



South East Strategic Reservoir Option
Preliminary Environmental Information Report

Appendix 8.4 - Preliminary assessment of effects for Historic environment

Date: October 2025

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1 Preliminary assessment of effects

1.1 Introduction

- 1.1.1 This appendix sets out the preliminary assessment of effects for Historic environment, receptor by receptor, for the construction and operation stages respectively. The appendix is split into tables that list effects that are initially anticipated to be significant and tables that list effects that are not initially anticipated to be significant. The judgement of significance has been made assuming that embedded design mitigation and standard good practice mitigation relevant to Historic environment is applied (these are summarised in this appendix with further detail provided in the Draft commitments register in Appendix 2.2). Nevertheless, the assessment assumes that additional mitigation is not applied, as the viability, nature and extent of any additional mitigation measures is not confirmed at this stage in the EIA process. As a result, consideration of residual effects (those that remain after the implementation of all mitigation, including additional mitigation) has not been completed for the PEI Report.
- 1.1.2 Each receptor assessed for this aspect in the preliminary assessment is listed in the 'Baseline conditions' section of the associated PEI Report chapter, and also within the tables in this appendix. Each receptor has been assigned an Area ID which relates to the spatial extent of the receptor assessed. Where these have been spatially defined for the PEI Report, these are shown in figures cross-referenced from the 'Baseline conditions' section.
- 1.1.3 Each effect assessed has been assigned a unique identifier, the Effect ID.
- 1.1.4 The tables identify the following for each effect:
- Receptor name, Effect ID and sensitivity category
 - Project components and activities giving rise to the effect
 - Relevant embedded design mitigation and standard good practice mitigation (with unique Commitment ID, which relates to Appendix 2.2: Draft commitments register)
 - Magnitude of impact category and narrative (if reported)
 - Initial category of effect significance, including whether it is adverse, beneficial or neutral (taking account of embedded design mitigation and standard good practice measures)
 - Description and duration of the effect
 - Any additional mitigation and monitoring identified at this stage (with unique Commitment ID, to enable cross reference to the measures noted in Section 8.10: Next steps of applicable aspect chapters)

1.2 Likely significant construction effects

Table 1.1 Initial likely significant effects during construction (with embedded and standard good practice mitigation applied, but prior to additional mitigation)

Receptor name [Effect ID] (Sensitivity of receptor)	Project component(s)	Project activity(ies)	Embedded design / standard good practice mitigation applied	Magnitude of impact category and commentary	Initial significance category where applicable (Initial significance) / Direction of effect	Description of effect (including duration)	Additional mitigation identified (including monitoring)
Non-designated Steventon WWII Depot [HEN-14] (Low)	Reservoir (including embankment and directly associated infrastructure, such as pipes in the base)	Most / all Project activities (construction)	(ED-45) Avoid physical disturbance to listed buildings / structures.	Large The WWII above ground structure within the Steventon Depot would be demolished entirely, resulting in a large magnitude of effect.	Moderate (Significant) Adverse	Total loss of built heritage assets through demolition: For the assessment of effects on the mid 20th century Steventon Vehicle Depot, where buildings are demolished, this would result in a total loss of heritage significance (value). (Permanent)	(AM-02) Archaeological preservation by record. 'Historic Building Recording' will be required to level agreed with stakeholders to reduce the level of effect. The building recording should be carried out in accordance with a Written Scheme of Investigation (WSI) approved in advance of implementation. This will help to reduce the adverse effects of the demolition by providing an accurate record in the public domain for future research.
Wiltshire and Berkshire Canal and surviving locks [HEN-25] (Low)	Reservoir (including embankment and directly associated infrastructure, such as pipes in the base)	Most / all Project activities (construction)	(SGP-10) Standard good practice measures to protect buried archaeological remains during construction.	Large Demolition and partial excavation of the surviving elements of the Wiltshire and Berkshire canal would result in a large magnitude of effect.	Moderate (Significant) Adverse	Partial loss of built heritage assets through reservoir construction: For the assessment of effects on the canal as a group, partial demolition would result in a partial loss heritage significance (value). (Permanent)	(AM-02) Archaeological preservation by record. 'Historic Building Recording' will be required to level agreed with stakeholders to reduce the level of effect. The building recording should be carried out in accordance with a Written Scheme of Investigation (WSI) approved in advance of implementation. This will help to reduce the adverse effects of the demolition by providing an accurate record in the public domain for future research.
Prehistoric remains within the draft Order limits [HEN-2] (High)	Most / all Project components	General construction activities Material excavation and handling	(SGP-09) Standard good practice measures for avoiding unexpected disturbance to heritage assets during construction.	Large 'Cut' activities, involving reducing ground level locally would truncate or entirely remove any archaeological remains within the footprint of the works, the degree of	Major (Significant) Adverse	Physical impact or total loss from construction activities: The main effect on previously unrecorded archaeological remains would derive from intrusive construction activities across the draft Order limits. Such activities comprise works carried out as part of site establishment, including assumed topsoil stripping across all	(AM-02) Archaeological preservation by record. Record all buried or built heritage assets affected during the construction phase of the Project in accordance with a Written Scheme of

Receptor name [Effect ID] (Sensitivity of receptor)	Project component(s)	Project activity(ies)	Embedded design / standard good practice mitigation applied	Magnitude of impact category and commentary	Initial significance category where applicable (Initial significance) / Direction of effect	Description of effect (including duration)	Additional mitigation identified (including monitoring)
		Vegetation removal Preparatory and enabling works Most / all Project activities (construction)	(SGP-10) Standard good practice measures to protect buried archaeological remains during construction.	impact depending on the depth of the cut. The magnitude of change is assessed as Large for all intrusive construction activities across the draft Order limits.		construction areas and for temporary construction compounds and access roads. 'Cut' activities, involving excavation for the reservoir, where they extend below the topsoil and subsoils, would truncate or entirely remove any archaeological remains within the footprint of the works, the degree of impact depending on the depth of the cut. There may be addition impacts from planting, landscaping and insertion of services across the draft Order limits in addition to piled and shallower foundations for above ground infrastructure (e.g. pumping station, intake/outfall structures). The Project also has the potential to affect the condition of archaeological remains not physically impacted, through changes to hydrological regimes. (Permanent)	Investigation (WSI) approved in advance of implementation. This will help to reduce the adverse effects of their removal by providing an accurate record in the public domain for future research.
Late Iron Age to Romano British settlements within the draft Order limits [HEN-3] (High)	Most / all Project components	General construction activities Material excavation and handling Vegetation removal Preparatory and enabling works Most / all Project activities (construction)	(SGP-09) Standard good practice measures for avoiding unexpected disturbance to heritage assets during construction. (SGP-10) Standard good practice measures to protect buried archaeological remains during construction.	Large 'Cut' activities, involving reducing ground level locally would truncate or entirely remove any archaeological remains within the footprint of the works, the degree of impact depending on the depth of the cut. The magnitude of change is assessed as Large for all intrusive construction activities across the draft Order limits.	Major (Significant) Adverse	Physical impact or total loss from construction activities: The main effect on previously unrecorded archaeological remains would derive from intrusive construction activities across the draft Order limits. Such activities comprise works carried out as part of site establishment, including assumed topsoil stripping across all construction areas and for temporary construction compounds and access roads. 'Cut' activities, involving excavation for the reservoir, where they extend below the topsoil and subsoils, would truncate or entirely remove any archaeological remains within the footprint of the works, the degree of impact depending on the depth of the cut. There may be addition impacts from planting, landscaping and insertion of services across the draft Order limits in addition to piled and shallower foundations for above ground infrastructure (e.g. pumping station, intake/outfall structures). The Project also has the potential to affect the condition of archaeological remains not physically impacted, through changes to hydrological regimes. (Permanent)	(AM-02) Archaeological preservation by record. Record all buried or built heritage assets affected during the construction phase of the Project in accordance with a Written Scheme of Investigation (WSI) approved in advance of implementation. This will help to reduce the adverse effects of their removal by providing an accurate record in the public domain for future research.
Roman remains within the draft Order limits [HEN-4] (High)	Most / all Project components	General construction activities	(SGP-09) Standard good practice measures for avoiding unexpected	Large 'Cut' activities, involving reducing ground level locally	Major (Significant) Adverse	Physical impact or total loss from construction activities: The main effect on previously unrecorded archaeological remains would derive from intrusive construction activities across the	(AM-02) Archaeological preservation by record. Record all buried or built heritage assets affected

Receptor name [Effect ID] (Sensitivity of receptor)	Project component(s)	Project activity(ies)	Embedded design / standard good practice mitigation applied	Magnitude of impact category and commentary	Initial significance category where applicable (Initial significance) / Direction of effect	Description of effect (including duration)	Additional mitigation identified (including monitoring)
		Material excavation and handling Vegetation removal Preparatory and enabling works Most / all Project activities (construction)	disturbance to heritage assets during construction. (SGP-10) Standard good practice measures to protect buried archaeological remains during construction.	would truncate or entirely remove any archaeological remains within the footprint of the works, the degree of impact depending on the depth of the cut. The magnitude of change is assessed as Large for all intrusive construction activities across the draft Order limits.		draft Order limits. Such activities comprise works carried out as part of site establishment, including assumed topsoil stripping across all construction areas and for temporary construction compounds and access roads. 'Cut' activities, involving excavation for the reservoir, where they extend below the topsoil and subsoils, would truncate or entirely remove any archaeological remains within the footprint of the works, the degree of impact depending on the depth of the cut. There may be addition impacts from planting, landscaping and insertion of services across the draft Order limits in addition to piled and shallower foundations for above ground infrastructure (e.g. pumping station, intake/outfall structures). The Project also has the potential to affect the condition of archaeological remains not physically impacted, through changes to hydrological regimes. (Permanent)	during the construction phase of the Project in accordance with a Written Scheme of Investigation (WSI) approved in advance of implementation. This will help to reduce the adverse effects of their removal by providing an accurate record in the public domain for future research.
Early medieval remains within the draft Order limits [HEN-5] (High)	Most / all Project components	General construction activities Material excavation and handling Vegetation removal Preparatory and enabling works Most / all Project activities (construction)	(SGP-09) Standard good practice measures for avoiding unexpected disturbance to heritage assets during construction. (SGP-10) Standard good practice measures to protect buried archaeological remains during construction.	Large 'Cut' activities, involving reducing ground level locally would truncate or entirely remove any archaeological remains within the footprint of the works, the degree of impact depending on the depth of the cut. The magnitude of change is assessed as Large for all intrusive construction activities across the draft Order limits.	Major (Significant) Adverse	Physical impact or total loss from construction activities: The main effect on previously unrecorded archaeological remains would derive from intrusive construction activities across the draft Order limits. Such activities comprise works carried out as part of site establishment, including assumed topsoil stripping across all construction areas and for temporary construction compounds and access roads. 'Cut' activities, involving excavation for the reservoir, where they extend below the topsoil and subsoils, would truncate or entirely remove any archaeological remains within the footprint of the works, the degree of impact depending on the depth of the cut. There may be addition impacts from planting, landscaping and insertion of services across the draft Order limits in addition to piled and shallower foundations for above ground infrastructure (e.g. pumping station, intake/outfall structures). The Project also has the potential to affect the condition of archaeological remains not physically impacted, through changes to hydrological regimes. (Permanent)	(AM-02) Archaeological preservation by record. Record all buried or built heritage assets affected during the construction phase of the Project in accordance with a Written Scheme of Investigation (WSI) approved in advance of implementation. This will help to reduce the adverse effects of their removal by providing an accurate record in the public domain for future research.

Receptor name [Effect ID] (Sensitivity of receptor)	Project component(s)	Project activity(ies)	Embedded design / standard good practice mitigation applied	Magnitude of impact category and commentary	Initial significance category where applicable (Initial significance) / Direction of effect	Description of effect (including duration)	Additional mitigation identified (including monitoring)
Later Medieval remains within the draft Order limits [HEN-24] (High)	Most / all Project components	General construction activities Material excavation and handling Vegetation removal Preparatory and enabling works Most / all Project activities (construction)	(SGP-09) Standard good practice measures for avoiding unexpected disturbance to heritage assets during construction. (SGP-10) Standard good practice measures to protect buried archaeological remains during construction.	Large 'Cut' activities, involving reducing ground level locally would truncate or entirely remove any archaeological remains within the footprint of the works, the degree of impact depending on the depth of the cut. The magnitude of change is assessed as Large for all intrusive construction activities across the draft Order limits.	Major (Significant) Adverse	Physical impact or total loss from construction activities: The main effect on previously unrecorded archaeological remains would derive from intrusive construction activities across the draft Order limits. Such activities comprise works carried out as part of site establishment, including assumed topsoil stripping across all construction areas and for temporary construction compounds and access roads. 'Cut' activities, involving excavation for the reservoir, where they extend below the topsoil and subsoils, would truncate or entirely remove any archaeological remains within the footprint of the works, the degree of impact depending on the depth of the cut. There may be addition impacts from planting, landscaping and insertion of services across the draft Order limits in addition to piled and shallower foundations for above ground infrastructure (e.g. pumping station, intake/outfall structures). The Project also has the potential to affect the condition of archaeological remains not physically impacted, through changes to hydrological regimes. (Permanent)	(AM-02) Archaeological preservation by record. Record all buried or built heritage assets affected during the construction phase of the Project in accordance with a Written Scheme of Investigation (WSI) approved in advance of implementation. This will help to reduce the adverse effects of their removal by providing an accurate record in the public domain for future research.
Post Medieval remains within the draft Order limits [HEN-6] (Moderate)	Most / all Project components	General construction activities Material excavation and handling Vegetation removal Preparatory and enabling works Most / all Project activities (construction)	(SGP-09) Standard good practice measures for avoiding unexpected disturbance to heritage assets during construction. (SGP-10) Standard good practice measures to protect buried archaeological remains during construction.	Large 'Cut' activities, involving reducing ground level locally would truncate or entirely remove any archaeological remains within the footprint of the works, the degree of impact depending on the depth of the cut. The magnitude of change is assessed as Large for all intrusive construction activities across the draft Order limits.	Moderate (Significant) Adverse	Physical impact or total loss from construction activities: The main effect on previously unrecorded archaeological remains would derive from intrusive construction activities across the draft Order limits. Such activities comprise works carried out as part of site establishment, including assumed topsoil stripping across all construction areas and for temporary construction compounds and access roads. 'Cut' activities, involving excavation for the reservoir, where they extend below the topsoil and subsoils, would truncate or entirely remove any archaeological remains within the footprint of the works, the degree of impact depending on the depth of the cut. There may be addition impacts from planting, landscaping and insertion of services across the draft Order limits in addition to piled and shallower foundations for above ground infrastructure (e.g. pumping station, intake/outfall structures). The Project also has the potential to affect the condition of	(AM-02) Archaeological preservation by record. Record all buried or built heritage assets affected during the construction phase of the Project in accordance with a Written Scheme of Investigation (WSI) approved in advance of implementation. This will help to reduce the adverse effects of their removal by providing an accurate record in the public domain for future research.

Receptor name [Effect ID] (Sensitivity of receptor)	Project component(s)	Project activity(ies)	Embedded design / standard good practice mitigation applied	Magnitude of impact category and commentary	Initial significance category where applicable (Initial significance) / Direction of effect	Description of effect (including duration)	Additional mitigation identified (including monitoring)
						archaeological remains not physically impacted, through changes to hydrological regimes. (Permanent)	
Buried 20th century remains within the draft Order limits [HEN-7] (Moderate)	Most / all Project components	General construction activities Material excavation and handling Vegetation removal Preparatory and enabling works Most / all Project activities (construction)	(SGP-09) Standard good practice measures for avoiding unexpected disturbance to heritage assets during construction. (SGP-10) Standard good practice measures to protect buried archaeological remains during construction.	Large 'Cut' activities, involving reducing ground level locally would truncate or entirely remove any archaeological remains within the footprint of the works, the degree of impact depending on the depth of the cut. The magnitude of change is assessed as Large for all intrusive construction activities across the draft Order limits.	Moderate (Significant) Adverse	Physical impact or total loss from construction activities: The main effect on previously unrecorded archaeological remains would derive from intrusive construction activities across the draft Order limits. Such activities comprise works carried out as part of site establishment, including assumed topsoil stripping across all construction areas and for temporary construction compounds and access roads. 'Cut' activities, involving excavation for the reservoir, where they extend below the topsoil and subsoils, would truncate or entirely remove any archaeological remains within the footprint of the works, the degree of impact depending on the depth of the cut. There may be addition impacts from planting, landscaping and insertion of services across the draft Order limits in addition to piled and shallower foundations for above ground infrastructure (e.g. pumping station, intake/outfall structures). The Project also has the potential to affect the condition of archaeological remains not physically impacted, through changes to hydrological regimes. (Permanent)	(AM-02) Archaeological preservation by record. Record all buried or built heritage assets affected during the construction phase of the Project in accordance with a Written Scheme of Investigation (WSI) approved in advance of implementation. This will help to reduce the adverse effects of their removal by providing an accurate record in the public domain for future research.
Palaeoenvironmental remains within the draft Order limits [HEN-8] (Moderate)	Most / all Project components	General construction activities Material excavation and handling Vegetation removal Preparatory and enabling works Most / all Project activities (construction)	(SGP-09) Standard good practice measures for avoiding unexpected disturbance to heritage assets during construction. (SGP-10) Standard good practice measures to protect buried archaeological remains during construction.	Large Magnitude of change is large where construction works would remove palaeoenvironmental evidence (or artefacts) present within river terrace gravels or Holocene Alluvium. Magnitude of change is medium where environmental or topographical data is partially truncated or removed.	Moderate (Significant) Adverse	Physical impact or total loss from construction activities: The main effect on previously unrecorded archaeological remains would derive from intrusive construction activities across the draft Order limits. Such activities comprise works carried out as part of site establishment, including assumed topsoil stripping across all construction areas and for temporary construction compounds and access roads. 'Cut' activities, involving excavation for the reservoir, where they extend below the topsoil and subsoils, would truncate or entirely remove any archaeological remains within the footprint of the works, the degree of impact depending on the depth of the cut. There may be addition impacts from planting, landscaping and insertion of services across the draft Order limits in addition to piled and shallower foundations for	(AM-02) Archaeological preservation by record. Record all buried or built heritage assets affected during the construction phase of the Project in accordance with a Written Scheme of Investigation (WSI) approved in advance of implementation. This will help to reduce the adverse effects of their removal by providing an accurate record in the public domain for future research.

Receptor name [Effect ID] (Sensitivity of receptor)	Project component(s)	Project activity(ies)	Embedded design / standard good practice mitigation applied	Magnitude of impact category and commentary	Initial significance category where applicable (Initial significance) / Direction of effect	Description of effect (including duration)	Additional mitigation identified (including monitoring)
						above ground infrastructure (e.g. pumping station, intake/outfall structures). The Project also has the potential to affect the condition of archaeological remains not physically impacted, through changes to hydrological regimes. (Permanent)	

1.3 Likely significant operation effects

Table 1.2 Initial likely significant effects during operation (with embedded and standard good practice mitigation applied, but prior to additional mitigation)

Receptor name [Effect ID] (Sensitivity of receptor)	Project component(s)	Project activity(ies)	Embedded design / standard good practice mitigation applied	Magnitude of impact category and commentary	Initial significance category where applicable (Initial significance) / Direction of effect	Description of effect (including duration)	Additional mitigation identified (including monitoring)
Scheduled monuments within the 2km study area and wider ZTV potentially affected through changes to setting [HEN-16] (High)	Reservoir (including embankment and directly associated infrastructure, such as pipes in the base) Reservoir towers Intake/outfall structure Pumping station Lighting (permanent)	Presence (of Project components)	(ED-44) Noise bunds. (ED-57) Design and establishment of planting, habitats, and/or landform to help control, limit, soften and filter views of new infrastructure. (ED-58) Landscape-led design that responds to landscape character, provides a sense of place and identity, ecological resilience and integrates into the wider landscape setting. (ED-59) Design to reduce adverse effects on the North Wessex Downs National Landscape.	Magnitude of impact is not reported for this preliminary assessment, refer to Section 8.4 Assessment methodology for further details.	(Significant) Adverse	Impact to heritage significance (value) through changes to setting: For the assessment of effects on Scheduled monuments within the wider area, where these coincide with the Zone of Theoretical Visibility (ZTV), the main potential effect would permanent effects on heritage significance due to changes to setting. Potential effects derive from the introduction of new built form, particularly the reservoir embankments and above ground infrastructure, which would likely be visible in medium to long views from assets in the wider study area. There may be additional effects resulting from operational noise, light spill and where visual/historical relationships between heritage assets is affected by the Project. (Permanent)	No additional mitigation has been confirmed at this stage, however, mitigation measures are being actively explored as the design and EIA progresses.
Grade II* listed buildings within the 2km study area (outside of conservation areas) [HEN-11] (High)	Reservoir (including embankment and directly associated infrastructure, such as pipes in the base) Reservoir towers Intake/outfall structure Pumping station Lighting (permanent)	Presence (of Project components)	(ED-44) Noise bunds. (ED-57) Design and establishment of planting, habitats, and/or landform to help control, limit, soften and filter views of new infrastructure. (ED-58) Landscape-led design that responds to landscape character, provides a sense of place and identity, ecological resilience and integrates into the wider landscape setting.	Magnitude of impact is not reported for this preliminary assessment, refer to Section 8.4 Assessment methodology for further details.	(Significant) Adverse	Impact to heritage significance (value) through changes to setting: For the assessment of effects on Grade II* listed buildings within the study area, where these coincide with the Zone of Theoretical Visibility (ZTV), the main potential effect would permanent effects on heritage significance due to changes to setting. Potential effects derive from the introduction of new built form, particularly the reservoir embankments and infrastructure, which would likely be visible in medium and long views from assets in the wider study area. There may be additional effects resulting from operational noise, light spill and where visual/historical relationships between heritage assets is affected by the Project. (Permanent)	No additional mitigation has been confirmed at this stage, however, mitigation measures are being actively explored as the design and EIA progresses.

Receptor name [Effect ID] (Sensitivity of receptor)	Project component(s)	Project activity(ies)	Embedded design / standard good practice mitigation applied	Magnitude of impact category and commentary	Initial significance category where applicable (Initial significance) / Direction of effect	Description of effect (including duration)	Additional mitigation identified (including monitoring)
Grade II listed buildings within the draft Order limits [HEN-9] (High)	Reservoir (including embankment and directly associated infrastructure, such as pipes in the base) Reservoir towers Intake/outfall structure Pumping station Lighting (permanent)	Presence (of Project components)	(ED-44) Noise bunds. (ED-57) Design and establishment of planting, habitats, and/or landform to help control, limit, soften and filter views of new infrastructure. (ED-58) Landscape-led design that responds to landscape character, provides a sense of place and identity, ecological resilience and integrates into the wider landscape setting.	Magnitude of impact is not reported for this preliminary assessment, refer to Section 8.4 Assessment methodology for further details.	(Significant) Adverse	Impact to heritage significance (value) through changes to setting: Grade II listed buildings within the draft Order limits are likely to experience an effect through permanent changes to setting. The likely effects derive from the introduction of new built form, particularly the reservoir embankments and infrastructure, which would likely be highly visible in views from assets. There may be additional effects resulting from operational noise, light spill and where visual/historical relationships between heritage assets is affected by the Project. (Permanent)	No additional mitigation has been confirmed at this stage, however, mitigation measures are being actively explored as the design and EIA progresses.
Conservation areas (and listed buildings within) inside the 2km study area [HEN-12] (High)	Reservoir (including embankment and directly associated infrastructure, such as pipes in the base) Reservoir towers Intake/outfall structure Pumping station Lighting (permanent)	Presence (of Project components)	(ED-44) Noise bunds. (ED-57) Design and establishment of planting, habitats, and/or landform to help control, limit, soften and filter views of new infrastructure. (ED-58) Landscape-led design that responds to landscape character, provides a sense of place and identity, ecological resilience and integrates into the wider landscape setting.	Magnitude of impact is not reported for this preliminary assessment, refer to Section 8.4 Assessment methodology for further details.	(Significant) Adverse	Impact to heritage significance (value) through changes to setting: For the assessment of effects on conservation areas (and listed buildings), where these coincide with the Zone of Theoretical Visibility (ZTV), the main potential effect would permanent effects on heritage significance due to changes to setting. Potential effects derive from the introduction of new built form, particularly the reservoir embankments and above ground infrastructure, which would likely be visible in medium and long views from assets in the wider study area. There may be additional effects resulting from operational noise, light spill and where visual/historical relationships between heritage assets is affected by the Project. (Permanent)	No additional mitigation has been confirmed at this stage, however, mitigation measures are being actively explored as the design and EIA progresses.
Palaeoenvironmental remains within the draft Order limits [HEN-20] (Moderate)	Most / all Project components Reservoir (including embankment and directly associated infrastructure, such as pipes in the base) River tunnel and shafts	Presence (of Project components)	(ED-22) Drainage Strategy to align with national and local planning policy and guidance. (ED-31) Lining of key watercourses and surface water features and provision of substrate. (ED-49) Measures embedded into the design to ensure permanent conveyance to tunnels/pipelines.	In all likelihood, waterlogged remains (where present) would not be lost in their entirety due to dryer ground conditions. Magnitude of change is therefore likely to be medium through some loss of integrity or elements.	Moderate (Significant) Adverse	Changes in ground water levels and flows leading to degradation of archaeological remains: The draft Order limits lie within a known floodplain environment. The presence of any waterlogged and thereby 'well preserved' archaeological remains is currently unknown. Where present, these would likely be confined to alluvial deposits located along the present river channels. Operational work in the area which	(AM-22) Project design avoids historic environment assets wherever practicable. (AM-02) Archaeological preservation by record.

Receptor name [Effect ID] (Sensitivity of receptor)	Project component(s)	Project activity(ies)	Embedded design / standard good practice mitigation applied	Magnitude of impact category and commentary	Initial significance category where applicable (Initial significance) / Direction of effect	Description of effect (including duration)	Additional mitigation identified (including monitoring)
	Groundwater drain Eastern watercourses diversion (Mere Dyke and Drayton North Ditch)		(ED-50) Drainage designed to reduce the risk of flooding. (ED-52) Measures to manage groundwater levels and flow routes.			permanently changes drainage and flow pathways has the potential to alter groundwater levels and flows. These changes could, in some areas lead to the drying out of archaeological remains, resulting in loss of significance through degradation which would occur during the Operation stage. (Permanent)	

1.4 Likely non-significant construction effects

Table 1.3 Initial likely non-significant effects during construction (with embedded and standard good practice mitigation applied, but prior to additional mitigation)

Receptor name [Effect ID] (Sensitivity of receptor)	Project component(s)	Project activity(ies)	Embedded design / standard good practice mitigation applied	Magnitude of impact category and commentary	Initial significance category where applicable (Initial significance) / Direction of effect	Description of effect (including duration)	Additional mitigation identified (including monitoring)
Scheduled monuments within the draft Order limits [HEN-10] (High)	Planting	Most / all Project activities (construction)	(ED-38) Avoid physical disturbance to Scheduled Monuments.	No change Assuming embedded mitigation to avoid the scheduled monuments within the draft Order limits (including within the consented landscape design), It is assumed that no direct physical impacts would occur.	None (Not Significant) Neutral	Physical impact and removal of buried features: All scheduled monuments within the draft Order limits are to be avoided in the design, with no intrusive works to be undertaken within the boundaries of the monuments. This includes potential impacts deriving from topsoil stripping (for compounds and temporary haul roads) and from landscape planting. In the case of the scheduled Ock Bridge there may be impacts deriving from vibration caused by vehicular access which would be further assessed in the ES. (Permanent)	No additional mitigation required as the effect is not significant.
Grade II listed buildings within the draft Order limits [HEN-23] (High)	Most / all Project components Highways improvements	Demolition General construction activities	(ED-45) Avoid physical disturbance to listed buildings / structures. (ED-47) Retention of listed buildings/structures.	No change Six of the seven listed buildings would be avoided in the design with no impacts predicted. The Grade II listed Milestone at SU 4152 9217 which is located within proposed new highways verge along the A338 and as such is assumed to require removal and reinstatement as part of the Project. Once recorded and reinstated the magnitude of change would likely be 'no change'.	None (Not Significant) Adverse	Physical impact or demolition deriving from construction activities: The draft Order limits contain seven listed buildings, which would be potentially impacted by physical demolition or alteration as a result of the Project design and through construction activities. Where assets are demolished without record, this would result in a loss of heritage value. (Long-term)	No additional mitigation required as the effect is not significant.
Heritage Assets potentially affected by temporary construction effects [HEN-19] (High)	Most / all Project components Site compounds, haul routes, temporary bridges or culverts	General construction activities	(SGP-13) Good practice measures for protecting landscape and visual receptors during construction. (SGP-25) Apply measures including Best Practicable Means to reduce construction noise and vibration. (SGP-26) Carry out construction works during standard working hours (where reasonably practicable). (SGP-51) Reduce light spill from construction.	Magnitude of impact is not reported for this preliminary assessment, refer to Section 8.4 Assessment methodology for further details.	(Not Significant) Adverse	Temporary effects on heritage significance through setting changes during construction: All temporary impacts derive from non-physical impacts of the Project. These comprise changes to the setting of heritage assets arising from views of Project infrastructure, principally compounds, temporary access roads, plant movement, cranes and tunnelling infrastructure. Potential effects also include increased noise and dust from construction activities. Potential effects would be transitory and of varying duration and would have ceased by the end of the construction period. (Medium-term)	No additional mitigation required as the effect is not significant.

Receptor name [Effect ID] (Sensitivity of receptor)	Project component(s)	Project activity(ies)	Embedded design / standard good practice mitigation applied	Magnitude of impact category and commentary	Initial significance category where applicable (Initial significance) / Direction of effect	Description of effect (including duration)	Additional mitigation identified (including monitoring)
Non-designated mid 20th century Pillbox in Culham [HEN-18] (Low)	Site-wide utilities diversions and new supplies Highways improvements New green open space	Most / all Project activities (construction)	(ED-45) Avoid physical disturbance to listed buildings / structures.	No change Embedded mitigation to be agreed - assumed no physical impact as the asset lies outside of the current Project design elements.	None (Not Significant) Neutral	Physical impact or demolition deriving from construction activities: For the assessment of effects on the mid 20th century Pillbox at Culham, the heritage (value) of the assets is low. There would be no change to the asset during construction. (Permanent)	No additional mitigation required as the effect is not significant.

1.5 Likely non-significant operation effects

Table 1.4 Initial likely non-significant effects during operation (with embedded and standard good practice mitigation applied, but prior to additional mitigation)

Receptor name [Effect ID] (Sensitivity of receptor)	Project component(s)	Project activity(ies)	Embedded design / standard good practice mitigation applied	Magnitude of impact category and commentary	Initial significance category where applicable (Initial significance) / Direction of effect	Description of effect (including duration)	Additional mitigation identified (including monitoring)
Scheduled monuments within the draft Order limits [HEN-21] (High)	Most / all Project components	No Project activities identified at this stage.	(ED-22) Drainage Strategy to align with national and local planning policy and guidance. (ED-31) Lining of key watercourses and surface water features and provision of substrate. (ED-49) Measures embedded into the design to ensure permanent conveyance to tunnels/pipelines. (ED-50) Drainage designed to reduce the risk of flooding. (ED-52) Measures to manage groundwater levels and flow routes.	In all likelihood, the scheduled monuments within the draft Order limits do not contain extensive waterlogged remains. Magnitude of change is currently unknown but anticipated to be negligible.	Minor (Not Significant) Adverse	Changes in ground water levels and flows leading to degradation of archaeological remains: The draft Order limits lie within a known floodplain environment. The presence of any waterlogged and thereby 'well preserved' archaeological remains is currently unknown. Where present, these would likely be confined to alluvial deposits located along the present river channels and as such the scheduled monuments are likely to be preserved within stable conditions. Operational work in the area which permanently changes drainage and flow pathways has the potential to change groundwater levels. These changes could, in some areas lead to the drying out of archaeological remains, resulting in loss of significance through degradation. (Long-term)	No additional mitigation required as the effect is not significant.
Registered Parks & Gardens within the 2km study area and those within the ZTV [HEN-13] (High)	Reservoir (including embankment and directly associated infrastructure, such as pipes in the base) Reservoir towers Intake/outfall structure Pumping station Lighting (permanent)	Presence (of Project components)	(ED-44) Noise bunds. (ED-57) Design and establishment of planting, habitats, and/or landform to help control, limit, soften and filter views of new infrastructure. (ED-58) Landscape-led design that responds to landscape character, provides a sense of place and identity, ecological resilience and integrates into the wider landscape setting.	Magnitude of impact is not reported for this preliminary assessment, refer to Section 8.4 Assessment methodology for further details.	(Not Significant) Adverse	Impact to heritage significance (value) through changes to setting: For the assessment of effects on Registered Parks and Gardens within the 2km study area and wider ZTV, the main potential effect would permanent effects on heritage significance due to changes to setting. Potential effects derive from the introduction of new built form, particularly the reservoir embankments and above ground infrastructure, which would likely be visible in longer views from the assets. There may be additional effects resulting from operational noise, light spill and where visual/historical relationships between heritage assets is affected by the Project. (Permanent)	No additional mitigation required as the effect is not significant.
Grade II listed buildings within the 2km study area (outside of conservation areas) [HEN-15] (High)	Reservoir (including embankment and directly associated infrastructure, such as pipes in the base) Reservoir towers Intake/outfall structure	Presence (of Project components)	(ED-44) Noise bunds. (ED-57) Design and establishment of planting, habitats, and/or landform to help control, limit, soften and filter views of new infrastructure. (ED-58) Landscape-led design that responds to landscape character, provides a sense of	Magnitude of impact is not reported for this preliminary assessment, refer to Section 8.4 Assessment methodology for further details.	(Not Significant) Adverse	Impact to heritage significance (value) through changes to setting: For the assessment of effects on Grade II listed buildings outside of conservation areas, where these coincide with the Zone of Theoretical Visibility (ZTV), the main potential effect would permanent effects on heritage significance due to changes to setting. Potential effects derive from the introduction of new built form, particularly the reservoir	No additional mitigation required as the effect is not significant.

Receptor name [Effect ID] (Sensitivity of receptor)	Project component(s)	Project activity(ies)	Embedded design / standard good practice mitigation applied	Magnitude of impact category and commentary	Initial significance category where applicable (Initial significance) / Direction of effect	Description of effect (including duration)	Additional mitigation identified (including monitoring)
	Pumping station Lighting (permanent)		place and identity, ecological resilience and integrates into the wider landscape setting.			embankments and infrastructure, which would likely be visible in medium and long views from these assets in the wider area. There may be additional effects resulting from operational noise, light spill and where visual/historical relationships between heritage assets is affected by the Project. (Permanent)	
Non-designated built heritage assets within the 1km study area [HEN-17] (Moderate)	Reservoir (including embankment and directly associated infrastructure, such as pipes in the base) Reservoir towers Intake/outfall structure Pumping station Lighting (permanent)	Presence (of Project components)	(ED-44) Noise bunds. (ED-57) Design and establishment of planting, habitats, and/or landform to help control, limit, soften and filter views of new infrastructure. (ED-58) Landscape-led design that responds to landscape character, provides a sense of place and identity, ecological resilience and integrates into the wider landscape setting.	Magnitude of impact is not reported for this preliminary assessment, refer to Section 8.4 Assessment methodology for further details.	(Not Significant) Adverse	Impact to heritage significance (value) through changes to setting: For the assessment of effects on Non-designated built heritage assets within 1km, where these coincide with the Zone of Theoretical Visibility (ZTV), the main potential effect would permanent effects on heritage significance due to changes to setting. Potential effects derive from the introduction of new built form, particularly the reservoir embankments and above ground infrastructure, which may be visible in longer views from the assets in the study area. There may be additional effects resulting from operational noise, light spill and where visual/historical relationships between heritage assets is affected by the Project. (Permanent)	No additional mitigation required as the effect is not significant.



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