1-3. POLICY - NATIONAL POLICY STATEMENT FOR NATIONAL NETWORKS (NN NPS), LOCAL DEVELOPMENT PLANS AND GREEN BELT

For the applicant; West Berkshire Council (WBerksC); Wokingham Borough Council (WokBC); Reading Borough Council (RBC); Royal Borough of Windsor & Maidenhead (RBWM); Bracknell Forest Council (BFC); Buckinghamshire County Council (BCC); South Bucks District Council (SBDC); Slough Borough Council (SBC); London Borough of Hillingdon (LBHiII); London Borough of Hounslow (LBHouns); Greater London Authority (GLA).

P1.1 Having regard to the criteria listed in para 1.2 of the National Policy Statement for National Networks (NNNPS), is there any reason why the application should not be determined in accordance with the NPS?

1. The application should be determined in accordance with the NNNPS pursuant to section 104 of the Planning Act 2008.

2. Paragraph 1.2 lists the criteria set out in that section which form the only bases on which the Secretary of State may determine an application other than in accordance with the NPS. None of these are relevant to determination of the application. Granting development consent for the application would not:

    2.1 lead to the UK being in breach of its international obligations;

    2.2 be unlawful;

    2.3 lead to the Secretary of State being in breach of any duty imposed by or under any legislation;

    2.4 result in adverse impacts of the development outweighing its benefits; or

    2.5 be contrary to legislation about how the decisions are to be taken.

3. As explained in numerous locations, the Scheme will not result in any conflict identified in paragraphs 2.1-2.5 above.

P1.2 To what extent would the project deliver the objectives of NNNPS to increase the capacity and improve the performance of the Strategic Road Network?

1. The Government's vision and strategic objectives for the national networks set out on page 9 of the NNNPS are:

   "The Government will deliver national networks that meet the country's long term needs; supporting a prosperous and competitive economy and improving overall quality of life, as part of a wider transport system. This means:

   1.1.1 Networks with the capacity and connectivity and resilience to support national and local economic activity and facilitate growth and create jobs.

   1.1.2 Networks which support and improve journey quality, reliability and safety.

   1.1.3 Networks which support the delivery of environmental goals and the move to a low carbon economy.

   1.1.4 Networks which join up our communities and link effectively to each other."

2. The following sections set out how these objectives, including the increase of capacity and improvement of performance, will be achieved by the Scheme:

Capacity, connectivity and resilience to support national and local economic activity and facilitate growth & create jobs:

3. As discussed in paragraph 1.2.4 of the ES (Application Document Reference 6-1), although traffic volumes reduced at the start of the global financial crisis in 2008, long-term traffic trends still show significant growth. Traffic flows are forecast to increase further, which is predicted to result in more severe congestion without road improvements.

4. The ratio of actual traffic flow to its capacity (the total flow that a link between junctions on a road is capable of handling), is a general way of indicating congestion.

5. Table 2 from Chapter 4 of the Engineering and Design Report (Application Document Reference 7-3) is reproduced below and shows forecast ratios for each link of the M4 without implementation of the Scheme. Traffic flow forecasts are taken from the traffic model developed to assess the Scheme. Two years' data are shown – 2022(opening year) and 2037 (design year) - for the morning and evening peak periods. In each case, without the Scheme, the number of links shaded red (where the ratio of flow to capacity exceeds 85%, which indicates that the links are predicted to become congested) increases over time. Similarly, the number of links where flow has reached capacity (shaded black) is also forecast to increase. The links which are shaded yellow in Table 2 are those which are predicted to be near to having a ratio of flow to capacity exceeding 85%. Those links shaded green do not have capacity issues.

6. A comparison of the two tables demonstrates that the Scheme achieves an increase in capacity. This illustrates that the Scheme would deliver an objective of the NNNPS.

7. Table 2 - Forecast ratios of traffic flow to capacity without implementation of the Scheme

	Morning peak-hour (07:00-08:00)				Evening peak-hour (17:00-18:00)			
	Eastbound		Westbound		Eastbound		Westbound	
	2022	2037	2022	2037	2022	2037	2022	2037
J12-J11	99.4	100.0	82.1	88.9	94.5	100.0	88.2	90.8
J11-J10	100.0	100.0	85.7	92.1	96.1	100.0	92.8	96.1
J10-J8/9	96.7	100.0	82.7	87.2	85.1	90.1	94.7	97.9
J8/9-J7	97.0	100.0	80.1	84.9	83.8	87.7	100.0	100.0
J7-J6	91.6	93.5	82.9	88.6	83.0	85.5	94.5	98.6
J6-J5	96.9	99.6	87.9	93.0	91.4	95.0	97.3	100.0
J5-J4b	74.0	76.2	73.1	75.2	75.1	78.2	80.0	82.3
J4b-J4	77.2	78.5	73.7	74.9	77.9	79.6	77.0	77.7
J4-J3	84.2	88.5	86.8	88.0	91.6	91.4	83.7	83.9

Key

Capacity reached	Ratio of flow to capacity >85%	Ratio of flow to capacity nearly 85%	No capacity issues

8. Table 3 - Forecast ratios for each link with implementation of the Scheme

	Morning peak-hour (07:00-08:00)				Evening peak-hour (17:00-18:00)			
	Eastbound		Westbound		Eastbound		Westbound	
	2022	2037	2022	2037	2022	2037	2022	2037
J12-J11	83.7	87.7	65.9	72.4	77.0	86.0	73.3	77.2
J11-J10	92.6	97.7	72.8	78.9	80.4	88.2	78.5	83.1
J10-J8/9	86.2	92.6	70.0	74.8	73.9	80.3	83.4	87.9
J8/9-J7	86.6	92.6	69.0	74.9	74.1	80.1	88.4	93.3
J7-J6	83.0	87.0	72.1	78.0	73.3	77.6	83.2	88.1
J6-J5	85.1	89.9	75.2	79.9	78.3	83.2	83.9	87.2
J5-J4b	83.4	87.3	80.3	83.1	82.1	86.9	87.7	89.7
J4b-J4	65.6	67.0	61.6	62.8	65.4	67.6	64.7	65.4
J4-J3	67.4	71.0	68.4	69.5	72.4	72.7	65.9	66.4

Key:

Capacity reached	Ratio of flow to capacity >85%	Ratio of flow to capacity nearly 85%	No capacity issues

9. Further information contained in the Socio-Economic Report (Application Document Reference 7.2) also illustrates that the Scheme achieves this objective.

10. The construction phase of the Scheme is likely to have a positive impact on employment in the sub-region. Construction of the Scheme is estimated to create in the region of 400 temporary FTE jobs, equating to some 2,000 person years of employment over a five year period. Using the semantic scale set out in ES Appendix 14.1 (Document Reference 6-3), which sets out summary tables for the assessment of magnitude and significance of impact for the community and private assets topic, the residual effect on employment is assessed as moderate beneficial.

11. As discussed above, the M4 currently suffers from heavy congestion and unpredictable journey times. Increases in traffic along the route of the Scheme are likely in the future as a result of increasing populations and the continued development of housing and employment areas. Traffic congestion is a possible constraint to the further economic development of the sub-region, affecting not only travel to work journeys, but also the attractiveness of the wider area as a place to live and visit. The operation of the Scheme is anticipated to relieve congestion and smooth the flow of traffic along the M4. Therefore, it can be expected for there to be improvements in the road network relied upon by local businesses and residents.

12. Economic and social assessments have been undertaken for the Scheme using guidance contained within the Department for Transport's ("DfT") Transport Analysis Guidance, WebTAG, Transport Appraisal Process. The results of these assessments are presented in the Appraisal Summary Table (AST), which can be found at Appendix B to the Socio-Economic Report.

13. Key Scheme-wide impacts identified by WebTAG analysis in relation to the economy can be summarised as an overall improvement in the transport economic efficiency ("TEE") of business users as a result of the Scheme, principally in the form of savings in journey time. 92% of total TEE benefit during normal operation is attributable to changes in business journey times and vehicle operating costs. As noted in the Economy section of the AST and in paragraph 6.2.9 of the Socio-Economic Report, a total of 56.7 million vehicle hours will be saved by business users in the Opening Year (2022) during normal operation.

14. The Socio-Economic Report also notes that the Scheme passes within close proximity to five Regeneration Areas ("RAs"), namely Reading, Wokingham, Bracknell, Maidenhead and Slough (see paragraph 6.2.10 of the Socio-Economic Report (Application Document Reference 7-2)). The definition of RAs as given in WebTAG Unit A2.2 is that 'these areas will have been designated for specific policy purposes related to economic development under one of the UK government's or European Union's regeneration programmes' with an RAs hinterland defined as 'linked to the idea of access, and there may be several hinterlands for a single RA corresponding to accessible employees, customers, suppliers, markets etc.'

15. The regeneration assessment has used travel-time data to define the hinterland for each RA (see paragraph 6.2.10 of the Socio-Economic Report (Application Document Reference 7-2)) and from this assesses the impact on short, medium and long journey travel times. The results of the analysis show that there are minor changes to travel times to the hinterlands from and to the RAs. The largest change in travel time occurs in the Slough area, where travel time within the 30-60 minute category for travel to or from RAs, is reduced by 10%. All other travel time changes are less than 5%. The overall conclusion of the analysis is that the Scheme does have a slight beneficial impact on travel times in relation to RAs which are close to the Scheme (see paragraph 6.2.11 of the Socio-Economic Report (Application Document Reference 7-2)).

16. The Socio-Economic Report concluded in paragraph 6.2.13 that the Scheme may positively influence decision-making for businesses looking to locate to areas within the sub-region, as it makes a significant and strategic improvement to local infrastructure. The Scheme is thereby considered to have a moderate beneficial effect on the future economic growth of the sub-region.

17. In summary, it is concluded that the Scheme provides capacity in support of the NNNPS objective to support economic activity and facilitate growth and create jobs.

Delivering improved journey quality, reliability and safety

18. In paragraph 13.8.16 of the ES (Application Document Reference 6-1), the results of the driver stress assessment are concluded. On the basis of the standard DMRB assessment, together with the additional factors covering improved reliability and safety, reduced tyre noise and enhanced information availability that are considered to contribute to journey quality, the assessment concludes that there is a beneficial impact on driver stress arising from the Scheme.

19. Journey safety and reliability are included within the economic assessment of the Scheme and the results are summarised in the AST. The assessment concluded that it is forecast to deliver

a reduction in the numbers of accidents across the wider study area worth an estimated £104.5M together with time savings due to improved reliability worth £574.5M, both over the 60-year appraisal period.

20. In line with DMRB requirements (Volume 11, Section 3, Part 9, Vehicle Travellers), Chapter 13 of the ES (Application Document Reference 6-1) considers journey quality in terms of view from the road and driver stress. Paragraph 13.2.5 provides the conclusion to the assessment of view from the road, where it is stated that the view from the M4 will not change materially as a result of the Scheme. However, it is acknowledged in the same paragraph that the additional gantries that are necessary for the information system signs will result in intermittent interruptions to views, albeit ones that are consistent with typical motorway infrastructure.

21. Accordingly, it is concluded that the Scheme can support the objective of the NNPS to improve journey quality, reliability and safety.

P1.3 Would the project deliver appropriate environmental and social benefits as required by NNNPS para 3.3?

1. Paragraph 3.3 of the National Networks National Policy Statement ("NNNPS") states that *"applicants should also provide evidence that they have considered reasonable opportunities to deliver environmental and social benefits as part of schemes,"* with *"the Government's detailed policy on environmental mitigations for developments…set out in Chapter 5 of the NNNPS."*

2. Chapter 5 of the NNNPS sets out generic impacts that may result from national networks infrastructure projects. These potential impacts may relate to different topics (e.g. visual and landscape effects). In each case, applicants may mitigate these impacts by taking the suggested steps to address them or by introducing its own mitigation measures.

3. Highways England has thus taken the opportunity not just to mitigate impacts, but also to provide appropriate environmental and social benefits in delivering the Scheme. In respect of the Scheme, these additional benefits include (but are not limited to):

4. **Low-noise surfacing** – paragraph 17.9.3 of the ES (Application Document Reference 6.1) concludes that there are some 17.2km of existing noise barriers along the west and eastbound carriageways of the M4 between junction 3 and junction 12, as well as sections of low-noise surfacing. However, Highways England has taken the opportunity to provide new mitigation, which has been incorporated into the Scheme design in the form of:

   4.1 low-noise surfacing (a Thin Surface Course System) across all lanes along the entire length of the Scheme (paragraph 12.2.49 of the ES (Application Document Reference 6.1) and Chapter 7 of the Engineering and Design Report (Application Document Reference 7.3)); and

   4.2 the provision of additional noise barriers (paragraph 12.2.49 of the ES) (Application Document Reference 6.1).

5. **Visual amenity** – while the new and modified Scheme components such as new signs, gantries, replacement bridges, and emergency refuge areas will introduce new elements into the landscape, location-specific mitigation, such as relocation and reuse of gantries and replacement planting, has been proposed to minimise the impacts of the Scheme on the landscape, urban areas, and on visual amenity, as far as practically possible (refer to paragraphs 8.2.13 and 8.2.14 of the ES (Application Document Reference 6.1) and the Environmental Masterplan (sheets 1 to 31), presented in Annex A1 to the Engineering and Design Report (Application Document Reference 7.4)).

6. **Reduced driver stress** – paragraph 13.8.12 of the ES (Application Document Reference 6.1) states that journey time reliability will improve as a result of the introduction of the Scheme, a benefit proven by the introduction of another smart motorway scheme; paragraph 13.8.13 of the ES) refers to the combined effect of the introduction of a smart motorway and the resurfacing of all lanes with low noise surfacing (the Thin Surface Course System previously mentioned) as being beneficial to driver stress. Paragraph 13.8.14 of the ES refers to improvements in the safety performance of the road network using smart motorway techniques (reference is made to the M42 pilot where a 55.7% improvement in personal injury accidents has been reported as a result of the Scheme).

7. **Additional capacity and more reliable journey times** – the Scheme will provide additional capacity and more reliable journey times on the M4, where peak time congestion regularly occurs, and will help maintain connectivity within the wider Thames Valley, Heathrow

Airport and London. Paragraph 4.3.3 and Tables 2 and 3 of the Engineering and Design Report (Application Document Reference 7.3) illustrate the improvements in traffic capacity during peak periods with the Scheme. Connectivity between key destinations in the region is described in Section 2.1 of the ES for the whole Scheme and Sections 2.3 to 2.10 of the ES for the links between consecutive junctions (Application Document Reference 6.1) and Chapter 3.3 of the Socio-Economic Report (Application Document Reference 7.2).

8. **Economic benefits** – paragraph 6.2.8 of the Socio-Economic Report (Application Document Reference 7.2) identifies that the assessment of economic benefits has made use of guidance contained within the Department for Transport's Transport Analysis Guidance, WebTAG. The WebTAG Appraisal Summary Table (Appendix 1 of the Socio-Economic Report) (Application Document Reference 7.2) identifies key Scheme-wide benefits as including an overall improvement in the transport economic efficiency of business users as a result of the Scheme, principally in the form of savings in journey time – a total of 56.7 million vehicle hours are anticipated to be saved by business users in the Design Year (2037) during normal operation. In addition, paragraph 14.4.21 of the ES (Application Document Reference 6.1) notes that the Scheme may positively influence decision-making for businesses looking to locate to areas within the sub-region, as it makes a significant and strategic improvement to local infrastructure.

9. **Impact on Regeneration Areas close to the Scheme** – paragraph 14.4.19 of the ES (Application Document Reference 6.1) summarises the findings of the Regeneration Report produced for the Scheme. Here it is stated that the Scheme passes within close proximity to five regeneration areas, namely Reading, Wokingham, Bracknell, Maidenhead and Slough. The analysis shows that there are minor but positive changes to travel times to the hinterlands from and to the regeneration areas with the largest change in travel time occurring in the Slough area, where travel time within the 30-60 minute category for travel to or from regeneration areas, is reduced by 10%. Each improvement in travel times is an additional benefit of the Scheme.

10. **Local Employment** – paragraph 5.2.2 of the Socio-Economic Report (Application Document Reference 7.2) states that *"the Scheme provides an opportunity to develop good practice in terms of use of a proportion of the workforce from local communities, development of skills and training programmes, and apprenticeship schemes."* This represents an additional benefit conferred by the Scheme during the construction phase.

P1.4 Are the local authorities satisfied that the traffic forecasts and economic case for the project have been adequately tested through the use of the M3/M4 variable demand transport model, and that the requirements of paras 4.5 and 4.6 of NNNPS have been met?

1. Paragraph 4.5 of the NNNPS states:

   "Applications for road and rail projects (with the exception of those for SRFIs, for which the position is covered in paragraph 4.8 below) will normally be supported by a business case prepared in accordance with Treasury Green Book principles. This business case provides the basis for investment decisions on road and rail projects. The business case will normally be developed based on the Department's Transport Business Case guidance and WebTAG guidance. The economic case prepared for a transport business case will assess the economic, environmental and social impacts of a development. The information provided will be proportionate to the development. This information will be important for the Examining Authority and the Secretary of State's consideration of the adverse impacts and benefits of a proposed development. It is expected that NSIP schemes brought forward through the development consent order process by virtue of Section 35 of the Planning Act 2008, should also meet this requirement"

2. To assist the local authorities in their consideration of the impacts arising from the Scheme within their respective areas, a series of meetings was held, commencing with meetings convened with the Thames Valley Berkshire Local Enterprise Partnership constituent authorities on 25 June 2014, followed by London Borough of Hillingdon on the 24 July 2014 and Transport for London on the 9th December 2014 to specifically discuss the approach adopted for traffic forecasting. Further meetings were held with local authorities during June and July 2015 to discuss Statements of Common Ground. Interested authorities were subsequently provided with copies of the Traffic Forecasting Report (Wokingham BC, West Berks DC, Bucks CC and the London Boroughs of Hillingdon and Hammersmith and Fulham). The Traffic Forecasting Report describes the application of the M3/M4 variable demand model to produce the traffic forecasts for the scheme and the subsequent inputs to the economic and environmental appraisals. No local authority has questioned the adequacy of the testing of the case for the Scheme using the M3/M4 traffic model.

3. Paragraph 6.2.8 of the Socio-Economic Report (Application Document Reference 7-2) summarises the approach undertaken to the assessment of the Scheme to meet the requirements laid down in WebTAG. Highways England has drawn on these assessments within its Business Case report that covers the five-case model specified by HM Treasury in the Green Book (https://www.gov.uk/government/publications/the-green-book-appraisal-and-evaluation-in-central-governent):The Business Case for the Scheme has been subject to external scrutiny by the Department for Transport and Office of Government Commerce as part of the Highways England project governance procedures, receiving approval from both parties.

4. Key element of the scheme business case are summarised in the AST (Annex A of the Socio-Economic Report), which together with supporting worksheets, was submitted to the Transport Appraisal and Strategic Modelling and Road Economics teams within the Department for Transport, who undertook a Value for Money (VfM) assessment. The metric used to define the VfM for the Scheme (or any other investment) is the ratio of the total net benefits divided by the total net costs, called the Benefit Cost Ratio or BCR. Taking account of all the costs and benefits, the Scheme has been assessed as having a BCR of 2.2, which affords the Scheme a rating of high value for money.

5. Paragraph 4.6 of the NNNPS advises that:

Applications for road and rail projects should usually be supported by a local transport model to provide sufficiently accurate detail of the impacts of a project. The modelling will usually include national level factors around the key drivers of transport demand such as economic growth, demographic change, travel costs and labour market participation, as well as local factors. The Examining Authority and the Secretary of State do not need to be concerned with the national methodology and national assumptions around *the key drivers of transport demand. We do encourage an assessment of the benefits and costs of schemes under high and low growth scenarios, in addition to the core case. The modelling should be proportionate to the scale of the scheme and include appropriate sensitivity analysis to consider the impact of uncertainty on project impacts.*

6. Response: The traffic forecasts and economic case for the Scheme have been developed through the use of the M3/M4 variable demand transport model. This model, which covers a large area of south-east England, has been validated in accordance with DMRB standard criteria. The variable demand model constitutes a hierarchy of different choice models. These are implemented in the following order:

    i) Trip Frequency;
    ii) Time Period Choice;
    iii) Main Mode Choice;
    iv) Trip Distribution; and
    v) Public Transport Sub Mode Choice.

7. Separate matrices have been derived for the following person trip purposes:

    7.1 Home-Based Work;

    7.2 Home-Based Employers Business;

    7.3 Home-Based Other;

    7.4 Non-Home-Based Employers Business; and

    7.5 Non-Home-Based Other.

8. TAG advises that an appraisal should consider a minimum of two sensitivity tests on the core scenario. Whilst there are several potential contributors to uncertainty in traffic forecasts the focus for M4SM future year matrix development has been:

    8.1 national uncertainties including demographic, economic and behavioural trends;

    8.2 factors affecting local supply for transport; and

    8.3 factors affecting underlying demand.

9. Therefore, in addition to a core scenario, high and low growth scenarios that take account of the various national level factors underpinning forecasting have been derived in line with TAG principles. Furthermore, local uncertainty has also been taken into account. Whilst there is a range of possible sources of uncertainty in the supply side, within a strategic model new road schemes or improvements are likely to have the most impact. Details of road schemes

and improvements were collated from local highway authorities and captured within an Uncertainty Log. All schemes identified were considered sufficiently certain to be incorporated in all sensitivity tests.

10. In terms of uncertainty over local demand, the major consideration here for scheme appraisal is the nature of development, together with its location, size and timing for becoming occupied. As with the supply side, details of prospective developments were collated from local planning authorities and captured within the Uncertainty Log, along with their prescribed level of uncertainty.

11. **Conclusion**: the application is supported by a local transport model that has been developed in accordance with established principles, is proportionate to the scale of the Scheme and has reflected uncertainty appropriately in its forecasts. Local authorities have been given the opportunity to raise any concerns over the approach to the development of the traffic modelling used in support of the Scheme through the preparation of Statements of Common Ground. As noted above, Wokingham BC, West Berks DC, Bucks CC and the London Boroughs of Hillingdon and Hammersmith and Fulham have each requested and received copies of the Traffic Forecasting Report that contains details of the approach adopted for the assessment of uncertainty. None of the local authorities has raised any issue with the approach to uncertainty assessment.

P1.5 Does the Thames Valley Multi Modal Study (TVMMS) provide an adequate assessment of options to comply with the requirement in NNNPS para 4.27?

Introduction

1. The TVMMS is one of a number of documented steps that have led to evolution of the Scheme. Most of these took place prior to designation of the NNNPS. Nevertheless, the requirements of the NNNPS are met, as explained below against the para 4.27 requirements.

2. It should be noted that the final report for the Thames Valley Multi Modal Study was completed in 2003 so preceded the publication of the NNNPS by some 11 years. It set out a strategic case for what has become the Scheme.

3. The initial development of the M4 junctions 3 to 12 smart motorway scheme commenced in 2010 when the operational regime options and design concepts were identified (as discussed in paragraph 5.1.11 of Chapter 5 of the Engineering and Design Report (Application Document Reference 7-3)), developed and reviewed, by the Highways Agency (now Highways England) based on the knowledge gained from delivering Managed Motorway schemes and incorporating the latest emerging concepts. Again, this work preceded the publication of the NNNPS.

All projects should have an options appraisal

4. The development of the Scheme and the corresponding options appraisals for both the overarching concept and scheme elements is reported in Chapter 5 of the Engineering and Design Report (Application Document Reference 7.3).

The appraisal should consider viable modal alternatives

5. The options assessment for the M4 considers the implementation and development of other alternative modal uses. The Planning Statement (Application Document Reference 7-1, paragraph 3.1.3) explains that the strategic case for providing additional capacity on the M4 within the Thames Valley was first examined in 'The Thames Valley Multi-Modal Study (2003) (the "TVMMS"). The purpose of the TVMMS was 'to identify the most effective means of addressing current and future transport-related problems in the Thames Valley. The final report for the TVMMS states (paragraph 2.9) that the scale of road-based demand in the Thames Valley is such that during the morning and evening workday peaks, demand is at, or exceeds, available road capacity. This results in congestion and increasingly unreliable journey times which affect private vehicle users, and also freight and public transport operators.

6. The Planning Statement (Application Document Reference 7-1, paragraph 3.1.11) states 'that consideration was given to a range of potential multi-modal interventions (as set out in Government Policy) to address the transport problems within the Thames Valley'. It also notes (paragraph 3.1.13) that the proposed 'strategy recognised that even with travel demand management and public transport enhancements in place, the overall magnitude of car-based demand would remain higher than now and that 'congestion will remain and, in specific areas, may intensify significantly, eroding some of the wider benefits delivered by a wider strategy'.

7. The proposed strategy for the Thames Valley road network placed an emphasis on better management of the existing road space, involving the identification of 'measures designed to reduce congestion broadly within existing road space, either through changes to the road layout, or through use of technology to better control traffic movements'.

8. Over recent years other forms of technology have been introduced on the M4 between junctions 3 and 12 to help manage traffic on this congested section. These include Ramp Metering, Closed Circuit Television, Motorway Incident Detection Automatic System and message signs. However with these measures in place the forecast traffic flow during peak periods in substantial areas of the Scheme will approach or exceed the available capacity without the scheme. See Table 2, Paragraph 4.3.3 of the Engineering and Design Report (Application Document Reference 7-3).

9. Rail developments, including Crossrail and improvements to train capacity and frequency and other improvements to public transport are both taken into account within the traffic model for the Scheme, as described in section 3.1.2 of the Traffic Forecasting Report (Document Ref: 514451-MUH-00-ZZ-RP-PM-300128 version 5, as provided to Wokingham Borough Council, West Berks County Council, London Borough of Hillingdon, London Borough of Hammersmith and Fulham, Buckinghamshire County Council as an annex to their respective Statements of Common Ground and sent separately to Transport for London).

10. Consideration of transport demand across modes within the forecasts has enabled the optimum transport solution to be developed which will address congestion on this section of motorway.

Other options may also be considered in light of paragraphs 3.23 to 3.27 of the NNNPS

11. The Scheme complies with paragraphs 3.23 to 3.27 of the NNNPS in that:

    11.1 Road user charging is not proposed to manage demand on this section of the Strategic Road Network;

    11.2 No new roads are being constructed therefore road user charging is not considered; and

    11.3 No new river or estuarial crossings are being constructed therefore road user charging is not considered.

P1.6 Are the local authorities satisfied that the applicant has demonstrated good design as required by NNNPS paras 4.32 to 4.34?

Introduction

1. Overall, the local authorities are satisfied that the applicant has demonstrated good design as required by those paragraphs in the NNNPS.

NNNPS 4.32 Is the proposed project as sustainable as it can reasonably be?

2. The impacts from resulting from the use of material resources associated with the works and waste management in the construction, demolition and excavation phases of the Scheme are assessed in Chapter 11 of the Environmental Statement ("ES") (Application Document Reference 6.1). This chapter only makes reference to the material resources and waste associated with the construction of the Scheme as the impacts during operation and maintenance were confirmed by the Secretary of State as being scoped out following appropriate consultation (Application Document Reference 6.3, Appendix 5.1, section 3.10). The findings of the materials and waste assessment, as set out in Table 11.25 of ES Chapter 11, show the overall significance of residual effect to be slight adverse.

3. Also a final forecast of the material resources use and waste likely to be generated during the 'end-of-life' decommissioning of the Scheme has not been provided, as the Scheme is still subject to detailed design and methods of construction have not been finalised.

4. To accord with the requirements of the NNNPS paragraph 5.42, all material resources used and waste arisings from the Scheme would be managed onsite and offsite in accordance the Outline Construction Environmental Management Plan ("CEMP") and its appendices (Outline Materials Management Plan ("MMP"), Outline Logistics Plan and Outline Site Waste Management Plan ("SWMP")). The requirements of the CEMP are secured through paragraph 8 of Schedule 2 to the draft DCO (Application Document Reference 3-1). As set out in paragraph 11.4.63 of ES Chapter 11, the CEMP requires the contractors to:

    4.1 maximise opportunities for the potential reusing and recycling of all material resources and waste;

    4.2 sort and segregate waste in different waste streams;

    4.3 manage material use to maximise the environmental and Scheme benefits from the use of surplus materials; and

    4.4 prepare and implement a SWMP, MMP and Logistics Plan.

5. Mitigation measures to reduce materials resources use and waste arisings are proposed in Table 11.17 of ES Chapter 11.

6. The information provided above is also set out in paragraphs 5.2.56 and 5.2.57 of the Planning Statement (Application Document Reference 7-1):

7. Waste will arise from activities such as demolition works, spoil not suitable for reuse onsite, construction and installation of new bridges and gantries, road resurfacing, and office activities. The waste hierarchy will be applied to minimise waste generation and the impact of disposal on the environment. The final disposal routes will vary between the different waste streams, so some wastes will be removed for reuse or recycling on other construction projects, or re-processed to create new materials such as recycled paper and metals. The remaining

waste, as a last resort option, will be disposed of at nearby and licensed landfill sites that have sufficient capacity to accept the waste.

8. The control of waste will be managed by the contractor(s) who will be responsible for updating and implementing a MMP and a SWMP as part of the CEMP (the requirements of the CEMP are secured through Schedule 2, article 8 of the draft DCO (Application Document Reference 3.1)). Contractors will also be required to identify and monitor sustainability Key Performance Indicators to demonstrate their commitment to reducing the impact of their activities on natural resources and waste disposal. An outline SWMP has been submitted as part of the Outline Environmental Management Plan (Application Document Reference 6.3 Appendix 4.2) which has been annexed to the ES (Application Document Reference 6-1).

Environmental sustainability: cumulative and combined effects

9. The various topic chapters of the ES (Application Document Reference 6.1) set out the respective effects of the Scheme on the environment and these are summarised in Chapter 17. The findings of the assessment of cumulative and combined effects (ES Chapter 17, section 16.13) are reproduced below:

    9.1 The assessment of cumulative effects considers two types of impact: the cumulative effect of multiple impacts arising from the Scheme on the same receptors, and the "in combination" effect of other proposed developments on the receptors affected by this Scheme.

    9.2 The in-combination effects of other developments on the Scheme considers major developments that are in the planning system or are under construction. A list of these developments is provided in Appendix 16.1 (Application Document Reference 6.3), and these effects have been considered and reported as part of each topic assessment, and summarised in Chapter 16 Combined and Cumulative Effects. Overall it is predicted that the construction of the Scheme will not lead to cumulative effects for the majority of the topic chapters.

    9.3 The assessment of the cumulative effects of multiple impacts arising from the Scheme on the same receptors is discussed in chapter 16, and considers impacts during the construction phase and in the Design Year (2037) for noise; in the Opening Year (2022) for air quality; and during the construction phase and in the Opening Year (2022) for visual impact. Relatively few sensitive receptors will be affected by more than one type of impact, the issues being changes in NO2 concentrations above the air quality standard and adverse impacts on views. Overall, the risk of cumulative effects on the same receptors is not considered to be significant due to the low number of locations where such cumulative effects occur.

Economic sustainability

10. The benefits of the improvement of national networks, by projects such as the Scheme are set out by the Government in Chapter 2 of the National Policy Statement for National Networks ("NNNPS"). The Scheme assists in meeting the need set out at sections 2.1 - 2.11 of the NNNPS. The Scheme complies with the NNNPS (see Planning Statement, Application Document Reference 7.1, paragraph 7.4.3) and as such the application for development consent should be determined in accordance with the NNNPS.

11. The compensating benefits of the Scheme are important and relevant and have been assessed in accordance with Government guidance. The Scheme has been subject to detailed appraisal covering a wide-range of potential impacts on the wider community. The assessment followed

the guidelines for appraisal set out in Treasury guidance (The Green Book, Appraisal and Evaluation in Central Government) and as laid down for transport projects in the Department for Transport's Transport Analysis Guidance, the Design Manual for Roads and Bridges and supplementary advice in the form of Interim Advice Notes published by Highways England.

12. The assessment covers travel-related benefits (principally travel time and reliability), safety, regeneration, and a range of environmental impacts (air quality, noise, greenhouse gases, land and townscape, heritage, biodiversity and water), physical activity and journey quality. Where possible, these effects are monetised, otherwise they are considered qualitatively. These potential benefits are compared against the costs of the Scheme (capital, construction impacts and operating), together with the change in indirect tax revenues to central government (principally fuel duties). The results of this assessment are brought together in an Appraisal Summary Table (AST), a copy of which is provided in Appendix B of the Socio-Economic Report for the Scheme (Application Document Reference 7.2).

13. The AST, together with supporting worksheets, was submitted to the Transport Appraisal and Strategic Modelling and Road Economics teams within the Department for Transport, who undertook a Value for Money (VfM) assessment. The metric used to define the VfM for the Scheme (or any other investment) is the ratio of the total net benefits divided by the total net costs, called the Benefit Cost Ratio or BCR. Taking account of all the costs and benefits, the Scheme has been assessed as having a BCR of 2.2, which affords the Scheme a rating of high value for money.

Social sustainability

14. Beneficial effects to be derived from construction of the Scheme include the creation of some 400 full time equivalent jobs equating to some 2,000 person years of employment, together with the opportunity this may present with the development of skills and training programmes, and apprenticeship schemes.

15. Adverse effects that have been identified relate principally to temporary changes in air quality, visual amenity and noise and vibration disturbance for a number of receptors along the route of the Scheme during the construction period. Other potential adverse impacts identified during construction include community severance and land-take. In relation to community severance, this is predicted to occur at a number of specific locations along the length of the Scheme as a result of activities such as the reconstruction of overbridges and subway lengthening. With regard to land-take, the Scheme has been designed so as to minimise the need for both permanent and temporary land-take. Feedback from stakeholders and local communities has contributed to the Scheme design process, with alterations to the design being made where appropriate in order to overcome potential impacts and address issues.

16. Suggested mitigation measures identified to ameliorate negative effects include construction best practice, the use of appropriate construction techniques wherever possible, travel management measures and the widespread use and communication of diversion and information measures. Mitigation measures are addressed on both a Scheme-wide and on a link-by-link basis within the ES (chapter 6 Air Quality, chapter 8 Landscape, chapter 12 Noise and Vibration, chapter 13 Effects on All Travellers and chapter 14 Community and Private Assets) (Application Document reference 6-1).

17. The Socio-Economic Report (Application Document Reference 7.2) has taken into account issues raised in the NNNPS of relevance, including existing and proposed land-uses, open space, agricultural land and networks of green infrastructure and it is considered that the

Scheme complies with the need for development of the national road network to be "designed to minimise social and environmental impacts and improve quality of life" (NNNPS paragraph 3.2)

4.32 Is the proposed project as aesthetically sensitive as it can reasonably be?

18. The visual effect of the scheme is assessed in the Environmental Statement ("ES") Chapter 8 (Application Document Reference 6-1) and the findings are reported on a link-by-link basis in Table 8.2. This assessment included consideration of potential receptors in the North Wessex Downs Area of Outstanding Natural Beauty. The visual assessment took into account the National Parks and Access to the Countryside Act 1949, the NNNPS (paragraphs 5.154 to 5.161) and the Countryside and Rights of Way Act 2000.

19. The visual appearance aspects of the design are discussed in the Engineering and Design Report section 7.11 (Application Document Reference 7-3).

20. Photomontages have been prepared to demonstrate the visual impact at sensitive receptors along the length of the Scheme and these are included as Appendix 4.3 of the ES (Application Document Reference 6-3). Additional photomontages for the Cranford Park area were prepared and sent to the London Borough of Hillingdon and Historic England (Response to Relevant Representations, Document 3, Appendix 4).

21. The preliminary design of the Scheme has considered its impacts on the landscape and on views and has been developed to minimise adverse impacts where practically possible. As the Scheme is the improvement of an existing road, with no verge widening or installation of types of infrastructure that are not already present along the Scheme (or elsewhere on Highways England's network), the visual appearance of the motorway will not change significantly from the existing appearance. It is considered that the replacement bridges, number of gantries and changes to vegetation will be the main alterations to the visual appearance for both the road users and adjacent residents. The following aspects of the design relate to how the aesthetics of the scheme were considered as the design developed:

    21.1 Replacement bridges will be of standard form as used elsewhere on the network;

    21.2 Bridges extended as part of the Scheme (Thames Bray, Slough) will match existing in form and materials;

    21.3 Vegetation clearance (Annex A2 to the Engineering and Design Report, Application Document Reference 7-4) in areas of bridge works will be reinstated with replacement planting;

    21.4 Replacement gantries will be of standard form as used elsewhere on the network;

    21.5 Existing gantries were repositioned, where possible, if it was considered they caused visual intrusion (ES Chapter 8 paragraph 8.2.13: eastbound, gantry G8-09 has been relocated westwards from chainage 49+090.000 to chainage 49+435.000 to avoid a significant visual impact on the two residential properties on Mill Lane to the north east of Mill Lane underbridge; and

    21.6 Screening planting is proposed, where space allows, where gantries were identified as causing visual intrusion and this is shown in the Environmental Masterplan (Annex A1 to the Engineering and Design Report, Application Document Reference 7-4).

4.32 Is the proposed project as durable as it can reasonably be?

22. As mentioned in ES Chapter 4 paragraph 4.13.4 (Application Document Reference 6-1), the actual working life of the Scheme is subject to the elements provided and the results of regular inspection and testing, but typical examples include approximately 15 years for technology equipment, 25 years for steel barriers, 50 years for concrete barriers and 120 years for bridges. In accordance with Highways England's policy, the Scheme will be maintenance-free for five years post opening.

4.32 Is the proposed project as adaptable as it can reasonably be?

23. The project is adaptable:

    23.1 The smart motorway technology could be used to implement a controlled all lane running scheme if required; or

    23.2 The hard shoulder could be reinstated if required.

24. However adapting the Scheme in these regards would be contrary to Government policy to bring forward smart motorways summarised in the NNNPS paragraph 2.23 and corresponding footnote 29. Both the above adaptations would not provide the benefits in terms of increased capacity and improved performance on the Strategic Road Network whilst minimising land take and environmental implications. So, whilst the project is adaptable, it is not intended that these adaptations would be implemented unless a change in Government policy changed to encourage that.

4.32 Is the proposed project as resilient as it can reasonably be, having regard to considerations including flooding?

25. Design life of the various asset types:

    25.1 From 3 above, as mentioned in the Engineering and Design Report (Application Document Reference 7-3), the actual working life of the Scheme is subject to the elements provided and the results of regular inspection and testing, but typical examples include approximately 15 years for technology equipment, 25 years for steel barriers, 50 years for concrete barriers and 120 years for bridges. In accordance with Highways England's policy, the Scheme will be maintenance-free for five years post opening.

26. Consideration of flooding and the potential impact of climate change

    26.1 The drainage strategy (Application Document Reference 7-5) has been produced to ensure that suitable mitigation measures are used to manage additional runoff where impermeable areas are increased as a result of the Scheme. It will be secured by a requirement attached to the development consent order (requirement 14 of Schedule 2 to the draft DCO (Application Document Reference 3.1)). That in turn will ensure that the detailed drainage design secures necessary mitigation.

    26.2 Drainage mitigation measures are to be implemented in accordance with design principles set out in IAN161/13, DMRB HD33/06, and the requirements of the NNNPS and the Water Framework Directive.

    26.3 The fundamental principle of the drainage strategy is that the Scheme will not produce additional discharge in flow rate or volume at outfalls.

26.4 All new drainage system designs will use the size of pipes required to contain a 1 in 1 year storm without pipe crown surcharging and to provide conveyance of 1 in 5 year surface water flows with surcharge but no flooding during a 1 in 5 year storm event (Drainage Strategy Report, paragraph 1.2 3 (Application Document Reference 7-5)).

26.5 A climate change allowance of 20% has been applied to the assessment of additional paved areas when designing new or augmenting existing drainage systems affected by increased impermeable as a result of the Scheme (Drainage Strategy Report, paragraph 1.2 3 (Application Document Reference 7-5)).

26.6 Using the principles within this drainage strategy it is considered that suitable mitigation measures can be implemented within and are secured for the Scheme's drainage system to manage surface water runoff from the Scheme.

26.7 In line with Highways England's design standards, existing maximum discharge rates from the highway drainage system to the receiving watercourses will not be increased, and therefore there will be no impact on flood risk from surface water discharge from the mainline works (see paragraph 15.2.4 of the Environmental Statement (Application Document Reference 6-1)).

26.8 Flood risk to third parties could increase as a result of the works to alter the overbridge alignments being located within the floodplain. Mitigation to compensate for any loss of floodplain as a result of the proposed side road alignment will be provided. There is sufficient land available within Highways England's land to provide suitable flood compensation. In addition slopes of the road embankment may be adjusted to further reduce the impact on flood levels.

26.9 The impact of climate change has been considered during drainage design; as noted in paragraphs 5.2.52 and 5.2.53 of the Planning Statement (Application Document Reference 7-1):

26.10 As stated in paragraph 7.1.2 to 7.1.5 of the Flood Risk Assessment (Application Document Reference 5.3), NN NPS UKCP09 50% probability level used against the figures from the 'UK Climate Projections: Briefing report', dated December 2010, indicate that climate change allowance of between 10 to 30% should be used. A 20% allowance for climate change was applied in accordance with the Highways England's guidance document HD33/06..

26.11 As concluded in paragraph 15.4.59 of the ES chapter (Application Document Reference 6-1)and linked documents, the safety of M4 motorway road users is not considered to be at any significant risk from river flooding as carriageway levels are mostly above the 1% Annual Exceedance Probability + climate change flood levels.

4.33 Applicants will want to consider the role of technology in delivering new national networks projects

27. The Scheme is largely a technology driven solution with provision of new gantries and signs to allow the motorway to function as a smart motorway with a variable speed limit, and to provide messages to road users. The speed limit displayed will take account of prevailing traffic conditions and will be automatically calculated through a radar detection system or alternatively set by the Regional Control Centre at South Mimms (paragraph 9.2.2 of the Engineering and Design Report (Application Document Reference 7.3)). There will also be enhanced CCTV coverage.

4.33 The use of professional, independent advice on the design aspects of a proposal should be considered

28. The preliminary design has been developed by a consortium of consultants (the "Alliance") on behalf of Highways England. The Alliance's specialists design engineers have applied Highways England's design guidance (the Design Manual for Roads and Bridges and associated Interim Advice Notes) for the various elements that comprise the design. Where a departure or relaxation of the design standard was required due to particular Scheme constraints, these have either been agreed with Highways England's specialists or the Alliance has undertaken independent certification.

4.34 demonstrate good design in terms of siting and design measures relative to existing landscape and historical character and function, landscape permeability, landform and vegetation

29. As the Scheme is the improvement of an existing road, with no verge widening or installation of types of infrastructure that are not already present along the Scheme (or elsewhere on Highways England's network), the siting and design measures do not change the motorway significantly from its existing appearance or impact on the surrounding environment.

30. The existing landscape, local heritage and ecology have been assessed as part of the Environmental Impact Assessment and the findings are reported in the Environmental Statement ("ES") (Application Document Reference 6-1):

    30.1 Heritage assessment, ES Chapter 7;

    30.2 Landscape assessment, ES chapter 8; and

    30.3 Ecology assessment, ES Chapter 9.

31. None of the above assessments found any significant impact on the environment.

32. The preliminary design of the Scheme has considered its impacts on the landscape and on views and has been developed to minimise adverse impacts where practically possible. As the Scheme is the improvement of an existing road, with no verge widening or installation of types of infrastructure that are not already present along the Scheme (or elsewhere on Highways England's network), the visual appearance of the motorway will not change significantly from the existing appearance. It is considered that the replacement bridges, number of gantries and changes to vegetation will be the main alterations to the visual appearance for both the road users and adjacent residents. The following aspects of the design relate to how the aesthetics of the scheme were considered as the design developed:

    32.1 Replacement bridges will be of standard form as used elsewhere on the network;

    32.2 Bridges extended as part of the Scheme (Thames Bray, Slough) will match existing in form and materials;

    32.3 Vegetation clearance (Annex A2 to the Engineering and Design Report, Application Document Reference 7-4) in areas of bridge works will be reinstated with replacement planting;

    32.4 Replacement gantries will be of standard form as used elsewhere on the network;

    32.5 Gantries were repositioned, where possible, if it was considered they caused visual intrusion; and

32.6 Screening planting is proposed, where space allows, where gantries were identified as causing visual intrusion and this is shown in the Environmental Masterplan (Annex A1 to the Engineering and Design Report, Application Document Reference 7-4).

33. Photomontages have been prepared to demonstrate the visual impact at sensitive receptors along the length of the Scheme and these are included as Appendix 4.3 of the ES (Application Document Reference 6-3). Additional photomontages for the Cranford Park area were prepared and sent to the London Borough of Hillingdon and Historic England (Response to Relevant Representations, Document 3, Appendix 4).

LOCAL DEVELOPMENT PLANS

For the applicant; WBerksC; WokBC; RBC; RBWM; BFC; BCC; SBDC; SBC; LBHiIl; LBHouns; GLA.

P2.1 Does the applicant accurately identify the Development Plans and Transport Plans currently in place for each of the 11 local authorities Table 1, APP-089 against which the application falls to be assessed?

1. Table 1 of the Planning Statement (Application Document reference 7.1) sets out the respective Development Plans and Transport Plans for each of the 11 'host' local authorities at the time of the submission of the DCO application. The Table also refers to the emerging Local Plans, although these remain un-adopted and do not form part of the Development Plan Framework for those authorities.

2. The status of the each of the Adopted Local Plans and Transport Plans remains unchanged since the date of the application and therefore remain in force at the present time.

P2.2 Do the local authorities agree the applicant's assessment of the project against the relevant policies of each Council? If not, please identify any areas of conflict and explain the reasons why the project would be in conflict.

1. Section 5.3 of the Planning Statement (Application Document reference 7.1) considers the local planning policy context and assesses the Scheme against relevant local planning and transport policies for each of the 11 'host' local authorities. Appendix 1 to the Planning Statement identifies the relevant planning and transport policies and provides a detailed policy assessment of the compliance of the Scheme with the relevant policy framework for each 'host' local authority.

2. Reference is made within the policy assessment in Appendix 1 of the Planning Statement to the policy position within both Adopted and emerging Local Plans, as well as published Local Transport Plans.

3. Through the assessments undertaken, the Planning Statement has demonstrated that the Scheme is in compliance with the planning and transport policies of each of the local authorities, including those with Green Belt land through which the Scheme passes. The one exception to this is a section of the Scheme which passes through the outer edge of the North Wessex Area of Outstanding Natural Beauty which is considered to result in slight adverse landscape and visual effects (Section 8.5 of the Environmental Statement, Application Document Reference 6-1). This is considered contrary to Area Delivery Plan Policy 5 of the West Berkshire Development Plan Core Strategy (Adopted 2012) which seeks to conserve and enhance its local distinctiveness.

4. However, the conclusion reached within the Planning Statement is that this policy must be balanced against the range of planning policies that are either supportive of the Scheme or are in compliance with it and therefore on balance, the Scheme is seen to accord with the provisions of the development plan and relevant policies of the emerging Local Plans of the 'host' authorities.

5. No contrary views have been expressed by those making representations regarding the Scheme's compliance with the relevant policies of each Council, through the representations received during the formal consultation undertaken at the pre-application stage.

P2.3 Are there any developments which are either proposed in or in accordance with Local Plans which might be affected by the project? If so, please identify and explain what the effects would be.

1. Table 4.1 of the Planning Statement (Document Reference 7.1) together with the subsequent Relevant Planning History Addendum (Document Reference 514451-MUH-00-ZZ-RP-DC-400112, Appended to these responses as Appendix 1) provides a schedule of development consents and proposals that are located within the Order limits. Two developments have been identified as ones that might be affected by the Scheme.

2. The first relates to the construction of an Eastern Relief Road ("ERR") to Shinfield including the construction of Road, Foot and Cycle Ways, an M4 overbridge, regarding of embankments, landscaping, utilities creation of flood compensation areas and associated works.

3. The planning assessment for the ERR proposal reported in Annex A to the Addendum to the Planning Statement concluded that the affected works relate to an approved overbridge to accommodate the route of the new highway. However, completion of the relief road is expected in summer 2016 and is not therefore expected to impact on the implementation of the M4 Scheme.

4. The second development identified relates to the erection of Class A1 retail store with associated car parking, landscaping, servicing and access arrangements. This refers to an application to construct an IKEA store, which is considered in more detail below.

5. The planning assessment for the IKEA proposal reported in Annex A to the Addendum to the Planning Statement concluded that the affected works relate to an approved landscaping scheme and the introduction of a narrower strip of planting along the northern boundary of the construction compound adjoining the A4 Bath Road. This work is scheduled to be completed during the course of 2016. Its location on the periphery of the site and its temporary use as a contractor's compound is not considered to impact on the implementation of the M4 Scheme.

Cumulative development assessment

6. The list of cumulative developments considered is presented in Table A16.2.1 of the Environmental Statement Appendix 16.2 (Application Document Reference 6-3). The list was compiled from details provided by local planning authorities and/or published local plans and represented the situation at the time the traffic forecasting model was under development. As such, the traffic forecasts prepared for the assessment of the Scheme contain traffic associated with the various developments in the Do-Minimum (without Scheme) as well as the Do- Something (with Scheme) assessments.

7. As part of their respective Relevant Representations, the local authorities of Buckinghamshire CC, South Bucks DC and Colnbrook with Poyle Parish Council have cited developments sites which they consider have not been fully assessed as part of the cumulative development assessment and/or have the potential for their construction to coincide with that of the Scheme:

    7.1 IKEA

    7.2 Slough International Freight Exchange

    7.3 Heathrow 3rd runway

7.4 Western Rail Extension

7.5 HS2 Heathrow Express sidings

8. **IKEA** – Application no. 11/20018/COMIND for the development of an IKEA store on land at the Berkshire Retail Park, Pincents Lane, Tilehurst was considered by a special meeting of the Eastern Area Planning Committee of West Berkshire Council on 4th April 2012. The Committee resolved to approve the application, subject to a number of specified conditions.

8.1 The application was supported by a Transport Assessment Report, prepared by Savell Bird and Axon consultants. The Transport Assessment provides details of expected levels of trip generation from the store and, based on junction assessments, describes proposed mitigation in terms of improvements to the junction of A4 Bath Road/Pincents Lane/Dorking Way and M4 junction 12.

8.2 The improvements proposed for M4 junction 12 are described in paragraph 8.42 of the IKEA Transport Assessment, as follows:

8.3 The highway improvements at Junction 12 (M4) propose a number of improvements to the approaches of the M4/A4 grade separated junction. This includes the widening of the western approach lane to provide a dedicated short-left turn lane. Provision of the additional lane will require a retaining wall to be provided along the length of the widened roadway in the north-western quadrant of the junction. The internal circulatory carriageway adjacent to the western approach will be widened to the east to enable a splitter island to be provided at this location. The embankment at this location will be re-graded. The southbound off-slip will be widened from 3 to 4 lanes at the approach to the stop line. The northern embankment will thus need to be re-graded. The circulatory carriageway adjacent to the eastern approach will be widened to the west to enable an additional lane to be provided for circulating traffic. The embankment to the west of the widening works will be regarded. Lane markings will be adjusted to reflect the changes to the junction.

8.4 The trip rates forecast for the IKEA store were compared with those assumed for the same parcels of land in the traffic model from which it was calculated that the traffic model had assumed higher trip rates and totals than forecast to arise with the IKEA store in operation. As such it was concluded that the effects of the development of an IKEA store on the land off Pincents Lane would have no material additional effect for the assessment of the Scheme.

8.5 Subsequent to the above approved consent, the applicant proposed to vary the conditions attached to the original application. The revisions, application no 14/03032/COMIND, were submitted on the 20th November 2014 and subsequently considered and approved by West Berkshire Council under delegated authority on 31st March 2015. It is understood that no variations were sought to the traffic assessed for the development and no changes sought to the off-site highway works.

9. **Slough International Freight Exchange** - An application to construct S.I.F.E. was refused by Slough Borough Council on the 8th September 2011. Accordingly it was excluded from the developments used as part of the traffic forecasting process for the Scheme. It is acknowledged that the proposal is the subject of a planning appeal (APP/30350/A/12/2171967) commencing in September 2015.

9.1 From documentation accompanying the application it is understood that access to the site is to be via the A4 Colnbrook Bypass and that the impact on the strategic highway network will be via the M4 junction 5 and the M25 junction 14. The transport assessment states the following estimated levels of trip generation: 1615 1-way (3230 total) HGV + 1790 1-way (3580 total) cars & lights = 6810 movements/day.

9.2 Clearly, there is forecast to be a significant number of trips associated with the development, should it proceed. However, it is not expected that all trips will directly affect the M4 between junctions 3 and 12. Furthermore, the applicant will have to demonstrate the effect of their proposal on the highway network.

10. **Western Rail Extension** - Proposal announced on 05.02.14 following consideration of four options by Network Rail. At the time the M3/M4 traffic model forecasts were under development, the proposal was at "early stages of development" following its inclusion in the Route Utilisation Studies published in March 2010. Therefore, it was excluded from the M3/M4 public transport model.

11. **Heathrow 3rd runway and associated development** - The recommendations of the Airports Commission concerning a possible third runway at Heathrow are under consideration by the Government, and no application for consent to construct the proposals has been made. Heathrow is one of two locations where additional airport capacity was considered and as such, pending a decision by the Government, it cannot be regarded as committed. Consequently, the proposal is not considered to be reasonably foreseeable. Any application for the construction of the third runway, will be required to take the M4 improvement Scheme into account when assessing the impact of their proposals, rather than the reverse.

12. **HS2 Heathrow Express sidings** - The proposal to relocate the Heathrow Express (HEX) depot from the Old Oak Common site to a site at Langley was included in HS2 Additional Provision 2, submitted to Parliament on 13th July 2015. Accordingly, the proposal had not been taken into consideration at the time the M4 Scheme assessment was undertaken. The Scheme would have no direct impact on the relocation of the depot to the Langley site. It is to be noted that the Old Oak Common site is included in our forecasts for redevelopment for housing and/or employment uses.

P2.4 Is the scheme compatible with regional and local strategies to increase uptake and mode share for public transport, walking and cycling?

1. The Planning Statement (Application Document Reference 7.1) provides the outcome of a review of regional and local strategy and transport plans at Appendix 1 to the Statement.

2. As discussed in the response to Question P1.2, the Scheme provides additional capacity on M4 that attracts traffic from local roads. This frees up road space for other users, including public transport and cycling.

3. The Public Rights of Way used by pedestrians, cyclists and equestrians affected by the scheme during construction will be maintained wherever possible and where subject to temporary diversion will be re-instated as part of the Scheme works. The ability to undertake walking, cycling and equestrian trips will be unaffected by the Scheme following its completion.

4. Table A-5 within Appendix A of the Traffic Forecasting Report (Document Reference 514451-MUH-00-ZZ-RP-PM-300128, as appended to the response to the relevant representations) (http://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/TR010019/Events/Deadline%20I%20-%2002-10-2015/Highways%20England%203.pdf) provides details of the total number of trips forecast in the Do Minimum (without Scheme) and Do Something (with Scheme) highway matrices for each of the modelled time periods for the opening (2022) and design (2037) years split by light and heavy vehicles. The difference between the two sets of matrices represents the amount of 'induced' traffic arising from the implementation of the Scheme.

5. As shown in Table A-5 the overall levels of induced trips, relative to the Do-Minimum scenario, are less than 0.3 % in all time periods in both forecast years. Over a 12 hour day, the level of induced traffic would equate to some 6500 additional trips out of a total of 465,000 or 0.14%. It is not known whether these trips are 'new trips' or switched from other modes. However, based on the small number of trips involved, it can be reasonably concluded that the Scheme does not have a significant adverse impact on public transport patronage and mode share.

6. A number of local authorities have provided supportive statements in their Relevant Representations:

7. **Transport for London / Greater London Authority -** *"After careful review of the aims of the scheme, the revised sections, and the methodologies used in terms of measuring the impact of the proposal, the Strategic Authorities are satisfied that the impact on traffic and journey times (on both surrounding local roads as well as destinations in central London) would be minimal and acceptable. It is nevertheless noted that (despite a minimal impact on traffic and journey times) the scheme would result in an increased volume of traffic. However, having regard to the forecast numbers provided, the Strategic Authorities are satisfied that this increased volume of traffic would not be significant."*

8. **Wokingham** (Rep 296) – *"WBC supports the objectives of the scheme and specifically welcomes the acknowledgement that the M4 motorway needs to be improved to reduce congestion and support the economy which in turn will facilitate further economic growth within the region. Wokingham Borough Council along with the other Thames Valley Local Authorities and the Thames Valley LEP recognise the importance of the M4 as a major strategic route though our support for the HA's local pinch point scheme to improve M4 junction 10 thus ensuring good connection for our residents to London, the West of England*

and Wales the M25 and Heathrow. The Council also supports the principals of the proposed smart motorway scheme."

9. **TVB LEP** (Rep 40): - *"Thames Valley Berkshire Local Enterprise Partnership supports the Smart Motorway proposals for the M4 (junctions 3 -12). This support is stated at p17 of our Strategic Economic Plan (SEP) "We welcome the planned M4 Smart Motorway Scheme from Junction 3 out to Junction 12, due to start construction in 2016. This should include screening, noise reduction and air quality measures.""* (available at http://thamesvalleyberkshire.co.uk/Portals/0/FileStore/StrategicEconomicPlan/TVB%20SEP%20-%20Strategy.pdf)

10. **West Berks** (Rep 274): - "West Berkshire Council, as part of the Thames Valley Local Enterprise Partnership (TVB LEP), is supportive of the Smart Motorway proposals for the M4 (Junctions 3-12), as outlined in the TVB LEP Strategic Economic Plan page 17. The Council recognises that the scheme will provide additional capacity and more reliable journey times on the M4 where peak time congestion regularly occurs and help maintain the District's connectivity with the wider Thames Valley, Heathrow Airport and London."

11. No local authority has cited any concern over any potential conflict with local strategies to increase uptake and mode share for public transport, walking and cycling.

GREEN BELT

For the applicant; RBWM; BCC; SBDC; SBC; LBHill; LBHouns; GLA.

P3.1 The scheme includes the widening of the M4 at junctions of the motorway to alter sliproads; the construction of new overbridges; and the widening of underbridges. To what extent would these works have an impact on the openness of the Green Belt and constitute inappropriate development? To what extent would these operations have an impact on the five purposes of including land in the Green Belt?

1. The National Networks National Policy Statement (NN NPS) is the primary policy basis for decision making in relation to the Scheme.

2. The NN NPS recognises the aims of the Green Belt (paragraph 5.164) and notes a general presumption against inappropriate development within the Green Belt; such development may only be approved in very special circumstances (paragraph 5.170). Paragraph 5.171 states that: "*Linear infrastructure linking an area near a Green Belt with other locations will often have to pass through Green Belt land. The identification of a policy need for linear infrastructure will take account of the fact that there will be an impact on the Green Belt and as far as possible, of the need to contribute to the achievement of the objectives for the use of land in Green Belts.*"

3. Paragraph 5.178 of the NN NPS also states *"When located in the Green Belt national networks infrastructure projects may comprise inappropriate development. Inappropriate development is by definition harmful to the Green Belt and there is a presumption against it except in very special circumstances. The Secretary of State will need to assess whether there are very special circumstances to justify inappropriate development. Very special circumstances will not exist unless the potential harm to the Green Belt by reason of inappropriateness, and any other harm, is clearly outweighed by other considerations. In view of the presumption against inappropriate development, the Secretary of State will attach substantial weight to the harm to the Green Belt, when considering any application for such development."*

4. Paragraph 5.170 directs applicants to determine whether their proposal, or any part of it, is within an established Green Belt and, if so, whether its proposal may be considered inappropriate development within the meaning of Green Belt policy. Such policy is contained in the National Planning Policy Framework.

5. Paragraph 79 of the National Planning Policy Framework states that the Government attaches great importance to Green Belts: *"The fundamental aim of Green Belt policy is to prevent urban sprawl by keeping land permanently open; the essential characteristics of Green Belts are their openness and their permanence."* The National Planning Policy Framework does not define the term "openness".

6. Paragraph 80 goes on to list the five purposes served by Green Belt:

- *"to check the unrestricted sprawl of large built-up areas;*
- *to prevent neighbouring towns merging into one another;*
- *to assist in safeguarding the countryside from encroachment;*
- *to preserve the setting and special character of historic towns; and*

- *to assist in urban regeneration, by encouraging the recycling of derelict and other urban land."*

7. Paragraph 81 requires local planning authorities to plan positively for opportunities to retain and enhance landscapes and visual amenity.

8. Paragraph 87 states that inappropriate development is by definition harmful to the Green Belt and should not be approved except in very special circumstances; whilst paragraph 88 goes on to say that local planning authorities should ensure that substantial weight is given to any harm to the Green Belt. The same paragraph confirms that 'very special circumstances' will not exist unless the potential harm to the Green Belt by reason of inappropriateness, and any other harm, is clearly outweighed by other considerations. Paragraph 90 states that certain forms of development are not inappropriate for the Green Belt, including engineering operations and local transport infrastructure which can demonstrate a requirement for Green Belt location.

9. Highways England's position on this matter is recognised in Paragraph 5.2.162 of the Planning Statement (Application Document Reference 7.1) in which it is considered that the Scheme may represent appropriate development in accordance with this guidance. However, it is acknowledged that a different interpretation may be applied and hence, the justification for the 'very special circumstances' in support of the Scheme, as forming inappropriate development within the Green Belt, has been set-out within the Planning Statement in paragraphs 5.2.32 to 5.2.38.

10. Chapter 3 of the Planning Statement (Application Document Reference 7.1) sets out the need case for the Scheme, as a form of linear infrastructure. The Scheme, on the main strategic route between London, the West of England and Wales, passes through the London Green Belt, which extends from the London Borough of Hounslow and the Greater London Authority in the east, to the Royal Borough of Windsor and Maidenhead to the west. The route of the M4 along this section already lies within the Green Belt, and the Scheme is confined largely to the existing physical boundaries of the motorway.

11. The M4 junctions 3 to 12 smart motorway Scheme ("the Scheme") lies in Green Belt for most of the route from the Straight Mile overbridge, to the east of junction 10, to junction 3. Within this section, there are small sections of the motorway that lie outside the Green Belt or where the Green Belt is narrow, mostly on the north side, due to the proximity to urban areas. The extent of the Scheme in the Green Belt is summarised below on a link-by-link basis. A drawing illustrating the location of the Green Belt for the Scheme is provided in Figure 1 of the Environmental Impact Assessment Scoping Report (issued August 2014). A comprehensive explanation of the extent to which the Scheme impacts on the Green Belt is as follows.

    11.1 Straight Mile overbridge to junction 8/9. The Green Belt extends to at least 1km to the north and south of the M4.

    11.2 Junction 8/9 to junction 7. The Green Belt extends to at least 1km to the north and south of the M4, with the exception of a short reach west and east of Windsor Road Underbridge, where the M4 crosses the settlement of Bray Wick which lies outwith the Green Belt.

    11.3 Junction 7 to junction 6. The Green Belt extends to at least 1km to the south of the M4 along most of this section, except around Eton Wick. To the north of the M4 there is a narrow strip of countryside of varying width (from less than 100m to about

250m) designated as Green Belt between the motorway and the built up area of Cippenham.

11.4 Junction 6 to junction 5. The Green Belt extends to at least 1km to the south of the M4, except for the settlement of Datchet. On the north side of the M4, there is no Green Belt between junction 6 and the settlements of Chalvey and Slough or in Langley. However, much of the countryside between Slough and Langley is designated Green Belt.

11.5 Junction 5 to junction 4b. Junction 5, with the settlements of Langley to the north and Brands Hill to the south, lies outside the Green Belt. From Sutton Lane Overbridge to Junction 4b, Green Belt extends to at least 1 km to the north and south of the M4.

11.6 Junction 4b to junction 4. The Green Belt excludes the M4 along this link. The Green Belt extends to at least 1km to the south of the M4, except for the villages of Harmondsworth and Sipson. On the north side of the M4 the Green Belt includes the Colne Valley, between Junction 4b and West Drayton, and the countryside along Stockley Road, but does not include the built up area of West Drayton which extends to the motorway.

11.7 Junction 4 to junction 3. The Green Belt excludes the M4 in this link, extends from the highway boundary to at least 1km to the south of the M4, except for the village of Harlington. On the north side of the M4, the Green Belt covers the countryside to the west and east of the Westlands Estate, and narrow sections along the westbound carriageway of the M4.

12. The existing motorway, its traffic and associated features form part of the landscape, its visual amenity and the setting to other features such as settlements and heritage assets within the Green Belt. The local landscape characters of the Green Belt through which the Scheme passes are considered in Chapter 8 of the ES (Application Document Reference 6.1) on a link-by-link basis, for junctions 10 to 8/9 paragraphs 8.7.1 to 8.7.5, for junctions 8/9 to 7 paragraphs 8.8.1 to 8.8.4, for junctions 7 to 6 paragraphs 8.8.9 to 8.9.4, for junctions 6 to 5 paragraphs 8.10.1 to 8.10.4, for junctions 5 to 4b paragraphs 8.11.1 to 8.11.5, for junctions 4b to 4 paragraphs 8.12.1 to 8.12.5, and for junctions 4 to 3 paragraphs 8.13.1 to 8.13.4. The coverage of the local landscape areas along the route are illustrated in Drawing 8.1 Sheets 6 to 16 while Drawing 8.2 Sheets 6 to 16 shows the extent of the Zone of Visual Influence of the Scheme (Application Document Reference 6.2). The value placed on the local landscape character areas varies from low, for the predominantly urban sections, to moderate, for the rural sections.

13. It is recognised that some elements of the Scheme such as the widening of the M4 at its junctions to alter slip roads will result in changes to the M4 highway alignment and thus impact on the Green Belt but these will be largely confined within the existing M4 highway estate. Similarly, the replacement of seven overbridges off line will require land take outside the existing M4 highway estate and the widening of underbridges, within the existing M4 highway estate, will be similar in appearance, scale and massing to those that presently exist. This is illustrated in the following points:

13.1 Widening at junctions to alter slip roads, see paragraph 2.1.1(d) of the Engineering and Design Report (Application Reference Document 7.3) and Drawing 1.1. Minor modifications of the slip roads will be required, with no change in ground levels. While these works will marginally increase the area of asphalt, this will not be significant in the context of a motorway and will not introduce obstacles to views.

Overall, these modifications will not affect the "openness" of the surrounding Green Belt.

13.2 Construction of new overbridges. It is proposed to demolish and re-build 11 overbridges where the hard shoulder is discontinuous and the portals of the existing overbridges are too narrow to accommodate the Scheme, see paragraph 2.1.1b and Table 6 of the Engineering and Design Report (Application Reference Document 7.3). These overbridges lie between junction 8/9 and junction 4b and all are located in the Green Belt. Of these 11 overbridges, five will be re-built on-line, while six will be re-built off-line but alongside the existing structures. The new overbridges will be no more than 1.5m higher than the existing structures, see paragraph 7.11.2 in the Engineering and Design Report (Application Reference Document 7.3). Apart from the replacement of existing overbridges, there will be no additional crossings over the motorway. The small increase in the height of these widely spaced structures will not materially affect the "openness" of the surrounding Green Belt.

13.3 Widening of underbridges. It is proposed to widen six underbridges (and four culverts), see Table 7 of the Engineering and Design Report (Application Reference Document 7.3). The most extensive works concern the asymmetric widening of Windsor Branch Railway line by 8.85m on the south side and asymmetric widening of Thames Bray Bridge by 7.8m on the north side. While widening of these structures will be noticeable from the ground level in close proximity to the structures, the increased width of the structures (with no changes in height) will not materially affect the "openness" of the surrounding Green Belt.

14. The assessment of the residual effects of the M4 junctions 3 to 12 smart motorway Scheme on the landscape character and visual amenity within the Green Belt are presented in Table 8.2 of the ES (Application Document Reference 6.1). This indicates that typically the Scheme would result in a neutral significance of effect on landscape character except at two locations in the link between junctions 8/9 and 7 within (a) the Royal Borough Windsor and Maidenhead Settled Developed Floodplain LCA 14b: Bray which includes the off-line construction of Monkey Island overbridge and asymmetric widening of Thames Bray underbridge (Drawing 8.1 Sheet 10) (Application Document Reference 6.2) and (b) the South Buckinghamshire Floodplain LCA 26.2: Dorney, which includes the on-line construction of Marsh Lane overbridge, off-line construction of Lake End Road Overbridge and partial off-line construction of Hunterscombe Spur overbridge (Drawing 8.1 Sheet 10) (Application Document Reference 6.2). The assessment of the residual effects on both landscape character areas is evaluated as a moderate adverse effect reducing to a slight adverse significance of effect by Design Year 2037. Similarly in relation to the visual amenity of the Green Belt, by Design Year 2037, at worst there would be a slight adverse significance of effect. This shows that in most cases, the net change in the physical elements of the Scheme are modest and that the mitigation and maturing of planting as part of the Scheme will be such that the road and its structures would be absorbed into the landscape. Where mitigation is unable to fully mitigate the effects of the Scheme, the effects at worst on the landscape and visual amenity within the Green Belt would not be considered significant.

15. On this basis, it is concluded that the Scheme preserves the openness of the Green Belt in relation to the alteration of sliproads; the construction of new overbridges; and the widening of underbridges.

16. The extent to which the widening of the M4 at junctions of the motorway to alter slip roads; the construction of new overbridges; and the widening of underbridges impacts on each of the five purposes of the Green Belt is covered in paragraphs 5.2.169 to 5.2.173 in the Planning Statement (Application Document Reference 7.1) and is considered below.

To check the unrestricted sprawl of large built-up areas

17. The proposed widening of junctions to alter slip roads, the construction of new overbridges and the widening of underbridges are directly related to and largely contained within the existing highway land. Moreover, these improvements are considered to create relatively inconspicuous additions within the landscape that are of similar appearance, scale and mass, to those presently in place. Consequently, the nature and scale of each of these elements is such that the Scheme is not considered to result in, or set the precedent for unrestricted urban sprawl of large built-up areas.

To prevent neighbouring towns merging into one another

18. The proposed widening of junctions to alter slip roads, the construction of new overbridges and the widening of underbridges are directly related to and largely contained within the existing highway land, thereby reinforcing the presence of the M4 as a physical barrier between neighbouring towns to the north and south side of the motorway. Moreover, these improvements are considered to create relatively inconspicuous additions within the landscape, that are of similar appearance, scale and mass, to those presently in place, thus limiting any further visual intrusion between settlements. The permanent land-take for the Scheme comprises relatively small, discrete parcels of land alongside slip roads to junctions and those bridges to be built off-line. Consequently, the nature and scale of each of these elements is such that the Scheme will not facilitate the merging of neighbouring towns.

To assist in safeguarding the countryside from encroachment

19. The proposed widening at junctions to alter slip roads, the construction of new overbridges and the widening of underbridges are directly related to and largely contained within the existing highway corridor. Where permanent land-take is required for the Scheme, the land is contiguous with the existing M4 and will only be used for the construction of specific elements. Based on the purpose and extent of the works and their relationship to the existing highway infrastructure, it is maintained that these do not result in any unacceptable encroachment into the countryside. Moreover, these improvements are considered to create relatively inconspicuous additions within the landscape that are of similar appearance, scale and mass, to those presently in place. Consequently, the nature and scale of each of these elements is such that the Scheme does not represent unacceptable encroachment into the countryside and maintains the openness of the countryside, Table 8.1 of the ES (Application Document Reference 6.1).

To preserve the setting and special character of historic towns

20. The M4 currently by-passes most of the towns it serves between junctions 12 and 3, such as Slough, Datchet, Eton, and Windsor. The outer suburbs of Cippenham, Slough, West Drayton and Westlands Estate do extend close to the motorway. The towns served by the Scheme are listed in paragraph 2.1.2 and Table 2.1 of the ES (Application Document Reference 6.1).

21. Drawing 8.2 Visual Effects Sheets 6 to 16 (Application Document Reference 6.2) shows that by and large the Zone of Visual Influence (ZVI) of the motorway is largely tightly drawn to the north and south of the motorway, with topography, woods, tree belts, hedgerows, and built up areas constraining views into and from the motorway. The historic towns of Maidenhead, Eton Wick, Eton and Windsor lie well away from the M4 and outwith the Zone of Visual Influence.

22. The setting and special character of historic towns could also be affected by intrusive noise levels. However, the proposals to lay low noise surface across all lanes of the motorway as

part of the Scheme (see paragraph 12.2.49 of the ES (Application Document Reference 6.1), together with some additional sections of noise barrier (shown in Drawing 12.2), will provide widespread reductions in ambient noise levels in the opening year as demonstrated in Drawing 12.4 Sheets 6 to 16 (Application Reference Number 6.2). The improvements will be greatest along the M4 and decrease with distance as noise is attenuated.

23. The following historic town centres and villages within 250m of the M4 have been designated as Conservation Areas, a designation that recognises the special architectural and historic character of built environments:

    23.1 Holyport Conservation Area in the Royal Borough of Windsor and Maidenhead. This is located to the south east of Junction 8/9 and south of the Ascot Road Overbridge. Most of the conservation area lies outside the Zone of Visual Influence, except for a small area close to the southern end of Ascot Road Overbridge (compare Drawing Nos 7.1 Sheet 9 and Drawing 8.2 Sheet 9). Drawing 12.4 Sheet 9 (Application Document Reference 6.2) shows decreases in ambient noise of up to 2 dB in year of opening.

    23.2 Datchet Conservation Area in the royal borough of Windsor and Maidenhead. This designated site is located to the south of the M4, close to the proposed works for the Riding Court Road Overbridge. Drawing 7.1 Sheet 12 (Application Document Reference 6.2) shows the conservation area outwith the Zone of Visual Influence, but lying close to the southern tip of the Order limits around the southern end of Riding Court Road Overbridge. Drawing 12.4 Sheet 12 (Application Document Reference 6.2) shows decreases in ambient noise of up to 2 dB in year of opening.

    23.3 Harlington Conservation Area in London Borough of Hillingdon. This designation lies to the south of the M4 between junctions 4 and 3. Drawing 7.1 Sheet 15 (Application Document Reference 6.2) shows most of the conservation area lying outwith the Zone of Visual Influence, with the exception of the northern part of the village which extends to the M4 and the western edge of the village with views towards junction 4. Drawing 12.4 Sheet 15 (Application Document Reference 6.2) shows decreases in ambient noise of up to 3 dB in year of opening.

24. The landscape and visual assessments undertaken along the route of the motorway corridor within the ES has not identified any adverse impacts as a consequence of the Scheme in relation to the setting and special character of any historic towns. Consequently, the nature and scale of each of these elements will therefore continue to preserve the setting and special character of historic towns. Furthermore, in their relevant representation Historic England has said "*Historic England is largely content with the Appraisal*".

To assist in urban regeneration, by encouraging the recycling of derelict and other urban land

25. The NNNPS acknowledges the importance of Green Belt and the need to develop brownfield and other land in preference to greenfield sites within the Green Belt. Importantly, paragraph 5.163 acknowledges that while the re-use of previously developed land can contribute to sustainable development by reducing the use of green field land, this "*may not be possible for some forms of infrastructure, particularly linear infrastructure such as roads*".

26. Most of the works required for the Scheme will be undertaken on existing highway land. Paragraph 5.2.149 of the Planning Statement (Application Document Number 7.1) notes that the Scheme is confined largely to the existing highway carriageway with the additional permanent land requirement beyond the boundary of the existing highway representing *"a demonstrably small increase in the use of greenfield land"*.

27. The Socio-Economic Report (Application Document Reference 7.2) considers that the Scheme will have a beneficial effect on the future economic growth of the region, through improvements to journey times and reliability. This, in turn, is seen as having a positive effect on strategic development land in the area that will assist in urban regeneration. Whilst this relates to the Scheme as a whole, the elements referred to will largely be contained within the footprint of the existing carriageway resulting in the use of previously developed land as opposed to new, greenfield development within the Green Belt.

Conclusion

28. Having regard to the points made above, Highways England's view is that the Scheme is not inappropriate development since engineering operations fall within the exception at paragraph 90 of the National Planning Policy Framework and they will preserve the openness of the Green Belt, which is illustrated above.

29. To the extent the Examining Authority disagrees with Highways England and regards these various elements of the Scheme as inappropriate development, Highways England considers that the Scheme should nevertheless be approved due to very special circumstances (which is permitted pursuant to paragraphs 87 and 88 of the National Planning Policy Framework). In short, paragraph 2.22 of the NNNPS concludes that there is a compelling need for development of the national road network because increased capacity must be provided.

P3.2 In respect of proposed new gantries, to what extent would their construction have an impact on the openness of the Green Belt and constitute inappropriate development? To what extent would they have an impact on the five purposes of including land in the Green Belt?

1. A summary of Green Belt policy in the National Planning Policy Framework and the National Networks National Policy Statement together with a description of the extent of Green Belt crossed by the Scheme, is provided in paragraphs 1 to 8 of the response to QP3.1.

2. The total number of gantries proposed on the Scheme is 162, an increase of 92 gantries from the existing 70 gantries along the route. The 162 Scheme gantries comprise 133 new gantries and re-use of 29 existing gantries. The remaining 41 existing gantries will be removed. The number of each gantry type, as defined in Schedule 1 to the Draft DCO (Application Reference Document 3.1) and on the works plans, is summarised in Table 1 below.

Gantry Type	***Description***	***No. of***
1	*Super-span portal*	*18*
2	*Single carriageway portal*	*5*
3	*Super-span cantilever*	*25*
4	*Sign only cantilever*	*26*
5	*Signal cantilever, MS4*	*51*
6	*Signal cantilever, MS3*	*8*
New	***Sub Total of Proposed New Gantries***	***133***
7	*Portal type gantry*	*9*
8	*Signal cantilever*	*20*
Re-used	***Sub Total of Re-used Gantries***	***29***
All	***Total Number of Gantries***	***162***

3. Gantry details are provided in the Gantry General Arrangement report (Application Document Reference 2.8). This includes typical dimensions for the main structural elements of each gantry type. For example a Type 1 Superspan gantry requires a minimum of 5.8m headroom (vertical clearance from road level to underside of boom) with a typical boom depth of 2.25m. The overall height from road level to top of each gantry sign is summarised on Table 2 at the end of this response. It includes the following elements:

   3.1 Minimum head room of 5.8m

   3.2 Additional headroom allowance for motorway cross-fall (typically 700mm for a Type 1 gantry, less for smaller span gantries)

   3.3 Boom depth (varies according to gantry type as shown in the Gantry General Arrangement Report

   3.4 Mounting height of signs or signals above the boom (assumed to be 0.7m)

   3.5 Sign or signal height varies according to sign face design (as a minimum text size based on the height of the letter x "x height" is required to ensure the signs are visible) as recommended in Interim Advice Note 111/09 "Managed Motorways implementation guidance – Hard shoulder running".

4. The location of the new gantries in relation to the heritage features and visual effects are shown in Drawings 7.1 Sheets 6 to 16 and Drawing 8.2 Sheets 6 to 16 (Application Document Reference 6.2).

5. Highways England's view is that the gantries do not form inappropriate development, since engineering operations fall within the exception at paragraph 90 of the National Planning Policy Framework. In any event, the gantries do no adversely affect the openness of the Green Belt.

6. It is concluded that although the number of gantries will increase, these additional features will not impact on openness of the Green Belt given that the structures are similar in design and dimensions to existing highway infrastructure, and will be seen in the context of an existing motorway with gantries. The additional gantries will not be perceived as an agglomeration of structures, detrimental to openness, since they will not all fall within a single view. Accordingly, the openness of the Green Belt is not adversely affected.

7. This conclusion is supported by the assessment of the residual effects of the Scheme on the landscape character and visual amenity within the Green Belt, which are presented in Table 8.2 of the ES (Application Document Reference 6.1). This indicates that typically the Scheme would result in a neutral significance of effect on landscape character except at two locations in the link between junctions 8/9 and 7 within (a) the Royal Borough Windsor and Maidenhead Settled Developed Floodplain LCA 14b: Bray and (b) the South Buckinghamshire Floodplain, LCA 26.2: Dorney, which would experience a slight adverse significance of effect by Design Year 2037. These two sections are dominated by the modification of major structures, although new gantries are proposed as shown in Drawing 4.1 Sheets 35 to 40 (Application Document Reference 6.2).

8. Similarly in relation to the visual amenity of the Green Belt, by Design Year 2037, at worst there would be a slight adverse significance of effect, as shown in Table 8.2 of the ES (Application Document Reference 6.1). This shows that in most cases, the mitigation and maturing of planting as part of the Scheme will be such that the road and its structures would be absorbed into the landscape. Where mitigation is unable to mitigate the effects of the Scheme fully, the effects at worst on the landscape within the Green Belt would not be considered significant.

9. To the extent the Examining Authority disagrees with Highways England and regards the gantries as inappropriate development, Highways England considers that the Scheme should nevertheless be approved due to very special circumstances. In short, paragraph 2.22 of the NN NPS concludes that there is a compelling need for development of the national road network because increased capacity must be provided.

10. The extent to which the proposed new gantries will impact on each of the five purposes of the Green Belt is considered below.

To check the unrestricted sprawl of large built-up areas

11. The construction of new gantries as part of the Scheme are wholly contained within the existing motorway corridor as shown on Drawing 4.1 (Application Document Reference 6.2). The proposed gantries will be new features which are entirely in keeping with the landscape character of a motorway corridor, albeit within Green Belt. The form and appearance of the gantries follow standard Highways England design guidelines and as such are of similar appearance and scale to those presently in place (Gantry General Arrangement details (Application Document Reference 2.8)). Some of the existing gantries will be removed altogether or replaced as part of the Scheme proposals. Consequently, the nature, scale and

siting of the proposed gantries is such that the Scheme is not considered to result in, or set the precedent for urban sprawl.

To prevent neighbouring towns merging into one another

12. The construction of new gantries as part of the Scheme are wholly contained within the existing M4 highway estate as shown on Drawing 4.1 (Application Document Reference 6.2). The new gantries are considered to create minor additions within the landscape that are of similar appearance to those presently in place as summarised in Table 8.2 of the ES (Application Document Reference 6.1). Consequently, the nature and siting of the proposed gantries is such that the Scheme is not considered to result in the merging of neighbouring towns into one another.

To assist in safeguarding the countryside from encroachment

13. The construction of new gantries as part of the Scheme are wholly contained within the existing motorway corridor as shown on Drawing 4.1 (Application Document Reference 6.2). The new gantries are considered to create minor additions within the landscape that are of similar appearance to those presently in place as summarised in Table 8.2 of the ES (Application Document Reference 6.1). Some of the existing gantries will be removed altogether or replaced as part of the Scheme. Consequently, the nature and siting of these elements is such that the Scheme does not represent unacceptable encroachment into the countryside.

To preserve the setting and special character of historic towns

14. The landscape and visual assessments undertaken along the route of the motorway corridor within the ES has not identified any impacts as a consequence of the Scheme in relation to the setting and special character of any historic towns. Table 8.2 and Drawing 8.2 Visual Effects summarise the impacts on residential properties, which show that the properties most affected by the scheme are generally houses in the countryside or along the suburban outskirts of towns. Consequently, the nature, scale and siting of the proposed gantries will therefore continue to preserve the setting and special character of historic towns.

To assist in urban regeneration, by encouraging the recycling of derelict and other urban land

15. The Socio-Economic Report (Application Document Reference 7.2) considers that the Scheme will have a beneficial effect on the future economic growth of the region, through improvements to journey times and reliability. This, in turn, is seen as having a positive effect on strategic development land in the area that will assist in urban regeneration. Whilst this relates to the Scheme as a whole, the siting of new gantries within the existing motorway corridor is based on the use of previously developed land as opposed to new, greenfield development. The Requirements regarding the details of gantry designs and their siting are referred to in Schedule 2, Requirement 4 of the Draft DCO (Application Document Reference 3.1).

Conclusion

16. Having regard to the above points, Highways England's view is that the gantries do not form inappropriate development since engineering operations fall within the exception at paragraph 90 of the National Planning Policy Framework and the gantries preserve the openness of the Green Belt.

17. To the extent the Examining Authority disagrees with Highways England and regards the gantries as inappropriate development, Highways England considers that the Scheme should nevertheless be approved due to very special circumstances (which is permitted pursuant to paragraphs 87 and 88 of the National Planning Policy Framework). In short, paragraph 2.22 of the NNNPS concludes that there is a compelling need for development of the national road network because increased capacity must be provided.

Table 2: Summary of information on proposed gantries along the Scheme

Gantry Ref.	Scheme Plan Sheet No. (EDR Annex F1)	Chainage	Gantry Type	Direction	Signs and Signals Carried on Gantry	Height (m above FRL)
Heathrow Spur (J4a to J3)						
G0-01	57		Type 6	Spur	3x18 MS3	9.2
G0-02	57		Type 7	Spur	Lane Destination Signs	11.7
G0-03	57		Type 7	Spur	Lane Destination Signs	11.7
M4 Junction 3 to Junction 4						
G1-01	61	10+570	Type 5	West Bound	MS4	9.2
G1-02	60	11+144	Type 5	East Bound	MS4	9.2
G1-04	60	11+454	Type 3	East Bound	Direction Signs for Exit Sliproad and M4 Eastbound	10.8
G1-05	59	11+925	Type 1	West Bound	MS4 and four AMI signals	12.8
	59			East Bound	1/4 Mile ADS for Exit Sliproad and four AMI signals	13.8
G1-03	59	12+125	Type 4	West Bound	1/2 mile ADS for Exit Sliproad	9.4
G1-07	59	12+610	Type 3	West Bound	1/4 Mile ADS for Exit Sliproad and four AMI signals	12.4
G1-08	59	12+339	Type 4	East Bound	1/2 mile ADS for Exit Sliproad	10.8
G1-09	59	12+519	Type 3	East Bound	MS4 and four AMI signals	12.8
G1-11	58	13+023	Type 3	West Bound	Direction Signs for Exit Sliproad and M4 Westbound	11.7
G1-12	58	13+641	Type 5	West Bound	MS4	9.2
G1-13	58	13+585	Type 5	East Bound	MS4	9.2
M4 Junction 4 to Junction 4b						

Gantry Ref.	Scheme Plan Sheet No. (EDR Annex F1)	Chainage	Gantry Type	Direction	Signs and Signals Carried on Gantry	Height (m above FRL)
G2-01	56	13+983	Type 4	West Bound	1 mile ADS for Exit Sliproad	12.8
G2-02	56	14+102	Type 4	West Bound	3/4 mile ADS for Exit Sliproad	12.7
G2-02a	56	13+853	Type 6	West Bound	3x18 MS3	9.0
G2-03	56	14+188	Type 7	East Bound	Direction Signs for Exit Sliproad and MS4	12.8
G2-04	55	14+654	Type 2	East Bound	Direction Signs for Exit Sliproad and M4 Eastbound	10.6
G2-06	55	14+897	Type 7	West Bound	MS4 and five AMI signals	12.8
G2-07	55	14+996	Type 2	East Bound	MS4 and five AMI signals	12.8
G2-08	55	15+180	Type 2	West Bound	1/3 mile ADS for Exit Sliproad and for M4 Eastbound	11.8
G2-09	55	15+205	Type 7	East Bound	1/4 mile ADS for Exit Sliproad to M25 and for M4 Westbound	11.6
G2-11	55	15+473	Type 2	East Bound	MS4 and five AMI signals	12.8
G2-10	55	15+395	Type 7	West Bound	MS4 and five AMI signals	12.8
G2-12	54	15+587	Type 2	West Bound	Direction Signs for Exit Sliproad and M4 Westbound	11.8
G2-13	54	15+920	Type 7	West Bound	Direction Signs for Exit Sliproad, MS4 and five AMI	15.0
G2-14	54	16+275	Type 4	East Bound	1 mile ADS for Exit Sliproad	10.7
G2-15	54	16+074	Type 4	East Bound	3/4 mile ADS for Exit Sliproad and for M4 Eastbound	11.8
G2-16	53	16+475	Type 5	East Bound	MS4	9.2
M4 Junction 4b to Junction 5						
G3-01	53	16+670	Type 5	West Bound	MS4	9.2
G3-02	52	17+354	Type 7	East Bound	Direction Signs for Exit Sliproad, MS4 and five AMI	15.2

Gantry Ref.	Scheme Plan Sheet No. (EDR Annex F1)	Chainage	Gantry Type	Direction	Signs and Signals Carried on Gantry	Height (m above FRL)
G3-03	52	17+669	Type 1	East Bound	Direction Signs for Exit Sliproad and M4 Eastbound	12.6
G3-03a	52	18+198	Type 1	West Bound	MS4 and four AMI signals	13.4
	52			East Bound	1/3 mile ADS for Exit Sliproad and for M4 Eastbound	13.2
G3-03b	52	17+729	Type 6	East Bound	3x18 MS3	9.2
G3-05	51	18+398	Type 1	West Bound	2/3 mile ADS for Exit Sliproad	9.9
	51			East Bound	MS4 and five AMI signals	12.8
G3-08	51	18+858	Type 4	West Bound	1/3 mile ADS for Exit Sliproad	9.9
G3-09	51	18+782	Type 4	East Bound	2/3 mile ADS for Exit Sliproad	12.7
G3-11	51	19+059	Type 1	East Bound	MS4 and five AMI signals	13.0
	51			West Bound		
G3-12	50	19+366	Type 3	West Bound	Direction Signs for Exit Sliproad and M4 Westbound	11.9
G3-14	50	19+743	Type 7	West Bound	Direction Signs for Exit Sliproad, four AMI	10.3
M4 Junction 5 to Junction 6						
G4-01	49	20+315	Type 5	East Bound	MS4	9.2
G4-02	49	20+835	Type 3	East Bound	Direction Signs for Exit Sliproad and M4 Eastbound, four AMI	15.5
G4-03	48	21+157	Type 1	West Bound	MS4 and four AMI signals	13.4
G4-04	48	21+370	Type 4	East Bound	1/3 mile ADS for Exit Sliproad	10.4
G4-05	48	21+570	Type 5	East Bound	MS4	9.2
G4-06	47	22+050	Type 5	West Bound	MS4	9.2
G4-07	47	22+505	Type 4	East Bound	1 mile ADS for Exit Sliproad	10.4

Gantry Ref.	Scheme Plan Sheet No. (EDR Annex F1)	Chainage	Gantry Type	Direction	Signs and Signals Carried on Gantry	Height (m above FRL)
G4-08	47	22+275	Type 5	East Bound	MS4	9.2
G4-09	46	22+950	Type 5	West Bound	MS4	9.2
G4-10	46	23+075	Type 5	East Bound	MS4	9.2
G4-11	45	24+188	Type 4	West Bound	2/3 mile ADS for Exit Sliproad	8.8
G4-12	45	23+891	Type 5	West Bound	MS4	9.2
G4-13	45	24+296	Type 5	East Bound	MS4	9.2
G4-15	45	24+496	Type 5	West Bound	MS4	9.2
G4-16	44	24+870	Type 1	West Bound	1/3 mile ADS for Exit Sliproad	9.0
	44			East Bound	MS4 and four AMI signals	13.0
G4-17	44	25+360	Type 3	West Bound	Direction Signs for Exit Sliproad and M4 Westbound	10.6
G4-18	43	25+831	Type 5	West Bound	MS4	9.2
M4 Junction 6 to Junction 7						
G5-01	42	26+370	Type 5	East Bound	MS4	9.2
G5-02	42	27+070	Type 3	East Bound	Direction Signs for Exit Sliproad and M4 Eastbound	11.3
G5-03	41	27+278	Type 3	West Bound	MS4 and four AMI signals	12.8
G5-04	41	27+645	Type 4	East Bound	1/3 mile ADS for Exit Sliproad	9.1
G5-05	41	27+345	Type 5	East Bound	MS4	9.2
G5-06	41	27+774	Type 4	West Bound	2/3 mile ADS for Exit Sliproad	9.1
G5-08	40	28+105	Type 1	West Bound	MS4	13.0
	40			East Bound		

Gantry Ref.	Scheme Plan Sheet No. (EDR Annex F1)	Chainage	Gantry Type	Direction	Signs and Signals Carried on Gantry	Height (m above FRL)
G5-09	40	28+330	Type 4	West Bound	1/3 mile ADS for Exit Sliproad	8.3
G5-10	40	28+869	Type 3	West Bound	Direction Signs for Exit Sliproad and M4 Westbound	13.3
G5-11	39	Spur	Type 3	Spur		12.8
M4 Junction 7 to Junction 8/9						
G6-01	38	29+045	Type 5	East Bound	MS4	9.2
G6-02	38	29+373	Type 3	East Bound	Direction Signs for Exit Sliproad and M4 Eastbound	10.4
G6-03	38	29+815	Type 5	East Bound	MS4	9.2
G6-04	37	29+958	Type 3	West Bound	MS4 and four AMI signals	12.8
G6-05	37	30+182	Type 4	East Bound	1/2 mile ADS for Exit Sliproad	8.3
G6-06	37	30+587	Type 5	West Bound	MS4	9.2
G6-07	37	30+737	Type 5	East Bound	MS4	9.2
G6-08	36	31+050	Type 4	East Bound	1 mile ADS for Exit Sliproad	8.3
G6-09	36	30+832	Type 6	West Bound	3x18 MS3	9.2
G6-10	36	31+350	Type 5	West Bound	MS4	9.2
G6-11	36	31+556	Type 4	West Bound	1 mile ADS for Exit Sliproad	9.4
G6-12	36	31+632	Type 5	East Bound	MS4	9.2
G6-13	35	31+807	Type 6	West Bound	3x18 MS3	9.2
G6-14	35	32+159	Type 5	West Bound	MS4	9.2
G6-15	35	32+266	Type 5	East Bound	MS4	9.2

Gantry Ref.	Scheme Plan Sheet No. (EDR Annex F1)	Chainage	Gantry Type	Direction	Signs and Signals Carried on Gantry	Height (m above FRL)
G6-16	35	32+441	Type 4	West Bound	1/2 mile ADS for Exit Sliproad	9.4
G6-17	34	32+963	Type 5	West Bound	MS4	9.2
G6-18	34	32+866	Type 3	East Bound	MS4 and four AMI signals	12.8
G6-19	34	33+194	Type 3	West Bound	Direction Signs for Exit Sliproad and M4 Westbound	11.2
G6-20	33	33+861	Type 5	West Bound	MS4	9.2
G6-21	33	33+836	Type 5	East Bound	MS4	9.2
M4 Junction 8/9 to Junction 10						
G7-01	33	34+362	Type 5	East Bound	MS4	9.2
G7-02	32	35+148	Type 3	East Bound	Direction Signs for Exit Sliproad and M4 Eastbound	15.1
G7-04	32	35+100	Type 1	West Bound	MS4 and four AMI signals	13.0
G7-05	31	35+786	Type 4	East Bound	1/2 mile ADS for Exit Sliproad	10.0
G7-06	31	35+966	Type 5	East Bound	MS4	9.2
G7-07	30	36+280	Type 5	West Bound	MS4	9.2
G7-08	30	36+354	Type 6	East Bound	3x18 MS3	9.2
G7-09	30	36+915	Type 5	West Bound	MS4	9.2
G7-10	30	36+663	Type 4	East Bound		
G7-11	30	37+100	Type 5	East Bound	MS4	9.2
G7-12	29	37+530	Type 5	West Bound	MS4	9.2
G7-13	29	37+634	Type 6	East Bound	3x18 MS3	9.2

Gantry Ref.	Scheme Plan Sheet No. (EDR Annex F1)	Chainage	Gantry Type	Direction	Signs and Signals Carried on Gantry	Height (m above FRL)
G7-15	28	38+400	Type 1	West Bound	MS4 and four AMI signals	13.0
	28			East Bound	MS4 and four AMI signals	13.0
G7-16	27	39+292	Type 8	West Bound	MS4	9.2
G7-17	27	39+260	Type 5	East Bound	MS4	9.2
G7-18	26	40+000	Type 5	East Bound	MS4	9.2
G7-19	26	40+507	Type 8	West Bound	MS4	9.2
G7-20	26	40+700	Type 5	East Bound	MS4	9.2
G7-21	25	41+080	Type 3	West Bound	MS4 and four AMI signals	12.8
G7-23	24	41+742	Type 3	East Bound	MS4 and four AMI signals	12.8
G7-24	23	42+555	Type 8	East Bound	MS4	9.2
G7-25	25	42+405	Type 5	West Bound	MS4	9.2
G7-26	23	42+948	Type 3	West Bound	1 mile ADS for Exit Sliproad and for M4 Westbound	13.0
G7-27	23	43+140	Type 8	West Bound	MS4	9.2
G7-29	22	43+864	Type 1	West Bound	1/2 mile ADS for Exit Sliproad and for M4 Westbound	13.2
	22			East Bound	MS4	13.0
G7-30	22	44+140	Type 8	West Bound	MS4	9.2
G7-31	21	44+745	Type 3	West Bound	Direction Signs for Exit Sliproad and M4 Westbound	13.0
G7-32	21	44+932	Type 3	East Bound	MS4 and four AMI signals	12.8
G7-33	20	45+450	Type 5	West Bound	MS4	9.2
G7-33a	20	45+450	Type 5	West Bound	MS4	9.2

Gantry Ref.	Scheme Plan Sheet No. (EDR Annex F1)	Chainage	Gantry Type	Direction	Signs and Signals Carried on Gantry	Height (m above FRL)
M4 Junction 10 to Junction 11						
G8-01	20	46+050	Type 3	West Bound	MS4	9.7
G8-02	19	46+546	Type 8	East Bound	MS4	9.2
G8-02a	19	46+641	Type 5	East Bound	MS4	9.2
G8-03	18	47+431	Type 1	West Bound	MS4 and four AMI signals	13.0
	18			East Bound	Direction Signs for Exit Sliproad and M4 Eastbound, four AMI	14.8
G8-04	17	48+014	Type 8	East Bound	MS4	9.2
G8-05	17	48+307	Type 1	West Bound	MS4	13.0
	17			East Bound	1/2 mile ADS for Exit Sliproad and for M4 Eastbound	12.3
G8-07	16	48+882	Type 8	East Bound	MS4	9.2
G8-08	16	48+934	Type 8	West Bound	MS4	9.2
G8-09	16	49+092	Type 3	East Bound	1 mile ADS for Exit Sliproad and for M4 Eastbound	12.1
G8-10	16	49+548	Type 5	East Bound	MS4	9.2
G8-11	15	49+846	Type 5	West Bound	MS4	9.2
G8-12	15	50+544	Type 8	East Bound	MS4	9.2
G8-13	14	50+629	Type 8	West Bound	MS4	9.2
G8-14	14	51+344	Type 1	West Bound	MS4 and four AMI signals	13.0
	14			East Bound	MS4 and four AMI signals	13.0
G8-15	13	52+152	Type 5	East Bound	MS4	9.2

Gantry Ref.	Scheme Plan Sheet No. (EDR Annex F1)	Chainage	Gantry Type	Direction	Signs and Signals Carried on Gantry	Height (m above FRL)
G8-16	13	52+100	Type 5	West Bound	MS4	9.2
G8-17	12	52+715	Type 4	West Bound	2/3 mile ADS for Exit Sliproad	8.6
G8-18	12	53+076	Type 8	West Bound	MS4	9.2
G8-19	11	53+349	Type 8	East Bound	MS4	9.2
G8-20	11	53+390	Type 4	West Bound	1/3 mile ADS for Exit Sliproad	8.6
G8-22	11	53+755	Type 3	West Bound	Direction Signs for Exit Sliproad and M4 Westbound, four AMI	13.5
G8-22a	11	53+873	Type 1	East Bound	Four AMI signals	9.3
G8-22b	11	53+580	Type 6	East Bound	3x18 MS3	9.2
G8-23	10	54+703	Type 8	West Bound	MS4	9.2
M4 Junction 11 to Junction 12						
G9-01	10	55+054	Type 8	East Bound	MS4	9.2
G9-02	9	55+855	Type 1	West Bound	MS4 and four AMI signals	13.0
	9			East Bound	Direction Signs for Exit Sliproad and M4 Eastbound, four AMI	13.5
G9-04	8	56+355	Type 4	East Bound	1/3 mile ADS for Exit Sliproad	8.6
G9-05	8	56+714	Type 5	East Bound	MS4	9.2
G9-06	8	56+635	Type 5	West Bound	MS4	9.2
G9-07	7	56+947	Type 4	East Bound	2/3 mile ADS for Exit Sliproad	8.6
G9-08	7	57+330	Type 8	East Bound	MS4	9.2
G9-09	7	57+404	Type 8	West Bound	MS4	9.2

Gantry Ref.	Scheme Plan Sheet No. (EDR Annex F1)	Chainage	Gantry Type	Direction	Signs and Signals Carried on Gantry	Height (m above FRL)
G9-10	6	58+470	Type 1	West Bound	MS4 and four AMI signals	13.0
	6			East Bound	MS4 and four AMI signals	13.0
G9-11	5	59+248	Type 5	East Bound	MS4	9.2
G9-12	4	59+753	Type 8	West Bound	MS4	9.2
G9-13	4	59+910	Type 4	West Bound		
G9-14	4	60+150	Type 5	East Bound	MS4	9.2
G9-15	3	60+514	Type 8	West Bound	MS4	9.2
G9-16	3	60+711	Type 4	West Bound		
G9-17	3	61+210	Type 1	West Bound	Four AMI signals	9.3
	3			East Bound	MS4 and four AMI signals	13.0
G9-19	2	61+508	Type 3	West Bound		
G9-20	2	62+009	Type 8	West Bound	MS4	9.2
G9-21	1	62+461	Type 5	East Bound	MS4	9.2

COUNT		
Type 1	18	
Type 2	5	
Type 3	25	
Type 4	26	
Type 5	51	
Type 6	8	133

Gantry Ref.	Scheme Plan Sheet No. (EDR Annex F1)	Chainage	Gantry Type	Direction	Signs and Signals Carried on Gantry	Height (m above FRL)
		Type 7	9			
		Type 8	20	29		
			162	162		

P3.3 Six potential construction compounds are proposed. To what extent would they have an impact on the openness of the Green Belt and constitute inappropriate development? To what extent would these operations have an impact on the five purposes of including land in the Green Belt?

1. Nine possible construction compounds have been proposed as part of the Scheme, of which six construction compounds (Nos 5, 6, 7, 8, 9, and 11) fall within the Green Belt. Five of these (Nos 5, 7, 8, 9 and 11) are located within the Order limits as temporary land-take (paragraph 8.2.5 in the Engineering and Design Report (Application Document Reference 7.3)) but lie outside the M4 highway estate owned by the Secretary of State (paragraph 6.3.2 in the Engineering and Design Report (Application Document Reference 7.3) while Construction Compound 6 is located within the highway estate. A brief description of each compound is provided in paragraph 8.2.5 of the Engineering and Design Report (Application Document Reference 7.3). Focussing on the six compounds in the Green Belt, Construction Compounds 5 and 7 have been used previously as construction compounds, Construction Compound 6 lies within the loop of junction 7 and Construction Compound 9 is a landfill site. Construction Compound 8 lies in a triangular piece of land bordered by the M4 and Datchet Road while Construction Compound 11 is in Prologis Park.

2. All sites are open areas of land, which could and would be used only temporarily (albeit on a medium term basis) for the erection of temporary compounds, storing materials and plant, as described in paragraph 8.2.3 of the Engineering and Design Report (Application Document Reference 7.3). All of the sites have been selected based on their suitability to support construction activities and have been assessed for the potential effects of their temporary use during construction on the environment. The study area for the assessments of the environmental effects on the construction compounds is explained in paragraph 5.4.2 of the ES, and the results of the assessment are reported in the relevant topic chapters in the rest of the ES (Application Document Reference 6.1). General and special mitigation measures have been identified to minimise the impact of the use of these sites on landscape, views, near neighbours and the local highway network as described in paragraphs 5.6.1 to 5.6.4 of the Outline Construction Environmental Management Plan (Application Document Reference 6.3), which will be secured under Schedule 2, Requirement 8 of the Draft DCO (Application Document Reference 3.1).

3. Green Belt policy contained in the NNNPS and the National Planning Policy Framework is set out in paragraphs 1 to 8 of the response to **P3.1**.

4. Chapter 8 of the ES (Application Document Reference 6.1) sets out the construction effects of the each of the construction compounds on the landscape character and visual amenity within the Green Belt. Table 8.2 summarises the results of the assessment. This indicates that Construction Compounds 5, 8, 9 and 11 would result in short term slight to moderate adverse significance of effect on landscape character; Construction Compounds 7, 8, 9 and 11 would result in short term slight to moderate adverse significance of effect on visual amenity, and Construction Compound 5 would result in a short term large adverse significance of effect on one adjacent property.

5. Paragraphs 8.3.1, 2, 4 and 5 of the Outline Construction Environmental Management Plan (Application Document Reference 6.3)) set out general provisions to mitigate the impact of works at construction compounds on landscape and views from sensitive receptors. The residual effects of activities at the compounds on landscape and visual receptors are generally temporary, slight to moderate adverse (Table 8.2 of the ES (Application Document Reference 6.1)). The effects of the construction compounds are reversible and at the end of the construction period all land is to be reinstated to its former use. At the start of the construction works, the contractor will prepare details for each individual construction site, including

compounds, to be agreed with the local planning authorities, and the compounds will be reinstated on the completion of works, as described in paragraph 5.1.1 and paragraph 10.3.3 of the Outline Construction Environmental Management Plan (Application Document Reference 6.3), which will be secured under Schedule 2, Requirement 8 of the Draft DCO (Application Document Reference 3.1). Consequently, at Opening Year 2022 following reinstatement to the original land use, as described in paragraph 8.4.9 of the ES (Application Document Reference 6.1), each of the construction compounds will result in no permanent effect on the landscape character or visual amenity of the Green Belt.

6. On this basis it is concluded that the construction compounds, as a temporary land-use, will maintain the openness of the Green Belt.

7. The extent to which the construction compounds impact on each of these five purposes of the Green Belt is considered below.

To check the unrestricted sprawl of large built-up areas

8. It is acknowledged that, with the exception of Construction Compound 6, each of the five potential construction compounds located outside the existing M4 highway estate and falling within Green Belt land is in open countryside. Each of these construction compounds is also recognised as having adverse effects on the local character, visual amenity and setting to intermittent sections of the large built up areas adjacent to the M4 Motorway. See for compound 5 paragraph 8.8.12, compound 7 paragraphs 8.10.13 and 8.10.18, compound 8 paragraph 8.10.14, compound 9 paragraphs 8.11.14 and 8.11.18(a), and compound 11 paragraphs 8.13.11 and 8.13.14 (a), (b), and (c) of the ES (Application Document Reference 6.1). However, in view of the temporary nature of the construction compound sites, (paragraph 5.2.162 of the Planning Statement refers (Application Document Reference 7.1)), any short term impacts are reversible with the land returning to its current use at the end of the construction period, as described in paragraph 10.3.3 of the Outline Construction Environmental Management Plan (Application Document Reference 6.3). The conditions in the Outline Construction Environmental Management Plan will be secured under Schedule 2, Requirement 8 of the Draft DCO (Application Document Reference 3.1). For these reasons, it is considered that the potential construction compounds will not result in the unrestricted sprawl of large built-up areas.

To prevent neighbouring towns merging into one another

9. It is acknowledged that, with the exception of Construction Compound 6 within junction 7, each of the five potential construction compounds located outside the existing motorway corridor and falling within Green Belt land are in open countryside. Each of these construction compounds, with the exception of compound 7, is also recognised as having adverse effects on the local character, visual amenity and setting to intermittent sections of the large built up areas adjacent to the M4 Motorway, see for compound 5 paragraph 8.8.12, compound 8 paragraph 8.10.14, compound 9 paragraphs 8.11.14 and 8.11.18(a), and compound 11 paragraphs 8.13.11 and 8.13.14 (a), (b), and (c) of the ES (Application Document Reference 6.1). Compound 7 is assessed to have a neutral effect on landscape during construction and in the opening year after restoration, as explained in paragraphs 8.10.13 and 8.10.18 of the ES (Application Document Reference 6.1). However, in view of the temporary nature of the construction compound sites (see paragraph 5.1.162 of the Planning Statement (Application Document Reference 7.1)), any short term impacts are reversible with the land returning to its current use at the end of the construction period, as described in paragraph 10.3.3 of the Outline Construction Environmental Management Plan (Application Document Reference 6.3). The conditions in the Outline Construction Environmental Management Plan will be secured under Schedule 2, Requirement 8 of the

Draft DCO (Application Document Reference 3.1). For these reasons, it is considered that the potential construction compounds will not result in neighbouring towns merging into one another.

To assist in safeguarding the countryside from encroachment

10. It is acknowledged that, with the exception of Construction Compound 6 within junction 7, each of the five potential construction compounds located outside the existing motorway corridor and falling within Green Belt land are in open countryside. Each of these construction compounds is also recognised as having adverse effects on the local character, visual amenity and setting to intermittent sections of the large built up areas adjacent to the M4 Motorway, see for compound 5 paragraph 8.8.12, compound 7 paragraphs 8.10.13 and 8.10.18, compound 8 paragraph 8.10.14, compound 9 paragraphs 8.11.14 and 8.11.18(a), and compound 11 paragraphs 8.13.11 and 8.13.14 (a), (b), and (c) of the ES (Application Document Reference 6.1). However, in view of the temporary nature of the construction compound sites (see paragraph 5.1.162 of the Planning Statement (Application Document Reference 7.1)), any short term impacts are reversible with the land returning to its current use at the end of the construction period, as described in paragraph 10.3.3 of the Outline Construction Environmental Management Plan (Application Document Reference 6.3). The conditions in the Outline Construction Environmental Management Plan will be secured under Schedule 2, Requirement 8 of the Draft DCO (Application Document Reference 3.1). For these reasons, it is considered that the potential construction compounds will continue in safeguarding the countryside from encroachment.

To preserve the setting and special character of historic towns

11. As described above, the construction sites are all located in open countryside, outside historic towns. Three of the construction compounds are located within 2km of Conservation Areas. Construction Compound 5 is located on the north side of the M4 and west side of Ascot Road. The Holyport, Windsor and Maidenhead Conservation Area lies on the south side of the M4 and comes close to the southern end of the proposed new Ascot Road Overbridge, Drawing 7.1 Sheet 9 (Application Document Reference 6.2). However, the M4 provides sufficient separation between the proposed construction compound and the Conservation Area, that activities at the construction compound are unlikely to affect the setting and special character of the Holyport, Windsor and Maidenhead Conservation Area. Construction Compound 8 lies about 1.5km west of the Datchet, Windsor, and Maidenhead Conservation Area, which is considered sufficient distance that the activities at the construction compound will not affect the setting or special character of the conservation area Drawing 7.1 Sheet 12 (Application Document Reference 6.2). Construction Compound 11 lies on the north side of the M4 and east side of Stockley Road, over 1km from the Harlington Conservation Area on the south side of the M4, Drawing 7.1 Sheet 15 (Application Document Reference 6.2). As described above, given the distance and the barrier effect provide by the M4, activities at Construction Compound 11 are not likely to affect the setting of the Harlington Village Conservation Area.

12. The landscape and visual assessments undertaken within the ES has not identified any impacts arising from the siting of the construction compounds in relation to the setting and special character of any historic towns. Table 8.2 and Drawing 8.2 Visual Effects summarise the impacts on residential properties, which show that the properties most affected by the scheme are generally houses in the countryside or along the suburban outskirts of towns, and not the historic centres. Consequently, each of the construction compounds will continue to preserve the setting and special character of historic towns.

To assist in urban regeneration, by encouraging the recycling of derelict and other urban land

13. As described in paragraph 8.2.5 in the Engineering and Design Report (Application Document Reference 7.3), Construction Compound 6 is located within junction 7, Construction Compounds 5 and 7 are known to have been used as construction compounds previously and Construction Compound 9 is located on the Colnbrook landfill site. Construction Compounds 8 and 11 are both green field land. The identification of these sites has taken account of the suitability of choosing brown field sites over green field sites. The use of these sites as construction compounds is a temporary one, with the land returning to its current use at the end of the construction period.

14. We consider that it is not appropriate to assist in urban regeneration by encouraging the recycling of derelict and other urban land for the construction of motorways which bypass urban areas, and that it is much more sensible to select suitable sites for construction compounds in rural areas away from housing wherever possible and close to the motorway.

Conclusion

15. With the exception of one construction compound, all are to be sited outside the highway estate. Nevertheless, these compounds are to be provided only on a temporary, albeit medium-term, basis. Having regard to the points made above, Highways England's view is that the construction compounds are not inappropriate development being engineering operations (benefiting from the exception in paragraph 90 of the National Planning Policy Framework) which preserve the openness of the Green Belt by virtue of their temporary nature.

16. To the extent the Examining Authority disagrees with Highways England and regards the construction compounds as inappropriate development, Highways England considers that the Scheme should nevertheless be approved due to very special circumstances (which is permitted pursuant to paragraphs 87 and 88 of the National Planning Policy Framework). In short, paragraph 2.22 of the NNNPS concludes that there is a compelling need for development of the national road network because increased capacity must be provided.

P3.4 Are there any other aspects of the development which might have an effect on the openness of the Green Belt and the five purposes of including land within the Green Belt?

1. There are no other aspects of the Scheme which might have an effect on the openness of the Green Belt and the five purposes of including land within the Green Belt.

2. It is considered that the principal elements of the Scheme, as set out in paragraph 2.1.1 of the Engineering and Design Report (Application Document Reference 7.3) and which may have an effect on the openness of the Green Belt, by virtue of their nature, scale and siting, have been referred to within the responses to the Examining Authority's Questions P3.1, P3.2 and P3.3. It is not therefore considered that there are other elements of the Scheme that need to be considered within this context.