

LONDON BOROUGH OF HILLINGDON

COMMENTS ON THE EXAMINING AUTHORITY’S SECOND WRITTEN QUESTIONS

HIGHWAYS ENGLAND'S RESPONSE

Question No	<i>LB Hillingdon Comment</i>	Highways England Comments
4.2 Landscape and visual effects		
<p>4.2.1</p> <p>From our visit to Cranford Park and its listed buildings EV-006, it was clear that the M4 currently has a significantly harmful effect on the amenities of the Park both in terms of noise and visual amenity. The listed buildings are on the ‘at risk register’ and the local community are working to conserve the buildings and to find new uses for them. The Park provides a valuable open space amenity in an otherwise urban area. The proposal to bring traffic closer to the Park and the listed buildings through all lane running (ALR), together with the positioning of new gantries would be likely to increase visual impact. Furthermore, whether or not ambient noise levels were reduced, the source of the noise would become more evident.</p> <p>What provisions can be made for enhancements to the visual and aural environment of the Park in terms of boundary treatment to the M4 such as higher fencing to provide visual and acoustic mitigation, and increased planting?</p>	<p><i>Heritage comments: the council has submitted comments with regard to the impact on the heritage assets of the site, these are re-provided at Appendix A of this response. The council also await submission of the requested Cranford Park survey which was requested by the ExA and is due for submission in Jan 2016.</i></p> <p><i>Landscaping comments: Acoustic fencing should be provided to the north of the east-bound slip road and to the south of the west-bound slip road to enhance the visual and aural environment for those enjoying the amenities of the Park and listed buildings.</i></p> <p><i>The overall height of the fence should be determined by the need to both screen the views and to be effective acoustically.</i></p> <p><i>A solid acoustic fence, such as timber or coir, could be erected to sufficient height to block out eye-level views (from the Park) to the source of the noise on the motorway, including high-sided vehicles.</i></p> <p><i>With regard to blocking the views, the height of the solid fence should take into account local topography and changes of level. For example,</i></p>	<p><u>Heritage:</u> Paragraph 7.13.17 of the Environmental Statement (“ES”) (Application Document Reference 6-1, APP-147) noted that several Grade II listed structures had been identified within Cranford Park, part of which is also designated as a conservation area. All of these assets are considered to be of medium value. The M4 and surrounding roads form part of the current setting of these assets. Gantries G1-04 and G1-02 will be located approximately 50m to the north of the conservation area. Any views of the gantries or traffic from the conservation area, and the listed buildings within it, will be filtered to varying degrees, dependent on season, by trees lining the northern boundary of the park. As such, the new motorway features (including the noise barrier proposed in the enhanced noise mitigation study, REP5-002) will not have an adverse impact on the significance of the cultural heritage assets.</p> <p>Similarly, no adverse impact on the setting of these heritage assets as a result of noise is expected, given the predicted decreases in noise levels in the year of opening due to the proposed low noise surfacing and</p>

Question No	<i>LB Hillingdon Comment</i>	Highways England Comments
	<p><i>if the ground level of the Park is lower than that of the motorway, a lower fence height may be effective visually. Conversely, if the adjacent land level is higher than the motorway, a greater fence height will be required to screen views of vehicles and the source of the noise.</i></p> <p><i>One downside of installing solid acoustic barriers fencing is that they are visually intrusive in the landscape and may block out desirable longer distance views and the skyline, above the motorway traffic.</i></p> <p><i>If the fence height needs to be higher for the purpose of acoustic mitigation than that required to screen the source of the noise, transparent acoustic panels should be used at a higher level - as used extensively in Europe.</i></p> <p><i>Where possible, off-site planting (using mixed native woodland species) should be planted on the Park side of the fence so that the impact of the fence itself is 'lost' behind a screen of vegetation. The planting mix is likely to be predominantly deciduous (only in leaf for approximately 6 months of the year) but should include some evergreen species. It should be noted that any new planting will take some years to achieve the desired height and density to form an effective visual screen. (See comments in final box relating to off-site planting).</i></p>	<p>accompanying noise barriers as identified in the enhanced noise mitigation study. In light of the above, the magnitude of impact of the M4 Junctions 3 to 12 Smart Motorway scheme (the "Scheme") on the heritage assets is, therefore, considered to be minor and the significance of the effect is predicted to be slight adverse in all cases as reported in Chapter 7 of the ES (Application Document Reference 6-1, APP-147).</p> <p>Historic England, which is the statutory body with responsibility for the protection of the historic environment, records in its Statement of Common Ground ("SoCG") with Highways England at paragraph 3.24 that it is satisfied that there will not be any increased harm to the significance of the Church of St Dunstan's, the associated listed buildings and Cranford Park Conservation Area as a consequence of the Scheme. Consequently, Highways England is of the view that no additional mitigation is required to mitigate the effects of the Scheme.</p> <p><u>Landscape:</u> At the request of the London Borough of Hillingdon, Highways England prepared a series of photomontages looking from Cranford Park to the existing M4 and the M4 once upgraded as a result of the Scheme (see photomontages 40, 41 and 53 to 67 in Appendix A to the Response to the Examining Authority's Second Questions, REP5-004). These photomontages indicate the extent of the visibility of the Scheme in comparison with the existing M4, its traffic and associated features,</p>

Question No	<i>LB Hillingdon Comment</i>	Highways England Comments
		<p>including an existing gantry (eastbound) and show that there would be a negligible change in the view between the Scheme and the existing situation.</p> <p>A site survey of the Cranford Park boundary has been completed by Highways England. As a result of that site survey, it was found that what was assumed to be an existing noise barrier (in the noise assessment reported in the ES), is not a noise barrier. Additionally, the location of the existing barrier would not provide any significant noise reductions. There is also an existing brick wall to some parts of the boundary of Cranford Park.</p> <p>Highways England will provide a new 2m high noise barrier at this location under its commitment, secured under requirement 22 in the draft Development Consent Order (“DCO”), that any existing barriers included as acoustic barriers in the noise assessment, and which turn out not to be acoustic barriers, will be replaced with acoustic barriers. With this new acoustic barrier in place, the noise reductions with the Scheme in operation will be an improvement on those shown in Sheet 15 of Drawing 12.4 of the ES (Application Document Reference 6-2, APP-265, APP-266, APP-267, and APP-268). Consequently, the setting of these heritage assets will be enhanced, in compliance with paragraphs 5.130 and 5.137 of the National Networks National Policy Statement (“NN NPS”).</p>

Question No	<i>LB Hillingdon Comment</i>	Highways England Comments
		<p>This area was included within the enhanced noise mitigation study. However, the assessment indicated that no additional barrier needed to be provided to the east of St. Dunstan's Subway, i.e. to the eastbound and westbound slip roads to junction 3. This is due to the fact there are no permanent residences in this area which would gain any benefit from an additional barrier. Furthermore, the noise level is forecast to reduce in any event due to the implementation of the Scheme. As the principal benefits of noise barriers relate to long term health issues (e.g. sleep disturbance) and are not applicable to effects on short term visitors, provision of additional noise barriers in this area is not considered to be justified or a good use of taxpayer's money.</p> <p>With regards to materials, Highways England's preference from a visual perspective is to install a 2m high timber barrier at this location, which when seen in the context of existing retained road side vegetation and other vegetation outside, but adjacent to, the Order limits, would form a relatively unobtrusive element in the landscape. On that basis, Highways England does not agree that the proposed 2m high barrier adjacent to Cranford Park would be visually intrusive, nor that it would not block out long distance views or the skyline.</p> <p>Highways England cannot commit to providing transparent panels on barriers. Not all barrier types are designed to allow for a transparent</p>

Question No	<i>LB Hillingdon Comment</i>	Highways England Comments
		<p>panel at the higher level. Moreover, the visual appearance of transparent noise barriers deteriorates over time as they become obscured by dirt, with attendant substantial maintenance requirements. As such, use of transparent fencing panels would be prohibitively expensive, and disproportionate, given the effects identified as a result of the Scheme.</p> <p>With respect to off-site planting, as stated in the response to the Examining Authority's Second Written Question 4.2.3, Highways England does not consider it appropriate or necessary to provide off-site planting to further mitigate the visual effects of the Scheme, which includes the area around Cranford Park.</p>
<p>4.2.2</p> <p>Having regard to the positioning of new gantries and the emergency refuge areas (ERA) in proximity to Harlington Village Conservation Area and the Church of St Peter and St Paul, what additional shrub and tree planting can be provided to mitigate the introduction of the gantries and the impact of bringing traffic closer to the heritage assets?</p>	<p><i>The nearest proposed gantries either side of the St Peter's subway include G1-03, G1-07 and G-11 (south side / west-bound) and G1-08 and G1-09 (north side, east-bound). Due to the height and scale of the gantries, they will be impossible to screen from view from all viewpoints outside the motorway corridor. To some extent views may be filtered from some vantage points by existing (retained) vegetation and built structures.</i></p> <p><i>Gantry G1-07 lies due north of the church and will be highly visible. There is very limited space behind the gantry, within the motorway corridor, to provide adequate screening. At a lower level fencing along the boundary would reduce some of the visual impact. Planting around / behind the gantry would help to filter</i></p>	<p>Highways England considers that it is not proportionate to require it to entirely screen from view all five gantries highlighted by the London Borough of Hillingdon from all viewpoints outside the motorway corridor. Highways England's assessment shows that from the most important views (i.e. high sensitivity visual receptors such as residential properties, users of Parks and Gardens and from the Public Rights of Way) the Scheme would not give rise to significant residual visual effects.</p> <p>Highways England has carried out an assessment of visual effects associated with each gantry, which has informed the following comments on each of the five gantries mentioned by the London Borough of</p>

Question No	<i>LB Hillingdon Comment</i>	Highways England Comments
	<p><i>views over time.</i></p> <p><i>The filtering of views of G1-09 viewed from Harlington Village to the south could be enhanced by additional woodland planting on Council- owned land directly opposite, between St Peter's Close and the motorway.</i></p> <p><i>In addition to this, the long distance oblique views could be enhanced by providing longer stretches of woodland planting between the carriageway and the motorway boundary, for example between G1-07 and G1-11. - If this is not feasible, off-site planting to the south of the motorway boundary should be considered.</i></p> <p><i>Lower level views and the blocking of views of the source of the traffic noise could best be improved by installing acoustic fencing.</i></p> <p><i>The closest ERA's include E1-A1 (south side, west-bound) and E1-B1 (north side, east-bound). These features are relatively low-lying and could be fenced close to the edge of the ERA, with mixed woodland planting between the fence and the motorway boundary (for longer term screening).</i></p> <p><i>The approach to the pedestrian subway at the north end of St Peters Way provides uninterrupted exposure to the motorway traffic and source of traffic noise. This is a problem shared with St Dunstan's and several other pedestrian underpasses. These gaps in the fencing would benefit from the installation of acoustic barriers. The barriers could be</i></p>	<p>Hillingdon in its response:</p> <p><u>Gantry G1-03, Type 4 and 9.4m high (West Bound)</u></p> <p>This Gantry, located immediately to the east of and in the context of the Warrington Road overbridge, would not be visible from high sensitivity visual receptors resulting in a neutral visual effect.</p> <p><u>Gantry G1-07, Type 3 and 12.4m high (West Bound)</u></p> <p>Highways England agrees that Gantry G1-07 would result in a residual effect of slight adverse on views from some residential properties, as well as from the west end of the churchyard of St Peter & St Paul Church. (See Highways England's comment to the London Borough of Hillingdon's written response submitted at Deadline V (REP5-005)). At paragraph 3.16 of the SoCG with Historic England, it is agreed that no impacts to the setting of the Church of St Peter and St Paul are anticipated, and therefore no mitigation is assessed to be required.</p> <p><u>Gantry G1-08, Type 4 and 10.4m high (East Bound)</u></p> <p>This gantry is located away from high sensitivity visual receptors and is considered to have a neutral visual effect.</p> <p><u>Gantry G1-09, Type 3 and 12.8m high (East Bound)</u></p>

Question No	<i>LB Hillingdon Comment</i>	Highways England Comments
	<p><i>staggered in such a way as to close the gap so that the view is blocked while continuing to provide pedestrian access.</i></p> <p><i>It should be borne in mind that planting alone will not provide an acoustic barrier and will take years to provide a filtered visual screen, the effectiveness of which will on the species mix and width of planting.</i></p>	<p>With reference to Photomontages 30 and 31, which were submitted to the London Borough of Hillingdon on 14 September 2015, this gantry would form a barely perceptible feature in the winter view from residential properties on St Paul’s Close resulting in a slight adverse residual effect.</p> <p><u>Gantry G1-11, Type 3 and 11.7m high (West Bound)</u></p> <p>This gantry is located approximately 450m west of the Harlington Village Conservation Area and although it may potentially be seen in some long distance views from the west edge of the Conservation Area, when seen in the context of intervening elements and the urban skyline beyond, it would form a barely perceptible feature in the view.</p> <p>Highways England notes that the London Borough of Hillingdon describes the Emergency Refuge Areas (“ERAs”) as “relatively low lying”. Highways England considers that the ERAs would be relatively inconspicuous features and would be used by vehicles very occasionally. The two ERAs are located away from high sensitivity visual receptors and so their presence and occasional usage is considered to have a neutral visual effect.</p> <p>Highways England confirms that the northern end of Harlington Village at St Peter’s Subway was assessed as part of the enhanced noise mitigation study. Based on the results of the</p>

Question No	<i>LB Hillingdon Comment</i>	Highways England Comments
		<p>enhanced noise mitigation study (Ref 514451-MUH-00-ZZ-RP-EN-400158) (REP5-002), Highways England proposes to provide a new 323m long, 2.5m high noise barrier at St. Paul's Close, Harlington, as detailed on Sheet 15 of Appendix E to the Enhanced Noise Mitigation Study Report. The provision of this mitigation will provide further noise decreases to properties in Harlington, in addition to the negligible to minor noise decreases on Scheme opening (without enhanced mitigation) presented on Sheet 15 of Drawing 12.4 of the ES (Application Document Reference 6-2, APP-268).</p> <p>The new barrier will help to screen most traffic other than high sided vehicles in a number of views out of the Harlington Village Conservation Area. Therefore, Highways England's preference, when considering the context of its vegetated setting, is to use a timber barrier, which would provide an additional visual benefit in some views from Harlington Village Conservation Area and its setting, as well as reducing M4 traffic noise within parts of it.</p> <p>Given the visual effects described above, Highways England does not consider it proportionate or necessary to provide further mitigation through the provision of screen fencing or off-site planting to further mitigate the visual effects of the Scheme.</p> <p>Highways England recognises that planting</p>

Question No	<i>LB Hillingdon Comment</i>	Highways England Comments
		<p>does not provide acoustic screening. In relation to visual screening, Highways England considers (based on its experience of other road schemes) that new tree planting using native species to the locality, and which is greater than 10m in width (Design Manual for Roads and Bridges (“DMRB”), Volume 10 Good Roads Guide, HA56/92), can take up to 15 years before it can perform as an adequate visual screen, particularly in summer when the vegetation is in full leaf. Visual screening in winter will depend on the amount of evergreen plants in the mix and the depth of the planting. Usually evergreen species comprise between 15 and 25% of the overall species mix. DMRB does not provide any advice on the depth of planting for a winter screen, but this would have to be in excess of 10m, otherwise there would be filtered winter views through the winter canopy.</p>
<p>4.2.3</p> <p>The potential for off-site planting to replace planting lost as a result of the scheme and to provide enhanced environmental mitigation was discussed at the issue specific hearing dealing with matters relating to the environment, and London Borough of Hillingdon (LB Hill) has identified locations with the potential for off-site planting to provide improvements to visual amenities EV-015 & EV-021. Highways England (HE) indicated that this could be dealt with by means of s253 agreements with land owners. However, there is no means by which</p>	<p><i>Principle of Off-site Planting:</i></p> <p><i>Where there will be unavoidable adverse visual, or acoustic, impact on residents, every opportunity should be taken to provide mitigation measures. If there is limited space within the motorway corridor and off-site measures cannot be secured, a combination of acoustic barriers and /or green walls should be installed.</i></p> <p><i>There are various types of acoustic barriers available including the traditional 'Buffalo' (solid timber) fencing, typically used on British</i></p>	<p>There are no significant adverse noise impacts predicted as a result of the operation of the Scheme. As reported in Chapter 12 of the Environmental Statement (“ES”) (Application Document Reference 6-1, APP-152), the magnitude of impact of the Scheme on ambient noise is minor beneficial in the short term and negligible in the long term, with the vast majority of the Scheme corridor experiencing negligible or minor reductions in noise levels with the Scheme in operation.</p> <p>It is noted in paragraph 12.4.112 of the ES (Application Document Reference 6-1, APP-</p>

Question No	<i>LB Hillingdon Comment</i>	Highways England Comments
<p>such agreements could be secured through the draft Development Consent Order (dDCO), and therefore the Secretary of State (SoS) could not be satisfied that any off-site planting would be achieved.</p> <p>Could a requirement be added to the dDCO for a scheme of off-site planting to be agreed with the relevant local planning authorities before the M4 Smart Motorway (M4SM) is brought into operation, with an appropriate implementation clause included, or is this a matter which could be secured through a Development Consent Obligation?</p>	<p><i>motorways. More recent developments in acoustic barriers include a coir covered fence, by Koko Systems (which can support climbing plants) and Gramm Barrier Systems which incorporates a mix of absorptive concrete and transparent sections.</i></p> <p><i>There are also many types of green wall available where space for denser planting is restricted. Some types of green wall (such as Devon banks) can also absorb noise.</i></p> <p><i>As described in 4.2.1, acoustic barriers create their own visual impact depending on their height, materials used, local topography and nearby vegetation. The selection of suitable acoustic barriers requires specialist advice in conjunction a landscape consultant regarding planting and the visual impact / landscape contribution of the barrier. These details should be subject to the agreement of the local planning authority.</i></p>	<p>152) that there is the potential to improve further the noise climate within the Scheme corridor through enhanced mitigation.</p> <p>The results of the enhanced noise mitigation study were provided with the submission at Deadline V (REP5-002). The barrier provision in the Hillingdon area is detailed within Appendix E of the Enhanced Noise Mitigation Study Report (Ref 514451-MUH-00-ZZ-RP-EN-400158). Sheets 14 and 15 are relevant to this area. The recommendation comprises additional noise barriers and the replacement of existing noise barriers with higher noise barriers.</p> <p>Highways England acknowledges that acoustic barriers can create their own visual impact. This has been considered in the assessment of the visual impact of the Scheme. With reference to the visual impact assessment in Appendix F of the Enhanced Noise Mitigation Study Report (Ref 514451-MUH-00-ZZ-RP-EN-400158) (REP5-002), Highways England considers that the three barriers within the Borough of Hillingdon (References EM32, EM33 and EM34), because they provide screening to most traffic on the M4 and are seen in the context of adjacent existing vegetation and/or new planting as it establishes overtime, would mostly result in a residual visual benefit, or at worst for a short section of EM32, a neutral visual effect when compared to the present situation. On this basis, Highways England does not consider that the proposed barriers would result in an</p>

Question No	<i>LB Hillingdon Comment</i>	Highways England Comments
		<p>unavoidable adverse effect. Finally, requirement 22 of the draft DCO provides for the Scheme for acoustic barriers to be approved by the Secretary of State in consultation with the relevant planning authorities.</p> <p>With regards to noise barrier designs and as stated in the response to the comments on question 4.2.1 above, Highways England's preference is to use timber noise barriers, given the colour, finish and weathering of these in to a vegetated urban setting. The installation of these barriers has also been tried and tested on the motorway network in terms of their durability, effectiveness and low maintenance. Highways England considers that timber barriers, in association with existing and or proposed road side vegetation, form relatively unobtrusive elements in the landscape.</p> <p>Highways England cannot commit to providing transparent panels on barriers. Not all barrier types are designed to allow for a transparent panel at the higher level. Moreover, the visual appearance of transparent noise barriers deteriorates over time as they become obscured by dirt, and there is no provision to clean or maintain transparent fencing panels. As such, use of transparent fencing panels would be prohibitively expensive, and disproportionate.</p> <p>Highways England cannot commit to providing green/living acoustic barriers. First, as living barriers typically have a height limitation of 2.5m, they are not able to act as taller barriers.</p>

Question No	<i>LB Hillingdon Comment</i>	Highways England Comments
	<p><i>Securing Off-site planting:</i></p> <p><i>At a meeting held with the applicants on 21st December 2015, the mechanism for securing off-site tree planting through S253 of the Highways Act 'Agreement as to use of land near highways' was briefly discussed.</i></p> <p><i>It is understood the provision under the Highways Act that the applicants intend to implement would require a land owner to 'give up' the strip of land which was offered for any off-site planting under the Act, impacting upon the land ownership of the residential property.</i></p> <p><i>The provisions under S253 appear to be overly restrictive and onerous and are likely to deter residents from taking up the opportunity to have off-site planting within their site, especially as this will impact upon land ownership rights and the buying and selling of the property in the future. This is likely to be a significant deterrent to securing any off-site planting for residents.</i></p> <p><i>The Council wish to go back to the suggestion</i></p>	<p>Second, as they require some form of irrigation system to ensure their survival through dry periods and annual trimming, the maintenance commitments associated with a living barrier would not be proportionate or appropriate for the operational requirements of the motorway. Further, additional maintenance activities such as these may lead to decreased road worker safety due to the potential additional site visits required to carry out the maintenance.</p> <p>Highways England agrees that a section 253 agreement is not appropriate, as explained in its responses to the Examining Authority's second written questions, submitted at Deadline V.</p> <p>However, Highways England disagrees with the submission that it should be required to offer planting in the gardens of Hillingdon residents. Highways England considers that such mitigation is neither required, appropriate nor proportionate.</p> <p>The obligation is inchoate, and open-ended. Such planting would be outside the Order limits, and cannot be controlled through the mechanism of the DCO. Nor can it be provided by way of a Development Consent Obligation, which is an agreement that is entered into between Highways England and a relevant local planning authority. It is therefore not a mechanism whereby local residents can be offered the opportunity to accept planting in their gardens.</p> <p>Further, Highways England does not consider</p>

Question No	<i>LB Hillingdon Comment</i>	Highways England Comments
	<p><i>made at the Hearings held in Nov 2015, whereby a Development Consent Obligation would be a more appropriate mechanism, whereby residents were offered the opportunity to accept planting in their gardens, should they wish to take it, without any implications on the land ownership rights/deeds etc.</i></p> <p><i>This is a planning mechanism which is a viable solution, whereas the S253 procedure appears to be a mechanism which would deter rather than encourage take up.</i></p>	<p>that it is appropriate to use taxpayer money to subsidise residential garden planting, particularly in circumstances where the environment impact assessment of the Scheme has concluded that no such planting is required to mitigate the effects of the Scheme.</p>
<p>4.2.4</p> <p>What mitigation measures can be put in place for properties in Keats Way where vegetation would be lost to rear gardens? Can acoustic barriers be replaced with a type which would support plants, with transparent upper panels?</p>	<p><i>The provision of acoustic barriers with transparent upper panels is supported.</i></p>	<p>For the reasons set out in Highways England's response to the Examining Authority's Second Written Question 4.2.4, and repeated above, Highways England does not agree that transparent upper panels on acoustic barriers should be provided on the Scheme.</p>
<p>4.2.6</p> <p>Fencing opposite to Savoy and Cleave Avenues and Cranford Drive allows for views directly onto the M4. LBHill request higher fences with off-site planting, or alternatively a type of fence which would support planting, with transparent upper panels REP4-038.</p> <p>Is there any reason why such provision could not be made?</p>	<p><i>Refer to notes above (4.2.3).</i></p> <p><i>In these locations there is a narrow public footpath which lies between the motorway boundary and a chain link fence. There will only be adequate space for the replacement of the existing timber fence with a new slim line acoustic barrier - probably without plants growing on it. If a higher barrier is required it could make the footpath space quite oppressive and the use of transparent panels at a higher level would be ideal.</i></p> <p><i>To the north of the footpath there is an intermittent line of trees, including evergreen conifers situated along the edge of a wide area</i></p>	<p>The results of the enhanced noise mitigation study were provided with the submission at Deadline V. The confirmed barrier provision in the Hillingdon area is detailed within Appendix E of the Enhanced Noise Mitigation Study Report (Ref 514451-MUH-00-ZZ-RP-EN-400158) (REP5-002). Sheet 15 is relevant to Savoy Avenue, Cleave Avenue and Cranford Drive. The recommendation in this area is the provision of a new 3.5m high noise barrier.</p> <p>The new barrier would help to screen traffic in views from the adjacent residential properties. Highways England considers that this barrier would provide visual benefit as well as reduce</p>

Question No	<i>LB Hillingdon Comment</i>	Highways England Comments
	<p><i>of Council-owned land. Off-site planting on the Council land would be feasible and is desirable.</i></p> <p><i>Aside from financial reasons, there is no reason why higher fencing with transparent upper panels and off-site planting cannot be provided in order to mitigate against the impacts of this development on local residents.</i></p>	<p>traffic noise from the motorway for these properties. However, whilst Highways England recognises that a new 3.5m high barrier immediately adjacent to an existing footpath might be initially viewed as a dominant new structure, the visual impact of the barrier is assessed as neutral or beneficial as it would screen the motorway and traffic noise. For the reasons set out above, Highways England is unable to provide transparent panels. In any event, in this location, transparent panels on the upper part of the barrier, would not noticeably diminished the barrier structure from the footpath in views.</p> <p>With reference to the visual impact assessment, in Appendix F of the Enhanced Noise Mitigation Study Report (Ref 514451-MUH-00-ZZ-RP-EN-400158) (REP5-002), Highways England concludes that the new barrier (Reference EM33), because it provides screening to most traffic on the M4 and would be seen in the context of adjacent existing vegetation, would result in a residual visual benefit from residential properties. In relation to the view from the adjacent footpath, the assessment is that although the barrier would be a dominant element along its south side, it would block views to the M4 and its traffic, and the filtered northerly views from the footpath to the adjacent open space and to the residential properties would remain unaffected. As a consequence, it is considered the barrier would have a neutral effect on the view from</p>

Question No	<i>LB Hillingdon Comment</i>	Highways England Comments
		<p>the footpath.</p> <p>As noted above, Highways England does not agree that off-site planting is appropriate in the context of a DCO. Even if off-site planting was available at this location, it would provide no additional screening of the Scheme or the barrier to that already provided by intervening vegetation. Further, such vegetation is likely to increase visual containment, resulting in potentially reduced surveillance from the adjacent houses and open space and consequently a reduction in safety for users of the footpath which would run adjacent to the barrier.</p>
4.3 Flooding		
<p>4.3.1</p> <p>Can the applicant confirm that the following documents will be submitted at Deadline V without fail, or sooner if possible? These documents should be discussed and agreed with the relevant statutory authorities.</p> <ol style="list-style-type: none"> i. Updated Flood Risk Assessment ii. Updated Drainage Strategy Report 	<p><i>The Council are still awaiting an updated FRA and therefore all comments issued with regard to Flooding by London Borough of Hillingdon (LBH) are still relevant.</i></p>	<p>A copy of the updated Flood Risk Assessment (“FRA”) and Drainage Strategy Report (“DSR”) were issued at Deadline V (REP5-002).</p> <p>The main updates to the FRA are as follows:</p> <ul style="list-style-type: none"> • Supplementary description of hydraulic links to floodplain compensation storage areas and a new set of plans (Annex I) illustrating these links in outline. • Assessment of flood risk to construction compound sites and mitigation proposals for the two compounds (Nos. 5 and 7) found to be partially located in the floodplain defined by the 1 in 100 year flood event plus an allowance for climate change.

Question No	<i>LB Hillingdon Comment</i>	Highways England Comments
		<ul style="list-style-type: none"> • Additional information regarding securing flood mitigation works, including reference to a new Requirement (No. 26) in Schedule 2 of the draft DCO. <p>The DSR has been updated to provide an assessment of the feasibility of the provision of above ground SuDS both within the Order limits, and on lands outside the Order limits offered for this purpose by the London Borough of Hillingdon and Buckinghamshire County Council.</p> <p>Highways England considers that all comments raised by the London Borough of Hillingdon with regard to flooding are addressed in the Deadline V submission and will seek a meeting to discuss the revised FRA and DSR reports with them prior to Deadline VII, so that both parties can advise the Examining Authority on the latest position at Deadline VII.</p>
4.5 Air Quality		
<p>4.6.2</p> <p>Reliability of the HE assessment.</p> <p>Can the applicant explain the relationship between the forecasts of traffic flows on the M4SM and the assessment of air quality impacts? Can the applicant also provide the following information:</p> <p>i. Does the air quality assessment use the same base year for traffic data as the traffic forecasts?</p>	<p><i>LBHill support these requests. Having sufficient information to understand the accuracy of the assumptions used in regard to the traffic data is an important part of reviewing the accuracy of the air quality assessment.</i></p>	<p>Highways England submitted a full response to this question for Deadline V (REP5-004).</p>

Question No	<i>LB Hillingdon Comment</i>	Highways England Comments
<p>ii. Is the base year traffic flow in each forecast based on real life surveys? If not, what is it based on?</p> <p>iii. Are the traffic levels from the traffic forecasts for do minimum and do something at the opening year (2022) those used in the air quality assessments?</p> <p>iv. Does the air quality assessment use the same vehicle fleet composition as in the traffic forecasts? What is the vehicle fleet composition for the base year, and the do minimum and do something 2022 scenarios?</p> <p>v. Can the applicant explain any additional or amended assumptions from those used in the traffic forecasting (such as the rate of fuel consumption) which are used for the air quality forecast, or any change in the data sets used in the air quality forecasts such as for the composition of the vehicle fleet?</p>		
<p>4.6.5 Implications for future AQMAs. Evidence is submitted by LBHill REP2-060 and Slough BC REP2-047 of receptors which are forecast to experience levels of NO₂ very close to or above the annual mean UK air quality objective (the EU limit of 40µg/m³). No forecast can be assumed to be entirely secure, and with the current doubt as</p>	<p><i>As reported in Prof Laxen's Review Air Quality Assessment of M4 Smart Motorway in Hillingdon, para 4.1 page 7, there must be some considerable uncertainty over future concentrations of nitrogen dioxide to which residents living near the M4 motorway in Hillingdon will be exposed. It is of utmost importance to LBHill that appropriate</i></p>	<p>All assessments of air quality which consider the future situations will inherently include a measure of uncertainty. However, the air quality assessment for the Scheme minimises this uncertainty by producing predictions for a realistic worst case scenario. This was achieved through the use of detailed traffic projections, detailed air quality modelling, model</p>

Question No	<i>LB Hillingdon Comment</i>	Highways England Comments
<p>to the reliability of Euro 6/VI vehicles, the ExA is concerned that the future pollution climate along the M4, which passes through existing AQMAs, is uncertain. An uncertainty of 10%, as suggested by Ricardo REP4- 034, could for example lead to increase of 4 µg/m³ of NO₂ in locations which are at the EU limit. This increase could result from either an underestimate of traffic levels or the level of emissions, but for those receptors in areas already just below or just above the EU limit, there would be a harmful level of exposure to NO₂.</p> <p>What assurance can HE provide that harmful increases in emission levels will not occur?</p>	<p><i>mitigation is properly considered should the predictions the HE are relying upon to improve air quality not occur in reality.</i></p>	<p>verification and long term trend predictions. This approach was based on relevant best practice approaches as set out in the DMRB, associated Interim Advice Notes (“IANs”), and supplemented, where relevant, with Department for Environment, Food and Rural Affairs (“Defra”) local air quality management guidance and tools. As a result, the Examining Authority can be confident in the approach to assessment which Highways England has adopted, which is consistent with national and precedented standards.</p> <p>On the basis of the air quality assessment undertaken for the Scheme, which follows published best practice guidance on both the adjustment of Emissions Factor Toolkit (“EFT”) based predictions to account for uncertainty in future NO₂ concentrations (IAN170/12v3), and the judgment of significant air quality effects (IAN174/13), Highways England does not consider that there is a need for air quality mitigation measures, as explained fully in its response to the comments on questions 4.6.8 below.</p>
<p>4.6.8</p> <p>Future proofing the M4SM. The applicant’s position is that there is no need for air quality mitigation measures, and in any event that there is little evidence of effective mitigation measures. However, Ricardo REP4-034 provides evidence of barriers which have been tested and used for air quality mitigation. We</p>	<p><i>LBHill fully support the preparation of a detailed mitigation strategy. It looks forward to receiving proposals from HE and entering into discussions.</i></p>	<p><u>AQ Monitoring and Mitigation Request</u></p> <p>A number of consultees have asked the Examining Authority to include a requirement in the DCO that requires monitoring and applies a trigger level be placed on the Scheme whereby if the concentration is triggered in the monitoring, mitigation is required.</p> <p>As a first principle, it is important to note that</p>

Question No	<i>LB Hillingdon Comment</i>	Highways England Comments
<p>note the argument that an increase in the height of barriers would cause visual amenity impacts, but there are examples of transparent barriers and the use of planting which would reduce such impacts. In any event, we consider that local authorities, on behalf of their local communities, should be given the opportunity to choose between air quality or visual impacts.</p> <p>HE in its Delivery Plan 2015-2020 REP4-005 commits 'to invest in a range of projects to reduce pollution and ensure the air around the network is clean and healthy for our customers and neighbours.' This also states that it will 'develop an air quality action plan setting out our activities for the next five years.'</p> <p>Furthermore the NN NPS states at paragraph 5.12 that the SoS must give air quality considerations substantial weight where a project would lead to deterioration in air quality in a zone/agglomeration- the NN NPS does not qualify that deterioration. In paragraphs 5.14 and 5.15 it goes on to state that the SoS should consider whether mitigation measures put forward by the applicant are acceptable and gives examples of mitigation measures including 'physical means including barriers to trap or better disperse emissions and speed control' Having regard to submissions on behalf of Slough BC and other IPs concerning the uncertainty of the modelled levels of air pollution from the scheme, we consider that provision should be made for the monitoring of air quality by HE along the route of the M4SM</p>		<p>the policy for the inclusion of air quality mitigation is not triggered under the NN NPS in respect of the Scheme. As seen for the A556 scheme, the Examining Authority accepted that an air quality 'trigger' was appropriate on that scheme as the scheme triggered a significant air quality impact and required mitigation. In this instance, the air quality assessment for the M4 Scheme concludes that the impact of the Scheme is not significant and does not affect compliance with the Air Quality Directive ("AQD").</p> <p>Consequently, the policies set out in the NN NPS around mitigation are not triggered, and there is no need to include mitigation as part of the Scheme or require air quality monitoring. To require Highways England to provide costly monitoring would be disproportionate in circumstances where no significant effect on air quality is anticipated as a result of the Scheme and where the Scheme does not affect the UK's reported ability to comply with the AQD.</p> <p>Environment Impact Assessment ("EIA") concerns the assessment of likely impacts. In this case the assessment is based on assumptions at the time of the preparation of the EIA with respect to guidance and assumptions assumed in the traffic modelling (the basis of the air quality assessment) assembled in accordance with published standards. As the assessment has been completed in accordance with the current guidance in relation to air quality and traffic modeling, it can properly be</p>

Question No	<i>LB Hillingdon Comment</i>	Highways England Comments
<p>during the periods of pre-construction, construction and operation of the scheme. In the event that monitoring data indicates that the scheme is causing increases to levels of NO₂, then an Air Quality Action Plan should be produced for implementation until such time as air quality levels are improved.</p> <p>We therefore invite the applicant to prepare, in consultation with the relevant local planning authorities, a requirement to be included within the dDCO which provides for the following:</p> <ol style="list-style-type: none"> <li data-bbox="264 651 806 887">i. A monitoring strategy for NO₂ detailing monitoring points, methods of measurement and levels of concentration which would trigger action, to be approved by the SoS and implemented at least 6 months prior to the commencement of development. <li data-bbox="264 906 806 1241">ii. In the event that the trigger levels are exceeded, a scheme for the management of the M4SM which could include restriction of traffic speeds, restricting traffic flow from feeder junctions, restricting access to the route for specific classes of vehicle, or other measures to be submitted to the SoS for approval and implemented within 3 months of such approval. <li data-bbox="264 1260 806 1390">iii. In the event that the management measures are not sufficient to reduce the air quality levels below the trigger value, a scheme for retrofitting physical 		<p>concluded that the outcomes of the assessment are based on the most reasonable, reliable and robust information available at the time of assessment.</p> <p>It would be unreasonable to place burdens upon a Scheme which had been assessed, in accordance with national guidance, as not requiring the provision of such measures. To do so would be to undermine the promulgated guidance upon which Highways England, the devolved administrations and other highways authorities rely.</p> <p>This is particularly the case for a scheme located on the strategic road network ("SRN") where developments other than the Scheme can affect the flow of traffic, and therefore air quality, on the SRN from a large geographical area over which Highways England has no control or authority. In effect, if a trigger for the implementation of mitigation was included as a requirement in the DCO, Highways England would be potentially liable to find and fund mitigation measures to mitigate the air quality effects of other schemes by third party developers that impact on the M4 over which Highways England has no control. This an unreasonable and disproportionate requirement to place on a body funded by tax payers' money.</p> <p>It should be noted that policy is supported where a distinction can be made between cases where migration is required by policy and</p>

Question No	<i>LB Hillingdon Comment</i>	Highways England Comments
<p>measures such as air quality barriers should be submitted to the SoS for approval and implemented within 6 months of approval. The measures to be included in this scheme should be in accordance with Best Practicable Environmental Options (BPEO) to ensure future proofing of the scheme.</p> <p>The requirement should provide for the applicant to prepare each scheme or plan set out above in consultation with the relevant local planning authorities and other appropriate interested parties.</p> <p>(2 Reference is made to the SoS as discharging body. In the event that another discharging body is identified for the dDCO requirements, that body should be identified in the requirement. If the SoS is the discharging body rather than relevant local authorities, full consultation with the local authorities must be provided for.)</p>		<p>where it is not, thus where Highways England have assessed schemes as having a significant impact on air quality, for example the A556 scheme, then air quality monitoring is being installed to provide evidence as to when mitigation measures can be removed and the preferred operation regime can commence. However, absolute trigger levels have not been proposed in these circumstances. Rather, results would be used as part of assessing when the schemes' impacts are unlikely to be significant.</p> <p>The Examining Authority and others have sought the use of trigger levels for the application of mitigation. This is not appropriate because:</p> <ol style="list-style-type: none"> 1. the basis for applying mitigation is not clear. No significant effects are predicted (unlike for the A556), and the assessment of compliance with the AQD is assessed on a level higher than locally; 2. the A556 approach is not applicable since that scheme was assessed to result in a significant impact in air quality, thereby resulting in a need for mitigation. No significant impact has been assessed for the M4 Scheme; 3. there are no mechanisms by which a mitigation measure can be applied from time-to-time as opposed to consistently. Further, no effect to be mitigated is identified and no policy requirement

Question No	<i>LB Hillingdon Comment</i>	Highways England Comments
		<p>applies; and</p> <p>4. there is no mechanism to identify non-scheme-related effects so that any duty of mitigation falls legitimately on those causing effects.</p> <p><u>Certainty of assessment</u></p> <p>The air quality assessment for the Scheme followed published best practice guidance and datasets when calculating NO2 concentrations at receptor locations. The methodology for model verification, which compares measured values with modelled values, demonstrates that the model is performing within acceptable bounds.</p> <p>Recognising the uncertainty associated with calculation of NO2 concentrations in the future, the calculation of opening year concentrations also followed published best practice guidance set out in IAN170/12. This method uses measured trends in roadside air quality, and conservative assumptions in relation to Euro 6/VI performance, to uplift future year predictions produced by the Defra toolkit. The purpose of this is to ensure that the air quality model outputs used to determine the potential significance of local air quality impacts due to the Scheme are precautionary and take account of anticipated uncertainty. Consequently, there is no need to account for any further uncertainty since the assessment already provides for it.</p> <p>The acceptability of the general approach</p>

Question No	<i>LB Hillingdon Comment</i>	Highways England Comments
		described above is demonstrated when considering the evidence from Slough BC and Mr Hamilton, who request that to account for uncertainty, locations with modelled concentrations of 36 µg/m ³ should be interpreted as exceedences of the NO ₂ annual air quality objective (40 µg/m ³). It is noted that this would be inconsistent with Ricardo’s own recommendations to Slough BC when identifying whether to declare an AQMA. For example, in their 2013 Detailed and Further Assessment Report, a measured concentration of 37.8 µg/m ³ at a property (corrected for distance) was not deemed sufficient to necessitate declaration of an AQMA because it was not in exceedance of the objective (http://www.slough.gov.uk/downloads/air-quality-detailed-further-assessment-2011.pdf).
4.7 Noise and Vibration		
<p>4.7.1</p> <p>Hours of Working and Construction Activity. Re question 4 in the noise and vibration hearing (EV-008), which asked if the local authorities were satisfied with the mechanism proposed by the applicant to control hours of working and construction activities, LBHillREP4- 033/038 raised a number of points, including the mechanism for ensuring adequate consultation with local authorities on the CEMP prior to the applicant’s proposed approval by the SoS, the need to ensure that the final CEMP is in place before work commences on site, and the need for</p>	<p><i>The Council are aware that the applicants are revising their dDCO for submission in Jan 2016. However the current proposed dDCO is not considered sufficient as there is no level of consultation on local matters/impacts, including noise, this objection in principle to the dDCO also relates to other matters which the local authority are not party to (CEMP etc).</i></p>	<p>The revised version of the DCO submitted at Deadline V has included measures for the consultation of the relevant planning authorities in the discharge of requirements, including those relating to the control of noise, the provision of acoustic barriers and the preparation of the Construction Environmental Management Plan (“CEMP”).</p>

Question No	<i>LB Hillingdon Comment</i>	Highways England Comments
<p>clarification on working hours at weekends.</p> <p>With the SoS as the approval authority proposed by the applicant for the dDCO requirement on the CEMP (and other requirements), how will the applicant secure an appropriate level of consultation with the local authorities in the dDCO?</p> <p>To what extent does the applicant accept LBHill's proposals with regard to working hours at weekends, and how will these proposals be secured in the dDCO by means of the CEMP?</p>		
<p>4.9 Effects on travellers (including Traffic Forecasting)</p>		
<p>4.9.7 Uncertainty in Forecasting. Re question 14 in the traffic forecasting hearing (EV-008), which referenced Section 4.4 of the HE Traffic Forecasting Report concerning the treatment of uncertainty in forecasting, the responses of some affected and interested parties at Deadline IV, notably BCC REP4-027 , LBHill REP4-033/038 have indicated that they were not convinced by the local modelling.</p> <p>What is the current status of dialogue between these parties and the applicant, and what issues remain unresolved?</p>	<p><i>A meeting was held with the applicants on 21st December 2016 and further information was issued to LBH on 24th December 2015, however due to annual leave this was not received by Officers until 4th January 2016. On the 6th January, Officers advised the applicants consultant on 6th January that despite numerous attempts, the files were not able to be accessed and had been passed to specialist to download.</i></p> <p><i>As such, the council is unable to provide any details/update with regard to the additional information provided to date.</i></p>	<p>At the meeting on the 21 December 2015, Highways England demonstrated an interactive map of the traffic flow plots which Highways England has prepared to enable London Borough of Hillingdon to interrogate and view the changes in forecast flows for Scheme opening and design years for every link in the traffic model network within the borough.</p> <p>The electronic copy of this interactive map was provided to London Borough of Hillingdon and it supplements the detailed traffic information previously issued to London Borough of Hillingdon. The electronic copy was supplied to London Borough of Hillingdon using a software package that London Borough of Hillingdon had advised was used by the Council. A further meeting to discuss the model</p>

Question No	<i>LB Hillingdon Comment</i>	Highways England Comments
		and the software is being arranged between Highways England and London Borough of Hillingdon.
Draft Development consent Order		
First Round Question no. 8.25	<i>The Council are in principle supportive of the proposed change to this requirement, however we await the further dDCO to be able to comment on its appropriateness in full.</i>	Highways England submitted a full response to this question for Deadline V (REP5-004).
First Round Question no. 8.28	<i>The council support the request for clarity on the content of this Requirement, which has a degree of ambiguity in its current drafting.</i>	Highways England submitted a full response to this question for Deadline V (REP5-004).
First round question no. 8.29	<i>The Local Authority have already identified areas of land which could be used to introduce SUDs. Given the limits of the application/Order, it is considered that a Development consent Obligation is the most appropriate mechanism to secure off-site SUDs.</i>	Highways England submitted a full response to this question for Deadline V (REP5-004).
Compulsory acquisition and other land matters		
<p data-bbox="248 1042 398 1074">Question 9.1</p> <p data-bbox="248 1094 819 1257">Can the applicant confirm that the arrangements for limiting the extent to which the Sipson Road subway is closed can be incorporated into the CEMP as requested by LB Hill at Deadline IV REP4-033?</p> <p data-bbox="248 1281 763 1378">Where there is a reduction in powers of temporary possession at Vine Close/Sipson Road subway can this be shown in updated</p>	<i>The Council support the request for clarification of how the applicant seeks to maintain pedestrian access via Sipson Road subway and the mechanism by which this will be secured.</i>	As set out in section 5.3 of the Construction Environmental Management Plan (“CEMP”) submitted at Deadline V (REP5-002), appropriate construction techniques and design details will be adopted to minimise the number of closures. Closures at weekends, evenings and over school holidays will be adopted to minimise disruption. Communication will be maintained with local communities and their representatives with regards to planning and

Question No	<i>LB Hillingdon Comment</i>	Highways England Comments
Land Plans?		<p>minimising closures.</p> <p>Highways England is continuing to develop the design details and the detailed construction planning. The intent is to minimise the overall extent and duration of temporary land acquisition and pedestrian access will be maintained between Vine Close and Sipson Road at all times during construction. The CEMP has been updated to include this requirement (paragraph 5.3.4). However, to maintain flexibility of construction methods, and to enable protection and management of pedestrian movement, the extent of temporary compulsory acquisition in the vicinity of Vine Close and Sipson Road will be maintained as shown on the Land Plans.</p> <p>This is necessary to isolate and protect pedestrians from the works by fencing off adjacent pedestrian routes. To enable such fencing to be constructed, it may be necessary to first provide a temporary pedestrian diversion along the west side of Sipson Road.</p>

APPENDIX A- IMPACT ON CRANFORD PARK- COMMENTS ISSUED AT DEADLINE IV

E – Visual Impact	<i>LB Hillingdon Comment</i>	Highways England Comments
<p>1. In the applicant’s response to FRQ, information is provided on the location and height of signs and gantries REP2-002, Section 4 Appendix C. Does this information assist IPs in their consideration of potential visual impact from the scheme?</p>	<p><i>The information does provide some assistance in understanding the visual impacts, however, there remains one area of concern in relation to Cranford Park.</i></p> <p><i>Following the Inspector's site visit, the London Borough of Hillingdon has provided additional visual information on the impact of the M4 Motorway on the setting of Cranford Park and its listed buildings. Sheet 1 shows the Cranford Park Conservation Area boundary, the location of the listed buildings and highlights existing viewpoints, from where traffic is already visible and considered detrimental to the setting of the historic assets. From the Cranford underpass west, the use of the hard shoulder will bring traffic closer to the buildings and the walled garden (figs 1.3- 1.6). The London Borough of Hillingdon considers that the additional low level and ineffective timber barrier should be upgraded along the boundary with the park (fig 1.6); this should be raised up to 4m in height together with additional planting. Screens should be attached to the concrete southern face of the underpass to safeguard the setting of the Stables (figs 1.0 and 1.2) and low level planting, or low screening installed along the existing barrier line of the slip road, to obscure views of the traffic currently visible from the footpath to the rear of St Dunstan's Church and the boundary of the park (fig 1.1). These are views</i></p>	<p>The comments from the London Borough of Hillingdon focus on existing views of traffic from the northern boundary of the Cranford Park Conservation Area and associated listed buildings. While Highways England accepts that the traffic on the M4 is visible from close to the boundary of the conservation area, the views of traffic are shielded from most of the Park and listed buildings due to the extensive planting in and around the Park, as shown in photomontages 40, 41 and 53 to 67 provided in Appendix A to the Response to the Examining Authority’s Second Written Questions (REP5-004).</p> <p>Highways England's assessment that the Scheme has minor adverse impacts on the conservation area and associated listed buildings is appropriate, as the relocation of traffic slightly closer to the highway boundary plus the new gantries and ERAs will not materially affect the integrity of the conservation area as a whole and only result in modest changes in landscape setting and views from restricted areas of the Park. Historic England accepted the assessment findings in the SoCG with Highways England.</p> <p>Notwithstanding the above, Highways England proposes to replace the existing wooden fence with a 2m high noise barrier. This will provide additional noise mitigation over and above that</p>

E – Visual Impact	<i>LB Hillingdon Comment</i>	Highways England Comments
	<p><i>that exist below the level of the existing tree canopy and are highly visible during the day and also at night, when the lights of the moving traffic creates an almost continuous line of illumination.</i></p> <p><i>The Council has provided additional views of the gantry positions (G1-07 and G1-08) in attached Sheet 2. These are views adjacent to the Harlington Village Conservation Area boundary and as noted in the Council's Local Impact Report. Highways England's most recent consideration of the impact of the gantries and refuge E1-A1 on views from within the extended conservation (figs 2.0- 2.3) is not supported by the Council and the view from the rear the Church of St Peter and St Paul (fig 2.4) has not been addressed by them. With regards to these locations, the Council is of the view that the impact of the works is such that it would wish to see additional shrub and tree planting provided, even if this is off site, as the proposed replacement grass seeding would do little to screen views of the new structures and areas of hard surfacing- the latter to be created directly on the boundary of the conservation area.</i></p> <p><i>Please see Appendix B for Sheet no.1 and Sheet no.2 referred to in this section.</i></p>	<p>already offered in the Environmental Statement, and visual screening of the traffic. Consequently, the setting of these heritage assets will be enhanced, in compliance with paragraphs 5.130 and 5.137 of the NN NPS.</p> <p>Highways England considers that the provision of 4m high barriers, as proposed by London Borough of Hillingdon, will create significant adverse visual impacts, which would be disproportionate, given that the Scheme will reduce traffic noise in the opening year and the change in views in traffic and motorway features is minor and restricted to a narrow fringe along the northern border.</p> <p>Further, there are important engineering considerations which need to be taken into account when considering tall barriers. The provision of 4m high barriers would require more extensive foundations than 2m high barriers in order to withstand wind load. Consideration would also need to be given to locating tall barriers further from the motorway, to avoid collision with vehicles in the event of the barrier failing structurally, through a road traffic accident or deterioration of structural components. These considerations mean that the foundation works for a 4m barrier are normally more extensive than a 2m barrier, resulting in the need to clear larger areas of vegetation and in some circumstances earthworks would be required to provide sufficient footing for the foundations. Tall barriers also result in further adverse impacts of views from the road, and</p>

E – Visual Impact	<i>LB Hillingdon Comment</i>	Highways England Comments
		<p>landscape setting and views of receptors outside the highway boundary. Highways England considers that given the lack of need for tall barriers for mitigation, the narrowness of the verge in this area, and the adverse visual effects, that 4m high barriers are not appropriate.</p> <p>Highways England does not propose to plant shrubs and trees behind the new 2m high acoustic barrier as the barrier itself, set in the context of the existing vegetated edge of Cranford Park, would not be a visually intrusive new feature.</p> <p><u>Harlington Conservation Area</u></p> <p>As noted above, it is stated in the Enhanced Noise Mitigation Study Report that Highways England is proposing a 2.5m high fence along the boundary of the Harlington Conservation Area, but is not proposing any additional planting behind the fence. The barrier itself would for the most part be barely perceptible and set in the context of existing vegetation. From locations where it would be visible i.e. in oblique views from the edge of the Conservation Area, it would form a relatively minor new element in the view and the assessment is that it would not be considered visually intrusive.</p>

APPENDIX B – SHEET 1

SHEET 1: Cranford Park Conservation Area and M4
Date of all pictures: 13/11/2015



Fig 1.5: View from footpath adjacent to north of walled garden



Fig 1.6: View from north of walled garden



Fig 1.0: View from south of St Dunstan's underpass/ rear of stables



Fig 1.4: View from walled garden

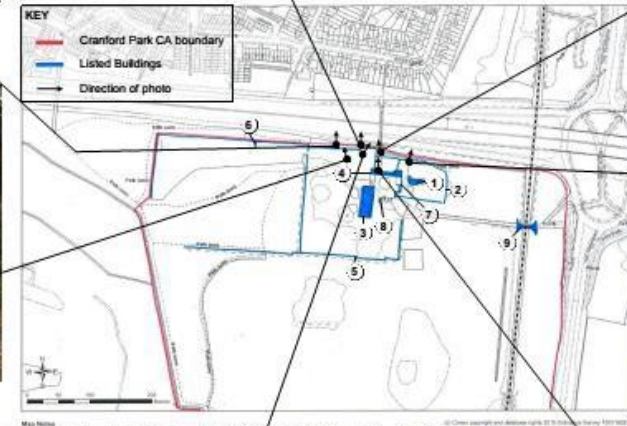


Fig 1.1: Footpath to rear of St Dunstan's Church

- Listed Buildings**
- 1) St Dunstan's Church, Grade II*
 - 2) Walls to the north of stables, Grade II
 - 3) Cellars of former Cranford House, Grade II
 - 4) Cranford House stables, Grade II
 - 5) Ha-Ha walls to south and south west of Cranford House, Grade II
 - 6) Garden walls to west of Cranford House stables, Grade II
 - 7) Wall to south of east end of stables, Grade II
 - 8) Curved wall to south of west end of stables, Grade II
 - 9) Cranford Park bridge, Grade II



Fig 1.3: View from walled garden



Fig 1.2: View from stables

APPENDIX B – SHEET 2

SHEET 2: Harlington Conservation Area and M4
Date of all pictures: 13/11/2015



Fig 2.3: Wooded boundary adjacent to M4 motorway



Fig 2.0: Position of proposed refuge area (E1-A1) where existing vegetation will be removed

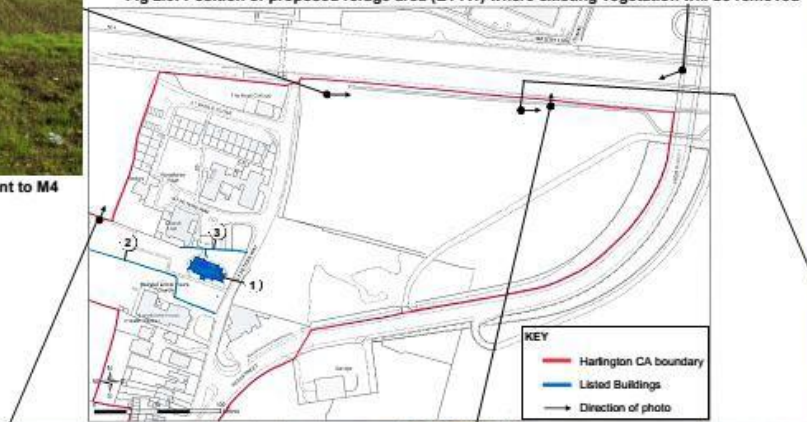


Fig 2.1: Existing trees and low level vegetation



Fig 2.4: Long open view from St Peter & St Paul Churchyard of proposed gantry G1-07



Fig 2.2: Area where vegetation that will be lost and view of proposed gantry G1-08

- Listed Buildings**
- ① Church of St Peter & St Paul, Grade I
 - ② Walls to the south of churchyard, Grade II
 - ③ Walls to the north of Church of St Peter & St Paul, Grade II