

LOUISA MAXWELL-WATTERS

WRITTEN REPRESENTATION

HIGHWAYS ENGLAND'S RESPONSE

- 1.1 *We object to the application for the M4 Motorway (Junctions 3 to 12) (Smart Motorway) Development Consent Order Application, concerning alterations to the M4 including conversion of the hard shoulder to a running lane and altering or demolition of existing over-bridges.*
- 1.2 *We are residents and one of the owners of Amerden Lane, a small private road. Land Plan Sheet 19 indicates that Amerden Lane will be used to access a new road for construction traffic which will impact on the residents and surrounding fields and wildlife. We will suffer significant disruption and upheaval as the current plan stands. In addition According to M4 junctions 3 to 12 smart motorway Preliminary Environmental Information report(PEI) (https://projects.ursglobal.com/M4_J3_to_J4_smart_motorway/M4%20PEIR%20-%20Volume%201%20-%20Final.pdf): "Initial access for construction works to the north east side will be via Marsh Lane. However, this access is not suitable for heavy construction plant so the main access will be gained from the motorway by tracking down the embankment". Creating an access down the embankment will remove all the current TPO protected forestation that protects the residents from the noise, atmospheric and light pollution generated by the highway. According to the M4 Junctions 3 to 12: Smart Motorway Environmental Impact Assessment Scoping Report (http://infrastructure.planninginspectorate.gov.uk/wpcontent/ipc/uploads/projects/TR010019/1.%20Pre-Submission/EIA/Scoping/Scoping%20Request/140811_TR010019_%202649169_Revised%20Scoping%20Report%20-%20Version%202%20Final.pdf): "Principle visual effects will arise from the loss of existing screening vegetation, as well as from changes in infrastructure such as side road levels, signing, lighting, and environmental barriers".*
- 1.3 *This forestation took decades to establish and will take decades to re-establish. Expanding the bridge can be done without the proposed destruction for a small incremental engineering cost which will be more than compensated for by the avoidance of the cost of restoring the amenity. While we understand the need to keep the project costs to budget I believe that the current proposal is not a cost reduction but a cost transferal to the borough and the residents.*

Highways England Comment

- 1.3.1 There will be no significant disruption or upheaval to local residents. The main construction access to the north east side of Thames Bray underbridge will be gained directly from the motorway by tracking down the embankment. Initial access for light construction equipment to assist in creation of this main access will be via Marsh Lane and a short stretch of Amerden Lane (Refer to paragraph 7.5.33 of the Engineering and Design Report (Application Document Reference 7-3)), but such traffic will be light and of only temporary duration.
- 1.3.2 Construction traffic using Amerden Lane during this initial access period will be small scale (rigid body) and restricted to that needed to create and subsequently remove the temporary access - for example to install fencing and to put down / take up trackway – and that associated with preparation of the site to accept the main access – for example removing vegetation. Traffic control measures, for example *stop / go boards*, will be used for any construction traffic that cannot easily be passed by residents’ vehicles along the short stretch of Amerden Lane between Marsh Lane and the temporary access (approximately 300m).
- 1.3.3 Close liaison will be maintained with residents, as set out in section 4 of the Construction Environmental Management Plan (“CEMP”) (Annex 4-2A of the Environmental Statement (“ES”), Application Document Reference 6-3) with advance notice of any unavoidable significant loads. Disruption to residents will be minimal and contained to the periods for the initial enabling works and the final reinstatement works.
- 1.3.4 The vegetation to the existing embankment has to be removed as the embankment at this location is to be widened to allow for the revised horizontal alignment of the motorway, as shown on the cross sections at chainages 31+400 and 31+100; these cross sections are included on sheet 2 of the Engineering Sections drawings (Application Document Reference 2-4).
- 1.3.5 The representation suggests that use of Amerden Lane for access for the works will impact on the surrounding fields and wildlife. However, this is not the case. The habitats in question are widespread, do not support rare species, and are accorded a local value, as described in paragraph 9.8.18 in the ES (Application Document Reference 6-1) and Section 4.1 in Appendix 9.1 of the ES (Application Document Reference 6-3). Fauna found in the area are of local value. The effects

of construction and operation on the habitats, plants and other species present are assessed to be neutral, as summarised in Table 9.5 of the ES.

- 1.3.6 With regards to the impacts arising from the removal of the vegetation, the representation suggests that the vegetation provides some protection to residents from atmospheric pollution. The effects of vegetation on local air quality is an area of on-going research which suggests that in some situations, concentrations of particulate matter may be reduced by vegetation. However, the effects on nitrogen dioxide, the principal pollutant gas emitted by vehicles, are less well established. The trees currently located between these properties and the M4 are therefore expected to have minimal effect on the concentrations of atmospheric pollution experienced at these properties, such that their removal will have little or no effect on the air quality of these receptors. In addition, it should be noted that all sensitive receptors identified in the air quality assessment (Chapter 6 of the ES, Application Document Reference 6-1) north of the M4 in the Amerden Lane area are predicted to experience annual mean concentrations below the objective value (40 µg/m³) both with and without the Scheme in the Opening Year (2022). The location of these receptors is presented on Figures 6.10 and 6.10a of the ES (Application Document Reference 6-2).
- 1.3.7 The representation also suggests that vegetation provides some protection to residents from traffic noise. However, the removal of trees in this location is not likely to result in a material change in the noise climate. A substantial band of trees is required to provide any significant noise attenuation. Removal of a thin band of trees, such as that proposed for the construction of the Scheme in this location, is unlikely to affect the propagation of noise from the motorway, which in any event is expected to reduce in this location, as explained further in the response to paragraph 1.6 below.
- 1.3.8 The representation also suggests that the vegetation protects residents from light pollution. The Institution of Lighting Professionals (“ILP”) identifies light pollution as obtrusive light and comes in three forms. These are:
- 1.3.8.1 Glare - the uncomfortable brightness of a light source when viewed against a dark background;
 - 1.3.8.2 Light trespass - the spilling of light beyond the boundary of the property or area being lit; and

1.3.8.3 Skyglow - the brightening of the night sky above our towns, cities and countryside.

1.3.9 The existing vegetation to be removed does not presently act as a filter / screen to the existing M4 street lighting due to its lower height. However, it is recognised that the removal of the vegetation, which presently helps to filter views to the M4 traffic, particularly during the summer months, will make the existing night time traffic on the motorway more noticeable, similar to daylight hours. Despite this, it is not considered that the illuminated traffic would result in obtrusive light due to the presence of the existing M4 lighting, resulting in no additional glare, the fact that there would be limited light encroachment on to the unlit areas of the view and the urban context of the night sky would have no change in skyglow. The Scheme would therefore result in no increase in night time light pollution.

1.3.10 It should be noted that, contrary to the suggestion of the representation, the vegetation on the existing M4 embankment which is to be removed is not protected by Tree Preservation Order(s) ("TPO"). The impact of removal of vegetation will be mitigated where possible. When used for access, only necessary vegetation removal will be undertaken. Any pre-construction surveys considered necessary to determine this will be actioned via the CEMP, and any mitigation measures considered necessary will be secured in the CEMP and implemented to ensure the ecological resource is safeguarded, for example fencing off vegetation to be retained, programming vegetation removal to avoid the bird nesting season where possible, and undertaking vegetation removal under the supervision of an ecologist. The CEMP is secured under Requirement 8, Schedule 2 of the draft Development Consent Order ("DCO") (Application Document Reference 3-1).

1.3.11 Any habitat that is to be retained, including trees, will be protected through the CEMP and in compliance with British Standard 5837 'Trees in relation to design, demolition and construction'.

1.3.12 The landscape and visual impacts arising from the Scheme are set out in Table 8.2 of the ES. The landscape effects during and immediately following construction are assessed to be moderate adverse and the visual effects are assessed to be large adverse to moderate adverse during construction and moderate adverse immediately following construction.

- 1.3.13 On completion of the embankment widening work, a reinstated 20m wide strip of woodland planting will be provided along the toe of the new reinforced embankment as per the Environmental Masterplan (Annex A1 of the Engineering and Design Report (“EDR”) (Application Document Reference 7-4)). It is expected that the proposed tree planting would achieve a height of between 5 and 7m by the Design Year (2037), 15 years after construction. Both landscape and visual effects would reduce to slight adverse by the Design Year (2037 - 15 years after construction) due to establishment of this planting.
- 1.3.14 The representation suggests that the widening of the bridge could be done without removal of the trees at little extra cost. The options for widening the bridge are discussed in Table 7 of the EDR. Widening to the north, instead of the south or symmetric widening, was selected due to savings in construction operations, reduced vegetation clearance, reduced traffic disruption and overall reduced complexity. Widening the bridge even further to span the trees would incur significant additional cost, require additional land acquisition, impact on Amerden Caravan Park and be likely to require the removal of the forestation west of Pigeon Hill Eyot. North widening also minimises the effects on the local school and residential properties located to the south. Widening to the south, would also require significant realignment of the motorway as it approaches and leaves the bridge, but the alignment of the road would require a reverse curve to connect to the existing alignment. This would incur additional costs with respect to land required for the realigned carriageway. Symmetric widening would not require realignment of the motorway, but would require vegetation clearance on both sides of the motorway.
- 1.4 *The Environmental Impact Assessment Scoping Report also raises concerns over pollution to the river: "Works will be required on the banks of the River Thames at Bray as the over bridge will be extended. This will involve works within the channel and may impact upon the physical nature of the channel and the biological quality of the watercourse". Insufficient plans exist for this risk especially as there is a risk of flooding as Amerden is part of the Thames flood-plane.*

Highways England Comment

- 1.4.1 The representation highlights the potential impact of the works on the biological quality of the Thames watercourse at Bray. In order to mitigate the potential for

the overbridge extension works to have such an impact, a suite of mitigation measures will be implemented. These are documented in the outline CEMP (Chapter 14, paragraph 14.1 to 14.83) and include a commitment for all bankside and instream works to be undertaken in accordance with current best practice pollution control guidance from the Environment Agency, contained in British Standards and key Regulations, as detailed in paragraphs 14.2.4 and 14.2.5 of the outline CEMP. The Water Framework Directive ("WFD") assessment of these works has concluded that, with the implementation of the mitigation measures proposed prior to and during construction, the works at Thames Bray would not cause detriment to the biological or chemical quality of the river and would be compliant with the objectives of the WFD (Application Document Reference Number 7-6).

- 1.4.2 The representation also highlights the potential impact of the works on the physical nature of the channel and associated risk of flooding. The risk of flooding from rivers along the section of the Scheme local to Amerden Lane (junctions 8/9 to 7) is acknowledged and described in paragraph 4.6.1 of the Flood Risk Assessment (Application Document Reference 5-3) and Table 15.8 of the ES.
- 1.4.3 The strategy to ensure that in-channel or floodplain works do not result in any detriment to existing flood risk has been consulted upon with the Environment Agency, and will be reflected in a Statement of Common Ground between the Environment Agency and Highways England that will be submitted to Examination in due course, and centres on the provision of compensation for any loss of floodplain storage. This commitment for works specifically between junctions 8/9 and 7 (i.e. local to Amerden Lane) is stated in paragraphs 5.1.22 and 5.1.26 of the Flood Risk Assessment report. Where works result in a loss of storage volume for floodwaters it will be compensated for on a volumetric equivalent basis, and (where feasible) also at a level for level basis, by re-profiling land or removing parts of existing embankments within the Scheme's Order Limits. It should be noted that the compensation storage area would be created first, before any storage is lost, meaning that there is no period when the area available for the storage of floodwaters is less than the current area.
- 1.4.4 The mitigation described above would be implemented in relation to the works at the Thames at Bray. Works would be timed to avoid spate flow conditions to

avoid undue erosion of the river bed and or banks and the works would also be undertaken in compliance with the conditions of a Flood Defence Consent from the Environment Agency.

1.4.5 Highways England concludes that this approach will ensure no detrimental impact upon the physical nature of the channel or the biological quality of the River Thames and that there will be no increase in baseline (existing) flood risk. Highways England also concludes that this approach is sufficiently and clearly recorded in the plans that are publicly available.

1.5 *The PEI report also states "It is assumed at this stage that the construction works for this bridge will take 27 months to complete". We have no details of the extent of the works, they must not start until provisions to reduce residents disruption and discomfort are agreed. The current proposal to expand the bridge is crude and inefficient. We believe that a proper project select study should be conducted where all the possible options are explored and a solution selected that benefits everyone. We wish to see the engineering proposal that led to the current plan to assure ourselves that all the options have been thoroughly explored and to see what options were considered.*

Highways England Comment

1.5.1 The extent of the proposed works on the banks of the river Thames can be seen on the Thames Bray Underbridge Widening General Arrangement Drawing in Annex F2 of the EDR (Application Document Reference 7-4), which provides sufficiently precise detail on the extent of the work to be completed. In summary, it is proposed to widen the bridge asymmetrically to the north side of the motorway. The widening will require two additional girders over the river. These girders will be shaped to match the existing girders and will require the bridge abutments and intermediate piers to be extended to the north. The underbridge plan included on the general arrangement drawings shows how the extension to the intermediate pier on the west bank of the river will extend approximately 6.8m into the river, measured from top of existing bank level, over a distance of 7.0m. It is not accepted, as suggested in the representation, that these proposals are crude and inefficient. The possible options available were thoroughly appraised, considering the impacts set out in 1.5.3 and 1.5.4 below, to arrive at the preferred option. Further details of how the proposed option makes best use of the existing structure are provided in 1.5.5 below.

1.5.2 The representation requests viewing of the engineering proposal that led to the current plan, in order to see what options were considered and the reasons behind the choice that was made. The engineering proposal is described above and is also outlined in paragraphs 7.5.30 to 7.5.36 of the Engineering and Design Report (“EDR”) submitted with the Application (Application Document Reference 7-3). In relation to the options that were explored for the works to the Thames Bray Underbridge, Highways England can confirm that, as set out in Table 7 of the EDR three widening options were considered:

- a) To symmetrically widen both sides of the bridge;
- b) To asymmetrically widen to the north side; and
- c) To asymmetrically widen to the south side.

1.5.3 The asymmetric widening approach was chosen due to the reduced overall impact that the works would have on the area, including:

- a) Reduced amount of vegetation clearance along the motorway embankments;
- b) Reduced overall impact on adjacent landowners;
- c) Reduced traffic disruption; and
- d) Reduced number and complexity of construction operations, which would otherwise have been required to symmetrically widen on both sides of the bridge.

1.5.4 Furthermore, the design to asymmetric widening on the north side was chosen due to the greater potential impact of selecting the south side of the bridge, which is in close proximity of Dorney School and residential properties off the Dorney Reach Road to the southeast, and businesses including SP Workware and Ipad Cloud Epos to the southwest. Listed buildings including Monkey Island Hotel and Monkey Island House are also located approximately 500m south of the bridge. In comparison, the north side of the bridge was considered a less sensitive location, with fewer sensitive receptors.

- 1.5.5 The existing bridge has an elegant and efficient design utilising profiled painted steel girders topped with a reinforced concrete deck spanning the 80m wide river channel. The widening proposal closely matches the appearance of the existing bridge in order to minimise the visual impact to adjacent landowners and river traffic. Closely replicating the span arrangements, girder spacing, stiffness, articulation and overall structural behaviour of the existing bridge is also an essential consideration to ensure that widening has no detrimental impact on the existing bridge. The widening solution preserves and makes best use of the existing asset which would otherwise need to be demolished and replaced at considerable cost, environmental impact and disruption to road users
- 1.5.6 Measures to reduce disruption to residents will be included in the CEMP, which is secured pursuant to Requirement 8 in Schedule 2 of the draft Development Consent Order.
- 1.6 *A plan needs to be agreed on the restoration of trees and light pollution screening and the residents need to be protected from light and noise pollution during construction phase and when the M4 is operational. We experience a high level of noise from the M4 the plans do not recommend what noise nuisance management solutions such as acoustic fencing or trees, measures which would reduce noise and light pollution.*

Highways England Comment

- 1.6.1 The representation suggests that a plan for mitigation through the restoration of trees is required. The landscape mitigation strategy for the Scheme comprises the provision of planting to replace the existing vegetation lost to the Scheme during construction. The vegetation clearance and mitigation proposals for the River Thames location at Bray are provided in the EDR, Annex A2, Vegetation Clearance Sheet 19 and Annex A1, Environmental Masterplan Sheet 19. Whilst vegetation clearance will be required, extensive replacement tree planting at the toe of the new reinforced embankment is proposed, as noted above. As set out in Table 8.2 of the ES, the landscape effects during and immediately following construction are assessed to be moderate adverse and the visual effects are assessed to be large adverse to moderate adverse during construction and moderate adverse immediately following construction. Both landscape and visual effects would reduce to slight adverse by the Design Year (2037 - 15 years after construction) due to establishment of planting. The proposals indicate a 20m wide

strip of new woodland planting to be provided at the toes of the embankment. It is anticipated that by Design Year 2037 (fifteen years after opening) the trees within the planting, comprising a mix and age range of deciduous and evergreen species, will have achieved between 5 and 7m in height and would at that stage help to conceal the traffic on the Scheme. The proposed tree planting will, beyond design year 15, continue to establish and become taller than the existing hawthorn vegetation which is on the present embankment. This tree planting will eventually establish to be of similar height or greater than the proposed lighting columns.

1.6.2 The representation also raises the issue of light pollution, both during construction and during operation of the Scheme. Light pollution has been considered previously in paragraph 1.3.8 above, which indicated that the Scheme would not result in increased obtrusive light. Paragraph 8.2.11 of the ES makes reference to the ILP guidelines. A judgement was made, (based on the night time surveys carried out in November 2014 and the proposed lighting for the Scheme) and it was reported that there would be no impact on the ILP environmental zones that define the broad characteristics of the area in terms of relative brightness and darkness. It is considered that the proposed woodland planting discussed in paragraph 1.6.1 above, to replace the existing vegetation in combination with the use of modern Light Emitting Diode (“LED”) luminaires to replace the existing 250W and 400W high-pressure sodium luminaires, will potentially have a long term benefit, after Design Year 2037, in helping to filter the effects of the Scheme lighting compared to the present situation. These measures will be developed as part of the detailed design and will be agreed with the Secretary of State in accordance with requirement 19 in the draft DCO.

1.6.3 The representation has highlighted potential noise pollution arising both during construction and during operation of the Scheme. The construction assessment has been based on an indicative likely construction schedule and plant roster, and has identified reasonable worst-case noise and vibration effects along the Scheme corridor. The assessment concludes that construction noise and vibration effects would generally be slight adverse for daytime, evening and night-time works in this location (see Section 12.8 of Chapter 12 of the ES (Application Document Reference 6-1), along with Appendices 12.1 to 12.5 of the ES (Application

Document Reference 6-3) and Figures 12.1 to 12.6 of the ES (Application Document Reference 6-2).

- 1.6.4 Highways England will employ best practicable means to minimise noise and vibration levels during the works. These are outlined in sections 12.2 and 12.3 of the CEMP (Application Document Reference 6-3), and include the provision of acoustic enclosures and barriers, minimisation of reversing alarm use and the integration of noise control measures into the preparation of all method statements for works.
- 1.6.5 The procedures for managing noise and vibration during construction, including a protocol for compliance monitoring, will be agreed in a plan, as suggested in the representation, in the form of the CEMP. An Outline CEMP was submitted in support of the DCO Application and this will be finalised by the contractor and agreed in consultation with relevant local authorities and other consultees prior to commencement of construction works. The CEMP is secured under Requirement 8, Schedule 2 of the Draft DCO.
- 1.6.6 The Application does include measures to minimise noise during operation of the Scheme. The proposed mitigation for the Scheme comprises low noise surfacing across all lanes, along the complete extent of the Scheme, and a number of new noise barriers, the heights and extents of which are defined in Table A12.2.1 of Appendix 12.2 of the ES. Existing noise barriers will be retained or replaced like for like if in poor condition. No new barriers are proposed in the Amerden Lane area as the Scheme is anticipated to result in noise reductions in this location, as explained below.
- 1.6.7 The noise and vibration assessment, as reported in Chapter 12 of the ES, is for the Scheme with the above mitigation in place. The magnitude of impact of noise resulting from the Scheme is minor beneficial in the short term and negligible in the long term at this location. The significance of effect during the operation of the Scheme is assessed as slight beneficial in the short term and neutral in the long term for this location (paragraphs 12.7.12 to 12.7.14 of Chapter 12 of the ES (Application Document Reference 6-1)). These noise reductions are shown in Figure 12.4 for the short term, and in Figure 12.5 for the long term. Sheet 10 of the figures is relevant to the Amerden Lane area. The negligible / minor noise reductions are evident.

- 1.6.8 In addition, Highways England is currently considering whether there is the potential to improve further the noise climate within the Scheme corridor through enhanced mitigation. A qualitative appraisal of an enhanced mitigation strategy to achieve this is provided in Appendix 12.5 of the ES. This enhanced mitigation strategy comprises the provision of additional noise barriers, as outlined in Table A12.5.1 of Appendix 12.5 of the ES and the replacement of some existing noise barriers with higher noise barriers as outlined in Table A12.5.2 of Appendix 12.5 of the ES.
- 1.6.9 In this location, additional noise barriers and the replacement of existing noise barriers to both carriageways of the motorway in the Dorney Reach / Amerden Lane area form part of this enhanced mitigation strategy.
- 1.6.10 The effects of implementing this enhanced mitigation strategy have not been assessed in Chapter 12 of the ES. Hence, the assessment provided in Chapter 12 of the ES, reported above, is very much a worst case.
- 1.6.11 Work is on-going to provide a quantitative assessment of the enhanced mitigation strategy outlined in Appendix 12.5 of the ES. This comprises an iterative process which is employed to estimate the numbers of receptors experiencing specific reductions in noise levels (for an additional noise barrier, as detailed in Table A12.5.1 of Appendix 12.5 of the ES, or replacement of an existing barrier, as detailed in Table A12.5.2 of Appendix 12.5), monetising the benefits of these reductions in noise levels (as employed in Transport Analysis Guidance (“TAG”) appraisal) and comparing this monetisation value with the cost of the mitigation to provide a cost benefit analysis so that the lengths and heights of new barriers (if specified), and the heights of replacement barriers (if specified), can be optimised. The results of that assessment, and the results of the assessment of the landscape and visual impact of any additional noise barriers proposed, will be provided to the Examination in due course.
- 1.7 *According to the PEI "The Scheme is considered to have a moderate to major beneficial effect on the future economic growth of the region, through improvements to journey times and reliability". The £15bn Crossrail project that will bring faster commuter rail times between Maidenhead and London has already stimulated the local economy without adding more pollution to the environment.*

Highways England Comment

- 1.7.1 The Scheme will lead to improvements in journey times and reliability as well as economic growth. A complete assessment of the benefits that the Scheme is anticipated to deliver is provided in paragraphs 7.1.3 to 7.1.7 of the Socio-Economic Report (Application Document Reference 7-2) where the benefits in terms of journey times and construction employment are quantified. A summary of the complete range of benefits and impacts is provided in the Appraisal Summary Table at Appendix B to the Socio-Economic Report. This shows that in the opening year the extra capacity provided by the Scheme is expected to deliver a total saving of 56.7 million hours to business users and 82.0 million hours to commuting and other users, with expected journey time benefits of £536.5M over the 60 year appraisal period. In addition, the reliability benefits generated by the extra capacity and smart motorway technology provided by the Scheme are estimated to be a further £575.5M. The combination of the reduced congestion, improvement of journey times and increase in journey reliability are therefore expected to generate over £1.1 billion in economic benefits meeting this strategic aim.
- 1.7.2 Highways England uses a computer forecasting model for traffic modelling (described in Chapter 2 of the Traffic Forecasting Report, a copy of which was provided at Appendix 1 to the response to relevant representations at Deadline I (Document Ref 514451-MUH-00-ZZ-RP-PM-300128)), an approach which is used on all Highways England major schemes. The traffic model takes account of details of the Scheme and of future developments provided by the local planning authorities and Highways England alongside national population and employment forecasts to assess the Scheme and its effects on the surrounding roads. Rail developments, including Crossrail and improvements to train capacity and frequency and other improvements to public transport are taken into account within the traffic model for the Scheme, as described in section 3.1.2 of the Traffic Forecasting Report.
- 1.7.3 The model was run with the referenced rail improvements in the Do-Minimum (without Scheme) scenario. Table 2 in chapter 4 of the EDR (Document Ref.7.3) shows that even with these public transport enhancements, considerable levels of congestion can be expected along the M4 between junctions 3 and 12, such that even with the Crossrail, the Scheme is still required. Table 3 in the EDR provides

a similar assessment with the Scheme in place and this shows a reduction in the level of congestion through to 2037, 15 years after opening of the Scheme.

- 1.8 *There are currently high levels of traffic congestion on the Bath Road during peak times. The increased flow from the M4 will exacerbate this problem leading to higher pollution levels in Taplow. Residents near the M4 currently experience a high level of air pollution. The Royal Borough of Windsor and Maidenhead has designated the Bray/M4 area, an Air Quality Management Area (AQMA) area where the annual mean Air Quality Objective for Nitrogen dioxide is exceeded. The 2014 Air Quality Progress Report for The Royal Borough of Windsor and Maidenhead http://www.rbwm.gov.uk/public/ep_progress_report_2014.pdf declared: "Motorway Emission from the M4 account for nearly half of the Local Sources". Increasing the traffic on the M4 will raise air pollution levels even more. The P E I report states that there is a risk "that environmental standards will be breached as annual mean concentrations of NO2 exceed the objective in the opening year in some locations". A decision by the UK Supreme court in April 2015 (<https://www.supremecourt.uk/cases/docs/uksc-2012-0179-judgment.pdf>) has ordered the Government to deliver an effective plan to cut levels of air pollution and target areas of high air pollution. Increasing the M4 will jeopardize the UK's climate targets, worsen air pollution not only in our area but along the entire M4.*

Highways England Comment

- 1.8.1 The representation suggests that there will be an increased traffic flow on the M4 as a result of the Scheme. Using the traffic model, Highways England has analysed the traffic flow in the opening year (2022 forecast) along Bath Road near Taplow (either side of A4094) and the results indicate that there is only very marginal change in flow between the Do-Minimum (without Scheme) and Do-Something (with Scheme) scenarios, as presented below, and based on these changes it is concluded that there will be a negligible effect on traffic conditions through Taplow.

| Bath Road Link | Scenario | AM: 08.00-09.00 | IP: 10.00-16.00 | PM: 17.00-18.00 | Annual Average Weekday Traffic |
|-----------------------|-----------------|------------------------|------------------------|------------------------|---------------------------------------|
| West of A4094 | Do-Minimum | 1410 | 1556 | 1710 | 23,440 |
| | Do-Something | 1424 | 1532 | 1711 | 23,263 |
| | Difference | 14 | -23 | 1 | -177 |
| | % Difference | 1% | -1% | 0% | -1% |
| East of A4094 | Do-Minimum | 2196 | 2064 | 2471 | 32,974 |
| | Do-Something | 2191 | 2039 | 2468 | 32,772 |
| | Difference | -5 | -25 | -3 | -201 |
| | % Difference | 0% | -1% | 0% | -1% |

1.8.2 The representation also suggests that the increase in traffic flow will worsen air pollution levels along the M4 as a whole. An air quality assessment for the Scheme is provided in Chapter 6 of the ES. That assessment considered increases in traffic along the motorway network, such as the Scheme route and local roads, This assessment has determined that whilst there is predicted to be a slight increase in air pollution as a result of the Scheme, the overall assessment indicates that air quality effects are not significant, along the length of the Scheme and on the local road network.

1.8.3 The air quality assessment has predicted that by the Opening Year (2022), sensitive receptors located within the Royal Borough of Windsor and Maidenhead Bray/M4 Air Quality Management Area would all experience annual mean NO₂ concentrations below the air quality objective, both with and without the Scheme. The location of these receptors is presented on Figure 6.9a of the ES (Application Document Reference 6-2).

1.8.4 The representation makes reference specifically to the issue of air quality in Taplow. Taplow is located approximately 2.5km north of the M4, between Maidenhead and Slough. The nearest major road to Taplow is the A4, Bath Road being approximately 900m to the south. In DMRB Volume 11, Section 3, Part 1

'Air Quality' (HA207/07), it is stated that "*Only properties and Designated Sites within 200 m of roads affected by the project need be considered.*" This is because at this distance, pollutant concentrations tend towards background concentrations, indicating little contribution from these sources at these distances. Therefore, the study area for the assessment is defined as within 200m of the Scheme or of a road link predicted to experience a significant change in traffic flows (as defined in DMRB Volume 11, Section 3, Part 1 'Air Quality' (HA207/07)). Outside of this study area, sensitive receptors are not anticipated to experience a significant air quality effect as a result of the Scheme, and have therefore not been included in the assessment. Sensitive receptors located within Taplow are therefore not anticipated to experience a significant air quality effect.

- 1.8.5 The representation points to the Supreme Court case of *R (Client Earth) v Secretary of State for the Environment, Food and Rural Affairs* [2015] UKSC 28 ("*Client Earth*") and highlights the need to meet climate and air pollution targets. The Scheme will also not affect the requirement of the Supreme Court and will not affect the ability of the Government to meet these carbon reduction targets.
- 1.8.6 *Client Earth* requires the UK Government to prepare a revised national air quality action plan to bring zones which are currently in non-compliance with EU Limit Values back in to compliance as soon as possible. *Client Earth* requires that this plan should be submitted to the EC by the end of 2015.
- 1.8.7 A draft plan to improve air quality in the UK was issued by Defra for consultation on 12 September 2015 (<https://consult.defra.gov.uk/airquality/draft-aq-plans>). This plan outlines the approach proposed to bring zones not in compliance back in to compliance as soon as possible. The consultation on the draft plan is scheduled to end on 6 November 2015 and the plan is scheduled to be submitted to the EC by the end of 2015. The consultation on the draft plans to improve air quality indicates that Defra considers that the submission of the air quality plan will fulfil the requirements of the Supreme Court judgement.
- 1.8.8 With respect to the publication of Defra's consultation reports on the new Air Quality Plans for the UK, low emission zones ("Clean Air Zones") are not specified for either the Reading / Wokingham Urban Area Zone or the South East Zone. Highways England understands that a potential CAZ for Greater London Agglomeration referred to in Defra's consultation on air quality plans is being

considered, although the exact details are unknown at this time. Consequently, it is not possible at this time to comment how, if at all, the scheme would interact with any possible future CAZ reference in Defra's consultation documents.

1.8.9 The assessment for the Scheme has calculated that carbon dioxide ("CO₂") emissions will increase by approximately 4 million tonnes over the 60 year appraisal period based on the method of calculation prescribed in the Department for Transport's 'Transport Analysis Guidance'.

1.8.10 The modelled increases in CO₂ attributable to the Scheme have been considered in line with the requirements of the National Policy Statement for National Networks ("NN NPS") (refer to paragraphs 6.18.1 to 6.18.10 of the ES). Paragraphs 5.17 and 5.18 of the NN NPS state:

5.17 "For road projects applicants should provide evidence of the carbon impact of the project and an assessment against the Government's carbon budgets"; and

5.18 "Determine whether it would have a material impact on ability of the Government to meet its carbon reduction targets. Where the increase in carbon emissions resulting from the proposed scheme are so significant that it would have a material impact on the ability of Government to meet its carbon reduction targets, then it should refuse development consent."

1.8.11 In line with the requirements of paragraph 5.17 above, the increase in CO₂ attributable to the Scheme has been shared with DfT for comparison against the National Carbon Plan. DfT has advised Highways England that, when taken together with the Department's wider strategy on carbon reduction, including the Government's commitment for almost every car and van to be zero emission by 2050, the increase attributable to the Scheme should not have a material impact on the Government's ability to meet its carbon reduction target.

1.8.12 Further, the Scheme, along with all schemes in the Spending Review programme and Road Investment Strategy, is included within the Government's National Carbon Plan. The measures developed by Government to deliver the National Carbon Plan targets take into account any changes in carbon associated with the Scheme as part of the wider programme of schemes at the national scale.

1.8.13 In summary, the Scheme will not affect the ability of the Government to meet its carbon reduction targets (paragraph 6.18.9 of the ES).

1.9 *As an interested party we wish to be included in the site visit between the 10th and 12th November 2015. We wish to speak at an open floor hearing and make oral representations as required.*