



A303 (Stonehenge) Improvement Scheme Team  
The Planning Inspectorate  
National Infrastructure Directorate  
Temple Quay House  
Temple Quay  
Bristol  
BS1 6PN

**Your Ref: TR010025**

Our Ref:  
A303Stonehenge\_WReps\_03052019

Date: 3 May 2019

Dear Sir or Madam,

**A303 (Stonehenge) Amesbury to Berwick Down scheme**  
**Environment Agency – Written Representations**

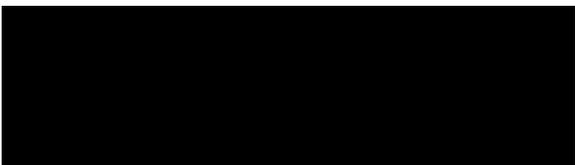
Please find enclosed our written representations for the A303 (Stonehenge) Amesbury to Berwick Down Scheme Development Consent Order (DCO) on behalf of the Environment Agency.

**Outstanding information and issues of concern**

Our representation outlines where further work, clarification or mitigation is required to ensure that the proposal has no detrimental impact on the environment. Our comments in particular cover Groundwater Protection and Land Contamination, Flood Risk Management, Fisheries and Biodiversity and highlight concerns which we believe need to be addressed prior to a development consent order being granted. In other instances, it may be acceptable for additional information to be provided later by Requirement or under our preferred Protective Provisions.

Please contact Katherine Burt, Planning Specialist, if you require any further information. We look forward to continuing to work with the applicant to resolve the matters outlined above, and to ensure the best environmental outcome for this project.

Yours faithfully



**Barry Smith**  
**Team Leader - Sustainable Places**  
**Environment Agency – Wessex Area**

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# Written Representations

## On behalf of the Environment Agency

We have been involved in formal and informal pre-application discussions with Highways England (the applicant) regarding the following matters.

### **1.0 Groundwater and Contaminated Land**

#### **1.1 Summary**

- 1.1.1 The risk assessment carried out to date indicates that the current tunnel design, when complete, will only have a minor impact on water interests. This will need to be reassessed during the detailed design process and upon receipt and review of the detailed drainage strategy.
- 1.1.2 However, we remain concerned that the construction phase has the potential to cause significant adverse impacts on controlled waters if de-watering were proposed. Initial design assumptions have been that de-watering will not take place and the impacts of any dewatering have not been assessed. It is understood that the Development Consent Order (DCO) will require, through compliance with the Outline Environmental Management Plan (OEMP), that risks during the construction phase will be addressed by the Main Contractor through provision of a Construction Environmental Management Plan (CEMP) and Groundwater Management Plan, developed in consultation with the EA.

#### **1.2 Sensitivity of scheme location with respect to controlled waters**

- 1.2.1 The area in which the proposed scheme is to be constructed is highly sensitive with respect to controlled waters. This is because the scheme crosses the Rivers Avon and Till that are designated as Special Area of Conservation (SAC) and Site of Special Scientific Interest (SSSI), and the underlying chalk is classified as a principal aquifer. Groundwater in the chalk provides essential baseflow to the Rivers Till and Avon and also supplies important abstractions for potable and agricultural use. Tunnelling could potentially impact groundwater levels and river flows by either lowering water levels through de-watering or providing preferential flow pathways, raising water level by acting as a barrier to flow and or by diverting water from one location to another.

#### **1.3 Impact of tunnel**

- 1.3.1 The reports included as Appendix 11 to the Environmental Statement and further work presented in supplementary reports received since submission of the DCO application provide confidence that the scheme is unlikely to have a significant impact on groundwater levels and flows, including baseflow to the Rivers Avon and Till, once constructed.
- 1.3.2 The modelling reported in the above documents identifies small increases in groundwater level to the north of the tunnel and small decreases in level to the south, but these changes are not significant when compared to natural seasonal or interannual fluctuations in groundwater level.
- 1.3.3 The majority of groundwater flow through the chalk aquifer occurs through fractures and along the upper surfaces of 'hard bands'. Should these preferential flow horizons be blocked by the placement of the tunnel there is potential for greater impacts on local groundwater levels and possibly diversion of groundwater flow between the Till and Avon catchments.
- 1.3.4 The ground investigation carried out to date and proposed vertical alignment of the tunnel suggests that the scheme may partially intercept known preferential flow horizons, namely the Whitway Rock. It is less likely to intercept the deeper Chalk Rock. However, it is vital that assessment of the degree to which these or any other horizons identified

during future ground investigation may be blocked is repeated should the alignment change from that proposed at the DCO application stage.

## **1.4 Drainage**

- 1.4.1 In principle we are supportive of the proposed use of Sustainable Drainage Systems (SuDS) to dispose of highway runoff and acknowledge that the scheme has the potential to provide improvement over the current provisions along this stretch of the A303 by diverting runoff to specific infiltration areas where it will be treated prior to discharge.
- 1.4.2 The documents submitted with the DCO application (Environmental Statement, Drainage Strategy, Outline Environmental Management Plan, etc.) contain insufficient detail regarding the drainage system and in particular the likely effectiveness of the treatment systems (eg. infiltration basin lining) in dealing with contaminants in the runoff prior to discharge to ensure that the scheme does not result in merely concentrating contaminants into specific areas.
- 1.4.3 It remains to be demonstrated that the treatment system will adequately deal with the expected contaminant loading in routine runoff and that future maintenance of the proposed systems, including renewal of proprietary treatment material, is secured for the life of the scheme.
- 1.4.4 Furthermore, it must be demonstrated that adequate storage capacity is included in the drainage system to contain likely volumes of liquid resulting from the reasonable worst-case spill incident. The capacity should include expected volumes of spilled liquid contaminant, fire-fighting runoff, surface water and groundwater ingress during a specified rainfall event.
- 1.4.5 We note the proposal to design the drainage strategy in accordance with DMRB HD45. We do not consider that the minimum required environmental protection measures stated in HD45 are appropriate for the sensitive location of the proposed scheme and consider that measures in excess of these are likely to be required, in line with paragraph 2.10 of HD33/16 of the DMRB.
- 1.4.6 It has been agreed with the applicant through Statement of Common Ground (SoCG) that the EA will be consulted on the detailed design of the drainage scheme and recognised that measures in excess of the minimum stated in DMRB HD45 may be required. However, Requirement 10 of the Draft DCO only requires consultation with the planning authority regarding the details of the drainage system. We request that the Environment Agency are included as a consultee on Requirement 10 in Draft DCO (dated October 2018) to secure formal consultation and ensure our concerns raised above are addressed. We therefore recommend the Requirement is amended to read as follows in the next iteration of the draft DCO:

“(1) No part of the authorised development is to commence until written details of the drainage system to be constructed for that part, based on the mitigation measures included in the environmental statement and including means of pollution control, have been submitted to and approved in writing by the Secretary of State, following consultation with the planning authority and the Environment Agency.”

## **1.5 Contaminated Land**

- 1.5.1 Several sites with potentially contaminative past uses have been identified within the scheme area.
- 1.5.2 We note Requirement 7 of the Draft DCO (dated October 2018) requires investigation, risk assessment and where required, remediation of any unexpected contamination that may be identified during works and we welcome the obligation under PW-GEO1 of the OEMP that ground investigation, where carried out, is undertaken in accordance with appropriate site investigation and contaminated land guidance. However, there does not appear to be any mechanism within the Draft DCO or OEMP that requires investigation

of the potentially contaminated sites identified during desk study, prior to works commencing.

- 1.5.3 We understand through the SoCG that ground investigation of some of these sites has been carried out and the results are to be shared with the EA. However, to date no such information has been received. To ensure that risks from possible contamination that may be disturbed at these historic sites are adequately managed we would request that there is a formal pre-commencement requirement for investigation and assessment as we would recommend for developments under the Town and Country Planning Act. Since the presence of contamination has been identified as a possibility within the scheme area we do not consider that waiting until it is encountered and potentially mobilised during works before it is addressed is acceptable as would be the case under Requirement 7 of the Draft DCO.
- 1.5.4 MW-GEO1 of the OEMP requires the main contractor to assess risks to human health from contamination disturbed during the works; we request that this assessment is extended to consider risks to controlled waters.

## **1.6 Construction**

- 1.6.1 To date, no assessment has been made of the likely impacts on groundwater quality or quantity during construction of the scheme, particularly the tunnel section. We note that choice of construction method is to be made by the Main Contractor rather than stipulated in the DCO and consequently there is the possibility that methods requiring dewatering may be proposed. Due to the hydrogeological properties of the area, dewatering has the potential to cause significant and widespread impacts on groundwater levels and flows to the Rivers Avon and Till as well as affecting abstractions in the area.
- 1.6.2 Should dewatering be necessary, further risk assessment will be required and unless the conditions of certain exemptions from licensing for small scale schemes can be satisfied, an abstraction licence will be required from the EA. A licence will only be granted if it can be demonstrated that the proposed dewatering, including any proposed mitigation, will not result in unacceptable impacts on existing water interests or the environment.
- 1.6.3 The discharge associated with any dewatering will require separate risk assessment to ensure the risk of pollution or flooding from the discharged water is acceptable and may require an environmental permit from the EA and possibly consent from Wiltshire Council.
- 1.6.4 The EA and Wiltshire Council should be consulted early in the planning of any dewatering scheme to ensure that impacts are acceptable and any necessary permits can be granted.
- 1.6.5 Current licensing policy across the Hampshire Avon indicate that no consumptive abstraction licence >20m<sup>3</sup>/d would be permitted. No groundwater abstraction licence should therefore be relied upon and other sources of water should be secured. We offered to provide further comments if the applicant could provide details of what abstraction may be required (volumes, durations, etc.). To date, no further information or correspondence has been received on this matter. As for dewatering, early dialogue with the EA regarding any proposed consumptive abstraction is recommended.
- 1.6.6 Construction of the tunnel may pose further risk to groundwater quality through migration of substances introduced to aid the process such as drilling fluids or grouts during tunnel boring. We welcome the requirement under the OEMP MW-WAT9 for all materials used for ground treatment and associated water quality monitoring to be approved by the EA.
- 1.6.7 We understand that the OEMP (compliance with which is secured through Requirement 4 of the DCO) requires the Main Contractor to develop a Construction Environmental Management Plan (MW-G5), Groundwater Management Plan and Water Management Plan (MW-G7).

- 1.6.8 The Groundwater Management Plan is to include an update to the Groundwater Risk Assessment taking account of construction methods and final scheme design, groundwater level and quality monitoring plan and the setting of trigger levels and action plans should the triggers be reached. Due to the sensitive nature of groundwater and surface water in the area of the scheme and potential for significant adverse impacts during construction we welcome the requirement for consultation with the EA during preparation of the CEMP (MW-G5 and MW-G6) and Groundwater Management Plan (MW-WAT10) and would request that we are also consulted during the preparation of the Water Management Plan.
- 1.6.9 Due to the potential for adverse impact on local abstractions during construction (depending on methods employed) we welcome the requirement through OEMP (MW-WAT11) for recognition of the rights of water users and consultation with abstractors and the EA over appropriate monitoring and measures to mitigate the risks to supplies and wider water interests.

## **2.0 Flood risk management**

- 2.1 Our written representations below, relating to flood risk management issues, are based on our previously submitted relevant representations (see letter to the Planning Inspectorate dated 11 January 2019). They represent an update based on the applicants' submissions to date in regards to flood risk and the proposed development.
- 2.2 We have been in constructive dialogue with the applicant's flood risk consultant (AECOM) for a while now and in particular since January 2019 following our latest review of the fluvial flood risk hydraulic modelling of the River Till and the River Avon. The latest flood risk modelling results are captured in the applicants' updated 'Fluvial Hydraulic Modelling Report' dated March 2019.
- 2.3 We provided formal feedback to AECOM on 8 April 2019 on their latest fluvial flood risk hydraulic modelling results, and understand these will be addressed and used as appropriate in an updated Flood Risk Assessment [update to the October 2018 Flood Risk Assessment submitted to PINS in support of the DCO] to be submitted to PINS by 3 May 2019. Hence, at the time of writing we have not had an opportunity to review the final Flood Risk Assessment prepared by the applicant in support of the proposed development.
- 2.4 Our position at the time of writing is fundamentally no different to our position as set out in our letter dated 11 January 2019, which was based on the applicant's October 2018 Flood Risk Assessment. To summarise, the final Flood Risk Assessment should demonstrate the following:-
- No increase in flood risk to third parties as a result of the permanent works and temporary works associated with the construction of the scheme;
  - Any loss of fluvial floodplain storage (River Avon and River Till) as a result of the proposed scheme to be fully compensated for, and where possible some betterment offered.
- 2.5 The above requirement is a matter of agreement between us and the applicant and the applicant's flood risk consultant (AECOM). We wish to highlight that at the time of writing, based on the findings of the applicants' assessment of fluvial flood risk to date, there is nothing to indicate that these requirements cannot be achieved.

## **3.0 Fisheries and biodiversity**

### **3.1 Summary**

- 3.1.1 The National Planning Policy Framework is clear that pursuing sustainable development includes moving from a net loss of biodiversity to achieving net gains for nature, and that a core principle for planning is that it should contribute to conserving and enhancing the natural environment and reducing pollution.
- 3.1.2 Similarly the Government's 25 Year Environment Plan (February 2018) has policy for embedding an 'environmental net gain' principle for development, including housing and infrastructure. Therefore, we expect that all developers, both public and private, to demonstrate how they can deliver this. In regards to this scheme we consider that this would be through river restoration which links to public open space. These enhancement opportunities offer the ability to provide a multi-functional space that deliver multiple benefits to the environment and the community.
- 3.1.3 The DCO submission confirms that there will be no adverse impacts on the water environment, but it does not commit to delivering a comprehensive scheme for enhancement of this specific environment. Enhancement of the water environment should be linked to proposed land use and habitat changes, footpath design and fencing, compaction, maintenance regime, etc. With regards to this we have highlighted a key location that we consider the applicant should enhance as part of this scheme, as a minimum; this links to the historic installation of the highway and modification to River Avon. The applicant should also be looking to enhance the environment of the River Till.
- 3.1.4 There are opportunities to enhance habitats for species, such as the Desmoulin's Whorl snail which is acknowledged to be in decline and is a feature of the Special Area of Conservation designation.
- 3.1.5 There remains a risk of impact on the River Till and Avon during construction, which will be minimised through appropriate construction methodology (including pollution control measures and invasive species). This will need to be adequately detailed in the DCO and OEMP.

### **3.2 Protected Species**

- 3.2.1 There is a requirement for the scheme to deliver mitigation and enhancements for Otters, as a protected species. Requirement 6 of the DCO confirms protection and mitigation from the scheme. We would highlight that this should be for both the permanent and temporary works.
- 3.2.2 The applicant will need to ensure that fencing in the river valleys (required for temporary and permanent works) do not hinder safe and preferred passage and allow access to both existing and new woodland habitat.

### **3.3 Fisheries impacts from Piling**

- 3.3.1 Silent or vibrational piling methods should be used as agreed in the OEMP. If impact piling is found to be required for the piers required following vibrational piling, then the gradual ramping up of sound to scare fish away before sound levels reach lethal limits should deter those fish able to swim away before the full power of the pile driver is felt through the river. A non-metallic pad between the hammer and the head of the pile can also reduce the impact. The piling method statement should also include details of timings. Percussive techniques would be limited to November-March inclusive in order to avoid key fish spawning and migration periods. If percussive piling techniques are required, then the piling work should be carried out over as short a period as is practical.
- 3.3.2 In addition, in relation to paragraph 8.8.25 I) in the Biodiversity Chapter 8 of the ES: "To avoid impacts on fish in the River Till, any piling works will be carried out using low vibration methods and will be excluded from within 8m of the river (as a minimum)." We would request that works should be carried out whilst there is no residual flow within the

channel. If the river is flowing, soft start techniques should also be used to minimise disturbance.

### **3.4 Environmental Enhancements and Opportunities**

- 3.4.1 We are disappointed that there is no aspiration or commitment within the DCO application to deliver net gain of wetland habitat. The two SAC river corridors which the new road crosses are both in unfavourable condition and both modified to accommodate the current A303 (which will likely remain). Catchment-wide river restoration plans and delivery partnerships exist, and any restoration works further upstream or downstream could be thoughtfully designed, modified and/or public access considered. As well as providing net gain to wetland biodiversity and the natural capital of the catchment (as supported by the aspirations of the NPPF, and Defra's 25 year Environment Plan) such commitment could offer compensation areas for the residual adverse effects on visual landscape and tranquillity of the river valleys to recreational users at the new crossing sites (as acknowledged in ES Chapter 7).
- 3.4.2 We have requested that the applicant contribute towards the River Avon Restoration Plan (RARP) as part of the schemes requirements to provide net gain / environmental improvements. There are ongoing discussions on the delivery of the relevant RARP actions as part of the legacy for the scheme, but currently there is no final commitment to how this could be delivered within the DCO. There is only commitment to continue discussion through an Environmental Forum.
- 3.4.3 We consider that there should be a greater commitment through the DCO for the development of enhancements of the scheme to deliver wetland habitats and improved river conditions.
- 3.4.4 This could be achieved by including a Requirement for an Environmental Enhancement Plan to be produced as part of the DCO. This should identify potential enhancement opportunities and provide a mechanism for relevant parties, including the Environment Agency, to agree what could be taken forward and delivered.
- 3.4.5 Our suggested wording for a Requirement for an Environmental Enhancement Plan is as follows:
- “(1) No part of the authorised development is to commence until an Environmental Enhancement Plan has been submitted to and approved in writing by the Secretary of State, following consultation with the planning authority, the Environment Agency and Natural England.  
(2) The Environmental Enhancement Plan must be implemented in accordance with the approved details referred to in sub-paragraph (1).”
- 3.4.6 We consider this should also be accompanied with a definition of ‘Environmental Enhancement Plan’ in the DCO.
- 3.4.7 The National Planning Policy Framework (NPPF) core principle for planning is that it should contribute to conserving and enhancing the natural environment, in this regards we consider that the current scheme is currently only meeting the first part of this statement. This is why we request a Requirement to be included in the DCO to cover this. This is also supported through the principles and aims of the Government's 25year Environment Plan.

### **3.5 Invasive species**

- 3.5.1 Section 6.1 Chapter 8.8.25 (k) states that invasive and non-native species will be identified prior to works and removed, or otherwise managed to prevent their spread; and the OEMP does have a line committing to minimising the risk. However, this feels too broad and unprepared given the extent of the other data gathering exercises. We know that invasive non-native species records exist which should have been reviewed, ground truthed, assessed and the controls outlined. Therefore, we will require the applicant to undertake full survey and control plan prior to preliminary works

commencement and reviewed by the relevant bodies (Environment Agency / Natural England). Within this, we would like to see the principles agreed that:

- Where cost effective and technically feasible, the aim should be long term management and ultimate removal of any invasive-non-native species. Where this is not possible, actions to limit spread would be acceptable.
- Ensure all actions are in accordance with best practice and as per UK strategy <http://www.nonnativespecies.org/home/index.cfm>
- Give commitment that any management to remove/prevent their spread is applicable during operation (as well as construction), and therefore actions should be included in a maintenance plan until this is achieved.
- In accordance, maintenance plans need to include survey of site once operational and periodically thereafter.
- Ensure commitment to any residual treatment required, both for previously known areas/species, but also any new areas/species which may have unknowingly arrived during earthworks and construction operations.
- General biosecurity principles for all people, vehicles and materials onsite are applied (already stated in OEMP).

### **3.6 Construction mitigation measures**

3.6.1 With regard to construction mitigation measures relating to biodiversity, we consider that the list of mitigation measures are appropriate, with the exception that we would like to see measures PW BIO1, MW BIO5 and MW BIO6 expanded regarding preliminary works and construction mitigation. This is required because we believe the sections in the OEMP relating to biosecurity and invasive species are too broad and unprepared given the extent of the other data gathering exercises, as discussed above.

## **4.0 Waste and materials management**

4.1 We support the overall approach to waste and materials that is proposed in the application documents. The level of detail that has been provided on waste types and quantities is acceptable, bearing in mind the uncertainties that exist at this stage of the design process.

4.2 We also support the scheme's construction and excavated materials commitments through the production of Materials Management Plan. This confirms that the tunnel arisings will be looking to comply with the CL:AIRE code of practice, and therefore not be considered a waste.

4.3 The Materials Management Plan is a commitment within the OEMP, and therefore forms part of Requirement 4 of the DCO dated October 2018.

## **5.0 Protective Provisions**

5.1 The applicant seeks to disapply various pieces of legislation - Part 1, Article 3, of the draft Development Consent Order dated October 2018.

5.2 Section 150 Planning Act 2008 provides that such disapplication can only take place with the consent with Environment Agency.

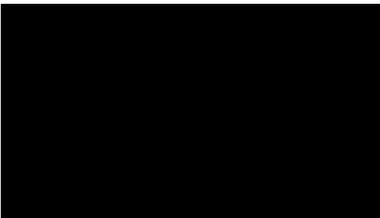
5.3 The Environment Agency do not give consent under Section 150 Planning Act 2008 to the disapplication of legislation listed in Article 3(1) (e), that is, Section 24 of the Water

Resources Act 1991. Reference to such legislation should be removed in the next iteration of the draft DCO.

- 5.4 The Environment Agency are potentially prepared to give consent to the disapplication of legislation listed in Article 3 (1) (f) and (g) subject to the adoption of our preferred protective provisions and receipt of more detailed information about the flood risk activities the applicant intends to undertake. We are of the view that there would be sufficient regulation if our preferred protective provisions are adopted and included in the final DCO.
- 5.5 The protective provisions currently included in Schedule 11 are not agreed as the applicant has not used the Environment Agency's preferred protective provisions – discussions are currently undergoing between legal representatives and it is hoped an agreement will be reached imminently with an agreed version being inserted into the next iteration of the draft DCO.
- 5.6 We will be liaising with the applicant on these issues and will provide the Examining Authority with an update in due course. As indicated in our above representations there are critical areas of works that have the potential to effect the local environment that need to be appropriately controlled.

## **6.0 Additional Requirements – CEMP and HEMP**

- 6.1 In addition to those Requirements that we have discussed in the paragraphs above, we consider there are some additional ones required to cover the production and implementation of a Construction Environmental Management Plan (CEMP) and Handover Environmental Management Plan (HEMP).
- 6.2 Requirement 4 (3) (Outline Environmental Management Plan) in Part 1, Schedule 2 of the draft DCO dated October 2018 states:  
“(3) The undertaker must make each construction environmental management plan and each handover environmental management plan produced in accordance with the OEMP available in an electronic form suitable for inspection by members of the public.”
- 6.3 There does not appear to be any other requirement in the draft DCO to ensure a CEMP and HEMP are produced and implemented. We consider that more specific mention of these plans should be included in the DCO. This is required to ensure that adequate measures are put in place during the construction stage to protect the environment and then appropriate maintenance put in place for the longer term. We would wish to be consulted on the CEMP and HEMP documents, and included as a consultee in any proposed Requirements for these. We consider the definition and requirement for a CEMP and HEMP should be more clearly stated in the DCO.



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