

ENVIRONMENT AGENCY

COMMENTS ON EXA'S FIRST WRITTEN QUESTIONS

HIGHWAYS ENGLAND'S COMMENTS

<i>Question Ref</i>	<i>Environment Agency Response</i>	Highways England Comments
4.1	<p><i>Chapter 5 Section 5.5 APP-145 sets out the methodology for establishing the baseline for the Environmental Impact Assessment (EIA). Are consultees and interested parties satisfied with the approach as adopted?</i></p>	
	<p><i>We are content with the methodology for establishing the EIA baseline as set out within section 5.5 of chapter 5. Although desktop studies form an important part of data collection for the baseline, up-to-date surveys also play a key role in ensuring that the baseline is reflective of the current situation.</i></p>	<p>Highways England welcomes the acknowledgement from the Environment Agency that they are content with the methodology for establishing the Environmental Impact Assessment (“EIA”) baseline.</p> <p>Highways England recognises the importance of keeping the baseline up to date, particularly with respect to ecological features that are dynamic and can change substantially in a comparatively short time for example, between the original dates of the baseline surveys and the start of construction works. In recognition of this, the requirement for pre-construction surveys has been identified in the Environmental Statement (“ES”) (Application Document Reference 6.1). Pre-construction surveys (secured under Requirement 13, Schedule 2 of the draft Development Consent Order (“DCO”) (Application Document Reference 3.1)) will be undertaken in construction areas which support habitats likely to be used by protected species (paragraph 9.2.16 of the ES), great crested newts (paragraph 9.4.41 of the ES), reptiles (paragraph 9.4.49 of the ES), bats (paragraph 9.4.68 of the ES), water voles (paragraph 9.4.82 of the ES) and otter</p>

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		(paragraph 9.4.88 of the ES). Where required, surveys will be carried out under licence from Natural England (paragraph 9.4.4 of the ES).
4.1.3	<p><i>Can the applicant please provide a table which sets out the mitigation measures which are identified as required in each technical chapter of the ES, and provide a cross reference to that part of the draft DCO through which the mitigation measure would be delivered. In particular the table should clarify which mitigation measures identified as necessary in the ES should be secured through the CEMP.</i></p> <p><i>We welcome the ExA's request for this information as we have concerns how some of the required mitigation measures will be secured and implemented through the DOC, CEMP and/or other associated documents.</i></p>	A table of mitigation measures has been prepared by Highways England and submitted to the Planning Inspectorate on 8 th October 2015 in response to QE4.1.3 of the ExA's First Written Questions.
4.1.4	<p><i>Do any interested parties have any comments on the sufficiency of the outline CEMP for securing mitigation? The ExA would be interested in particular in comments from NE, the EA and the LPAs who would be responsible for approving the CEMP under requirement 8 of the DCO.</i></p> <p><i>We are continuing to review the outline CEMP and if relevant we will seek to provide additional comments to the ExA regarding it on or before 26 October 2015.</i></p> <p><i>From our reviews to date we have concerns how the CEMP will be successfully used to secure mitigation measures. Section 1.6 of the CEMP states that amongst other items, it will include 'all committed mitigation measures as set out in the Environmental Statement, environmental best practice measures and any further mitigation measures as agreed post publication or developed following the completion of ecological surveys prior to the works commencing.'</i></p>	<p>Highways England notes the Environment Agency's intention to review the outline Construction Environmental Management Plan ("CEMP") (Appendix 4.2 A of the ES) (Application Document Reference 6.3) and provide additional comments by 26th October 2015. Highways England notes that the Environment Agency has not previously raised any concerns regarding the Outline CEMP.</p> <p>The outline CEMP sets out the framework for controlling impacts on people and the environment resulting from construction activities that are the responsibility of the contractor. CEMPs are the usual vehicle for securing mitigation measures for schemes such as this, in conjunction with the requirements in the DCO.</p> <p>The implementation of the CEMP is secured under Requirement 8,</p>

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		<p>Schedule 2 of the draft DCO (Application Document Reference 3.1), which states that the construction of the authorised developments must be carried out in accordance with the CEMP. Breach of this requirement constitutes an offence under s.161 of the Planning Act 2008. As such, the measures secured in the CEMP must be carried out.</p> <p>The process, under Requirement 8, involves the approval of the CEMP in consultation with relevant stakeholders. Consequently, Highways England is of the view that the statutory environmental bodies, including the Environment Agency, can be confident that the CEMP secures the mitigation they are seeking relating to the control of adverse impacts as a consequence of construction activities.</p>
	<p><i>Furthermore, paragraph 1.7.1 states that 'liaison will be required with the relevant local planning authorities along the Scheme and relevant statutory bodies to ensure that the scheme proposed and recommended mitigation measures are acceptable to the authorities and such statutory bodies.'</i></p> <p><i>However, vital elements of mitigation such as floodplain compensation (FpC) have not been incorporated within the outline CEMP. Although the type and degree of FpC to be provided has yet to be determined and agreed we would expect the outline CEMP to at least include a brief reference to this, with additional detail to follow at a later stage.</i></p>	<p>As noted above the final CEMP developed by the contractor will be subject to approval as described in Requirement 8, Schedule 2 of the draft DCO (Application Document Reference 3.1), in consultation with relevant stakeholders. The CEMP is required to be developed and approved prior to the start of works, so that control measures are put in place before construction starts and continue for the duration of the construction programme.</p> <p>Floodplain compensation will be provided where required, as identified in the updated Flood Risk Assessment ("updated FRA") a copy of which was provided to the EA on 26th October 2015 and which is provided at Appendix 1 to the response to the Environment Agency's written representation. That floodplain compensation will be provided pursuant to a Flood Compensation Strategy, to be approved in consultation with the Environment Agency. That Flood Compensation Strategy is secured by a new requirement in the draft</p>

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	<p><i>Additionally, there are no provisions requiring the mitigation measures to be included within the final version of the CEMP.</i></p> <p><i>We do not believe this to be acceptable wording and will seek through further discussions with the ExA and HE to have an approval process incorporated for any revisions of the CEMP. If the CEMP is to be used for securing and implementing various mitigation measures, it must be transparent and include a chain of 'checks and balances' to ensure that people and the environment are protected both during the construction phase and throughout the lifetime of the development.</i></p> <p><i>In addition to concerns about the CEMP, we also have concerns in relation to the EMP and HEMP. In particular, it is not clear how the EMP, CEMP and HEMP will all interact and how the HEMP will be agreed.</i></p>	<p>DCO submitted at Deadline III.</p> <p>Given that approval of the Flood Compensation Strategy will require consultation with the Environment Agency, it is considered that it is more appropriately secured by way of a requirement to the DCO than in the CEMP.</p> <p>From discussion with the Environment Agency, Highways England understands that the Environment Agency's concern here is in relation to the ability to modify the final CEMP, which was previously provided for in Requirement 8. This power has now been deleted, with this amendment reflected in the version of the DCO submitted at Deadline II.</p> <p>The EMP is an introductory document that will be reviewed and updated regularly. It will explain how the relevant measures will be secured, how the final CEMP will be delivered and consulted upon with local authorities and how the CEMP will be refined into the HEMP.</p> <p>The CEMP will exist as a standalone document to provide all information required for the appropriate management of environmental effects from the scheme and will incorporate the provisions of the EMP. It will evolve out of the EMP as more information on the environmental effects becomes available and the design and construction plans are finalised. By the time construction commences, the CEMP will be fully comprehensive and will be amended during the construction period to take account of any changes in design and changes in external factors such as regulations and standards. It will also be amended to reflect any failings in environmental performance arising from routine inspections and</p>

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		<p>audits.</p> <p>The HEMP is a future looking document containing all information required for the effective future operation and maintenance of the Scheme from an environmental point of view. This will include details of the aftercare, monitoring and maintenance activities relating to the environmental features and the mitigation measures that will be required to ensure continued long-term effectiveness of the environmental mitigation measures.</p> <p>The HEMP will be refined from the CEMP towards the end of the construction period. The contractor appointed by Highways England to undertake construction of the authorised development will draft the HEMP based on the provisions of the CEMP. Because the HEMP will continue commitments already contained in the CEMP which have therefore already been submitted and approved pursuant to the DCO, further external approval of the HEMP will not be required. Paragraphs 8(4) and 8(5) of Schedule 2 to the dDCO secure the provision and implementation of the HEMP. Upon completion of the construction of the authorised development paragraph 8(4) requires that the CEMP is converted into the HEMP and paragraph 8(5) requires that the authorised development must be operated and maintained in accordance with the HEMP.</p>
4.2.6	<p><i>Para 8.2.11 APP-148 states that no further assessment work (since a survey in November 2014) has been carried out in relation to impacts on the night time landscape from lighting, as the replacement lighting will be retained at its current locations. However, it is uncertain whether the lighting columns will be replaced and if so their design; para 4.2.4 of Chapter 4 APP-144 states “lighting columns will be mounted on top of the new concrete barrier”. Details are not provided regarding the existing and proposed light spill. Can the applicant confirm the design of the new lighting and how it compares with the existing lighting and provide details of the how the proposed light spill compares with the existing?</i></p>	

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	<p><i>We are interested in the comparisons between the existing and the proposed light spill. Any increase in light spill from existing levels has the potential to adversely affect river wildlife corridors, the natural habitats for flora and fauna located in these areas and the potential movement of species along these green and blue infrastructure corridors. We look forward to reviewing the application's response to this question.</i></p>	<p>Highways England refers Environment Agency to the response to the question submitted for Deadline II, which states, "The existing lighting is provided via 250W and 400W high-pressure sodium luminaires. The Scheme will use modern Light Emitting Diode ("LED") luminaires throughout. The LED luminaires control the lighting distribution to project light onto the road surface. The luminaires will be installed horizontally and there will be no upward light distribution.</p> <p>The total light output from the LED luminaires to achieve the required road illumination levels will be up to 50% less than that of the existing high pressure sodium luminaires. There will therefore be both less lighting spill and less light pollution"</p> <p>Highways England trust that this gives Environment Agency comfort that river wildlife corridors and natural habitats for flora and fauna will not be adversely affected as a result of the Scheme by any increase in light spill from the carriageway lighting.</p>
4.3.1	<p><i>For a more detailed response we would refer the ExA to chapters 1.0 to 1.10 of our Written Representations (WR). The Environment Agency has made formal comments regarding flood risk in response to all formal consultations. After reviewing the Environmental Statement and accompanying FRA we continue to have a number of issues.</i></p>	<p>Highways England confirms that there is on-going dialogue with the Environment Agency regarding their concerns, with additional information having been supplied following a meeting on the 25th September 2015. Further assessment results are documented the updated FRA and associated drawings which were provided to the Environment Agency on 26th October 2015 and were discussed at a meeting with the Environment Agency on 28th October 2015. The updated FRA is provided at Appendix 1 to the response to the Environment Agency's written representation.</p>

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	<p><i>As noted within our Relevant Representations (RR) the submitted information within the flood risk assessment (FRA) is inadequate. It does not fully assess the impacts of the scheme with regards to flood risk. Specifically, the applicant has not satisfactorily assessed the impacts of the proposed works in relation to upstream and downstream flood risk. Furthermore, they have not properly quantified the loss of floodplain storage and the associated compensation that may be required as a mitigation measure.</i></p> <p><i>The applicant is proposing works within the floodplain without demonstrating that 'level for level' compensation is achievable. Therefore the applicant has failed to demonstrate that there would not be an increase in flood risk elsewhere as a result of the proposed works as required by paragraph 5.99 of the NPS for National Networks (NPSNN).</i></p> <p><i>Flood storage compensation is required to mitigate for loss of storage for all flood events up to and including the 1% annual exceedance probability (AEP) (1 in 100 year) with an allowance for climate change flood event.</i></p>	<p>As noted within Highway England's response to the Environment Agency's Written Representation, since submission of the FRA at the Application stage (Application Document Reference 5.3) further work has been on-going to locate all sites along the Scheme where works are required in the floodplain, quantify the extent of floodplain storage loss and determine what compensation, if any, may be required as a mitigation measure. This is reported in the updated FRA, which has quantitatively confirmed that the proposed works will have no impact on upstream or downstream flood risk.</p> <p>Compensation will be provided as a mix of level for level (at the sites where floodplain storage losses are greatest) and volume for volume, and compensation solutions at individual sites of loss would be further developed during the detailed design stage of the Scheme, via the Flood Compensation Strategy. That this is achievable has been demonstrated in the updated FRA. As a result of this mitigation there will be no increase in flood risk elsewhere and the Scheme achieves compliance with paragraph 5.99 of the NPS for National Networks.</p> <p>All sites where works are required within the 100 year plus climate change floodplain have been confirmed, using Environment Agency flood level and available topography data, and this data has also been used to quantify the volume of storage loss and to demonstrate the feasibility of the compensation that is required as a flood risk mitigation measure to compensate during all flood events up to this annual exceedance probability.</p>

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	<p><i>The FRA explains that compensation will be provided for and assessed at the detailed design stage. The applicant has suggested that there is the required compensatory storage volume for the proposed earth embankment works but have only supplied volumes. We do not know whether this will be on a level for level basis or volumetric compensation. It could even be provided on a mixture of the two but this is not confirmed. If volumetric compensation is the only option for providing mitigation there could be an increase in flood risk in the higher order events.</i></p> <p><i>The earth embankment work totals 6300m2. It appears that HE are also proposing some small sections of land raising for the Emergency Refuge Areas (ERAs) which is 400m2 per Junction. Without further details about these from the outset, it is unclear if the applicant will be able to satisfactorily provide the required floodplain compensation or how they propose to implement/secure them.</i></p>	<p>As noted above, compensation will be provided as a mix of level for level (at the sites where floodplain storage losses are greatest) and volume for volume.</p> <p>All sites where earth embankment works and widening (such as for the creation of emergency refuge areas (“ERAs”)) have now been identified and confirmed within an updated FRA, which has also demonstrated (with the exception of works within the River Loddon floodplain, which Highways England are still awaiting Environment Agency flood level data for) that the required floodplain compensation can satisfactorily be provided. This mitigation will be secured by the inclusion of a further requirement in the DCO regarding the provision of flood compensation, as explained above.</p>
	<p><i>Paragraph 5.96 of the NPS states that If the Environment Agency has concerns about the proposal on flood risk grounds, ‘the applicant is encouraged to discuss these concerns with the Environment Agency and look to agree ways in which the proposal might be amended, or additional information provided, which would satisfy the Environment Agency’s concerns’.</i></p>	<p>As noted above there is on-going dialogue with the Environment Agency regarding their concerns, with additional information having been supplied following a meeting on the 25th September 2015 and further assessment results contained in a revised FRA and associated drawings which were provided to the Environment Agency on 26th October 2015 and were discussed at a meeting with the Environment Agency on 28th October 2015.</p> <p>However, at the time of writing it should be noted that Environment Agency flood water level data (which has been used to inform the assessments presented in the revised FRA) is still outstanding for the River Loddon. Highways England looks forward to receiving this</p>

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	<p><i>In summary we require:</i></p> <ul style="list-style-type: none"> • <i>A revised FRA and associated drawings, which include all the evidence requested within the issues detailed below. This will allow us to fully assess the flood risk issues relating to the scheme. These issues mainly relate to floodplain concerns and flood compensation areas;</i> • <i>Written confirmation that HE will not be seeking to disapply our flood defence consenting regime as set out under the Water Resources Act 1991 and land drainage byelaws. If HE seek to disapply this consenting regime additional protective provisions within the DCO will be sought as it is important for us to retain our ability to approve any works affecting main rivers in order to ensure that there will be no increase in flood risk elsewhere and no adverse</i> 	<p>data from the EA.</p> <p>Highways England consider that the additional information provided to the Environment Agency evidences that floodplain compensation can be provided for any loss of storage due to works within the 1 in 100 year plus climate change floodplain. This compensation would take a mixed form of level for level (at the sites where floodplain storage losses are greatest) and volumetric equivalent compensation.</p> <p>On this basis, Highways England look forward to agreeing that the Environment Agency's concerns in relation to the impact of the Scheme on flood risk have been satisfied and that a suitable mechanism to secure implementation of the mitigation works within the appropriate phasing timetables is in place, during the course of the Examination.</p> <p>Further assessment results in a revised FRA and associated drawings have been provided to the Environment Agency and were discussed at a meeting with Environment Agency on 28th October 2015.</p> <p>With regard to the disapplication of the flood defence consenting regime as set out under the Water Resources Act 1991 and land drainage byelaws, Highways England can confirm that there have been discussions between Highways England and the Environment Agency on this point. At present Highways England is not seeking to dis-apply this regime, and confirm that all required consent</p>

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	<p><i>impact on the status of the relevant Water Framework Directive (WFD) waterbodies.</i></p> <p><i>So long as the additional information required evidences that sufficient floodplain compensation areas are available and indicates what form of compensation will be provided ('level for level 'volumetric', etc..) we anticipate that we will be able to agree a mechanism to secure the implementation and completion of the required flood water storage within the appropriate phasing timetables during the course of the examination. We will jointly provide a copy of these to the ExA once finalised.</i></p> <p><i>At the time of writing we are waiting for further flood risk information and evidence to be provided by the applicant for consideration and review. Upon receipt of this information we will notify the ExA if our position has changed and/or appropriate mitigation measures have been agreed.</i></p>	<p>applications will be lodged at the appropriate juncture. However, should Highways England seek to disapply the flood defence consenting regime, they will consult with the Environment Agency to reach agreement regarding the inclusion of additional protective provisions within the DCO.</p> <p>Highways England welcomes Environment Agency's confirmation that Environment Agency anticipates being able to agree a mechanism to secure the required flood water storage. As stated above, further assessment results are documented in a revised FRA and associated drawings which were provided to the Environment Agency on 26th October 2015 and discussed at a meeting with the Environment Agency on 28th October 2015.</p>
4.5.1	<p><i>Chapter 10 APP-150 identifies no significant residual impact from the project on groundwater resources during either construction of operation. Are the conclusions agreed with statutory consultees?</i></p> <p><i>With regards to our remit, providing appropriate mitigation measures are implemented and continuing monitoring and survey works are agreed and undertaken we believe the majority of our concerns have been assessed. The Environmental Statement appears to have addressed most of the issues with respect to protecting aquifers and source protection zones within Chapter 15. It also covers potential sources of contamination (e.g. landfills) in chapter 10.</i></p>	<p>Highways England welcomes this confirmation from the Environment Agency. As the Environment Agency states in its response, the Environmental Statement sets out various mitigation measures in relation to the protection of groundwater during construction. These will be confirmed during the detailed design stage. Groundwater monitoring will be undertaken pursuant to section 14.8.3 of the CEMP (Appendix 4.2A of the ES (Application</p>

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	<p><i>In Chapter 10, within the list of receptors in many of the tables it has "Persons abstracting water without a licence". Under "locations" it puts "Unknown theoretical only". However, we are aware of a number of domestic and private abstractions below 20m3/day (these would not require a licence) within the zone of investigation along the motorway. We are not responsible for keeping a record of these abstractors but the Local Authority will have records of potable abstractions. We strongly recommend that HE obtain a record of these from the relevant Local Authorities.</i></p> <p><i>With regards to water resources dewatering of excavations has the potential to damage the receiving watercourses. This has could have slight adverse to moderate adverse impact. Therefore, we strongly recommend that HE implement suitable pollution prevention controls where dewatering activities occur, for example, settlement ponds, sediment traps and visual checks. We acknowledge that some of these measures are noted within the outline CEMP however, the mechanism for securing/implementing this document is not clear within the draft DCO.</i></p>	<p>Document Reference 6.3) and the CEMP is secured under Requirement 8, Schedule 2 of the draft DCO (Application Document Reference 3.1).</p> <p>Highways England confirm that, following a request from South East Water, a Hydrogeological Risk Assessment, looking at the potential impacts of the scheme on groundwater protection zones, is shortly to commence, with results expected to be provided before the end of the Examination. Highways England confirms that, as part of this study, records of unlicensed abstractors will be obtained from relevant Local Authorities.</p> <p>The requirement for dewatering of excavations as part of the Scheme is expected to be limited. Other than the overbridges that are to be reconstructed offline, it is anticipated that the majority of structural foundations will be piled and will therefore not require dewatering of excavations. At some of the new overbridges where spread foundations are anticipated, the foundations will be kept as high as possible within the ground to minimize any requirements for dewatering. Where dewatering proves unavoidable then suitable pollution prevention controls such as settlement ponds, sediment traps and visual checks/monitoring will be put in place and applications for appropriate consents will be prepared and lodged with the Environment Agency, with consent secured prior to discharging any water generated via dewatering activities, in accordance with paragraph 3.3.1e of the CEMP.</p> <p>Additional protection is provided in the event of the discovery of any previously unidentified contaminated land and groundwater under Requirement 12 of Schedule 2 of the draft DCO. This requirement allows for the work to cease and the matter to be reported</p>

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	<p><i>Dewatering activities are required to comply with the Environment Agency's Regulatory Position Statement (RPS): Temporary water discharges from excavations</i> https://www.gov.uk/government/publications/temporary-water-discharges-from-excavations.</p> <p><i>Where dewatering activities do not fall within the criteria of the RPS then the discharge will require an environmental permit for a bespoke water discharge activity. Dewatering activity is currently exempt from regulatory requirements. This may not be the case in the future.</i></p> <p><i>ES Sub-section 15.4.46 highlights actions which will be undertaken if there is any requirement to dewater the groundwater. The potential concern for dewatering relates to the abstraction of any contaminated/polluted water. These poor quality waters (where identified) may be due to more than just a heavy silt content. This needs to be carefully monitored and assessed as the discharge of such water into controlled water could result in a pollution incident. Information from any water quality sample, and land survey data needs to be assessed</i></p>	<p>immediately to the Environment Agency and the relevant planning authority.</p> <p>Highways England's detailed response as to how the CEMP will be implemented and secured is provided above. Where de-watering activities are identified to be required, early engagement with the Environmental Agency will occur to discuss proposed solutions and to ensure solutions and controls are compliant with the current Regulatory Position Statement (“RPS”) for temporary de-watering. Applications for appropriate consents will be prepared and lodged with the Environment Agency, with consent secured prior to discharging any water generated via dewatering activities. The early engagement is provided for in paragraph 14.2.4 of the CEMP (Appendix 4.2A of the ES (Application Document Reference 6.3) and application for consents is provided for in paragraph 3.3.1e of the CEMP, an updated version of which will be submitted to the Examining Authority at Deadline III.</p> <p>This is noted. These permits are listed in the report on 'Details of other consents and licenses' (Application Document Reference 5.5) as a consent likely to be required for the Scheme.</p> <p>A number of old landfill sites have been identified along the Scheme. Pursuant to a requirement in the draft DCO, where these are likely to be impacted by the works, ground investigation including contamination testing has been planned to monitor and assess water quality as set out in section 10.2 of the CEMP. A Geotechnical Design Report will be produced following completion of the ground investigation which will detail among other things water quality data.</p>

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	<p><i>to flag potential issues, and adequate measures incorporated into the method statement for this activity.</i></p> <p><i>We would request that proposed areas for dewatering be discussed through the detailed design phase.</i></p>	<p>The data will be interpreted within this report to assist in identifying if contaminated groundwater is likely to be present and if so allow the appropriate protocols (i.e. compilation of detailed Specification Appendices setting out treatment/disposal options for contaminated water), to be put in place in order that contaminated water can be effectively dealt with during the construction activities. If contaminated groundwater is found, the provisions of requirement 12 at Schedule 2 of the DCO will apply.</p> <p>It is proposed to undertake a ground investigation prior to commencement of the detailed design of individual scheme elements. This will assist in identifying where dewatering of the ground may be required to facilitate construction. Should such areas be identified then design optioneering will initially be undertaken to attempt to either eliminate the need for dewatering or to minimise the need. During this stage of the design development all matters will be fully discussed with the Environment Agency as set out in 14.2.3, 14.6.3 and 14.6.5 of the CEMP. Should it not be possible to eliminate the need for dewatering then applications for appropriate consents will be prepared and lodged with the Environment Agency, with consent secured prior to discharging any water generated via dewatering activities as set out in section 5.2 of the CEMP.</p>
	<p><i>ES Sub-section 15.4.42 notes the need for an abstraction licence, if water abstraction is required, has been recognised. The applicant must be aware that any abstraction licence granted will be done so in such a way so as to avoid derogation of existing abstractors. Any licence granted may be subject to constraints limiting/preventing abstraction under low-flow conditions. It is important that they contact the Environment Agency at an early stage due to the regulatory procedures that might apply (time constraint imposed by these procedures) where a licensing situation arises.</i></p>	<p>During the detailed construction planning stage, de-watering activities will be identified and early engagement with the Environmental Agency will be held to discuss proposed solutions and to ensure solutions and controls are compliant with the current RPS for temporary de-watering. During that engagement potential licence requirements will be identified and applied for early in advance of the construction works.</p>

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	<p><i>The scheme, primarily in the design/construction stage, may impact upon water abstraction operations and infrastructure relating to public water supply. The applicant must determine what, if any, abstractions the scheme will conflict with, and liaise with the custodians of said abstractions to establish how to best mitigate against any negative impacts. Of particular concern are the abstractions at Beenham's Heath and Bray, which sit within 100m of the centreline of the scheme. The public water supply abstractions deemed to be at risk, the precise impacts and the mitigation measures must be assessed, agreed with the abstractor(s) and documented.</i></p>	<p>The proposed works in the vicinity of the Beenham's Heath site comprise the installation of one new gantry which is very likely to be on piled foundations. It is thus considered that the risk of groundwater pollution caused by increased turbidity at this site is very low. In the area of Bray however, the proposed construction activities are more extensive comprising several new gantries, two Emergency Refuge Areas, embankment widening and the construction of a new overbridge. The details of such construction operations, such as piling for the gantries and the new overbridge, excavation of soft ground below newly widened embankments and excavation below the water table all have potential to cause migration of contaminants (suspended solids and chemical contaminants from landfill materials), which may affect groundwater quality and in particular affect public water drinking supplies. With the exception of the new bridge foundations at Bray, the construction of the new side road and other earthworks will be above existing ground level thus minimising the extent of excavation and the consequential impact of disturbing the ground leading to increased turbidity of the groundwater. It is understood that water is abstracted from the boreholes in the northern and southern Bray Gravel well fields from depths of around 10 to 15m. Excavation depths (other than for the bridge foundations) are expected to be less than 2m deep and contained within the cohesive alluvium which is believed to cap the gravels in this location. Excavations will be kept to as shallow a depth as possible, and above the groundwater table, in order to mitigate the risk of causing turbidity within the groundwater. With such mitigation measures in place the risk of causing increased turbidity of the groundwater is considered to be very low.</p> <p>As noted above, a Hydrogeological Risk Assessment ("HRA"), looking at the potential impacts of the Scheme on groundwater protection zones and public water supplies, has commenced. This</p>

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		<p>HRA will determine what, if any, abstractions the Scheme will conflict with. Highways England notes that it is already in discussion with South East Water in relation to abstractions in the vicinity of the Scheme, such as those at Beenham's Heath and Bray. Further, mitigation measures to manage the risk of water quality contamination, involving employing best practice pollution prevention measures during construction of the works, are detailed in paragraph 15.4.39 of the Environmental Statement (Application Document Reference 6.1).</p> <p>The HRA will concentrate in particular on abstractions at Beenham's Heath and Bray. This report will detail the likely impacts and, as appropriate, the necessary measures to mitigate against any impacts. This assessment is shortly to commence and is currently programmed to be completed by the end of Examination.</p>
5.8	<p><i>Has the drainage strategy for the project been agreed with the EA?</i></p> <p><i>This question is best addressed by the relevant Lead Local Flood Authorities (LLFAs). Although the Environment Agency has a overview of surface water flooding, under the Flood and Water Management Act 2010 surface water drainage and associated approvals are the responsibility of the LLFAs from April 2015. We have advised the applicant of this on several occasions, most recently at a meeting on 25 September 2015 and believe that they are liaising with the relevant authorities.</i></p>	<p>Highways England acknowledge that surface water drainage and associated approvals are the responsibility of the Lead Local Flood Authorities ("LLFAs"), which have all had the opportunity to raise any concerns regarding the drainage strategy via their Local Impact Reports and Written Representations.</p> <p>Where concerns have been raised, for example by London Borough of Hillingdon and South Bucks District Council / Buckinghamshire County Council, responses have been provided by Highways England.</p> <p>Highways England can confirm that the drainage design is based on delivering the fundamental principle that the Scheme will not produce</p>

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	<p><i>We did previously provide general surface water advice to the applicant as part of our statutory pre-application Planning Act 2008, section 42 response on 18 December 2014. At this time surface water drainage was within the remit of the Environment Agency.</i></p>	<p>additional discharge in flow rate or volume at outfalls. Mitigation measures will be implemented as required to secure this principle, which is in accordance with the design guidance set out in IAN 161/13, Design Manual for Road and Bridges (“DMRB”) HD33/06, and the requirements of the National Policy Statement for National Networks (“NN NPS”). These measures are set out in paragraph 14.7.4 of the outline CEMP (Annex E to Appendix 4-2A, Application Document Reference 6.3) and paragraph 1.2.3 of the Drainage Strategy (Application Document Reference 7.5).</p> <p>Highways England confirm and appreciate the provision of general surface water advice from Environment Agency within their Section 42 (Planning Act 2008) response on 18th December 2014. This was taken into account in the development of the Scheme proposals.</p>
5.9	<p><i>Is the EA satisfied that adequate compensation for any loss of floodplain can be provided?</i></p>	
	<p><i>For a more detailed response we would refer the ExA to chapters 1.0 to 1.10 of our Written Representations (WR). These deal with our outstanding concerns on the adequacy of the applicant’s flood risk assessment (FRA).</i></p>	<p>The adequacy of the compensation for any loss of floodplain is addressed in Highways England's response to Question 4.3.1 above and in its response to the written representation of the Environment Agency. There is on-going dialogue and an exchange between Environment Agency and Highways England in respect of additional flood risk information and assessment to be carried out to satisfy Environment Agency’s concerns.</p>
	<p><i>In summary, as noted within our Relevant Representations (RR) and WR the submitted information within the flood risk assessment (FRA) is inadequate. We have made formal comments regarding flood risk in response to all formal consultations.</i></p>	

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	<p><i>The submitted FRA does not fully assess the impacts of the scheme with regards to flood risk. Specifically, the applicant has not satisfactorily assessed the impacts of the proposed works in relation to upstream and downstream flood risk. Furthermore, they have not properly quantified the loss of floodplain storage and the associated compensation that may be required as a mitigation measure.</i></p> <p><i>The applicant is proposing works within the floodplain without demonstrating that 'level for level' compensation is achievable. Therefore the applicant has failed to demonstrate that there would not be an increase in flood risk elsewhere as a result of the proposed works as required by paragraph 5.99 of the NPS for National Networks (NPSNN).</i></p> <p><i>Flood storage compensation is required to mitigate for loss of storage for all flood events up to and including the 1% annual exceedance probability (AEP) (1 in 100 year) with an allowance for climate change flood event.</i></p> <p><i>The FRA explains that compensation will be provided for and assessed at the detailed design. The Applicant has suggested that there is the required compensatory storage volume for the proposed earth embankment works but have only supplied volumes. We do not know whether this will be on a level for level basis or volumetric</i></p>	<p>As noted within Highway England's response to the Environment Agency's Written Representation, since submission of the FRA at the Application stage (Application Document Reference 5.3) further work has been on-going to locate all sites along the Scheme where works are required in the floodplain, quantify the extent of floodplain storage loss and determine what compensation, if any, may be required as a mitigation measure. This is reported in the updated FRA, which has quantitatively confirmed that the proposed works will have no impact on upstream or downstream flood risk.</p> <p>As stated above, compensation will take a mixed form of provision, on a level for level (at the sites where floodplain storage losses are greatest) and volume for volume basis and compensation solutions at individual sites of loss would be further developed during the detailed design stage of the Scheme. As a result of this mitigation there will be no increase in flood risk elsewhere and the Scheme achieves compliance with paragraph 5.99 of the NPS for National Networks.</p> <p>The flood storage compensation provided will mitigate for loss of storage for all flood events up to and including the 1% annual exceedance probability (1 in 100 year) with an allowance for climate change flood event. This was demonstrated in the additional information regarding flood risk which was provided to the Environment Agency on 26th October 2015.</p> <p>As noted above, compensation would take a mixed form and be provided on a level for level (at the sites where floodplain storage losses are greatest) and volume for volume basis. This was confirmed to the Environment Agency on 26th October 2015.</p>

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	<p><i>compensation. It could even be provided on a mixture of the two but this is not confirmed. If only volumetric compensation is used to mitigate there could be an increase in flood risk in the higher order events.</i></p> <p><i>The earth embankment work totals 6300m2. It appears that HE are also proposing some small sections of land raising for the Emergency Refuge Areas (ERAs) which is 400m2 per Junction.</i></p> <p><i>Without further details from the outset, it is unclear if the applicant will be able to satisfactorily provide the required measures or how they propose to implement/secure them through the DCO, phasing schemes and other associated documents.</i></p> <p><i>At the time of writing we are waiting for further flood risk information and evidence to be provided by the applicant for consideration and review. Upon receipt of this information we will notify the ExA if our position has changed and/or appropriate mitigation measures have been agreed.</i></p>	<p>As stated above, all sites where earth embankment works and widening (such as for the creation of ERAs) have now been identified and assessed within an updated FRA, which has also demonstrated (with the exception of works within the River Loddon floodplain, which Highways England are still awaiting Environment Agency flood level data for) that the required floodplain compensation can satisfactorily be provided. This mitigation will be secured by the inclusion of a further requirement in the DCO in relation to flood compensation, which is reflected in the latest draft DCO submitted at Deadline III to cover this aspect.</p> <p>Compensation will be provided on a mixed level for level (at the sites where floodplain storage losses are greatest) and volume for volume basis and compensation solutions at individual sites of loss would be further developed during the detailed design stage of the Scheme. This mitigation will be secured by the inclusion of a further requirement in the DCO regarding the provision of floodplain compensation.</p> <p>Highways England confirms that there is ongoing dialogue with the Environment Agency regarding its concerns. Additional information was provided to the Environment Agency following a meeting on the 25th September 2015. That information was discussed at a meeting with the Environment Agency on 28th October 2015.</p>

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8.10	<p>Draft DCO Article 6 - This wording is not present in the equivalent article included in the A556 (Knutsford to Bowden Improvement) DCO, referred to in the Explanatory Memorandum (EM) APP-027.</p> <p>This would seem to provide little clarity as to the extent of the development. If it is anticipated that the Order limits (together with the deviation limits in this article) will be the maximum extent, why is this wording required? Alternatively, should the order limits be amended to reflect the proposed limits?</p>	
	<p><i>We are currently considering the DCO provisions relating to limits of deviation and will inform the ExA as soon as possible if we seek any amendments to the current wording.</i></p>	<p>Highways England has been in discussion with the Environment Agency regarding its concerns in relation to the draft DCO.</p>
8.12	<p>Draft DCO Article 15 - Would this provision grant adequate protection for adverse impacts as a result of the formation of a means of access? Would there be circumstances where the prior approval of the local planning authority should be sought?</p>	
	<p><i>We are currently considering whether there is any land that we would not wish a new access to be formed over and will inform the ExA as soon as possible if we seek any amendments to the current wording.</i></p>	<p>Highways England awaits the EA's further comments. Highways England's position is that there is no reason to suppose that adverse impacts would result from the power provided for in Article 15 of the draft DCO (Application Document Reference 3.1), such that prior approval of the relevant planning authority should be required.</p>
8.13	<p>Draft DCO Article 16 - The powers provided by this article could have significant impacts on the navigation or watercourse and on its users. With that in mind, can each of the powers be justified? Have the Environment Agency or any other relevant bodies commented on this approach?</p>	

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	<p><i>We have advised the applicant that the wording in Article 16 of the DCO is acceptable to us so long as it includes a paragraph confirming that it does not supersede the requirement to obtain Water Resources Act or Byelaw consent i.e. Flood Defence Consents.</i></p> <p><i>From a navigational perspective for the purposes of powers in relation to relevant watercourses, our focus will be the River Thames as the other rivers listed are either non navigable or navigations that are managed by the Canal and Rivers Trust.</i></p> <p><i>From the proposed plans it seems the primary impact on navigation would be during works involving the M4 bridge crossing the River Thames between junctions 7 and 8/9. As the navigation authority on the River Thames it is our responsibility to maintain the public right of navigation and make sure any proposed works have minimal impact on our river users. In order to achieve this we are likely to request or seeks safeguards to include:</i></p>	<p>Highways England are currently reviewing the terms of Article 16, with regard to the flood defence consenting regime as set out under the Water Resources Act 1991 and land drainage byelaws, Highways England confirm that there have been discussions between Highways England and the Environment Agency on this point. At present Highways England is not seeking to dis-apply the flood defence consenting regime, and confirm that all required consent applications will be lodged at the appropriate juncture. However, should Highways England seek to disapply the flood defence consenting regime, it will consult with the Environment Agency to reach agreement regarding the inclusion of additional protective provisions within the DCO.</p> <p>This is noted.</p> <p>The impact of the Scheme on navigation was considered as part of the EIA (see paragraph 14.8.7 of the ES (Application Document Reference 6.1) and paragraphs 4.2.18, 4.5.19 and 6.6.21 of the Socio-Economic Report (Application Document Reference 7.2)). The impact of the works on the River Thames at Bray, which is where the works are concentrated, is assessed within Chapter 15 of the ES at paragraphs 15.4.71 and 15.4.87. Measures to prevent or manage the impacts resulting from the in-channel works at Bray and to ensure the works have minimal impact on river users, are described in Table 15.15 of the ES and provided for in the Outline Construction and Environmental Management Plan at Appendix 4.2A to the Environmental Statement (Application Document Reference 6.3) at</p>

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		paragraphs 9.4.14-15 and 14.2.2-4.
	<p>a) <i>A minimum of 10 weeks' notice given on any planned river restrictions/closures for more than four consecutive hours;</i></p> <p>b) <i>An indication of timescale of any proposed works that will require a river closure / restriction;</i></p> <p>c) <i>That works be scheduled out of the main boating season i.e. April to September inclusive;</i></p> <p>d) <i>A single point of contact is established between contractors and our Waterways team and that full detailed method statements for any proposed works are provided to us and that they will be in accordance with our Navigation Conditions for Bridge Works</i></p>	<p>Highways England is currently reviewing the requirements of the Environment Agency listed here. Highways England will engage with the Environment Agency in relation to these points and will update the ExA accordingly.</p>