

UNIVERSITY OF READING

WRITTEN REPRESENTATION

HIGHWAYS ENGLAND'S RESPONSE

1. *This Written Representation is submitted on behalf of the University of Reading. The University is a major landowner along the A327 corridor to the south of Reading. The interest of the University in the Application relates to both the operational needs of the University itself and also the development of some of its landholdings for residential and business/employment purposes.*
2. *The University has approximately 17000 students and employs about 4000 staff. It has 2 main campuses. Whiteknights Campus to the east of the A327 between Reading and Shinfield and London Road Campus to the south of the A4 London Road on the southern edge of Reading Town Centre. It is an internationally recognised university being ranked in the top 1% worldwide. Both campuses contain commercial development. In particular the Whiteknights Campus houses the world renowned Henley Business School and the Enterprise Centre providing business space for developing innovative businesses with plans to expand provision further in future years.*
3. *The University has major landholdings at Shinfield some of which are surplus to requirements. They are mainly along the A327 corridor immediately south of the M4 Motorway.*
4. *A significant part of the land is included within the South of the M4 Strategic Development Location, as included in Policy CP19 of the adopted Wokingham Borough Core Strategy (adopted on 29 January 2010).*
5. *The University is developing the Thames Valley Science Park at Shinfield on land to the south of and adjoining the M4 Motorway. The Science Park is included as Policy CP16 of the Wokingham Borough Core Strategy. Floorspace of 55000m² is allocated in the Core Strategy for the period up to 2026. Planning permission was granted in 2010 by Wokingham Borough Council for the initial phase (18,850m²) (Ref O/2009/1027). It is intended that the Science Park will reach over 70,000m² by 2035. It is expected that occupations of the Science Park will commence in early 2017 and continue until at least the mid-2030s.*
6. *Planning permission was granted by the Secretary of State in October 2012 for residential development of up to 1200 dwellings, 150 units of specialist housing for elderly persons together with a local centre and other ancillary uses (Application reference O/2010/1432 and Appeal reference APP/X0360/A/11/2151409). Implementation is expected to commence in early 2016.*
7. *Planning permission was also granted by the Secretary of State in October 2012 for the Shinfield Eastern Relief Road. (Application reference F/2010/1428 and Appeal reference APP/X0360/A/11/2151413). The Relief Road runs around the north and east of Shinfield and will replace the A327 through Shinfield. It includes a new bridge over the M4 Motorway. The Relief Road is currently under construction with opening scheduled for Summer/Autumn 2016. The timetable for implementing the road has been brought forward from that originally envisaged as a result of a loan from the Homes and Communities Agency. The estimated cost is approximately £30m. It is noted that the Relief Road is not shown on the relevant Works Plan for the Application TRO10019-2.2. (Sheet 7 of 31 Lower Earley). This should be corrected. The Relief Road provides access to the Thames Valley Science Park.*

Highways England's Comment

- 7.1 The Planning Statement (Application Document Reference 7.1) sets out the relevant planning policies contained within the Wokingham Borough Core Strategy as part of the planning assessment undertaken in respect of each of the 'host' local authorities affected by the Scheme.
- 7.2 The consented planning applications referred in Paragraphs 5, 6 and 7 above were identified within Table 4.1 of Chapter 4 of the Planning Statement. The information presented was based on that provided by Wokingham Borough Council and is therefore considered by Highways England to represent the correct planning position at the time of the Application.
- 7.3 Highways England has met the contractor for the Shinfield Relief Road and maintain contact to allow final construction and as built details to be incorporated into the background mapping for the Scheme once the details are available. It is noted that the estimated completion date for Shinfield Relief Road is summer 2016.
8. *The University broadly supports the M4 Junctions 3 to 12 Smart Motorway Scheme and agrees with the strategic aims which are set out in paragraph 2.1.3 of Volume 4.1 - Statement of Reasons. Additional capacity on the Motorway is necessary to sustain development in the general area in the medium term future at least. The proposal in the Application which can achieve that additional capacity is welcomed together with the resulting reduced congestion and improved reliability of journeys.*
9. *The University will however need to be satisfied that the strategic aims are being met by the Scheme. This is important to the University for Operational Reasons for the Campuses, to ensure the commercial viability and attractiveness of the Thames Valley Science Park and to ensure that there is appropriate capacity on the Motorway, including at Junctions 10 and 11, to enable future developments along the A327 corridor and at Shinfield to be delivered.*

Highways England's Comment

- 9.1 The Scheme has been designed to meet each of the 5 strategic aims (detailed in paragraph 2.1.3 of the Statement of Reasons (Application Document Reference 4.1) which are repeated and analysed as follows:

- a) reduce congestion, smooth the flow of traffic to improve journey times and make journeys more reliable;

As detailed in paragraph 1.1.7 of the Engineering and Design Report (Application Document Reference 7.3), "*improvement of the M4 to a smart motorway will help to relieve congestion by permanently converting the hard shoulder to a running*

lane and using technology to vary speed limits and manage traffic. Signs and signals will be used to inform drivers of conditions on the highway network, when and where variable speed limits are in place, and when lanes are closed”.

The additional capacity and control will also improve journey times and smooth traffic flows increasing reliability (paragraph 9.1.1 of the EDR).

The overall appraisal of the Scheme is summarised in the Appraisal Summary Table (Appendix B of the Socio-Economic Report, Application Document Reference 7.2). This shows that in the opening year the extra capacity provided by the Scheme is expected to deliver a total saving of 56.7 million hours to business users and 82.0 million hours to commuting and other users, with expected journey time benefits of £536.5M over the 60 year appraisal period. In addition, the reliability benefits generated by the extra capacity and smart motorway technology provided by the Scheme are estimated to be a further £575.5M. The combination of the reduced congestion, improvement of journey times and increase in journey reliability are therefore expected to generate over £1.1 billion in economic benefits meeting this strategic aim.

- b) support and enhance the role of the M4 as a major national and inter-urban regional transport artery;

The provision of the Scheme provides both additional physical capacity and improved technology. The M4 is one of the first motorways to be subject of an application relating to conversion to a smart motorway. The Scheme confirms the M4 status as a major national and inter-urban transport artery, and the investment in the Scheme and capacity which that investment creates supports and enhances the status of the M4 compared to other routes.

- c) support the economy and facilitate economic growth within the regions by providing much-needed capacity on the motorway;

The increased capacity and enhanced control provided by the Scheme and the resulting journey time and reliability benefits detailed in section a) above makes a significant strategic improvement to local infrastructure. As detailed in paragraph 6.2.13 of the Socio-Economic Report, the improvements provided by the Scheme

are “*considered to have a moderate beneficial effect on the future economic growth of the sub-region*” meeting this strategic aim.

- d) continue to deliver a high level of safety performance of the network using smart motorway techniques; and

It is anticipated that the Scheme will deliver a high level of safety performance on the network using smart motorway techniques. The Hazard Log report, Annex E of the Engineering and Design Report (Application Document Reference 7-4), outlines the hazard analysis work undertaken and leads to the conclusion that, the All Lane Running design of the Scheme is likely to be no worse in terms of safety performance (than the baseline). Annex E concludes that the Scheme can expect “*A reduction in risk for 13 of the 17 highest scoring existing motorway hazards (i.e. those with a risk score of E08/S08 and above), due to a controlled environment being provided through a combination of regularly spaced [variable] mandatory speed signals, speed enforcement, and full CCTV coverage.*”

In addition the Hazard Log Report states that “*Calculations show that the total score for ‘after’ represents approximately a reduction of risk of 18% when compared with the safety baseline (no motorway incident detection and automatic signalling (MIDAS) queue protection).*” It is noted that when comparing the predicted reduction in risk with the actual M4 J3-12 motorway with MIDAS (10% safety benefit compared to the baseline) the Scheme would still expect to see a reduction in risk of approximately 8%.

The smart motorway solution provided by the Scheme will result in a reduction in risk compared to both the safety baseline and the actual M4 meeting this strategic aim.

- e) deliver environmental improvements and mitigation where appropriate and required.

The environmental implications of the Scheme have been assessed as part of the Environmental Statement (ES) (Application Document Reference 6.1). The conclusions of the environmental impact assessment are set out in Chapter 17 to

the ES. When an environmental impact is anticipated, the ES provides the necessary environmental protection measures to mitigate that environmental impact (as detailed in Appendix A of the Response to Examining Authority's First Written Question E4.1.). These mitigation measures are incorporated into the Scheme and secured by the requirements attached to the draft DCO (Application Document Reference 3-1, Section 2) which are summarised below.

- i. Requirement 8: Construction Environmental Management Plan
- ii. Requirement 9: Implementation and maintenance of landscaping
- iii. Requirement 10: Fencing
- iv. Requirement 11: Ecological mitigation
- v. Requirement 12: Contaminated land and groundwater
- vi. Requirement 13: Protected species
- vii. Requirement 14: Surface water drainage
- viii. Requirement 15: Archaeological remains
- ix. Requirement 16: Written Scheme of Investigation (for archaeological works)
- x. Requirement 17: Buildings at risk
- xi. Requirement 18: Traffic management
- xii. Requirement 19: Permanent lighting.

The Scheme also offers environmental improvements where appropriate (eg provision of a new low noise surfacing along the M4 which will provide an immediate benefits in terms of noise mitigation) meeting this strategic aim.

- 9.2 Detailed link by link traffic flow information is presented for each link along the Scheme for each of the different modelled periods and forecast years in Tables A14 – A17 of the Traffic Forecasting Report (Document 3, Appendix 1 of Deadline I). Although traffic flows are forecast to increase along the extent of the Scheme, overall network performance will be enhanced. One measure of the performance is the

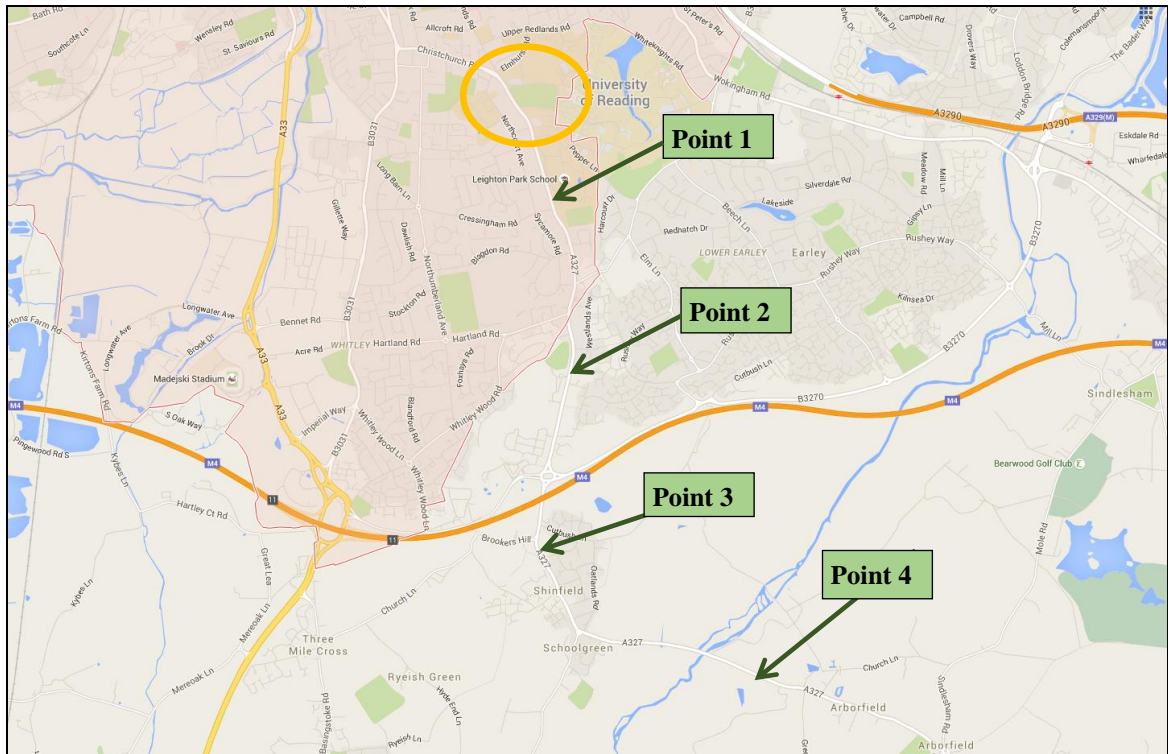
volume to capacity Ratio (V/C ratio). A comparison of the V/C ratios with and without the Scheme in Table A-22 (V/C Ratio without the Scheme) and A-23 (V//C Ratio with the Scheme) of the Traffic Forecasting Report. The reduction in the V/C ratio between junctions 10 and 11 arising from the Scheme is indicative of reduced levels of congestion which will be of benefit to the University's interests.

10. *Reference to the Chapter 13 of the Environmental Statement (ES)- Effects on All Travellers shows that in assessing driver stress the approach has been to consider the Motorway itself and the roads directly connected to the Junctions. These details are shown on Tables 13.4 and 13.5. The tables do not refer to the A327 corridor and therefore it has to be assumed that the A327 has not been included in the assessments. The A327 is a Strategic Road Corridor and runs from Reading, through Shinfield, Arborfield and Eversley to the A30 to the south east. It is considered that this is an important omission as there are likely to be implications for the traffic flows on the A327 as a consequence of the Application proposals. The University has invested significant amounts of money in the corridor and indeed is continuing to do so. It does not want to see the benefits of that investment diminished. The assessments do need to include the A327 corridor and hence traffic flow information should be made available for the A327 corridor. It may be that further investment in the corridor is justified in association with the Application proposals for the Scheme which would have overall benefits for the future operation of the network.*

Highways England's Comment

- 10.1 Tables 13.4 and 13.5 within Chapter 13 of the Environmental Statement (ES), Effects on All Travellers (Application Document Reference 6.1) do not include details of A327. These two particular tables were compiled to highlight some of the major links running parallel to the M4 and links that directly connect to the M4 junctions.
- 10.2 It is recognised that the A327 is a strategic corridor linking to the M4 and accordingly the A327 was considered in the driver stress analysis which relates to traffic conditions. The results of this analysis were reported in Chapter 13, paragraph 13.3.4 for the base (2013) and paragraph 13.8.9 for the design year (2037) scenarios.
- 10.3 The 2013 base scenario is reported in Table 13.10 - Existing estimated driver stress for drivers on non-motorway local, connected or affected roads – M4 crossing roads 2013. The 3rd and 4th rows refer to A327 traffic data.
- 10.4 The 2037 design year data is reported in Table 13.29 - Comparison of Driver Stress for the Do Minimum and the Do Something for the Design Year (2037) for M4 Crossing Roads (the first four rows refer to A327 traffic data). From a comparison of the entries within each of the above tables, it can be seen that the Scheme has no impact on the assessed level of driver stress associated with the A327.

10.5 To provide further assistance in the consideration of the effect of the Scheme on the A327, traffic flow forecasts have been abstracted from the traffic model and are illustrated below:



10.6 Modelled traffic flows (vehicles) for the four locations along the A327 (DM and DS 2022, Core scenario) are presented in the Table below. From a comparison of the Do-Minimum (without Scheme) and Do-Something (with Scheme) flows, it can be seen that the forecast effect of the Scheme on the A327 is minimal.

Traffic flow (vehicles) – Do-Minimum and Do-Something 2022 (Core scenario)

Road	Direction	07.00-08.00		08.00-09.00		Inter-peak		17.00-18.00		AADT		AAWT	
		DM	DS	DM	DS	DM	DS	DM	DS	DM	DS	DM	DS
A327 (Point 1)	NB	748	752	861	863	777	776	805	812	10440	10460	12000	12023
	SB	662	673	663	651	736	738	626	629	9154	9176	10522	10548
	Both dir	1,410	1,425	1,524	1,514	1,513	1,514	1,431	1,441	19,594	19,636	22,522	22,570
A327 (Point 2)	NB	949	942	952	982	612	609	775	762	9692	9669	11140	11114
	SB	735	714	712	767	587	590	790	783	8840	8876	10161	10202
	Both dir	1,684	1,656	1,664	1,749	1,199	1,199	1,565	1,545	18,532	18,545	21,301	21,317
A327 (Point 3)	NB	1303	1309	1291	1298	920	921	1310	1309	14601	14622	16782	16807
	SB	1042	996	1187	1206	861	857	1277	1289	13492	13460	15508	15471
	Both dir	2,345	2,304	2,478	2,504	1,781	1,778	2,586	2,599	28,093	28,082	32,290	32,278

A327 (Point 4)	NB	1071	1065	1017	979	719	715	1052	1048	11604	11523	13338	13245
	SB	887	862	900	887	646	638	847	846	9965	9878	11454	11354
	Both dir	1,958	1,927	1,917	1,867	1,364	1,353	1,899	1,894	21,569	21,401	24,792	24,598

Traffic flow (vehicles) – Do-Minimum and Do-Something 2037 (Core scenario)

Road	Direction	07.00-08.00		08.00-09.00		Inter Peak		17.00-18.00		AADT		AAWT	
		DM	DS	DM	DS	DM	DS	DM	DS	DM	DS	DM	DS
A327 (Point 1)	NB	773	786	868	868	825	824	854	856	10979	10997	12620	12641
	SB	764	763	692	679	816	812	659	658	10033	9994	11532	11487
	Both dir	1,537	1,549	1,559	1,547	1,641	1,637	1,513	1,514	21,012	20,991	24,152	24,128
A327 (Point 2)	NB	985	982	959	988	709	710	844	842	10647	10677	12238	12272
	SB	787	761	821	926	664	659	774	805	9572	9703	11003	11153
	Both dir	1,772	1,743	1,780	1,914	1,372	1,369	1,619	1,647	20,219	20,379	23,241	23,425
A327 (Point 3)	NB	1309	1306	1298	1298	1095	1092	1309	1309	15826	15809	18190	18171
	SB	1149	1164	1300	1305	1087	1084	1308	1306	15497	15501	17813	17817
	Both dir	2,457	2,471	2,599	2,603	2,182	2,176	2,618	2,615	31,323	31,310	36,003	35,988
A327 (Point 4)	NB	1145	1107	1131	1088	880	878	1050	1053	13008	12902	14952	14830
	SB	875	871	907	888	815	811	837	836	11092	11042	12750	12692
	Both dir	2,020	1,978	2,038	1,976	1,695	1,689	1,888	1,890	24,101	23,944	27,702	27,522

11. *It is also the case that both Junctions 10 and 11 of the Motorway have been improved, at considerable cost, in recent years. The University wants to be assured that the future efficient operation and safety of the Junctions is not affected by the Application proposals. The supporting documents for the Application do not contain any analyses of these matters.*

Highways England's Comment

- 11.1 The recent improvements at M4 junction 10 and junction 11 have been included in the traffic model developed for the Scheme assessment. Table 3.1 and Figure 3.2 within Chapter 3 of the Traffic Forecasting Report (Document 3, Appendix 1 of Deadline I) provides the details of improvements that were modelled.
- 11.2 With the proposed improvement to the M4, there will be additional traffic joining and leaving the motorway through both of these junctions. Traffic flows through junction 11 are forecast to increase by some 2% and through the motorway-to-motorway interchange at junction 10 by some 5%. However, the traffic model suggests the junctions will be able to cater for these modest increases and accordingly there will not be any material change in junction performance as a result of the Scheme.
12. *It is important that further details are made available on the traffic flows which have been used for the assessments which have been reported. The background documents do not appear to include a Transport Assessment, Traffic Impact Report or Modelling Reports.*

Highways England's Comment

- 12.1 Details of the Traffic modelling and forecasting information have been provided in the Local Model Validation Report (Document 7, Appendix 1 of Highways England's Response to Relevant Representations provided for Deadline I) and Traffic Forecasting Report (Document 3, Appendix 1 of Highways England's Response to Relevant Representations provided for Deadline I). These reports provide the details that would normally be provided in a Transport Assessment, Traffic Impact Report and/or Modelling Report.
13. *It is noted that Deadline 2 requires the submission of Local Impact Reports from Local Authorities and Statements of Common Ground. The University will be reviewing those reports and statements and is likely to make comments on some of these documents by Deadline 3 on 5 November 2015.*

Highways England's Comment

- 13.1 Highways England notes the comment.