remain unchanged.

**DEVELOPMENT POLICY 16: ACCESS**

It is noted that this was named Policy 15 in the previous Local Plan consultation and the wording of the policy has been slightly amended. Development Policy 16 states that *“proposals for development need to demonstrate that: acceptable off-site improvements to the highway infrastructure (including traffic management measures), cycleways, public rights of way and the public transport network can be secured where these are not adequate to service the development.”*

Highways England continues to be supportive of this policy which aligns with the principles of NPPF and Circular 02/2013.

**DEVELOPMENT POLICY 17: TRANSPORT ASSESSMENTS AND TRAVEL PLANS**

It is noted that this was named Policy 16 in the previous Local Plan consultation and the wording of the policy has been slightly amended. Development Policy 17 states that *“proposals for major development will need to be supported by a Transport Assessment or Statement and Travel Plan in accordance with Oxfordshire County Council guidance... and the latest National Planning Practice Guidance. The scope of the assessment should be agreed with the County Council as the highway authority, in association with the district council, as the planning authority. Highways England should also be consulted as appropriate, in accordance with Highways England guidance”*.

Highways England continues to be supportive of this policy which aligns with the principles of NPPF and Circular 02/2013.

**DEVELOPMENT POLICY 19: LORRIES AND ROADSIDE SERVICES**

It is noted that this was named Policy 18 in the previous Local Plan consultation. Highways England’s comments on this policy remain unchanged.

**SUSTAINABILITY APPRAISAL (SA) – September 2017**

The SA is a mechanism for considering and communicating the likely effects of an emerging plan and alternatives, with a view to avoiding and mitigating adverse effects of any housing, employment and retail development on the SRN and maximising the positives. The SA states that, *“all sites are broadly supported from a transport perspective”* however, when considering transport, the ETI outputs within the SA determines that the SRN will be affected by several housing developments proposed in the Part 2 plan. Highways England recognises that impacts to the SRN have been qualified by the Development Template within Appendix A of the Local Plan which requires a transport assessment to be submitted with any planning application in order to identify *“the measures that will be taken to adequately mitigate or compensate for any harmful transport impacts”*. Highways England is supportive of the use of the Development Template which aligns with the principles of NPPF, its soundness requirements, and Circular 02/2013.

## TOPIC PAPER 5: TRANSPORT AND ACCESSIBILITY – October 2017

This topic paper sets out the process and evidence considered by VoWHDC to inform the policies in Local Plan Part 2, in relation to ‘Supporting Sustainable Transport and Accessibility’. The Stage 2 ETI outputs from July 2017 considered three development options and modelled the transport impacts associated with each option. The outputs indicates that the mitigation measures modelled are having impacts on the A34’s capacity in the vicinity of Lodge Hill, moving the route from ‘within capacity’ to ‘close to capacity’. This has informed the additional Policies in the Part 2 plan, which will look to mitigate the effects of development on the SRN.

The paper states that “*further, more detailed work will be needed to help refine the package of highway and sustainable transport mitigation measures to support future housing and employment growth in the area to ensure the plan contributes towards the delivery of sustainable development.*” We would therefore welcome the opportunity to work with the VoWHDC in order to mitigate any traffic impacts that could impact the SRN.

## VALE OF WHITE HORSE DISTRICT COUNCIL LOCAL PLAN PART 2: EVALUATION OF TRANSPORT IMPACTS – STAGE 2 October 2017

Please see the attached Technical Note (Annex A) setting out comments from Highways England’s consultants about the VoWHDC Local Plan Part 2: Evaluation of Transport Impacts – Stage 2 Report (October 2017).

For background, you may be interested to read “The Strategic Road Network Planning for the Future” which is a guide to working with Highways England on planning matters. Please see [https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/461023/N150227 -  
\\_Highways\\_England\\_Planning\\_Document\\_FINAL-lo.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/461023/N150227_-_Highways_England_Planning_Document_FINAL-lo.pdf).

Regards

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