South East Strategic Reservoir Option

Preliminary Environmental Information Report

Chapter 20 - Cumulative effects

Date: October 2025

Contents

20 Cumulative effects 1

20.1 Introduction 1

20.2 Legislation, policy and guidance 2

20.3 Consultation, engagement and scoping 7

20.4 Assessment methodology 9

20.5 Study area 21

20.6 Baseline conditions 22

20.7 Project parameters, assumptions and limitations 22

20.8 Embedded design mitigation and standard good practice 24

20.9 Preliminary assessment of likely significant effects 24

20.10 Summary of likely significant effects and additional mitigation 54

20.11 Next steps 62

References 68

List of tables

Table 20.1 Relevant legislation, policy and guidance for cumulative effects 2

Table 20.2 Key Scoping feedback for cumulative effects 7

Table 20.3 Key ongoing engagement for cumulative effects 9

Table 20.4 Other developments for inclusion in the Cumulative effects assessment (Based upon PINS Advice on CEA) 12

Table 20.5 Project parameters and assumptions forming the basis of assessment 23

Table 20.6 Potential significant effects with other developments (shortlisted at PEI Report stage) 26

Table 20.7 Key Receptor Groups 46

Table 20.8 Additional mitigation identified to date in relation to the Cumulative effects assessment 62

20 Cumulative effects

20.1 Introduction

20.1.1 This chapter of the Preliminary Environmental Information (PEI) Report provides the preliminary assessment of likely significant cumulative effects from the construction and operation of the proposed SESRO Project (the Project, as detailed in Chapter 2: Project description).

20.1.2 Within this chapter, aspect-specific sections are included on:

- Legislation, policy and guidance (Section 20.2)
- Consultation, engagement and scoping (Section 20.3)
- Assessment methodology (Section 20.4)
- Study area (Section 20.5)
- Baseline conditions (Section 20.6)
- Project parameters, assumptions and limitations (Section 20.7)
- Embedded design mitigation and standard good practice (Section 20.8)
- Preliminary assessment of likely significant effects (Section 20.9)
- Summary of likely significant effects and additional mitigation (Section 20.10)
- Next steps (Section 20.11).

20.1.3 This chapter of the PEI Report considers the potential inter-project and intra-project effects arising from the construction and operational phases of the Project. These effects are defined as:

- Inter-project effects: The consolidated effect of multiple residual environmental effects of a single project with other developments on a single receptor or group of receptors.
- Intra-project effects: The consolidated effect of multiple residual environmental effects from within a single project affecting a single receptor or group of receptors.

20.1.4 This chapter should be read in conjunction with Chapter 2: Project description, Chapter 4: Approach to the environmental assessment, and aspect Chapters 5 – 19.

20.1.5 This chapter is supported by the following figures and appendices:

- Figure 20.1: Cumulative effects Zone of Influence (ZOI)
- Figure 20.2: Overview of long list of other development
- Appendix 20.1: Long list of other developments
- Appendix 20.2: Cumulative soils assessment.

20.1.6 This PEI Report does not constitute a draft Environmental Statement (ES). Assessments reported within this PEI Report chapter are considered a reasonable 'worst case' as a precautionary approach has been taken where design, construction or baseline information is being developed. Nevertheless, the preliminary assessment is considered sufficiently robust to enable consultees to understand the likely significant environmental effects of the Project, based on current design information and understanding of the baseline environment. Gaps in information identified within the PEI Report will be considered and addressed as part of the assessment during the production of the ES, as noted in Section 20.11: Next steps.

20.1.7 The ES will be submitted with the Development Consent Order (DCO) application and will provide the final assessment of likely significant effects; this will be informed by the ongoing Environmental Impact Assessment (EIA) process and ongoing consultation and engagement.

20.2 Legislation, policy and guidance

20.2.1 Table 20.1 lists the legislation, policy and guidance relevant to the Cumulative effects assessment for the Project and specifies where in the PEI Report information is provided in relation to these. A full policy compliance assessment will be presented within the Planning Statement as part of the DCO application.

20.2.2 The National Policy Statements (NPS) form the principal policy for developments progressing through the Planning Act 2008 process. The NPS for Water Resources Infrastructure (NPSWRI) is the primary NPS for the Project. In addition, the Secretary of State must also have regard to any other matters which they think are both important and relevant to the decision and this could include regional and local planning policies.

20.2.3 The Project is located mainly within the Vale of White Horse District, with the exception of the far eastern extent on the eastern bank of the River Thames, which falls within the South Oxfordshire District. The Project is wholly within the county of Oxfordshire. The regional and local planning policies most relevant to the assessment within this chapter are included in Table 20.1.

Table 20.1 Relevant legislation, policy and guidance for cumulative effects

Legislation, policy or guidance description	Relevance to assessment	Where in the Report is information provided to address this
Legislation		
Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 ('the EIA Regulations'). These regulations contain the requirements for the assessment of the effects of certain public and private projects on the environment to ensure that the environmental impacts are thoroughly assessed and considered before development consent is granted. They set out the requirement to assess inter-project cumulative effects in paragraph 5(e) of Schedule 4, and the need to consider interactions between aspects in regulation 5 (2e). This regulation states that the EIA must identify, describe and assess in an appropriate manner the direct and indirect significant effects of the proposed development arising from the interaction between the	There is the potential that the Project would give rise to cumulative effects and interaction effects. Therefore, this chapter of the PEI Report provides a preliminary assessment of the cumulative effects and a subset of interaction effects (refer to Chapter 4 for definitions) of the Project, and a full cumulative assessment will be provided in the Environmental Statement (ES).	The preliminary assessment of cumulative effects of the Project is provided in Section 20.9: Preliminary assessment of likely significant effects.

Legislation, policy or guidance description	Relevance to assessment	Where in the Report is information provided to address this
following factors: population and human health; biodiversity; land, soil, water, air and climate; material assets, cultural heritage and the landscape.		
National Policy Statement for Water Resources Infrastructure (NPSWRI)		
The NPSWRI sets out the requirement to consider cumulative effects for a project (paragraph 3.1.3), particularly those that may arise with other developments – inter-project effects (paragraph 3.2.6), and those that may arise from the combination or inter-relationship of effects within a project (paragraph 3.2.7). The assessment of cumulative effects requires consideration of pollution (paragraph 3.8.8), health (paragraph 3.12.4), air pollution (paragraph 4.2.3), heritage (paragraph 4.8.7), landscape and visual (paragraph 4.9.2), communities (paragraph 4.13.7) and highways (paragraph 4.14.22).	The assessment must take into account both the inter- and intra-project effects in relation to all aspect chapters. Therefore, this chapter of the PEI Report provides a preliminary assessment of the cumulative effects and a subset of interaction effects (refer to Chapter 4: Approach to the environmental assessment for definitions) of the Project, and a full cumulative assessment will be provided in the ES.	The preliminary assessment of cumulative effects of the Project is provided in Section 20.9: Preliminary assessment of likely significant effects.
Other national policy		
National Planning Policy Framework (NPPF) (MHCLG, 2024). The NPPF sets out the Government's planning policies for England and how these are expected to be applied. The NPPF recognises cumulative effects as a material consideration in planning decisions (paragraph 50, part a). Cumulative effects relating to the following aspects are specifically mentioned; transport (paragraph 116), landscape and visual (paragraph 165), health and the natural environment (paragraph 198) and air quality (paragraph 199).	There is the potential that the Project will give rise to cumulative effects. For the PEI Report, a preliminary assessment has been undertaken to identify key effects and identify preliminary mitigation measures. A full detailed assessment will be reported in the ES.	The preliminary assessment of cumulative effects of the Project is provided in Section 20.9: Preliminary assessment of likely significant effects.
Regional and local policy		
Local Plan 2031 Part 1: Strategic Sites and Policies (Vale of White Horse District Council, 2016) and Local Plan 2031 Part 2: Detailed Policies and Additional Sites (Vale of White Horse District Council, 2019).	The cumulative effects related to amenity, physical and visual separation between settlements and conservation areas	The preliminary assessment of cumulative effects of the Project is provided in Section 20.9: Preliminary assessment of likely significant effects.

Legislation, policy or guidance description	Relevance to assessment	Where in the Report is information provided to address this
Sets out the spatial strategy and strategic and detailed policies for the district to deliver sustainable development. The Local Plan sets out the need for developments to consider the cumulative impact on amenity (development policy 23), the physical and visual separation between settlements (development policy 29) and conservation areas (development policy 37). Through both parts of the Local Plan a number of development site allocations are identified.	(where relevant), along with all other aspects, have been subject to a preliminary assessment as part of this PEI Report and will be fully assessed in the ES. The site allocations have been considered as part of the inter-project Cumulative effects assessment.	The site allocations are included in Appendix 20.1: Long list of other developments.
South Oxfordshire Local Plan 2011-2035 (South Oxfordshire District Council, 2020). Sets out the future for development in South Oxfordshire up to 2035. The Local Plan sets out the need for developments to consider the cumulative impact on development which have impacts on transportation networks (Policy TRANS4), conservation areas (Policy ENV8), pollution on existing and/or previous land uses on new developments (Policy ENV11), pollution causing an impact on human health (Policy ENV12), air quality (Policy EP1) and residential amenity (Policy DES6). In appendix 2 and 3, a number of development site allocations are identified.	The cumulative effects related to transportation networks, conservation areas, pollution, air quality and residential amenity (where relevant), along with all other aspects, have been subject to a preliminary assessment as part of this PEI Report and will be fully assessed in the ES. The site allocations have been considered as part of the inter-project Cumulative effects assessment.	The preliminary assessment of cumulative effects of the Project is provided in Section 20.9: Preliminary assessment of likely significant effects. The site allocations are included in Appendix 20.1: Long list of other developments.
West Oxfordshire Local Plan 2031 (West Oxfordshire District Council, 2018). Sets out the overall planning framework for the district from 2011 to 2031. The Local Plan sets out the need for developments to consider the cumulative impact on conservation areas (Policy EH10). In appendix 3, a number of development site allocations are identified as the delivery mechanism for some of their policies.	The cumulative effects related to conservation areas (where relevant) have been subject to a preliminary assessment as part of this PEI Report and will be fully assessed in the ES. The site allocations have been considered as part of the inter-project Cumulative effects assessment.	The preliminary assessment of cumulative effects of the Project is provided in Section 20.9: Preliminary assessment of likely significant effects. The site allocations are included in Appendix 20.1: Long list of other developments.
Oxford Local Plan 2036 (Oxford City Council, 2020). Contains several policy documents that set out agreed planning policies for the city	The cumulative effects related to archaeological remains, road networks and cultural / leisure and tourism facilities (where	The preliminary assessment of cumulative effects of the Project is provided in Section 20.9: Preliminary assessment of

Legislation, policy or guidance description	Relevance to assessment	Where in the Report is information provided to address this
against which planning decisions are made. The Local Plan sets out the need for developments to consider the cumulative impact on archaeological remains (Policy DH4), that there are no severe residual cumulative impacts on the road network (Policy M2), cultural, entertainment, leisure and tourism uses of other similar uses in the area (Policy V6). Through section 9 of the Local Plan, a number of development site allocations are identified.	relevant) have been subject to a preliminary assessment as part of this PEI Report and will be fully assessed in the ES. The site allocations have been considered as part of the inter-project Cumulative effects assessment.	likely significant effects. The site allocations are included in Appendix 20.1: Long list of other developments.
Emerging Joint Local Plan dated October 2024 (Pre-submission publication version) for South Oxfordshire and Vale of White Horse (Vale of White Horse and South Oxfordshire District Councils, 2024). The Emerging Local Plan will guide the kinds of new housing and jobs needed and where they should go, informing planning application decisions for the two districts. It contains developing planning policies that help address the climate emergency, restore nature, and meet the needs of residents. The emerging Local Plan sets out the need for developments to consider the cumulative impacts on renewable energy generation (Policy CE5), flood risk (Policy CE6), water quality, wastewater infrastructure and drainage (Policy CE8), air quality (Policy CE9), pollution sources and receptors (CE10), neighbouring amenity (Policy DE5), the Chilterns and North Wessex Down National Landscapes (Policy NH5), valued landscapes (Policy NH6) and conservation areas (NH10). Through chapter 8 of the emerging Local plan, a number of development site allocations are identified.	The cumulative effects related to all policies (where relevant) have been subject to a preliminary assessment as part of this PEI Report and will be fully assessed in the ES. The site allocations have been considered as part of the inter-project Cumulative effects assessment.	The preliminary assessment of cumulative effects of the Project is provided in Section 20.9: Preliminary assessment of likely significant effects. The site allocations are included in Appendix 20.1: Long list of other developments.
Guidance		
Nationally Significant Infrastructure Projects: Advice on Cumulative Effects Assessment (Planning Inspectorate, 2024a).	The assessment methodology follows the guidance set out in the	The assessment methodology is set out in Section 20.4: Assessment methodology.

Legislation, policy or guidance description	Relevance to assessment	Where in the Report is information provided to address this
The advice note sets out a four-stage process to evaluate how a proposed development's environmental impacts may combine with those of other existing or approved projects. It also provides guidance on identifying interrelated effects and provides best practice recommendations to support Environmental Impact Assessments under the Planning Act 2008.	Planning Inspectorate's (PINS) Advice Pages.	
Nationally Significant Infrastructure Projects - Advice Note Nine: Rochdale Envelope (Planning Inspectorate, 2018). This advice note set out an approach which allows for flexibility in project design during Environmental Impact Assessments (EIAs) when specific details are yet to be finalised. It ensures that potential environmental impacts are thoroughly assessed despite uncertainties, aiding in comprehensive cumulative effects evaluations. This is noted in paragraph 4.13 bullet 2 stating the approach must 'ensure that the assessment of the worst-case scenario(s) addresses impacts which may not be significant on their own but could become significant when they inter-relate with other impacts alone or cumulatively with impacts from other development (including those identified in other aspect assessments).' Paragraph 4.14 identifies the importance of clearly defining developments which would form part of the baseline position, and the need for consultation with the local planning and other relevant authorities to identify the other developments.	The assessment methodology follows the guidance set out in the PINS Advice Note Nine and consultation and engagement has been undertaken with the relevant authorities to identify other developments.	The assessment methodology is set out in Section 20.4: Assessment methodology.
Nationally Significant Infrastructure Projects - Advice Note Seven: Environmental Impact Assessment: process, preliminary environmental information and environmental statements. (Planning Inspectorate, 2020) This advice note identifies the importance of identifying and assessing cumulative effects during the EIA. It ensures that potential combined impacts with other	The assessment methodology follows the guidance set out in the PINS Advice Note Seven.	The assessment methodology is set out in Section 20.4: Assessment methodology.

Legislation, policy or guidance description	Relevance to assessment	Where in the Report is information provided to address this
developments or other aspects are considered early and thoroughly.		

20.3 Consultation, engagement and scoping

20.3.1 Feedback from consultation and engagement is used to define the assessment approach and to ensure that appropriate baseline information is used. Feedback is also used to drive the design of the Project to avoid, prevent and reduce any likely significant environmental effects. In particular, feedback from key stakeholders has informed the Project's proposed mitigation measures. Specific mitigation measures relevant to the Cumulative effects assessment are summarised in Section 20.8: Embedded design mitigation and standard good practice of this chapter. Engagement is ongoing and will continue to inform the EIA and design process.

Scoping Opinion

20.3.2 The EIA Scoping Report (Thames Water, 2024) was issued to the PINS on 28 August 2024. PINS provided its EIA Scoping Opinion (The Planning Inspectorate, 2024b) on 8 October 2024, which included feedback from consultation bodies that it formally consulted.

20.3.3 Table 20.2 captures the key Scoping Opinion comments received from PINS along with the Applicant's response to these at this stage of the assessment. The Scoping Opinion comments from consultation bodies did not result in a change to the scope or approach of the assessment and so are not reproduced here. Key activities to inform the final assessment that will be undertaken between the PEI Report and ES are covered in Section 20.11: Next steps. The full consultee comments on the EIA Scoping Report and responses to these will be provided in the ES.

Table 20.2 Key Scoping feedback for cumulative effects

Stakeholder	Scoping comment	Applicant response
PINS	3.14.2 – *'The Scoping Report states that professional judgement would be used to identify potential intra-development cumulative effects [that] could occur across the aspects and would be reported that deals with the receptor affected. The ES should set out the methodology for the assessment of cumulative effects on individual receptors in combination with other environmental aspects, in particular how the sensitive receptors would be selected.'*	This chapter sets out the assessment methodology for intra-project cumulative effects. Only a preliminary assessment has been completed for this PEI Report, and a full assessment in accordance with the methodology set out in Section 20.4 will be undertaken for the ES.

Stakeholder	Scoping comment	Applicant response
PINS	3.14.3 – *'For the purposes of clarity, the ES should include an assessment of the loss of solar farm apparatus and identify any associated likely significant effects, if applicable.'*	The loss of solar farm apparatus because of the Project is not a cumulative consideration as it is an effect of the Project alone. The effect of the loss of renewable energy generation is assessed in Chapter 17: Greenhouse gases.
PINS	3.14.4 – *'For the purposes of clarity, the ES should include the potential effects of the different timescales for construction and completion of the Proposed Development, when compared to that of other known proposals within the study area. Intra-development cumulative impacts, for example (but not limited to) the construction and operation of the River Thames intake/outfall and the construction of the Wiltshire and Berkshire canal within the site, should also be assessed. The Applicant is advised to seek agreement regarding the developments to be included in the assessment with the relevant consultation bodies.'*	Anticipated timescales have been provided for all other developments where available, or likely worst-case assumptions made where timescales are not available. These timescales have been compared with timescales for the Project to understand whether the other development is part of the baseline or future baseline for the assessment, and to understand the type of cumulative effects which could arise. The methodology used to understand the timescales of the other development is provided in Section 20.4, and the timescales assumed for the other developments to inform the preliminary assessment is set out in Appendix 20.1: Long list of other developments. The approach taken for other developments related to the Project have been set out in Chapter 2: Project description (i.e. whether assessed). The other developments that do not form part of the Project, or in part do not form part of the Project are included in Appendix 20.1: Long list of other developments. The engagement undertaken for the PEI Report on the list of other development is set out in this chapter (at Section 20.3), and further engagement will be undertaken as the Project progresses.

Non-statutory public consultation

20.3.4 Non-statutory public consultation on the emerging proposals for the Project was undertaken with stakeholders and local communities in Summer 2024. Formal responses to this non-statutory consultation feedback have been provided within the 'Statement of Response' (Thames Water, 2025). Any feedback relevant to the Cumulative effects assessment has been taken into account where appropriate.

Ongoing engagement

20.3.5 This section summarises the ongoing technical engagement for cumulative effects with key stakeholders since EIA scoping. This includes written correspondence with:

- Vale of White Horse District Council
- South Oxfordshire District Council
- West Berkshire District Council
- West Oxfordshire District Council
- Oxfordshire County Council
- Oxford City Council

20.3.6 Table 20.3 provides a summary of the ongoing technical engagement for cumulative effects, including the issues raised and outcomes for the assessment.

Table 20.3 Key ongoing engagement for cumulative effects

Stakeholder	Topics	Outcome
The local planning authorities – Vale of White Horse District Council, South Oxfordshire District Council, West Berkshire District Council, West Oxfordshire District Council, Oxfordshire County Council, Oxford City Council	These local planning authorities have been contacted to request information for the long list of developments that informs the inter-project Cumulative effects assessment.	Feedback from the local planning authorities on projects, including spatial information, has been used to inform Appendix 20.1: Long list of other developments and the preliminary assessment of cumulative effects.

20.4 Assessment methodology

20.4.1 This section outlines the methodology followed to assess the likely significant effects of the Project in relation to the Cumulative effects assessment including:

- Effects scoped in to the assessment
- Study area
- Criteria for determining likely significant effects
- Changes to the methodology that have been adopted for this PEI Report stage

20.4.2 The project-wide approach to the assessment methodology is set out in Chapter 4: Approach to environmental assessment.

20.4.3 The assessment methodology followed for the Cumulative effects assessment varies between the inter-project and intra-project cumulative effects. The assessment methodology for both types of effects is informed by the Nationally Significant Infrastructure Projects: Advice on Cumulative Effect Assessment published by the Planning Inspectorate (Planning Inspectorate, 2024a), hereafter referred to as the 'PINS Advice on CEA'). However, available advice relating to the intra-project assessment is limited.

20.4.4 The assessment methodology set out below describes the approach for the full ES stage of assessment. Due to various limitations (described further in Section 20.7: Project parameters, assumptions and limitations) at this PEI Report stage it has not been possible to complete the full assessment methodology. Therefore, the approach that has been taken for the preliminary assessment stage is set out at the end of this Assessment methodology section (from paragraph 20.4.49).

Scope of the assessment

20.4.5 The scope of the assessment has been informed by the EIA Scoping process, including the EIA Scoping Report (Thames Water, 2024) and Scoping Opinion (The Planning Inspectorate, 2024b), combined with subsequent changes to the Project design and an enhanced understanding of the baseline environment.

20.4.6 No effects have been scoped out of the Cumulative effects assessment. Effects that are scoped in for the Cumulative effects assessment relevant to the construction and operation stages are:

- Inter-project effects
- Intra-project effects

Study area

20.4.7 The study areas have changed since the EIA scoping stage as a result of changes to the design and the associated draft Order limits. See Chapter 2: Project description for details of the Project parameters and assumptions for the PEI Report.

20.4.8 The study areas for the Cumulative effects assessment have been developed as follows.

Inter-development cumulative effects

20.4.9 The first task in establishing the long list of relevant 'other existing development and/or approved development(s)', hereafter referred to as 'other developments', is to determine the 'search area'. The 'search area' is determined by consideration of the aspect ZOI for each environment aspect assessed. Each aspect chapter has defined their 'aspect ZOI' in the form of a study area.

20.4.10 For the purposes of the Cumulative effects assessment, these aspects Zones of Influence (ZOIs) have been combined for all aspect chapters (with some exceptions set out below). This has created the 'Cumulative ZOI' which is referred to in this chapter and is shown in PEI Report Figure 20.1: Cumulative Effects ZOI. This covers the largest extent of these combined ZOIs.

20.4.11 The aspect ZOI for some receptors extends more widely than the majority of other ZOIs and have differing search criteria (the search criteria are explained in paragraph 20.4.26. The ZOIs are described below and also shown on Figure 20.1: Cumulative Effects ZOI:

- Terrestrial ecology: Internationally designated sites with bats as a qualifying feature (Special Area of Conservation (SAC): The study area for this receptor is 30km.
- Water environment (surface water and flood risk) and aquatic ecology: The study area includes the geographical extent of the draft Order limits and all surface water features, including main rivers and their tributaries, ordinary watercourses, ponds and other surface water features, surface water abstractions and flood zones, within 1 kilometre (km) of the Order limits, or where features have hydraulic connectivity to the Project. Extension of the study area beyond the 1km buffer, along the River Thames to Teddington Weir, which forms the tidal limit and at which point additional flows released from SESRO will have been re-abstracted, is necessary to capture potential impacts to surface water receptors downstream of the standard study area.

- Socio-economics – economic effects: The study area for economic effects covers the whole of Oxfordshire County.

Intra-development cumulative effects

20.4.12 This assessment relies on the study areas defined within each aspect chapter. The study area for intra-project cumulative effects is the area where one or more effects interact.

Baseline

20.4.13 Baseline data collection has been undertaken to obtain information within the study areas. No specific baseline data collection has been undertaken for the Cumulative effects assessment, instead the data sources (both desk based and surveys) used to inform the baseline in the aspect chapters has also informed the baseline for Cumulative effects assessment (for both inter- and intra-project cumulative effects).

20.4.14 In relation to the inter-project Cumulative effects assessment where other developments have been completed prior to 1 May 2025 date (the freeze date as required through the PINS Advice on CEA guidance, and explained further at paragraph 20.4.28) they are considered to form part of the baseline.

Future baseline

20.4.15 The assessment has considered the likely evolution of the baseline without the implementation of the Project. For the assessment of cumulative effects (both inter- and intra-project) the data sources used to inform the future baseline in the aspect chapters has also informed the future baseline for the Cumulative effects assessment.

20.4.16 The future baseline for the majority of aspects includes consideration of any relevant other developments expected to be operational prior to or during the construction and operation of the Project (in accordance with the guidance within the PINS Advice on CEA). Further information on the aspect specific approach is provided in Section 20.4: Assessment methodology of the aspect chapters 5 to 19. The methodology used to gather the long list of other developments to be referred to in the future baseline is largely the same as that set out below for inter-project cumulative effects. The exception is that for future baseline, for some aspects, it is relevant to include other developments which meet the definition of minor development. These smaller developments may become receptors to effects of the Project.

20.4.17 For the purpose of assessment, other developments can be considered to form both part of the future baseline and need to be considered cumulatively, if for example that other development becomes operational part way through the construction phase of the Project. Those other developments which are expected to complete construction prior to 2028 (the start of enabling works) are considered solely as part of the future baseline, and those that are expected to complete construction between 2028 - 2043 (opening year) are considered as part of the future baseline and cumulatively.

Approach to inter-project cumulative effects

20.4.18 The PINS Advice on CEA provides a four-staged approach to identify and assess other developments. The four stages, which will be completed in full for the ES, are:

- Stage 1: Establishing the long list
- Stage 2: Establishing the short list
- Stage 3: Information gathering
- Stage 4: Assessment

Stage 1: Establishing the long list

20.4.19 The long list identifies other developments with the potential for overlap with the Project in terms of impact on sensitive receptors within the Cumulative ZOI (or exceptions listed above at paragraph 20.4.10).

20.4.20 Where other developments have been specifically identified by a stakeholder, even if they fall outside of the Cumulative ZOI, they have been included and considered in the long list. The long list of other developments has been updated from the version submitted with the EIA Scoping Report (Thames Water, 2024).

20.4.21 Each other development has been categorised in accordance with the tiered approach set out in the PINS Advice on CEA (see Table 20.4). For the purposes of this assessment EIA Screening and Scoping Opinions provided by any consenting body has been categorised as Tier 2.

Table 20.4 Other developments for inclusion in the Cumulative effects assessment (based upon PINS Advice on CEA)

Tier	Description
Tier 1	• Under construction (refer to Baseline/Future Baseline sections from paragraph 20.4.13) • Permitted application(s), whether under the Planning Act 2008 or other regimes, but not yet implemented • Submitted application(s) whether under the Planning Act 2008 or other regimes but not yet determined • All refusals subject to appeal procedures not yet determined
Tier 2	• Other developments on the Planning Inspectorate's Programme of Projects where a scoping report has been submitted • Other developments where an EIA Screening or Scoping Opinion has been provided by any consenting body.
Tier 3	• Other developments on the Planning Inspectorate's Programme of Projects where a scoping report has not been submitted • Identified in the relevant Development Plan (and emerging Development Plans – with appropriate weight being given as they move closer to adoption) recognising that there will be limited information available on the relevant proposals • Identified in other plans and programmes (as appropriate) which set the framework for future development consents/approvals, where such development is reasonably likely to come forward

Source: Adapted from PINS Advice on CEA

20.4.22 Tier 1 developments are the most likely to have associated environmental information available for use in an assessment of cumulative effects. Tier 3 developments are the least likely to have this information.

20.4.23 The following types of existing and / or approved developments have been considered for inclusion in the Long List of Other Developments. These include applications which have been approved on or after 1 January 2022 to provide continuity from the EIA Scoping Report:

- NSIPs/DCOs
- Hybrid Bills, Transport and Works Act Orders and other legislation (e.g. the Electricity Act 1989)
- Planning applications for major developments (as defined in Section 2 of The Town and Country Planning (Development Management Procedure) (England) Order 2015), this includes major minerals, waste and road developments
- Adopted allocations, for example in Local Plans, which are likely to meet the definition of major development
- Emerging allocations, for example in Local Plans, which are likely to meet the definition of major development
- Other plans or programs including:
  - Known development within the water industry in the Thames River Basin District
  - Developments likely to come forward in relation to the Project, comprising; Severn to Thames Transfer, Thames to Southern Water Transfer and Farmoor Transfer (Swindon and Oxfordshire raw water transfer) (see Chapter 2: Project description)
  - Highways upgrades or improvements (which have the potential to result in significant environmental effects)
  - Utilities improvement schemes
  - Canal & River Trust plans (including Wiltshire and Berkshire Canal Trust plans)

20.4.24 Planning applications which have been withdrawn or rejected are scoped out, in accordance with the EIA Scoping Report. However, where an application has been rejected and is either under appeal, or within the timeframes allowed for appeal (six months) it has been included in the long list.

20.4.25 The EIA Scoping report stated that '*Minor developments have not been assessed at this stage of the EIA process as it is assumed, due to their scale and nature, that they will be complete by the time that SESRO construction will begin (expected to commence 2030) and, therefore, such minor developments will become part of the baseline environment and become potential environmental receptors'.* However, due to the scale of minor developments there is not considered to be any likelihood for potential significant effects to arise, therefore minor developments are excluded from the search for other developments. However, minor developments are referred to in the future baseline section above.

20.4.26 Where a type of other development is only likely to result in potential inter-project cumulative effects with a specific aspect, the search of this type of other development has only been undertaken for that aspect's ZOI, this applies to:

- Water environment (surface water and flood risk) and aquatic ecology: the search will focus only on other developments that are likely to impact the water environment, these comprise:

  - Infrastructure projects of national significance within the Water Environment ZOI.
  - Water Resources Management Plans within the Water Environment ZOI.
  - Canals and River Trust projects and plans within the Water Environment ZOI.
  - Developments identified through Flood Risk Management Plans (Environmental Agency, 2022a), River Basin Management Plans (Environment Agency, 2022b), Drought Plans (Thames Water, 2022c) and Drainage and Wastewater Management Plan (Thames Water, 2023).
- Socio-economics – economic effects: In order to enable a proportionate assessment of cumulative effects, and to avoid duplication of work completed as part of the local planning process this assessment of cumulative effects has been targeted to NSIPs/DCOs within Oxfordshire County Council. It also includes major developments within the local authority study area (the boundary of Vale of White Horse district and South Oxfordshire district) which have been identified through consultation and engagement with the local authorities with a focus on major developments that generate comparable employment during construction and/or operation.

20.4.27 Although terrestrial ecology has a 30km search area for internationally designated sites with bats as a qualifying feature, there are no such sites within the 30km search area from the draft Order limits, therefore no cumulative search has been undertaken for this impact pathway.

20.4.28 An assessment cut-off date is required (as set out in PINS Advice on CEA) to enable the assessment to be finalised. The search of other developments was frozen as of 1 May 2025 to enable the assessment in this PEI Report to be completed. The Long List of Other Developments, defined as those which meet these Stage 1 criteria, is provided in Appendix 20.1: Long list of other developments.

Stage 2: Establishing the short list

20.4.29 Following the completion of the long list, the eligible developments identified require further assessment (Stage 2) to establish a short list of developments which, in combination with the Project, have the potential to result in significant cumulative effects. To consolidate the short list a set of criteria has been applied for all aspects. The criteria includes:

- Consideration of the timescales of the developments – Only those other developments whose construction, operation or decommissioning overlap with the anticipated timescales for the Project have been taken forward to the short list (i.e. construction of the other developments expected to complete after the start of Project construction in 2028). Other developments that are expected to be operational prior to the start of the construction period of the Project have been considered within the future baseline scenario (refer to paragraph 20.4.16). In order to address uncertainty associated with timescales, the following items have been considered in determining whether a development is baseline or cumulative:
  - Where published timescales are available (for example within planning application documents), these have been taken into account.
  - A review of satellite imagery where available for recent dates to determine whether the other development has commenced.

- Consulting with the relevant planning authority as to knowledge of the proposed timescales of the other development.
- Where the above does not provide any information on anticipated construction timescales, the other developments have been taken forward as both a future baseline and cumulative project. As set out in paragraph 20.4.17 other developments can be both part of the future baseline and give rise to cumulative effects, if for example they will be built out part way through the construction of the Project. The long list has been reviewed on a case-by-case basis, and consideration of whether another development is future baseline or cumulative, or both, has been undertaken and documented.

20.4.30 Those developments taken forward for this initial short list have then been considered against aspect-specific criteria. This includes:

- Only other developments within the aspect study area have been taken forward to the short list.
- Only other developments which are of a scale or nature that could give rise to likely significant cumulative effects relating to that aspect have been taken forward to the short list. This has been considered using the professional judgment of the aspect chapter authors, informed by the EIA Screening thresholds and selection criteria identified in Schedule 2 and Schedule 3 of the EIA Regulations 2017. Other developments which exceed those thresholds have the potential to cause significant effects.
- Only other developments which could result in significant cumulative effects after consideration of all mitigation have been taken forward to the short list.
- For Tier 1 'other developments', only developments which have been subject to EIA, or aspect-specific assessment have been taken forward to the short list. This is on the basis that if no EIA or aspect-specific assessment has been completed for that aspect, no significant effects relating to that other development would be expected and / or the other development is not sensitive to the relevant aspect. Where the other development has completed a relevant aspect assessment, only development which did identify residual effects on the same receptors as the Project have been taken forward to the short list. This includes if the assessment information identified that the other development is not sensitive for the relevant aspect.
- For Tier 2/3 'other developments', only developments which impact the same receptors as the Project have been taken forward to the short list.
- Only other developments where there is sufficient information to complete an assessment of effects, or there is insufficient information but a high likelihood of significant effects with the Project, have been taken forward to the short list. For some developments, particularly those within Tier 3, there is likely to be minimal information both about the development and any potential environmental effects. These developments are likely to apply for relevant consents after the Development Consent Order application for the Project has been approved, and any cumulative effects with the Project should be assessed at that point by the other development.

20.4.31 Appendix 20.1: Long list of other developments identifies which other developments have been taken forward to the short list for each aspect and which have not been taken forward

to the next stages (an initial screening has been undertaken for this PEI Report, see further information from paragraph 20.4.49).

Stage 3: Information gathering

20.4.32 The other existing development and / or approved developments that form part of the short list have been subject to a review of environmental information, where available, including details of:

- Proposed design and location information
- Proposed programme of construction, operation and decommissioning
- Environmental assessment that set out baseline data and effects arising from the other developments.

20.4.33 This information has been gathered from Local Planning Authority (LPA) Planning Portals, the Planning Inspectorate website and through consultation and engagement with the LPAs and other stakeholders including statutory bodies and relevant applicants / developers.

20.4.34 This stage, information gathering, has been undertaken iteratively with Stage 2: Short list in order to understand whether each specific other development should be taken forward to Stage 4.

20.4.35 For the developments short-listed in Stage 2 where there is limited information available but a high likelihood of significant effects with the Project, assumptions have been developed to enable assessment. These assumptions have been recorded alongside key other information in Section 20.9: Preliminary assessment of likely significant effects.

Stage 4: Assessment

20.4.36 The potential for cumulative effects of the Project with each other development identified in the short list has been reviewed for each environmental aspect, as relevant to each aspect short-listing criteria. The aspect specific methodology, and professional judgment where needed, has been applied to determine the potential for significant cumulative effects. The assessment of inter-project cumulative effects categorises the effects in accordance with the requirements set out in Chapter 4: Approach to environmental assessment. The key difference in the assessment of cumulative effects is that all mitigation (embedded design, additional and standard good practice) specified for the effects of the Project alone have been assumed to be in place for the initial assessment of inter-project cumulative effects. If the initial assessment identifies the potential for significant effects additional mitigation will be specified if practicable, including the requirement for collaboration with other developments. The residual inter-project cumulative effect will then be reported after additional mitigation.

20.4.37 The other developments that have resulted in a likely significant cumulative effect with the Project, or require mitigation to be developed, have been assessed within the assessment of effects section in this chapter.

20.4.38 There are certain aspect chapters which follow a slightly different process to assess their inter-project cumulative effects. These comprise of:

- Chapter 9: Landscape and visual – An assessment of the cumulative effects to landscape and visual arising from the Project with other developments has been undertaken in line with Guidelines for Landscape and Visual Impact Assessment

(GLVIA) (Landscape Institute and IEMA, 2013). The basis of the assessment followed the principles of additional, rather than combined, cumulative effects as set out in GLVIA paragraph 7.18. Additional effects are those effects that could arise from the Project on top of all other developments that have been scoped in. Therefore, other developments have been considered part of the future baseline for the Landscape and visual assessment where they are allocated in adopted or emerging local plans, and either have consent or are subject to an advanced degree of policy commitment, national programme backing, or infrastructure phasic certainty that the delivery within the assessment timescales is reasonably assured. Other developments have been assessed cumulatively where they are reasonably foreseeable, but less certain, these other developments comprise those that are allocated but not yet consented and not formally part of the same masterplan, delivery framework or phasing as the future baseline project.

- Chapter 10: Geology and soils - The inter-project cumulative effect of the Project on the land available to agriculture was assessed quantitively using rate of change metrics for the national and local level in accordance with the guidance from IEMA (IEMA, 2022a). Further information on the methodology and the assessment is provided in Appendix 20.2: Cumulative soils assessment.
- Chapter 11: Materials and waste - The Materials and waste assessment is inherently cumulative, because growth forecasts of material consumption and depletion of landfill void capacity are included within the future baseline for the two types of effect. In addition, targeted consultation with the Minerals and Waste Planning Authority and South East England working groups will be undertaken to identify other developments, which may not have been considered in material consumption and depletion of landfill void capacity growth projections. These developments will be assessed qualitatively (based on professional judgement) where practicable.
- Chapter 12: Traffic and transport together with transport related effects within Chapter 7: Terrestrial ecology, Chapter 13: Air quality, Chapter 14: Noise and vibration and Chapter 15: Socio-economics – In line with the Planning Inspectorate guidance in its Advice Note Seven (Planning Inspectorate, 2020), cumulative traffic and transport effects are inherently included in the future baseline scenarios. Further information on this is included in Chapter 12: Traffic and transport. In addition, where a 'reasonably foreseeable' scheme (which wasn't included in the future baseline) may have a material effect on the operation of the transport networks in the vicinity of the Project (such as Dalton Barracks), subject to scoping discussions with highway authorities, separate scenarios with and without these developments will be undertaken to identify the cumulative effects.
- Chapter 15: Socio-economics (specifically effects on economy) - The study area for economic effects (employment, economic activity, skills, accommodation and public services) covers the whole of Oxfordshire County. In order to enable a proportionate assessment of cumulative effects, and to avoid duplication of work completed as part of the local planning process this assessment of cumulative effects will be targeted to NSIPs/DCOs within Oxfordshire County Council. It will also include major developments within the local authority study area (Vale of White Horse district and South Oxfordshire district) which will be identified through engagement and consultation with the local authorities with a focus on major developments that generate comparable employment during construction and/or operation.

- Chapter 17: Greenhouse gases – All global greenhouse gases (GHG) sources are relevant to the effect on climate change, therefore effects of GHG emissions from specific cumulative projects should not be individually assessed, as there is no basis for selecting any particular (or more than one) cumulative project that has GHG emissions for assessment over any other. This is in line with IEMA GHG Guidance (IEMA, 2022b). The assessment presented in the aspect chapter has considered the cumulative effects of GHG emissions through the contextualisation of the emissions against the UK carbon budgets (see Section 7.8).
- Chapter 18: Climate resilience – There are no inter-project cumulative effects as the climate change resilience impacts are specific to the Project and would not result in impacts to nearby developments. As such, no inter-project Cumulative effects assessment has been completed for this chapter. This aligns with an example rationale for scoping out inter-project cumulative effects provided in IEMA: Environmental Impact Assessment Guide to: Climate Change Resilience & Adaptation (IEMA, 2020c).
- Chapter 19 Major accidents and disasters – Regarding inter-project cumulative effects, the Major accidents and disasters assessment identifies potential external sources of risk, as per the methodology set out in Section 19.4, which could increase the risk of a major accident or disaster affecting the Project. To avoid double counting between these external sources of risk identified by the Major accidents and disasters assessment and the inter-project cumulative effects, a separate assessment of inter-project cumulative effects for major accidents and disasters is excluded from this assessment. Therefore, inter-project cumulative effects are assessed within the Major accident and disasters assessment at Section 19.9.

Approach to intra-project cumulative effects

20.4.39 Limited guidance is available to define the approach to intra-project cumulative effects. The PINS Advice on CEA states that '*the Environmental Statement should set out a table demonstrating where multiple impacts from the proposed NSIP would combine to affect sensitive receptors. Where they are identified, these in-combination effects should be assessed in the Environmental Statement*'.

20.4.40 As set out in Chapter 4: Approach to the environmental assessment, the EIA Regulations 2017 requirement is to assess '*interactions between the … factors [listed in Schedule 4]*'. For the purposes of this EIA:

- Interactions which are not explicitly on the same receptor have been assessed as indirect effects, and those relationships between the aspect chapters are sign-posted in Section 1 Introduction of each aspect chapter (e.g. dewatering of the Ock catchment has been assessed as an effect on the Ock catchment in Chapter 5: Water environment, and then the subsequent effect on ecological designated sites is considered in Chapter 6: Aquatic ecology). Certain aspects, for example Air quality and Noise and vibration, use representative receptors in their assessment. Where relevant, this information has been extrapolated to cover different receptors by the relevant aspect leads to understand the potential for effect interactions and indirect effects.
- Interactions which are explicitly on the same receptor have been assessed as intra-project cumulative effects.

20.4.41 Professional judgement has been used to develop a staged approach for the assessment of intra-project effects, these comprise:

- Stage 1: Understanding the relationships between receptors
- Stage 2: Understanding where multiple impacts would occur
- Stage 3: Assessment

20.4.42 This assessment will be completed in full for the ES, and has been partially completed for the preliminary assessment. The approach at this stage is set out in paragraph 20.4.56.

Stage 1: Understanding the relationships between receptors

20.4.43 Each receptor identified in the aspect assessments has been related to a 'receptor group'. This receptor group is the level of receptor at which effects could combine to create a greater effect. For example, if the receptor within the Noise and vibration aspect is resident(s) of an individual property, but the Landscape and visual aspect considers the visual effects for the residents of the wider neighbourhood, it would be appropriate to consider how the effects could combine for the residents of the wider neighbourhood. Therefore, in this example the receptor group assigned to both effects would be the residents of the wider neighbourhood.

Stage 2: Understanding where multiple impacts would occur

20.4.44 Effects in the aspect assessments which act upon the same receptor group have been identified. A lead aspect has been assigned for each intra-project receptor group. This aspect is the most appropriate to lead the assessment of combined effects upon the 'intra-project receptor group' (with the input of other aspect competent experts as required).

20.4.45 A review of the residual effects occurring on each intra-project receptor group has been undertaken to understand whether there is the potential for the effects to combine to create a new or greater effect. Where there is no potential for the effects to combine this has been recorded alongside justification. Example justification could include:

- If there is only one effect on that intra-project receptor group there is no potential for intra-project cumulative effects, and therefore the intra-project receptor group is screened out.
- If the residual effects on that intra-project receptor group are all beneficial or negligible adverse there is unlikely to be an adverse intra-project cumulative effect, and therefore the intra-project receptor group is screened out.

20.4.46 Those intra-project receptor groups where a new or greater effect has been identified have been taken forward to Stage 3.

Stage 3: Assessment

20.4.47 The combined effects on the intra-project receptor groups screened in at Stage 2 have been assessed using the methodology set out within the lead aspect chapter. Additional mitigation has been identified for significant adverse cumulative effects where required. The intra-project cumulative effects has been inherently assessed within the aspect chapters.

20.4.48 The assessment of major accidents and disasters is already an inherently intra-project cumulative assessment as it draws from the relevant aspect chapters, therefore, major accidents and disasters is not included in the intra-project cumulative assessment section of this chapter.

Amendments to the assessment methodology for PEI Report

20.4.49 For this PEI Report it has not been possible, or considered to be proportionate, to complete the full assessment methodology set out above for the Environmental Statement. This is because there are a number of data limitations at this stage of the Project, which are described in Section 20.7: Project parameters, assumptions and limitations. Therefore, the approach that has been taken to inform the future baseline considerations and the preliminary assessment of likely significant effects for inter-project and intra-project Cumulative effects assessments are set out below.

Future baseline

20.4.50 At this PEI Report stage only those other developments which meet the PEI Report short list criteria (described below) have been considered as part of the future baseline.

Inter-project cumulative effects

20.4.51 Stage 1: Establishing the long list has been undertaken as described in the assessment methodology. For Stage 2: Establishing the short list the Cumulative effects assessment has focussed on those other developments that meet one or more of the following criteria:

- Other developments which are subject to EIA have submitted a planning application, and are within 3km of the draft Order limits
- Other developments that are related to the Project (as set out in paragraph 20.4.23)
- Other developments that are within or directly adjacent to the draft Order limits
- Nationally significant infrastructure projects that are water related within the water environment study area
- Garden town developments within 3km of the Project

20.4.52 The short-listed developments are identified in Appendix 20.1: Long list of other developments. Although Swindon and Oxfordshire (SWOX) potable water transfer is a related project safeguarded within the Project, there is a high level of uncertainty as to whether it will be completed, and therefore has not been included in the shortlist at this stage.

20.4.53 Stage 3: Information gathering has been undertaken for the short-listed developments. For those other developments short-listed at PEI Report, the potential temporal overlap with the Project has been considered, and only those which are expected to have a temporal overlap have been taken forward to the cumulative assessment.

20.4.54 It has not been possible to complete Stage 4: Assessment in full as a residual effects assessment has not been completed for the aspect assessments reported in aspect chapters 5 to 19. Therefore, a high level and qualitative assessment of potential likely significant cumulative effects has been undertaken for the short-listed other developments only.

20.4.55 It has not been possible to complete a full assessment for the aspects which follow a slightly different process for the cumulative assessment (as per paragraph 20.4.38), as follows:

- Chapter 11: Materials and waste – Growth forecasts of material consumption and depletion of landfill void capacity are included within the future baseline for the two

types of effect, and therefore have been used to complete an inherently cumulative assessment (refer to Chapter 11: Materials and waste for further detail). However, consultation with the Minerals and Waste Planning Authority and South East England working groups to identify other developments which fall outside the growth projections has not been undertaken at this stage.

- Chapter 12: Traffic and transport related effects reported within Chapter 7: Terrestrial ecology, Chapter 13: Air quality, Chapter 14: Noise and vibration and Chapter 15: Socio-economics – Cumulative traffic and transport effects have been included in the assessment at this stage primarily through the use of growth forecasts for local traffic growth. In addition, Chapter 12: Traffic and Transport reports a qualitative review of the potential for significant cumulative effects with the shortlisted developments, this has not been possible at this stage for the other related aspects, and this will be revisited for the Environmental Statement. Refer to Chapter 12: Traffic and transport for further information.
- Chapter 15: Socio-economics (economy effects) - Consultation and engagement with the local authorities to identify major developments that generate comparable employment during construction and/or operation has not been undertaken at this stage.

Intra-project cumulative effects

20.4.56 The intra-project Cumulative effects assessment has been completed on the basis of the preliminary information available. The outcomes of these steps are presented in Section 20.9: Preliminary assessment of likely significant effects including signposting to the locations of intra-project Cumulative effects assessments where relevant. Justification for the screening of intra-project cumulative effects is not provided in full at this stage.

20.5 Study area

20.5.1 The study areas for the inter- and intra-project Cumulative effects assessment comprise the following, the reasoning for selecting these study areas is provided in the assessment methodology (Section 20.4):

- Inter-project cumulative effects study areas (all shown on Figure 20.1: Cumulative Effects ZOI):
  - Cumulative ZOI: The largest extent of the study areas for each of the environmental aspects, with the exception of those provided below. This ZOI extends to approximately 10km from the draft Order Limits.
  - Terrestrial Ecology ZOI: This study area extends to 30km from the draft Order limits.
  - Water environment (surface water and flood risk) and aquatic ecology ZOI: This study area comprises all hydraulically connected waterbodies to the Project.
  - Socio-economics – economic effects: This study area comprises the entirety of Oxfordshire County.
- Intra-project cumulative effect study areas: This assessment relies on the study areas defined within each aspect chapter. The study area for intra-project cumulative effects is the area where one or more effects interact.

20.6 Baseline conditions

20.6.1 To assess the significance of cumulative effects arising from the Project, it is necessary to identify and understand the baseline environment within the study areas. This provides a reference state against which any potential cumulative effects can be assessed.

20.6.2 This section outlines the existing and expected future baseline conditions in the study areas.

Existing baseline

20.6.3 This assessment has considered the known receptors within the study areas. Key existing baseline features for the Cumulative effects assessment (both intra-project and inter-project) are those that are described in each aspect chapter (5-19) at sub-section 6: Baseline conditions.

20.6.4 For the inter-project Cumulative effects assessment, where other developments have been constructed prior to 1 May 2025 they are considered to form part of the baseline. Those other developments that have been identified through the methodology set out in Section 20.4, shortlisted following the PEI Report shortlisting methodology (explained at paragraph 20.4.50) and completed prior to this date are identified as baseline developments in Appendix 20.1: Long list of other developments.

Future baseline

20.6.5 As set out in Chapter 4: Approach to the environmental assessment, the preliminary assessment of effects considers the likely evolution of the baseline without the implementation of the Project.

20.6.6 The future baseline for the assessment of cumulative effects (both intra- and inter-) is reliant on the future baseline features that are described in each of the aspect chapters (5-19) at sub-section 6: Baseline conditions.

20.6.7 In relation to the inter-project Cumulative effects assessment the other developments that have provisionally been identified as part of the future baseline, i.e. those that are due to complete construction prior to January 2028, and shortlisted following the PEI Report shortlisting methodology, are set out in Appendix 20.1: Long list of other developments.

20.7 Project parameters, assumptions and limitations

20.7.1 Chapter 2: Project description relies on the use of relevant parameters and assumptions to allow flexibility in the final design of the Project, in accordance with the Rochdale envelope approach (Planning Inspectorate, 2018). This preliminary assessment for the Cumulative effects aspect uses the parameters and assumptions outlined in Chapter 2: Project description as well as additional parameters and assumptions specific to this aspect to ensure the reasonable worst-case scenario is considered within this assessment.

Project parameter and assumptions specific to this aspect

20.7.2 Table 20.5 identifies the Project parameters, components and activities relevant to this assessment where assumptions specific to the Cumulative effects assessment have been

generated. Assumptions relating to other developments are provided in Section 20.9: Preliminary assessment of likely significant effects.

Table 20.5 Project parameters and assumptions forming the basis of assessment

Project parameter / component / activity	Assumption (basis of assessment)
All project parameters defined in the other aspect chapters	Both the intra- and inter-project Cumulative effects assessment relies on the assessments completed in each of the other aspect chapters, and therefore the Project parameters and assumptions relied upon are as documented in those aspect chapters.

Assessment assumptions and limitations

20.7.3 This section identifies the aspect-specific assumptions and limitations made for the Cumulative effects assessment including those related to the availability of data to inform the assessment and assumptions used in the methodology. All assessed effects in this chapter are preliminary and will be revisited in the ES in light of data available at that time and the design taken forward for submission. Assessments reported within this PEI Report chapter are considered a reasonable 'worst case' as a precautionary approach has been taken where design, construction or baseline information is incomplete. Nevertheless, the preliminary assessment is considered sufficiently robust to enable consultees to understand the likely significant environmental effects of the Project, based on current design information and understanding of the baseline environment. Gaps in information identified within the PEI Report will be considered and addressed as part of the assessment during production of the ES, as noted in Section 20.11: Next steps. Assumptions and limitations identified in relation to the Cumulative effects assessment include:

- The assessment assumptions and limitations set out in the aspect Chapters 5 to 19 all affect the Cumulative effects assessment and so should be cross referred to.
- As a residual effects assessment has not been completed for each aspect it has not been possible to complete the Cumulative effects assessment in full, the approach taken for the preliminary assessment is set out from paragraph 20.4.49. This approach informs a preliminary understanding focused on the effects most likely to be significant.
- It has been assumed that the other developments will implement standard good practice mitigation and legislatively required mitigation and the Project has implemented the mitigation identified in each aspect chapter for the Project alone.
- Information on other developments that is publicly available has been used to complete the preliminary assessment where available, any information relating to other developments is assumed to be correct and complete.
- Where timescales or other information relating to the shortlisted developments are not publicly available or not sufficiently complete for the preliminary assessment of inter-project cumulative effects, a number of assumptions have been made to provide a reasonable worst-case assessment. In particular, where timescales are not available it has been assumed that there could be an overlap in construction between the other development and the Project. Detailed assumptions for each other development are provided in Section 20.9: Preliminary assessment of likely significant effects.
- Where there is very limited information available for another development, in particular on spatial locations, scale, or the works required, it has not have been possible to make

sufficient assumptions to complete an assessment at this stage. Where this is the case it is identified in Section 20.9: Preliminary assessment of likely significant effects.

- The details set out in Appendix 20.1: Long list of other developments have been updated as of the assessment cut off-date of 1 May 2025 for the PEI Report. Any changes to applications, or additional applications, after the cut-off date have not been captured in this Cumulative effects assessment but will be captured within the updates for the ES.
- As set out in the assessment methodology it is assumed that no significant inter-project cumulative effects are likely arising from minor developments (minor developments are those which do not meet the definition of major development defined in Section 2 of The Town and Country Planning (Development Management Procedure) (England) Order 2015). This is also considered to apply to those minor applications located within the draft Order limits.
- It is assumed that the early works commencing for the Project prior to 2028 (refer to Chapter 2: Project description for more information) would not result in likely significant cumulative effects due to their size and scale.
- Where other developments are located within the draft Order limits, and have the potential to adversely impact the environmental mitigation to be provided as part of the Project, it is assumed that that other development would fully mitigate any subsequent effects and re-provide that mitigation.

20.8 Embedded design mitigation and standard good practice

20.8.1 As described within Chapter 4: Approach to the environmental assessment, identified embedded design (primary) mitigation and standard good practice (tertiary) measures are assumed to be applied within this preliminary assessment, to reduce the potential for environmental effects.

20.8.2 Embedded design mitigation identified for the Project at this stage are noted in Chapter 2: Project description. These, and standard good practice measures to be applied, are described in greater detail within Appendix 2.2: Draft commitments register.

20.8.3 The embedded design mitigation and standard good practice measures applicable to the Cumulative effects assessment are those that are relied on in each of the aspect chapters.

20.9 Preliminary assessment of likely significant effects

Inter-project cumulative effects

20.9.1 This section reports the preliminary assessment of inter-project cumulative effects.

20.9.2 Table 20.6 documents the outcome of the review for potential for significant cumulative effects with shortlisted other developments during construction and operation. This is denoted by use of 'Y' for potential significant effects and an 'N' for no potential significant effects. Where there are potential significant effects which are beneficial, these are indicated by a green background and a plus symbol (+). Potential significant effects which are expected to be adverse are indicated by an orange background and a minus symbol (-). In some cases an aspect has identified both beneficial and adverse effects for the same

other development. The location of the other developments are shown on Figure 20.2: Overview of long list of other development.

20.9.3 For some of the other developments and aspects it has not been possible to confirm at this stage whether there are potential significant inter-project cumulative effects. This is generally due to a lack of data either for the other development, or for the Project. This has been identified with a 'TBC' in Table 20.6. Where other developments have been given the 'TBC' categorisation, this shall be further investigated and the assessment updated for the submission of the ES. In particular, where the assessment requires further information on the other development, further engagement will be undertaken with third party developers (where practicable) to better understand the potential for cumulative effects for the ES.

20.9.4 Where no potential for significant inter-project cumulative effects has been identified (as signified by 'N') it is for one or more of the following reasons:

- There are no common receptors between the Project and the other development.
- The other development has been considered as part of the future baseline for this aspect (in accordance with the methodology), and therefore the assessment of the Project alone incorporates potential cumulative effects with the other development.
- The implementation of reasonably foreseeable mitigation (including, but not limited to, standard good practice mitigation, such as good industry practice during construction) adopted for the Project and that can be assumed to be adopted for the other development is likely to be sufficient to avoid any potential for significant effects.
- The other development is outside of the individual aspect chapter ZOI.
- The size, scale or nature of the other development, and its location in relation to the Project means that significant cumulative effects are unlikely.
- The EIA or other environmental assessments undertaken for the other development:
  - Scopes out effects relating to this aspect, or scopes out assessment of shared receptors with the Project.
  - Assesses this aspect but does not identify residual effects of magnitudes likely to result in cumulative significant effects (i.e. Negligible/no change).
- Timescales of effects are not expected to overlap.

20.9.5 Developments that were assessed across the aspects and found to have no potential for significant inter-project cumulative effects have not been discussed further beyond Table 20.6. Details of these developments are instead provided in Appendix 20.1: Long list of developments.

20.9.6 Following a review of the shortlisted developments, it was determined that the following aspects did not identify any potential for significant effects cumulatively with any of the developments. As such, they are not included in Table 20.6:

- Chapter 10: Geology and soils
- Chapter 13: Air quality

20.9.7 The assessment of cumulative effects to agricultural land is reported in Appendix 20.2: Cumulative soils assessment and summarised in Section 20.10: Summary of likely significant effects and additional mitigation.

Table 20.6 Potential significant effects with other developments (shortlisted at PEI Report stage)

Shortlisted other development [ID as provided in Appendix 20.1: Long list of other developments]	Ch5: Water environment	Ch6: Aquatic ecology	Ch7: Terrestrial ecology	Ch8: Historic environment	Ch9: Landscape and visual	Ch12: Traffic and transport	Ch14: Noise and vibration	Ch15: Socio-economics and communities	Ch16: Human health
Thames to Southern Water Transfer (T2ST) [OTH-0001]	TBC	N	Y (-)	N	TBC	N	TBC	TBC	TBC
Severn to Thames Transfer (STT) [OTH-0002]	TBC	Y (-)	Y (-)	N	TBC	N	TBC	TBC	TBC
Farmoor Transfer (SWOX Raw water transfer) [OTH-0004]	TBC	Y (-)	Y (-)	N	TBC	N	N	TBC	TBC
East Hanney Flood Alleviation Scheme [OTH-0005]	Y (+) Y (-)	Y (-)	Y (-)	N	N	N	TBC	N	N
Steventon Flood Alleviation Scheme [OTH-0006]	Y (+) Y (-)	Y (-)	Y (-)	N	N	N	TBC	N	N
Drayton to Didcot New Power Connection [OTH-0007]	N	N	Y (-)	N	N	N	TBC	TBC	TBC
Teddington Direct River Abstraction [DCO-0002]	N	N	N	N (outside of aspect ZOI)	N (outside of aspect ZOI)	N (outside of aspect ZOI)	N (outside of aspect ZOI)	N (outside of aspect ZOI)	N (outside of aspect ZOI)
River Thames Scheme [DCO-0004]	N	Y (-)	N	N (outside of aspect ZOI)	N (outside of aspect ZOI)	N (outside of aspect ZOI)	N (outside of aspect ZOI)	N (outside of aspect ZOI)	N (outside of aspect ZOI)
Land East of Kingston Bagpuize [PLA-0012]	N	N	N	N	N	N	N (outside of aspect ZOI)	N (outside of aspect ZOI)	N
Didcot Garden Town Housing Infrastructure Fund (HIF1) [PLA-0027]	N	N	N	N	N	N	N (outside of aspect ZOI)	N	N
East Hanney Solar Farm [PLA-0036]	N	N	Y (-)	TBC	N	N	N	Y (+) Y (-)	N
Crab Hill (north-east Wantage) [PLA-0052]	N	N	N	N	N	N	N (outside of aspect ZOI)	N (outside of aspect ZOI)	N
Willowfields Energy Park [PLA-0090]	N	N	Y (-)	TBC	Y (-)	N	N	Y (+) Y (-)	N
Tubworth Quarry, Barn Farm, Tubney [PLA-0093]	N	N	N	N	N	N	N (outside of aspect ZOI)	N (outside of aspect ZOI)	N
North-west of Grove [PLA-0155]	N	N	Y (-)	N	N	N	Y (-)	Y (+) Y (-)	N
Sutton Courtenay Landfill Site [PLA-0182]	N	N	N	N	N	N	N (outside of aspect ZOI)	N (outside of aspect ZOI)	N
Battery Energy Storage System (BESS) north of Culham Science Centre [PLA-0192]	N	N	N	N (outside of aspect ZOI)	N	N	N (outside of aspect ZOI)	N (outside of aspect ZOI)	N
Williams Racing, Grove (refurbish and enhance) [PLA-0197]	N	N	Y (-)	N	N	N	TBC	N	N
Oxford Flood Alleviation Scheme [PLA-0204]	N	N	N	N (outside of aspect ZOI)	N	N (outside of aspect ZOI)	N (outside of aspect ZOI)	N (outside of aspect ZOI)	N
Valley Park, Didcot [PLA-0215]	N	N	Y (-)	TBC	N	Y (-)	Y (-)	Y (+) Y (-)	Y (-)

Shortlisted other development [ID as provided in Appendix 20.1: Long list of other developments]	Ch5: Water environment	Ch6: Aquatic ecology	Ch7: Terrestrial ecology	Ch8: Historic environment	Ch9: Landscape and visual	Ch12: Traffic and transport	Ch14: Noise and vibration	Ch15: Socio-economics and communities		Ch16: Human health
Grove Airfield [PLA-0216]	N	N	N	N	N	N	Y (-)	Y (+)	Y (-)	Y (-)
Monks Farm, North Grove [PLA-0217]	N	N	Y (-)	N	N	N	Y (-)	Y (+)	Y (-)	Y (-)
Frilford and Marcham improvements (Marcham bypass) [SAL-0021]	TBC	TBC	Y (-)	N	N	TBC	TBC	Y (+)	Y (-)	Y (-)
Wilts and Berks Canal [SAL-0023/ SAL-0034/ SAL-0093/ SAL-0151]	Reduction in a not significant beneficial effect for the Project alone, remaining beneficial	Reduction in a significant beneficial effect for the Project alone, remaining beneficial but not significant. & Y (-)	Y (-)	TBC	N	TBC	TBC	Y (+)		Y (+)
Land Adjacent to Culham Science Centre [SAL-0027, PLA-0219]	N	N	N	N (outside of aspect ZOI)	N	Y (-)	N (outside of aspect ZOI)	N (outside of aspect ZOI)		Y (-)
Dalton Barracks Garden Village [SAL-0032 / SAL-00087]	N	N	N	TBC	N	Y (-)	Y (-)	Y (+)	Y (-)	Y (-)
Land for improvements to Featherbed Lane and Steventon Junction and Relief to Rowstock and Harwell to Didcot Busway [SAL-0053 / SAL-0111]	N	N	Y (-)	N	N	TBC	TBC	Y (+)	Y (-)	Y (-)
Abingdon Flood Alleviation Scheme [SAL-0064]	Y (+)	Y (-)	N	N	N	N	TBC	TBC		TBC
Land for Grove Railway Station [SAL-0083]	TBC	N	Y (-)	N	N	TBC	TBC	Y (+)	Y (-)	Y (-)
Land for Abingdon south bypass [SAL-0138]	TBC	TBC	Y (-)	N	N	TBC	TBC	Y (+)	Y (-)	Y (-)

20.9.8 Each of the other developments where a potential significant cumulative effect is identified, or where a Cumulative effects assessment has not been able to be undertaken, is discussed in further detail below. Where practicable at this stage of assessment additional mitigation which may need to be developed has been identified, this additional mitigation is documented below. Reference has been made to embedded, standard good practice and additional mitigation identified in the aspect chapters where the cumulative mitigation builds on mitigation for the Project alone. Further information on the embedded and standard good practice mitigation (including the codes referenced) is provided in Appendix 2.2: Draft commitments register, and further information on the additional mitigation is provided in the relevant aspect chapter.

Thames to Southern Water Transfer (T2ST) [OTH-0001]

20.9.9 T2ST is a transfer of water from Thames Water to Southern Water's Hampshire area helping to improve resilience through better connectivity. This would involve the treatment and transfer of up to 120Ml/day of water via pipeline to Southern Water's supply region. The other development would originate at the Project reservoir and terminate to the north-east of Southampton. The Project includes the T2ST wastewater treatment works, and the section of the potable water transfer pipeline within the draft Order limits (these components are assessed as part of the Project alone).

20.9.10 There is limited information available on the T2ST at this stage, as it is not currently subject to a planning application but does have some information with the Regulators Alliance for Progressing Infrastructure Development (RAPID) gate reports (Thames Water, 2022b). At the time of writing this assessment, the detailed spatial location of the route, the phasing and construction process is unknown.

20.9.11 Outside the draft order limits, it is understood that the pipeline would primarily be below ground with pumping stations and break pressure tanks located above ground. The Gate 2 Main Report for T2ST indicates that the transfer of Invasive non-native species (INNS) is unlikely as it states '…*At no point during the normal operation of the transfer will raw or treated water be discharged to an open waterbody. Therefore, there is no risk of INNS introduction to the receptor catchment*.' It has been assumed that construction would commence around 2034 and be operational from the start 2040. Therefore, a concurrent construction phase with the Project has been assumed.

20.9.12 Due to the level of information available, most aspects have been unable to assess the other development in its entirety. However, due to the nature, general location (i.e. adjacent to the Project) and anticipated timescales (i.e. overlapping construction timescales) of the other development, the following aspect has identified the potential for significant inter-project cumulative effects comprising:

- Terrestrial ecology: Temporary cumulative adverse effects to terrestrial ecology receptors from habitat loss and fragmentation due to construction of both the Project and the other development occurring concurrently.

20.9.13 The preliminary assessment of effects has identified the need for an additional measure comprising collaboration and cooperation with third party developers as part of the management of ecology impacts (identified for the Project alone as SGP-06).

Severn to Thames Transfer (STT) [OTH-0002]

20.9.14 This is a water transfer infrastructure project from the North West / Midlands to the South East to support the South East of England during drought events. The water would be provided from the River Severn, with additional sources provided by Severn Trent Water and United Utilities. The water would be moved from the River Severn to the River Thames or the reservoir either by a new pipeline or restoration of the Cotswold canals. The diversity of sources provides resilience and means the scheme can be developed in a phased manner. It is anticipated that the STT development would connect into the river tunnel provided as part of the Project. The Project provides a shaft for a future pipeline connection and safeguards a corridor for the future STT pipeline within the draft Order limits and space for a future turbine building in the Project pumping station.

20.9.15 Information on the other development from the RAPID gate 2 reports has been used for the Severn to Thames Transfer (Thames Water, 2022a), which is at an early stage of development. At the time of writing this assessment, there is no decided route and it is not confirmed whether the transfer route will be above or below ground. However, a safeguarded route within the draft Order limits is identified. It has been assumed that the other development would have a concurrent construction phase with the Project. It has been assumed based on the Gate 2 report that pre-treatment of raw water from the River Severn will be undertaken to avoid transfer of INNS.

20.9.16 Due to the level of information available, most aspects have been unable to assess the other development in its entirety. However, due to the nature, general location (i.e. adjacent to the Project) and anticipated timescales (i.e. overlapping construction timescales) of the other development, the following aspects have identified the potential for significant inter-project cumulative effects comprising:

- Aquatic ecology: Permanent cumulative adverse effect to aquatic ecology receptors due to a residual risk of potential transfer of Invasive Non-Native Species (INNS) during operational water transfer in the event that pre-treatment is ineffective or the process fails.
- Terrestrial ecology: Temporary cumulative adverse effects to terrestrial ecology receptors from habitat loss and fragmentation due to construction of both the Project and the other development occurring concurrently.

20.9.17 The preliminary assessment of effects has identified the need for additional measures comprising collaboration and cooperation with third party developers as part of the management of aquatic INNS (identified for the Project alone as ED-32 and additional mitigation 'Measures to reduce INNS dispersal resulting from abstractions and discharges AM-49' in Chapter 6: Aquatic ecology) and the management of ecology impacts (identified for the Project alone as SGP-06).

Farmoor Transfer (SWOX Raw water transfer) [OTH-0004]

20.9.18 The WRMP24 (Thames Water, 2024) indicates the need for a raw water transfer pipeline to support Farmoor Reservoir and supply Thames Water's SWOX Water Resource Zone. The Farmoor Transfer would allow water to be transferred by a pipeline from the Project to Farmoor reservoir via a pump set in the pumping station. This would enable reduced abstraction from the River Thames at Farmoor (upstream of the Project) in certain flow scenarios.

20.9.19 The Project would include a pump set within the pumping station allowing up to 150Ml/d to be transferred, and the section of pipeline up to the south side of a new connection at Marcham Road. The remainder of the pipeline will be delivered as a separate project, under a separate planning application, with water planned to be available for use by 2040. Therefore, a concurrent construction phase with the Project is assumed.

20.9.20 There is limited information available on the Farmoor Transfer outside the draft Order limits at this stage, as it is not currently subject to a planning application, and only very limited information is available in the WRMP24. At the time of writing this assessment, the route of the pipeline, whether there are above ground components or how this development is phased is unknown. The other development is assumed to comprise of a raw water pipeline between SESRO and Farmoor reservoir, and a new break pressure tank at or near the high point of the transfer route.

20.9.21 Due to the level of information available, most aspects have been unable to assess the other development. However, due to the nature, general location (i.e. adjacent to the Project) and anticipated timescales (i.e. overlapping construction timescales) of the other development, the following aspects have identified the potential for significant inter-project cumulative effects comprising:

- Aquatic ecology: Permanent cumulative adverse effect to aquatic ecology receptors due to potential transfer of Invasive Non-Native Species (INNS) during operational water transfer.
- Terrestrial ecology: Temporary cumulative adverse effects to terrestrial ecology receptors from habitat loss and fragmentation due to construction of both the Project and the other development occurring concurrently.

20.9.22 The preliminary assessment of effects has identified the need for additional measures comprising collaboration and cooperation with third party developers as part of the management of aquatic INNS (identified for the Project alone as ED-32 and additional mitigation 'Measures to reduce INNS dispersal resulting from abstractions and discharges AM-49' in Chapter 6: Aquatic ecology) and the management of ecology impacts (identified for the Project alone as SGP-06).

East Hanney Flood Alleviation Scheme [OTH-0005]

20.9.23 There is limited information available on the East Hanney Flood Alleviation Scheme at this stage, it is not currently subject to a site allocation or planning application. However this is a known development within the water industry within the Thames River Basin district and due to it being within the draft Order limits, it has therefore been included. The other development is assumed to comprise of a new section of watercourse for flood relief connecting Letcombe Brook and the western watercourse diversion provided through the Project, and a culvert under the A338. It has been assumed that construction timescales would overlap with the Project as a reasonable worst case.

20.9.24 Due to the lack of construction information available, noise and vibration has been unable to assess the other development in its entirety. However, due to the nature, available information on the works required and anticipated timescales (i.e. overlapping construction timescales) of the other development, the following aspects have identified the potential for significant inter-project cumulative effects comprising:

- Water environment:

  - Cumulative adverse effects to the Letcombe Brooke, Western Watercourse Diversion, and groundwater receptors due to water quality (temporary) and hydromorphological changes (permanent) during construction.
  - Permanent cumulative beneficial effects to communities and infrastructure downstream during operation due to a reduction in flood risk.
- Aquatic ecology: Temporary cumulative adverse effects to watercourses and associated habitats and species including the connection between the Letcombe Brook and Western Watercourse Diversion due to changes in water quality and hydromorphology during construction and permanent effects from the introduction of pathways for spreading INNS during construction and operation.
- Terrestrial ecology: Temporary cumulative adverse effects to terrestrial ecology receptors from habitat loss and fragmentation due to construction of both the Project and the other development occurring concurrently.

20.9.25 The preliminary assessment of effects has identified the need for additional measures comprising collaboration and cooperation with third-party developers as part of:

- Management of ecology impacts (identified for the Project alone as SGP-06).
- Measures to manage water quality, hydromorphological changes and aquatic INNS (identified for the Project alone as SGP-02 and SGP-08)

Steventon Flood Alleviation Scheme [OTH-0006]

20.9.26 There is limited information available on the Steventon Flood Alleviation Scheme at this stage, it is not currently subject to a site allocation or planning application. However this is a known development within the water industry within the Thames River Basin district and due to it being within the draft Order limits, it has therefore been included. The other development is assumed to comprise of a new section of watercourse for flood relief connecting Ginge Brook and the eastern watercourse diversion provided through the Project. It has been assumed that construction timescales would overlap with the Project as a reasonable worst case.

20.9.27 Due to the lack of construction information available, noise and vibration has been unable to assess the other development in its entirety. However, due to the nature, available information on the works required and anticipated timescales (i.e. overlapping construction timescales) of the other development, the following aspects have identified the potential for significant inter-project cumulative effects comprising:

- Water environment:
  - Cumulative adverse effects to the Ginge Brook and Eastern Watercourse Diversion, and groundwater receptors due to water quality (temporary) and hydromorphological changes (permanent) during construction.
  - Permanent cumulative beneficial effects to communities and infrastructure downstream during operation due to a reduction in flood risk.
- Aquatic ecology: Temporary cumulative adverse effects to watercourses and associated habitats and species including the connection between the Ginge Brook and Eastern Watercourse Diversion due to changes in water quality and hydromorphology during construction and permanent effects from the introduction of pathways for spreading INNS during construction and operation.

- Terrestrial ecology: Temporary cumulative adverse effects to terrestrial ecology receptors from habitat loss and fragmentation due to construction of both the Project and the other development occurring concurrently.

20.9.28 The preliminary assessment of effects has identified the need for additional measures comprising collaboration and cooperation with third-party developers as part of:

- Management of ecology impacts (identified for the Project alone as SGP-06).
- Measures to manage water quality, hydromorphological changes and aquatic INNS (identified for the Project alone as SGP-02 and SGP-08).

Drayton to Didcot New Power Connection [OTH-0007]

20.9.29 This would provide a new permanent power connection between Drayton substation and Didcot substation. The connection between Drayton substation and the Project is included in the DCO, however, the part of the connection between Didcot substation and Drayton substation is not part of the Project.

20.9.30 There is limited information available on the Drayton to Didcot New Power Connection at this stage, as it is not currently subject to a site allocation or planning application but has been included due to the ongoing conversations with Scottish and Southern Electricity (SSE). The following assumptions have been made to enable this assessment:

- The majority of the route would follow existing highways, with only the final connection into Drayton substation located outside existing infrastructure.
- The cable would be buried underground.
- The connection would be operational by 2037, depending on National Grid undertaking upgrade works at Didcot substation. Therefore, the construction phase would be concurrent with the Project construction.

20.9.31 Due to the level of information available, certain aspects (refer to Table 20.6 for the aspects which state 'TBC') have been unable to assess the other development in its entirety. However, due to the nature, general location (i.e. adjacent to the Project) and anticipated timescales (i.e. overlapping construction timescales) of the other development, the following aspect has identified the potential for significant inter-project cumulative effects comprising:

- Terrestrial ecology: Temporary cumulative adverse effects to terrestrial ecology receptors from habitat loss and fragmentation due to construction of both the Project and the other development occurring concurrently.

20.9.32 The preliminary assessment of effects has identified the need for an additional measure comprising collaboration and cooperation with third party developers as part of the management of ecology impacts (identified for the Project alone as SGP-06).

River Thames Scheme [DCO-0004]

20.9.33 The River Thames Scheme (RTS) would reduce the risk of flooding to thousands of homes, businesses and vital infrastructure while unlocking the economic, health and environmental benefits of the river between Egham and Teddington and responding to the challenges of climate change and nature recovery. The development represents a new landscape-based

approach to creating healthier, more resilient, and more sustainable communities. The scheme would create new areas of green and blue open space with recreational facilities and a nature recovery network and provide sustainable travel connections to link communities together.

20.9.34 The following aspect has identified the potential for significant inter-project cumulative effects comprising:

- Aquatic ecology: Permanent cumulative adverse effects to aquatic ecology receptors within the River Thames relating to INNS dispersal during operation.

20.9.35 The preliminary assessment of effects has identified the need for additional measures comprising collaboration and cooperation with third party developers as part of the management of aquatic INNS (identified for the Project alone as ED-32 and additional mitigation 'Measures to reduce INNS dispersal resulting from abstractions and discharges AM-49' in Chapter 6: Aquatic ecology).

East Hanney Solar Farm [PLA-0036]

20.9.36 East Hanney Solar Farm is subject to a full planning application. This comprises of a solar farm and associated development including battery energy storage scheme over a 63ha site area. No information is available on the likely construction timescales, therefore, it has been assumed that construction timescales of this development overlap with those of the Project as a reasonable worst case. Potential effect pathways with this other development have been identified relating to the following, however, the potential for a cumulative effect has not been possible to assess at this stage but will be assessed at the ES:

- The setting of heritage assets due to the further work required to be undertaken for the setting assessment of the Project.
- Effects on businesses with shared land holdings due to further work required to understand the location of land holdings.

20.9.37 The following aspects have identified the potential for significant inter-project cumulative effects comprising:

- Terrestrial ecology: Temporary cumulative adverse effects to terrestrial ecology receptors from habitat loss and fragmentation due to construction of both the Project and the other development occurring concurrently.
- Socio-economics and communities:
  - Temporary cumulative adverse effects to the amenity of PRoW 198/3/10 and 198/20/10 due to combined closures and diversions during construction.
  - Temporary cumulative beneficial effects on the economy from additional employment during construction, if construction timescales overlap.

20.9.38 The preliminary assessment of effects has identified the need for additional measures comprising collaboration and cooperation with third-party developers as part of:

- Management of ecology impacts (identified for the Project alone as SGP-06).
- Determining temporary closures and diversions required for PRoW 198/3/10 and 198/20/10 (identified for the Project alone as SGP-49).

Willowfields Energy Park [PLA-0090]

20.9.39 Willowfields Energy Park has submitted an application for full planning application, which has not yet been granted (at the time of writing in early October 2025). This other development is described as 'construction and operation of a renewable energy park comprising ground mounted solar photovoltaics (PV) together with associated infrastructure, including inverters, transformers, substation, security cameras, fencing, access, landscaping and cabling' over a 158ha site area. A six month construction timescale is stated in the Application Documents, however, as no start date is known it has been assumed that there is the potential for overlap with construction of the Project.

20.9.40 Potential effect pathways for a cumulative effect relating to setting of heritage assets with this other development have been identified for this other development, however, it is currently not possible to assess this potential cumulative effect due to the further work required to be undertaken for the setting assessment of the Project at ES.

20.9.41 The following aspects have identified the potential for significant inter-project cumulative effects comprising:

- Terrestrial ecology: Temporary cumulative adverse effects to terrestrial ecology receptors from habitat loss and fragmentation due to construction of both the Project and the other development occurring concurrently.
- Landscape and visual: Permanent cumulative adverse effects to landscape and visual receptors due to the proposed ribbon of solar developments during operation.
- Socio-economics and communities:
  - Temporary cumulative adverse effects to the amenity of PRoW 222/3/10, 222/4/20, 221/16/30, and 222/4/10 due to combined closures and diversions during construction.
  - Temporary cumulative beneficial effects on the economy from additional employment during construction, if construction timescales overlap.

20.9.42 The preliminary assessment of effects has identified the need for additional measures comprising:

- Collaboration and cooperation with third-party developers as part of:
  - Management of ecology impacts (identified for the Project alone as SGP-06).
  - Determining temporary closures and diversions required for PRoW 222/3/10, 222/4/20, 221/16/30, and 222/4/10 (identified for the Project alone as SGP-49).
- Measures to provide visual separation between the Project and the solar development (in addition to additional mitigation 'Design and establishment of planting, habitats, and/or landform to help control, limit, soften and filter views of new infrastructure AM-23' and 'Phase the works to enable early establishment of woodland/structural planting between the development and sensitive visual receptors AM-36' identified for the Project alone in Chapter 9: Landscape and visual).

North-west of Grove [PLA-0155]

20.9.43 North-west of Grove is subject to an outline planning application. The outline application is for a residential development of up to 624 new houses with new access points and vehicular, cycle and pedestrian links, strategic landscaping and green infrastructure

including areas of informal and public open space, other associated site infrastructure, and an extension to the cemetery. Based on dates included in the Transport Assessment submitted with the application (Vale of White Horse District Council, 2025) it has been assumed that there is an overlap of construction period with the early years of the Project build out, with the development becoming completely operational during the construction of the Project.

20.9.44 The following aspects have identified the potential for significant inter-project cumulative effects comprising:

- Terrestrial ecology: Temporary cumulative adverse effects to terrestrial ecology receptors from habitat loss and fragmentation due to construction of both the Project and the other development occurring concurrently.
- Noise and vibration: Temporary cumulative adverse effects of construction noise to receptors in at the northern edge of Grove.
- Socio-economics and communities:
  - Temporary cumulative adverse effects to the amenity of PRoW 235/12/50, 235/12/40, 235/7/10, and 402/11/10 due to combined closures and diversions during construction.
  - Temporary cumulative beneficial effects on the economy from additional employment during construction, if construction timescales overlap.

20.9.45 The preliminary assessment of effects has identified the need for additional measures comprising collaboration and cooperation with third-party developers as part of:

- Management of ecology impacts (identified for the Project alone as SGP-06).
- Measures to control noise during construction (as required for the Project alone in SGP-25).
- Determining temporary closures and diversions required for PRoW 235/12/50, 235/12/40, 235/7/10, and 402/11/10 (identified for the Project alone as SGP-49).

Williams Racing, Grove (refurbish and enhance) [PLA-0197]

20.9.46 The other development is described as refurbishment and enhancement of the Williams Racing manufacturing and operations capability at the existing headquarters site at Grove, Oxfordshire.

20.9.47 The other development is currently subject to an EIA Screening request only, with limited information available on the works including construction information. Therefore, noise and vibration has been unable to assess the other development. It has been assumed, as a reasonable worst case, that there would be overlap between construction of the Project and this development.

20.9.48 Due to the nature, available information on the works required, and assumptions made, the following aspect has identified the potential for significant inter-project cumulative effects comprising:

- Terrestrial ecology: Temporary cumulative adverse effects to terrestrial ecology receptors from habitat loss and fragmentation due to construction of both the Project and the other development occurring concurrently.

20.9.49 The preliminary assessment of effects has identified the need for additional measures comprising collaboration and cooperation with third-party developers as part of the management of ecology impacts (identified for the Project alone as SGP-06).

Valley Park, Didcot [PLA-0215]

20.9.50 Valley Park, Didcot is subject to an outline planning application. This outline planning application describes the other development as a residential development of up to 4,254 dwellings, mixed-use local centres, primary schools, sports pitches, community and leisure facilities, special needs school, open space and extensive green infrastructure, hard and soft landscaping, attenuation areas, diversions to public rights of way, pedestrian and vehicular access and associated works.

20.9.51 The developer website (Taylor Wimpey and Persimmon Homes, 2024) indicated that the first phases are available for sale, therefore it was assumed that construction has commenced at the time of writing. The total construction duration is stated as approximately 15 years (Taylor Wimpey UK Ltd, 2014), therefore, an overlap with the construction period for the Project is assumed.

20.9.52 Potential effect pathways relating to cumulative effects on the setting of heritage assets with this other development have been identified, however, it is currently not possible to assess this potential cumulative effect due to the further work required for the setting assessment of the Project at the ES.

20.9.53 The following aspects have identified the potential for significant inter-project cumulative effects comprising:

- Terrestrial ecology: Temporary cumulative adverse effects to terrestrial ecology receptors from habitat loss and fragmentation due to construction of both the Project and the other development occurring concurrently.
- Traffic and transport: Temporary and permanent cumulative adverse effects (including severance, non-motorised user amenity, fear and intimidation, driver delay, public transport user delay and road user and pedestrian safety) during construction and operation to receptors around the A34 Milton interchange on the A34 and on the A417 particularly in the Rowstock area.
- Noise and vibration: Temporary cumulative adverse effects of construction noise to receptors in Milton Heights and Harwell.
- Socio-economics and communities:
  - Temporary cumulative adverse effects to local amenity due to cumulative effects of traffic and transport and noise and vibration during construction and operation, and to users of Public Right of Way (PRoW) 243/3/10 during construction.
  - Temporary cumulative beneficial effects on the economy from additional employment during construction, if construction timescales overlap.
- Human health: Temporary cumulative adverse effects to the health and wellbeing of the community in Harwell during construction due to changes in environmental amenity which is a determinant of physical and mental health.

20.9.54 The preliminary assessment of effects has identified the need for additional measures comprising:

- Collaboration and cooperation with third-party developers as part of:

  - Measures to control noise during construction (as required for the Project alone in SGP-25).
  - Management of ecology impacts (identified for the Project alone as SGP-06).
  - Determining temporary closures and diversions required for PRoW 243/3/10 (identified for the Project alone as SGP-49).
- Development of additional mitigation for the A34 Milton interchange, if required (in addition to additional mitigation 'Highways improvements to reduce effects on the wider transport network AM-08' identified in Chapter 12: Traffic and transport for the Project alone).

Grove Airfield [PLA-0216]

20.9.55 Grove Airfield is subject to an outline planning application. This outline application describes the other development as residential development of about 2,500 dwellings with associated services and facilities including secondary school, primary schools, local centre (including uses falling within use classes A1, A2, A3, A4, A5, B1, C2, D1 and D2), open space including community park, and the realignment of Denchworth Road to the south.

20.9.56 The timescales for completion of this other development are uncertain, a number of dwellings are understood to have been occupied on site as of June 2022. Therefore, construction is understood to have commenced, however a reasonable worst case has been assumed that the construction will not be completed before the construction of the Project commences.

20.9.57 The following aspects have identified the potential for significant inter-project cumulative effects comprising:

- Noise and vibration: Temporary cumulative adverse effects of construction noise to receptors in at the northern edge of Grove.
- Socio-economics and communities:
  - Temporary cumulative adverse effects to the amenity of PRoW 188/2/20, 196/11/10, 235/7/10 and 235/12/50 due to combined closures and diversions during construction.
  - Temporary cumulative beneficial effects on the economy from additional employment during construction, if construction timescales overlap.
- Human health: Temporary cumulative adverse effects to the health and wellbeing of the community in Grove during construction due to changes in environmental amenity which is a determinant of physical and mental health.

20.9.58 The preliminary assessment of effects has identified the need for additional measures comprising collaboration and cooperation with third-party developers as part of:

- Measures to control noise during construction (as required for the Project alone in SGP-25).
- Determining temporary closures and diversions required for PRoW 188/2/20, 196/11/10, 235/7/10 and 235/12/50 (identified for the Project alone as SGP-49).

Monks Farm, North Grove [PLA-0217]

20.9.59 Monks Farm, North Grove is subject to an outline planning application. This outline planning permission is for up to 400 dwellings, extension to the Grove CE primary school, associated landscaping and infrastructure with all matters except access reserved. Based on the reserved matters applications submitted to date it is assumed that approximately half of the dwellings will be constructed in the same period as the Project.

20.9.60 The following aspects have identified the potential for significant inter-project cumulative effects comprising:

- Terrestrial ecology: Temporary cumulative adverse effects to terrestrial ecology receptors from habitat loss and fragmentation due to construction of both the Project and the other development occurring concurrently.
- Noise and vibration: Temporary cumulative adverse effects of construction noise to receptors in at the northern edge of Grove.
- Socio-economics and communities:
  - Temporary cumulative adverse effects to the amenity of PRoW 235/12/50, 235/12/40, 235/7/10, and 402/11/10 due to combined closures and diversions during construction.
  - Temporary cumulative beneficial effects on the economy from additional employment during construction, if construction timescales overlap.
- Human health: Temporary cumulative adverse effects to the health and wellbeing of the community in Grove during construction due to changes in environmental amenity which is a determinant of physical and mental health.

20.9.61 The preliminary assessment of effects has identified the need for additional measures comprising collaboration and cooperation with third-party developers as part of:

- Management of ecology impacts (identified for the Project alone as SGP-06).
- Measures to control noise during construction (as required for the Project alone in SGP-25).
- Determining temporary closures and diversions required for PRoW 235/12/50, 235/12/40, 235/7/10, and 402/11/10 (identified for the Project alone as SGP-49).

Frilford and Marcham improvements (Marcham bypass) [SAL-0021]

20.9.62 The Marcham bypass is subject to a site allocation only, no planning application has yet been submitted. This land is safeguarded for highways improvements to address congestion issues at the A415/A338 junction at Frilford and the A415 through Marcham Viallage. There is no information available on likely timescales of the other development, therefore, it has been assumed as a reasonable worst case that the other development would overlap with the construction period of the Project.

20.9.63 Some aspects have been unable to assess the other development as information on the size, scale, materials and construction information for the other development is not available. However, due to the nature, available information on the works required and anticipated timescales of the other development, the following aspects have identified the potential for significant inter-project cumulative effects comprising:

- Terrestrial ecology: Temporary cumulative adverse effects to terrestrial ecology receptors from habitat loss and fragmentation due to construction of both the Project and the other development occurring concurrently.
- Socio-economics and communities:
  - Temporary cumulative adverse effects to the amenity of PRoW 293/16/20 and 293/15/20 due to combined closures and diversions during construction.
  - Temporary cumulative beneficial effects on the economy from additional employment during construction, if construction timescales overlap.
- Human health: Temporary cumulative adverse effects to the health and wellbeing of the community in Marcham during construction due to changes in environmental amenity which is a determinant of physical and mental health.

20.9.64 The preliminary assessment of effects has identified the need for additional measures comprising collaboration and cooperation with third-party developers as part of:

- Management of ecology impacts (identified for the Project alone as SGP-06).
- Determining temporary closures and diversions required for PRoW 293/16/20 and 293/15/20 (identified for the Project alone as SGP-49).

Wilts and Berks Canal [SAL-0023/ SAL-0034/ SAL-0093/ SAL-0151]

20.9.65 Part of the historic alignment of the Wilts and Berks canal would be lost under the footprint of the reservoir. The Project includes realignment and recreation of this section of water channel for the Wilts and Berks Canal; that is without components to make the canal navigable e.g. no locks. Therefore, the other development assessed in this Cumulative effects assessment is the upgrade of the water channel to a navigable canal, and the components of canal/active travel provision outside the draft Order limits.

20.9.66 There is limited information available on the cumulative components of the canal provision, the provision of canal restoration and active travel routes is safeguarded through a site allocation in the Vale of White Horse Local Plan (Vale of White Horse District Council, 2019) but no further details are available on timescales, location of locks and infrastructure requirements and arrangements for filling the canal. It is assumed that the construction of the canal components cannot be started until the Project is operational. Due to the level of information available, some aspects have been unable to assess the other development in its entirety. However, due to the nature and location the following aspects have identified the potential for inter-project cumulative effects.

20.9.67 The Water environment and Aquatic ecology aspects identified beneficial effects relating to the provision of the water channel component of the Wilts and Berks Canal (as part of the assessment of the Project alone). The water environment effects are not significant, beneficial, during operation because of improvements to hydrology, fluvial geomorphology and water quality. The aquatic ecology effects are significant beneficial from the provision of habitat gain, and not significant beneficial due to changes in flow/ water level and water quality.

20.9.68 These beneficial effects are likely to be reduced through the conversion of the water channel to a functioning canal, because of potential impacts to the water quality, habitat loss and fragmentation during construction and the introduction of recreational disturbance

during operation. However, for both Aquatic ecology and Water environment aspects the effects are likely to be not significant, beneficial and permanent in the cumulative scenario.

20.9.69 The Terrestrial ecology aspect identifies permanent cumulative adverse effects from the provision of the Wilts and Berks Canal as a navigable feature, primarily due to the introduction of recreational disturbance in a currently undisturbed area in the baseline (and proposed to be an undisturbed area through the Project). Both terrestrial ecology and aquatic ecology identified potential permanent cumulative adverse effects due to the potential for INNS transfer from new connections with existing waterbodies and recreational use of the canal.

20.9.70 The Socio-economics and communities and Human health aspects have identified potentially significant beneficial effects in converting the water channel to a functioning canal. The canal would provide recreational and amenity benefits for the users of the canal. Reinstating the historic canal provides a potential benefit for shared above ground heritage assets, however, further consideration to determine the significance of this effect would be required at the next stage as part of the ES assessment.

20.9.71 No mitigation has been identified at this stage for cumulative effects with this other development, it is currently not certain if it is possible or necessary to develop mitigation, this will be further explored as part of the ES assessment.

Land Adjacent to Culham Science Centre [SAL-0027, PLA-0219]

20.9.72 Policy AS2 (Land adjacent to Culham Campus) in the emerging joint local plan (Vale of White Horse and South Oxfordshire District Councils, 2024) is allocated as a mixed-use development for the delivery of approximately 3,500 new homes, 60 units of housing with care for older people, between six and ten pitches for gypsies and travellers, supporting service and facilities and optimisation of the existing employment area located next to Culham Campus, on land east of the railway, known as the 'Culham No. 1 site'.

20.9.73 This development is currently subject to a site allocation for the full site, an EIA Scoping Opinion for the full site, and a planning application and EIA for the employment and hotel component of the allocation. It has been assumed that this development would overlap with the construction of the Project. The following aspects have identified the potential for significant inter-project cumulative effects comprising:

- Traffic and transport: Temporary and permanent cumulative adverse effects (including severance, non-motorised user amenity, fear and intimidation, driver delay, public transport user delay and road user and pedestrian safety) during construction and operation to receptors on the A415 in Abingdon, at the A34 Marcham interchange and on the A34.
- Human health: Temporary and permanent cumulative adverse effects to the health and wellbeing of the community in Culham during construction and operation due to changes in environmental amenity which is a determinant of both physical and mental health.

20.9.74 The preliminary assessment of effects has identified the potential need for additional measures comprising development of mitigation for the A34 Marcham interchange and for other locations in Abingdon (in addition to additional mitigation 'Highways improvements to reduce effects on the wider transport network AM-08' identified in Chapter 12: Traffic and transport for the Project alone).

Dalton Barracks Garden Village [SAL-0032 / SAL-00087]

20.9.75 The Dalton Barrack Garden Village site allocation would deliver approximately 2,750 new homes, 180 units of housing with care for older people, between six and ten pitches for gypsies and travellers, supporting services and facilities, and 7.4 ha employment opportunities. There is an aspiration to provide a total of 5,250 homes as part of the allocation (the spatial area for this allocation is provided through policy AS 13 in the emerging joint local plan (Vale of White Horse and South Oxfordshire District Councils, 2024)).

20.9.76 The Dalton Barracks Garden Village is currently subject to a site allocation only, no planning application has yet been submitted. Due to this level of information available, some aspects have been unable to assess the other development in its entirety. As a precaution, this assessment considers the full aspiration of 5,250 homes to be built but assumes that only the first 2,750 homes are constructed during the construction period of the Project.

20.9.77 Potential effect pathways relating to cumulative effects on the setting of heritage assets with this other development have been identified, however, it is currently not possible to assess this potential cumulative effect due to the further work required for the setting assessment of the Project at the ES.

20.9.78 The following aspects have identified the potential for significant inter-project cumulative effects comprising:

- Traffic and transport: Temporary and permanent cumulative adverse effects (including severance, non-motorised user amenity, fear and intimidation, driver delay, public transport user delay, road user and pedestrian safety) during construction and operation on common receptors, particularly in the vicinity of Marcham and Abingdon.
- Noise and vibration: Temporary cumulative adverse effects of construction noise to receptors at the southern end of Shippon, Abingdon.
- Socio-economics and communities:
  - Temporary cumulative adverse effects to local amenity due to cumulative effects of traffic and transport and noise and vibration during construction.
  - Temporary cumulative beneficial effects on the economy from additional employment during construction, if construction timescales overlap.
- Human health: Temporary cumulative adverse effects to health and wellbeing of school communities at education facilities adjacent to the A34 during construction due to changes to environmental amenity which is a determinant of both physical and mental health.

20.9.79 The preliminary assessment of effects has identified the need for additional measures comprising:

- Measures to address the proposed access roundabout on the A415, which would require a fourth arm to serve Dalton Barracks and provide additional capacity; with the potential for further improvements to the A415, A34 Marcham interchange, junctions east of the A34 into Abingdon, and potentially other junctions in the area to the north of the Project (in addition to additional mitigation 'Highways improvements to reduce effects on the wider transport network AM-08' identified in Chapter 12: Traffic and transport identified for the Project alone).

- Collaboration and cooperation with third party developers as part of the management of construction noise (identified for the Project alone as SGP-25).

Land for improvements to Featherbed Lane and Steventon Junction and Relief to Rowstock and Harwell [SAL-0053 / SAL-0111]

20.9.80 The other development is subject to a site allocation only, no planning application has yet been submitted. This development involves the delivery of improvements to Featherbed Lane and Steventon Junction, and relief to the road network at Rowstock and Harwell.

20.9.81 No information is available currently on the type of works required to deliver these other developments, or the timing of works. It has been assumed, as a reasonable worst case, that the development would overlap with the construction period of the Project. Due to the level of information available, some aspects have been unable to assess the other development in its entirety.

20.9.82 However, due to the nature, available information on the works required and anticipated timescales (i.e. overlapping construction timescales) of the other development, the following aspects have identified the potential for significant inter-project cumulative effects comprising:

- Terrestrial ecology: Temporary cumulative adverse effects to terrestrial ecology receptors from habitat loss and fragmentation due to construction of both the Project and the other development occurring concurrently.
- Socio-economics and communities:
  - Temporary cumulative adverse effects to the amenity of PRoW 99/3/10, 199/16/50 and 299/13/40 due to combined closures and diversions during construction.
  - Temporary cumulative beneficial effects on the economy from additional employment during construction, if construction timescales overlap.
- Human health: Temporary cumulative adverse effects to the health and wellbeing of the communities in Harwell, Milton Heights and East Hendred during construction due to changes in environmental amenity which is a determinant of physical and mental health.

20.9.83 The preliminary assessment of effects has identified the need for additional measures comprising collaboration and cooperation with third-party developers as part of:

- Management of ecology impacts (identified for the Project alone as SGP-06).
- Determining temporary closures and diversions required for PRoW 99/3/10, 199/16/50 and 299/13/40 (identified for the Project alone as SGP-49).

Abingdon Flood Alleviation Scheme [SAL-0064]

20.9.84 Abingdon Flood Alleviation Scheme is an area safeguarded for flood risk management within the Vale of White Horse local plan (Vale of White Horse District Council, 2019). Proposals for the scheme were developed by the Environment Agency in 2018. These continue to be investigated by Thames Water in partnership with the Environment Agency to see if there are any opportunities to reduce flood risk alongside the Project. Based on discussions with the proponents of the other development it is understood that the other

development, in conjunction with the Project, would comprise the following, and this description forms the basis of this cumulative assessment:

- Hydraulic cut off within the clay embankment under the Project main access road (without changes to the footprint or height of the access road).
- Two flood control gates on bridges on the Project main access road.
- A low height embankment or wall and local raising of levels to Meadow Farmhouse.

20.9.85 Due to the level of information available, particularly the lack of construction information the Noise and vibration, Socio-economics and communities and Human health aspects have been unable to assess the other development in its entirety. As a precautionary approach the timeframes from this other development have been assumed to overlap with the construction phase of the Project.

20.9.86 The following aspects have identified the potential for significant inter-project cumulative effects:

- Water environment: Permanent cumulative beneficial effect during operation due to a reduced flood risk to communities and infrastructure located downstream.
- Aquatic ecology: Temporary cumulative adverse effects to fish during construction relating to potential watercourse stoppages, and for example need for over-pumping.

20.9.87 The preliminary assessment of effects has identified the need for an additional measure comprising collaboration and cooperation with third party developers as part of the management of ecology impacts in particular in relation to fish and to the timing of construction works (identified for the Project alone as SGP-06 and SGP-07).

Land for Grove Railway Station [SAL-0083]

20.9.88 The other development is subject to a site allocation only, no planning application has yet been submitted. The other development would comprise re-opening of the railway station at Grove. There is no information available on the works required to deliver the railway station, including construction timescales. It has been assumed that delivery of the railway station would occur concurrently with the construction period for the Project as a reasonable worst case.

20.9.89 Due to the level of information available, some aspects (refer to those aspects marked as 'TBC' in Table 20.6) have been unable to assess the other development in its entirety. However, due to the nature, available information on the works required and anticipated timescales (i.e. overlapping construction timescales) of the other development, the following aspects have identified the potential for significant inter-project cumulative effects comprising:

- Terrestrial ecology: Temporary cumulative adverse effects to terrestrial ecology receptors from habitat loss and fragmentation due to construction of both the Project and the other development occurring concurrently.
- Socio-economics and communities:
  - Temporary cumulative adverse effects to the amenity of PRoW 235/3/30, 235/7/10 and 235/12/50 due to combined closures and diversions during construction.
  - Temporary cumulative beneficial effects on the economy from additional employment during construction, if construction timescales overlap.

- Human health: Temporary cumulative adverse effects to the health and wellbeing of the community in Grove during construction due to changes in environmental amenity which is a determinant of physical and mental health.

20.9.90 The preliminary assessment of effects has identified the need for additional measures comprising collaboration and cooperation with third-party developers as part of:

- Management of ecology impacts (identified for the Project alone as SGP-06).
- Determining temporary closures and diversions required for PRoW 235/3/30, 235/7/10 and 235/12/50 (identified for the Project alone as SGP-49).

Land for Abingdon south bypass [SAL-0138]

20.9.91 The other development is subject to a site allocation only, no planning application has yet been submitted. This is land safeguarded for south Abingdon-on-Thames bypass linking the A415 to the west and south-east of the town, including a new River Thames crossing. There is limited information on this development, for example whether the road would be at-grade or any construction information. It is assumed, as a reasonable worst case, that there would be construction overlap.

20.9.92 Due to the level of information available, some aspects (refer to those aspects marked as 'TBC' in Table 20.6) have been unable to assess the other development in its entirety and will revisit this assessment as more information comes forward (including socio-economics and communities in relation to land take). However, due to the nature, available information on the works required and anticipated timescales (i.e. overlapping construction timescales) of the other development, the following aspects have identified the potential for significant inter-project cumulative effects comprising:

- Terrestrial ecology: Temporary cumulative adverse effects to terrestrial ecology receptors from habitat loss and fragmentation due to construction of both the Project and the other development occurring concurrently.
- Socio-economics and communities:
  - Temporary cumulative adverse effects to the amenity of PRoW 192/28/10, 192/5/60, 192/7/10, 192/8/10 and others in the vicinity due to combined closures and diversion during construction.
  - Temporary cumulative beneficial effects on the economy from additional employment during construction, if construction timescales overlap.
- Human health: Temporary cumulative adverse effects to the health and wellbeing of the community in Caldecott during construction and to the users of Drayton Road Allotments (temporary and permanent) during construction and operation due to changes in environmental amenity which is a determinant of physical and mental health.

20.9.93 The preliminary assessment of effects has identified the need for additional measures comprising collaboration and cooperation with third-party developers as part of:

- Management of ecology impacts (identified for the Project alone as SGP-06).
- Determining temporary closures and diversions required for PRoW 192/28/10, 192/5/60, 192/7/10, 192/8/10 (identified for the Project alone as SGP-49).

Intra-project cumulative effects

20.9.94 The preliminary assessment of intra-project cumulative effects seeks to identify where multiple impacts could occur. At this stage it has only been possible to identify receptor groups at a high level (referred to as key receptor groups and set out in Table 20.7). These receptor groups will be further refined for the ES. The aspects which assess receptors in each of the key receptor groups, the types of impact identified and the likelihood of intra-project cumulative effects and location of the intra-project cumulative effects where relevant is provided in Table 20.7. Refer to the sign-posted chapters to understand the significant effects concluded. Where an intra-project cumulative effect is not likely, even though there are multiple effects assessed in different aspects, further explanation is provided of why no intra-project cumulative effect is expected.

Table 20.7 Key Receptor Groups

Key Receptor Group	Aspects which have assessed effects on the key receptor group	Potential intra-project cumulative effects during construction	Potential intra-project cumulative effects during operation	Likelihood and location within the PEI Report of intra-project cumulative effects assessment
Local residents	Air quality Geology and soils Human health Landscape and visual Noise and vibration Socio-economics and communities Water environment	• Construction dust and vehicle emissions from construction traffic (Air quality). • Creation of new pathways to pre-existing contamination during construction (Geology and soils). • Effects on visual amenity (Landscape and visual). • Construction noise (Noise and vibration). • Changes in pluvial, fluvial and groundwater flood risk (Water environment). • Land take as a result of construction and temporary amenity effects due to increased noise, visual amenity changes and traffic effects acting in combination (Socio-economics and communities). • Pre-construction anxiety relating to unknown effects, changes to community identity and cohesion (from access to services, severance and social isolation and decrease due to in-migration), community safety (due increase in actual and perceived crime and antisocial behaviour, increase in actual and perceived risk from radiation, increased emergency response times, increased risk of transport related accidents and risk to health from major accidents and disasters), environmental amenity (including air quality, noise and visual, sense of place/tranquility), housing (increase in flood risk to residential properties, involuntary relocation, and decrease in housing due to in-migration), localized disruption to societal infrastructure (e.g. energy, water, IT.), and socio-economic conditions (relating to provision of employment and skills and training opportunities) (Human health).	• Operational odour emissions, and vehicle emissions from operational traffic (Air quality). • A reduction in contamination exposure from existing sources (Geology and soils). • Effects on visual amenity (Landscape and visual). • Operational noise (Noise and vibration). • Changes in pluvial, fluvial and groundwater flood risk (Water environment). • Changes to community identity and cohesion (from access to services, severance and beneficial impacts from the provision of community assets), community safety (due increase in actual and perceived crime and antisocial behaviour, increase in actual and perceived risk from radiation, increased emergency response times, increased risk of transport related accidents and risk to health from major accidents and disasters), environmental amenity (including landscape and visual impacts, increased noise and lighting, increased traffic), housing (increase in flood risk to residential properties, involuntary relocation, and decrease in housing due to in-migration), benefits to wider societal infrastructure (e.g. provision of active travel routes and community infrastructure), and socio-economic conditions (relating to provision of employment) (Human health).	A preliminary assessment of intra-project cumulative effects to amenity for local residents during construction, on a spatial basis where practicable, is provided in Chapter 15: Socio-economics and communities. No likely significant intra-project cumulative effects on amenity have been identified during operation based on the outcomes of the individual aspect assessments. A preliminary assessment of intra-project cumulative effects to the human health of local residents during construction and operation at a population scale by each spatial community is provided in Chapter 16: Human health.
Users of active travel routes	Air quality Human health Landscape and visual Socio-economics and communities Traffic and transport	• Vehicle emissions from construction traffic (Air quality). • Effects on visual amenity (Landscape and visual). • Fear and intimidation due to changes in traffic flows, hazardous or large load effects on the highways network, changes in amenity of active travel routes due to changes in footway/cycleway provision, delay on active travel routes due to changes in the public right of way network, changes in road safety due to changes in traffic flows and severance effects due to changes in traffic flows (Traffic and transport). • Temporary closure and obstruction of public rights of way leading to changes in accessibility (Socio-economics and communities). • Effects on health lifestyles from access and amenity changes to active travel routes which at a population level	• Vehicle emissions from operational traffic. • Effects on visual amenity (Landscape and visual). • Fear and intimidation due to changes in traffic flows, changes in amenity of active travel routes due to changes in footway/cycleway provision, delay on active travel routes due to changes in the public right of way network, changes in road safety due to changes in traffic flows and severance effects due to changes in traffic flows (Traffic and transport). • Permanent diversions of public rights of way leading to changes in accessibility (Socio-economics and communities). • Improvements in physical activity at a population level due to provision of active travel routes and provision of new and reinstated public rights of way connecting the Project to the local	The Human health assessment provides a preliminary assessment of the potential population level intra-project cumulative effects on active travel routes (incorporating effects of disruption, increased traffic, air quality and noise changes, and visual environments). Refer to Chapter 16: Human health.

Key Receptor Group	Aspects which have assessed effects on the key receptor group	Potential intra-project cumulative effects during construction	Potential intra-project cumulative effects during operation	Likelihood and location within the PEI Report of intra-project cumulative effects assessment
		may reduce physical activity and active lifestyles (Human health).	community. However, potential adverse effects have been identified to active travel routes on the road network due to additional road traffic associated with the Project (Human health).	
Users of allotments	Geology and soils Human health Socio-economics and communities (construction only)	• Creation of new pathways to existing contamination sources (Geology and soils). • Users of West End Allotments due to partial land take permanently required (Socio-economics and communities). • Population level effects associated with healthy lifestyles due to the loss of a part of the West End allotments, and associated amenity effects to the remaining West End allotments; access and amenity effects at Steventon Allotments and Drayton Road Allotments (Human health).	• A reduction in contamination exposure from existing sources (Geology and soils). • Population level effects on environmental amenity at West End allotments and Drayton Road allotments (Human health).	The Human health assessment provides a preliminary assessment of the potential population level intra-project cumulative effects on users of allotments (incorporating effects of access changes, air quality and noise changes, and visual environments). Refer to Chapter 16: Human health.
Users of public open space	Geology and soils Human health Landscape and visual Noise and vibration Socio-economics and communities	• Creation of new pathways to existing contamination sources (Geology and soils). • People visiting Devil's Punchbowl Open Access Land within the North Wessex Downs National Landscape from adverse effects on visual amenity (Landscape and visual). • The open green space at Holmes Park Play Area from construction noise (Noise and vibration). • Temporary access impacts on registered common land at Abingdon, Cowhane, Heywoods Close and in the parish of West Hanney (Socio-economics and commuinities). • Adverse effects on healthy lifestyles from access and amenity changes to open spaces used for physical activity and leisure (Human health).	• A reduction in contamination exposure from existing sources (Geology and soils). • People visiting Devil's Punchbowl Open Access Land within the North Wessex Downs National Landscape from adverse effects on visual amenity (Landscape and visual). • Beneficial effects to healthy lifestyles due to improved access to open space and nature for leisure and play as part of the operation of the Project (Human health).	The Human health assessment (Chapter 16) provides a preliminary assessment of the intra-project cumulative effects on public open space from access and amenity changes during construction (e.g. air quality, noise and visual environment). During operation no likely significant intra-project cumulative effect have been identified, as geology and soils and human health have identified beneficial effects only. Multiple effects to the same open space receptors have not been identified at this stage, and therefore no cumulative amenity effects are anticipated, however this will be revisited at the next stage of assessment.
Road users (vehicle and bus)	Geology and soils Landscape and visual Traffic and transport Water environment Human health	• Creation of new pathways to existing contamination sources (Geology and soils). • Effects on visual amenity (Landscape and visual). • Pluvial, fluvial and groundwater flooding of highways and local roads (Water environment). • Driver delay due to changes in traffic flows, hazardous or large loads effects on the road network and road safety due to changes in traffic (Traffic and transport). • Environmental amenity of local communities (including road users), community identity and cohesion relating to access to assets and services, severance and social	• A reduction in contamination exposure from existing sources (Geology and soils). • Effects on visual amenity (Landscape and visual). • Pluvial, fluvial and groundwater flooding of highways and local roads (Water environment). • Driver delay due to changes in traffic flows and road safety due to changes in traffic (Traffic and transport). • Environmental amenity of local communities (including road users), community identity and cohesion relating to access to assets and	During both construction and operation, geology and soils and water environment effects are all neutral, therefore, considered unlikely to contribute to a likely significant intra-project cumulative effect on road users. Both Landscape and visual and Traffic and transport assessments have identified potential significant effects (prior to additional mitigation) at specific road locations. However, intra-project cumulative effects to amenity of road

Key Receptor Group	Aspects which have assessed effects on the key receptor group	Potential intra-project cumulative effects during construction	Potential intra-project cumulative effects during operation	Likelihood and location within the PEI Report of intra-project cumulative effects assessment
		isolation and community safety due to increased risk of traffic accidents (Human health).	services, severance and social isolation and community safety due to increased risk of traffic accidents (Human health).	users are considered unlikely as the road users would only temporarily be experiencing these amenity effects. The Human health assessment focusses on the disruption/inconvenience of changes to transport for the local communities (alongside other issues covered under separate key receptor groups).
Users of education facilities	Noise and vibration (construction only) Socio-economics and communities (construction only) Human health	• Effects to St Michael's CoE primary school from construction noise (Noise and vibration). • Effects to St Michael's CoE primary school and the Duchess Nursery Steventon due to increased noise and visual effects in combination (Socio-economics and communities). • Effects to education facilities in some locations arising from access and environmental amenity changes (Human health).	• Beneficial effects from the provision of on-site education facilities through the Project (Human health).	The Socio-economics and communities assessment (Chapter 15) provides a preliminary assessment of the potential intra-project cumulative effects on amenity of education facilities where relevant during construction. The Human health assessment (Chapter 16) provides a preliminary assessment of the potential intra-project cumulative effects on users of education facilities during construction.
Users of health services	Water environment Human health (construction only)	• Pluvial, fluvial and groundwater flooding of highways and local roads (Water environment). • Health and social care services due to severance caused by construction activities and traffic diversions, and specifically to healthcare facilities located along the A415 in west Abingdon environmental amenity effects during construction have been identified (human health).	• Pluvial, fluvial and groundwater flooding of highways and local roads (Water environment).	The water environment effects are all identified as neutral during both construction and operation, therefore there is no potential for intra-project cumulative effects. The Human health assessment integrates other amenity effects which are not explicitly identified in those aspect assessments.
Users of recreational facilities	Human health Water environment (operation only) Noise and vibration (construction only) Socio-economic and communities (operation only)	• Effects to users of Drayton Park golf club from construction noise (Noise and vibration). • Effects to users of Drayton Park golf club related to both access and amenity (Human health).	• Effects on users of the recreational lakes due to effects on surface water quality (Water environment). • Risks of poor surface water quality, and beneficial effects associated with provision of recreational facilities (Human health). • Beneficial effects during operation associated with the provision of new recreational and leisure facilities (Socio-economics and communities).	The Human health assessment (see Chapter 16) covers the intra-project cumulative effects to users of recreational facilities during construction (limited to Drayton Park golf club) and to users of recreational facilities provided by the Project during operation.
Owners, workers and customers of businesses	Air quality Geology and soils Noise and vibration Socio-economics and communities (construction only) Water environment	• Commercial receptors from vehicle emissions during construction (Air quality). • Creation of new pathways to existing contamination sources (Geology and soils). • Construction noise and vibration effects (Noise and vibration). • Land take as a result of construction (Socio-economics and communities). • Changes in groundwater, pluvial and fluvial flood risk (Water environment).	• Commercial receptors from vehicle emissions during operation (Air quality). • A reduction in contamination exposure from existing sources (Geology and soils). • Operational noise from road traffic and mechanical and electrical plant (Noise and vibration). • Changes in groundwater, pluvial and fluvial flood risk (Water environment).	There is limited potential for intra-project cumulative effects to owners, workers and customers of businesses because all air quality effects are not significant, all geology and soils effects are not significant or neutral, all water environment effects are neutral, and the socio-economic and community effects are in relation to those businesses which are scheduled to be demolished,

Key Receptor Group	Aspects which have assessed effects on the key receptor group	Potential intra-project cumulative effects during construction	Potential intra-project cumulative effects during operation	Likelihood and location within the PEI Report of intra-project cumulative effects assessment
				and therefore won't be the recipient of amenity effects. There are specific businesses which have potential for intra-project cumulative effects, namely Abingdon Marina Park, Drayton Golf Course and South Oxfordshire Crematorium and Memorial Park and users of Grove Cemetery, these are addressed separately under other key receptor groups.
Users of the River Thames	Human health Landscape and visual Traffic and transport Socio-economics and communities	• Effects on visual amenity during construction to people using the River Thames for recreational activities (Landscape and visual). • River vessel users of the River Thames due to changes in navigable width (Traffic and transport). • Changes in navigable width (Socio-economics and communities). • River vessel users and at Abingdon marina park, and more generally associated with changing water quality on the River Thames (Human health).	• Effects on visual amenity during operation to people using the River Thames for recreational activities (Landscape and visual). • River vessel users of the River Thames due to changes in navigable width (Traffic and transport). • Changes in navigable width (Socio-economics and communities) • Environmental amenity effects during operation associated with changing water quality on the River Thames (Human health).	Based on the Socio-economics and communities assessment methodology no amenity effect to users of the River Thames are identified. The Human health assessment (see Chapter 16) covers the intra-project cumulative effects during construction to users of the River Thames.
Users of rail services	Geology and soils Landscape and visual Water environment	• Creation of new pathways to existing contamination sources (Geology and soils). • Visual amenity to people travelling by rail toward/from Didcot (Landscape and visual). • Changes in groundwater, pluvial and fluvial flood risk (Water environment).	• A reduction in contamination exposure from existing sources(Geology and soils). • Visual amenity to people travelling by rail toward/from Didcot (Landscape and visual). • Changes in groundwater, pluvial and fluvial flood risk (Water environment).	Both the Geology and soils assessment and the Water environment assessment determines that effects to users of rail services are not significant and neutral respectively. Therefore, they are unlikely to contribute to a likely significant intra-project cumulative effect.
Users of South Oxfordshire Crematorium and Memorial Park and users of Grove Cemetery	Human health Landscape and visual Noise and vibration (construction only) Socio-economics and communities (construction only) Water environment	• Visual amenity of South Oxfordshire Crematorium and Memorial Park (Landscape and visual). • Noise effects on South Oxfordshire Crematorium and Memorial Park and Grove Cemetery (Noise and vibration). • Changes in groundwater levels, flows and quality at the South Oxfordshire Crematorium and Memorial Park (Water environment). • Amenity effects (of noise and visual interactions) to users of the South Oxfordshire Crematorium and Memorial Park and Grove Cemetery (Socio-economics and communities). • Environmental amenity effects, of access, air quality, noise and visual environments, to users of South Oxfordshire Crematorium and Memorial Park (Human health).	• Visual amenity of South Oxfordshire Crematorium and Memorial Park (Landscape and visual). • Changes in groundwater levels, flows and quality at the South Oxfordshire Crematorium and Memorial Park (Water environment). • Environmental amenity effects, of noise and visual environments, and traffic effects to users of South Oxfordshire Crematorium and Memorial Park (Human health).	A preliminary assessment of intra-project cumulative effects to amenity for users of South Oxfordshire Crematorium and Memorial Park and users of Grove Cemetery during construction is provided in Chapter 15: Socio-economics and communities. A preliminary assessment of intra-project cumulative effects to environmental amenity as a determinant of health for users of South Oxfordshire Crematorium and Memorial Park and users of Grove Cemetery construction and operation is provided in Chapter 16: Human health.
Economy	Socio-economics and communities	Effects to the economy are covered only within Chapter 15: Socio-economics and communities, therefore, intra-project cumulative effects are unlikely.	Effects to the economy are covered only within Chapter 15: Socio-economics and communities, therefore, intra-project cumulative effects are unlikely.	Refer to Chapter 15: Socio-economics and communities assessment of effects to the receptor.

Key Receptor Group	Aspects which have assessed effects on the key receptor group	Potential intra-project cumulative effects during construction	Potential intra-project cumulative effects during operation	Likelihood and location within the PEI Report of intra-project cumulative effects assessment
		However, the resulting effects on local residents from these economy effects are covered by the Human health assessment and included in the relevant key receptor groups above.	However, the resulting effects on local residents from these economy effects are covered by the Human health assessment and included in the relevant key receptor groups above.	Refer to Chapter 16: Human health for the intra-project cumulative effect of the impact of economy changes to local residents.
International designated biodiversity sites - Oxford Meadows Special Area of Conservation, SAC	Terrestrial Ecology	Effects to the SAC are covered only within Chapter 7: Terrestrial ecology, therefore, intra-project cumulative effects are unlikely.	Effects to the SAC are covered only within Chapter 7: Terrestrial ecology, therefore, intra-project cumulative effects are unlikely.	Refer to Chapter 7: Terrestrial ecology and communities for the assessment of effects to the receptor.
Nationally designated biodiversity site - Little Wittenham Site of Special Scientific Interest, SSSI	Aquatic ecology	Effects to the SSSI are covered only within Chapter 6: Aquatic ecology, therefore, intra-project cumulative effects are unlikely.	Effects to the SSSI are covered only within Chapter 6: Aquatic ecology, therefore, intra-project cumulative effects are unlikely.	Refer to Chapter 6: Aquatic ecology for the assessment of effects to the receptor.
Nationally designated biodiversity site – Barrow Farm Fen SSSI	Terrestrial ecology	Effects to the SSSI are covered only within Chapter 7: Terrestrial ecology, therefore, intra-project cumulative effects are unlikely.	Effects to the SSSI are covered only within Chapter 7: Terrestrial ecology, therefore, intra-project cumulative effects are unlikely.	Refer to Chapter 7: Terrestrial ecology for the assessment of effects to the receptor.
Nationally designated biodiversity site – Culham Brake SSSI	Terrestrial ecology	Effects to the SSSI are covered only within Chapter 7: Terrestrial ecology, therefore, intra-project cumulative effects are unlikely.	Effects to the SSSI are covered only within Chapter 7: Terrestrial ecology, therefore, intra-project cumulative effects are unlikely.	Refer to Chapter 7: Terrestrial ecology for the assessment of effects to the receptor.
Nationally designated biodiversity site – Frilford Heath, Ponds and Fens SSSI	Terrestrial ecology	Effects to the SSSI are covered only within Chapter 7: Terrestrial ecology, therefore, intra-project cumulative effects are unlikely.	Effects to the SSSI are covered only within Chapter 7: Terrestrial ecology, therefore, intra-project cumulative effects are unlikely.	Refer to Chapter 7: Terrestrial ecology for the assessment of effects to the receptor.
Non-statutory biodiversity sites – Marcham Salt Spring Local Wildlife Site (LWS)	Air quality (construction only) Aquatic ecology (construction only) Geology and soils Water environment Terrestrial ecology	• Construction dust (Air quality). • Changes in water quality, changes in flow/level, direct habitat loss/gain and severance, and the introduction of invasive non-native species (Aquatic ecology). • Damage to soil functions (Geology and soils). • Impacts on the spring due to changes in groundwater levels, quality or flows (Water environment). • Hydrological changes, habitat loss/gain, fragmentation and modification, air quality changes, and introduction and spread of invasive non-native species (Terrestrial ecology).	• Effects during operation on the spring due to changes in groundwater levels, quality or flows (Water environment). • Beneficial effect during operation relating to an increase in soil biodiversity (Geology and soils). • Hydrological changes and air quality changes (Terrestrial ecology).	Chapter 6: Aquatic ecology and Chapter 7: Terrestrial ecology have identified the intra-project cumulative effects expected to this receptor as relevant to their assessment.
Non-statutory biodiversity sites – The Cuttings and Hutchins Copse LWS	Air quality (construction only) Geology and soils Aquatic ecology Terrestrial ecology	• Construction dust (Air quality). • Damage to soil functions (Geology and soils). • Changes in water quality, changes in flow/level, direct habitat loss/gain and severance, and the introduction of invasive non-native species (Aquatic ecology). • Hydrological changes, habitat loss/gain, fragmentation and modification, air quality changes, and introduction and spread of invasive non-native species (Terrestrial ecology).	• Changes in flow/level and water quality and beneficial effects relating to creation and improvement of habitats (Aquatic ecology). • Beneficial effect relating to an increase in soil biodiversity (Geology and soils). • Hydrological changes and air quality changes (Terrestrial ecology).	Chapter 6: Aquatic ecology and Chapter 7: Terrestrial ecology have identified the intra-project cumulative effects expected to this receptor as relevant to their assessment.
Non-statutory biodiversity sites – Cowslip Meadow LWS	Air quality (construction only) Geology and soils	• Construction dust (Air quality) • Damage to soil functions (Geology and soils).	• Changes in flow/level and water quality and beneficial effects relating to creation and improvement of habitats (Aquatic ecology).	Chapter 6: Aquatic ecology and Chapter 7: Terrestrial ecology have identified the intra-project cumulative

Key Receptor Group	Aspects which have assessed effects on the key receptor group	Potential intra-project cumulative effects during construction	Potential intra-project cumulative effects during operation	Likelihood and location within the PEI Report of intra-project cumulative effects assessment
	Aquatic ecology Terrestrial ecology	• Changes in water quality, changes in flow/level, direct habitat loss/gain and severance, and the introduction of invasive non-native species (Aquatic ecology). • Hydrological changes, habitat loss/gain, fragmentation and modification, air quality changes, and introduction and spread of invasive non-native species (Terrestrial ecology).	• Beneficial effect relating to an increase in soil biodiversity (Geology and soils). • Hydrological changes and air quality changes (Terrestrial ecology).	effects expected to this receptor as relevant to their assessment.
Non-statutory biodiversity sites – Clifton Hampden Meadows LWS	Aquatic ecology	Effects to the LWS are covered only within Chapter 6: Aquatic ecology, therefore, intra-project cumulative effects are unlikely.	Effects to the LWS are covered only within Chapter 6: Aquatic ecology, therefore, intra-project cumulative effects are unlikely.	Refer to Chapter 6: Aquatic ecology for the assessment of effects to the receptor.
Non-statutory biodiversity sites – Hayward's Eyot LWS	Aquatic ecology	Effects to the LWS are covered only within Chapter 6: Aquatic ecology, therefore, intra-project cumulative effects are unlikely.	Effects to the LWS are covered only within Chapter 6: Aquatic ecology, therefore, intra-project cumulative effects are unlikely.	Refer to Chapter 6: Aquatic ecology for the assessment of effects to the receptor.
Non-statutory biodiversity sites - Dorchester Meadow LWS	Aquatic ecology	Effects to the LWS are covered only within Chapter 6: Aquatic ecology, therefore, intra-project cumulative effects are unlikely.	Effects to the LWS are covered only within Chapter 6: Aquatic ecology, therefore, intra-project cumulative effects are unlikely.	Refer to Chapter 6: Aquatic ecology for the assessment of effects to the receptor.
Non-statutory biodiversity sites – Dorchester Gravel Pits LWS	Aquatic ecology	Effects to the LWS are covered only within Chapter 6: Aquatic ecology, therefore, intra-project cumulative effects are unlikely.	Effects to the LWS are covered only within Chapter 6: Aquatic ecology, therefore, intra-project cumulative effects are unlikely.	Refer to Chapter 6: Aquatic ecology for the assessment of effects to the receptor.
Non-statutory biodiversity sites – Clifton Hampden Woods LWS	Aquatic ecology	Effects to the LWS are covered only within Chapter 6: Aquatic ecology, therefore, intra-project cumulative effects are unlikely.	No operation effects identified to this LWS.	Refer to Chapter 6: Aquatic ecology for the assessment of effects to the receptor.
Non-statutory biodiversity sites – Gozzards Ford Fen LWS	Terrestrial ecology	Effects to the LWS are covered only within Chapter 7: Terrestrial ecology, therefore, intra-project cumulative effects are unlikely.	Effects to the LWS are covered only within Chapter 7: Terrestrial ecology, therefore, intra-project cumulative effects are unlikely.	Refer to Chapter 7: Terrestrial ecology for the assessment of effects to the receptor.
Non-statutory biodiversity sites – Radley Gravel Pits LWS	Terrestrial ecology	Effects to the LWS are covered only within Chapter 7: Terrestrial ecology, therefore, intra-project cumulative effects are unlikely.	Effects to the LWS are covered only within Chapter 7: Terrestrial ecology, therefore, intra-project cumulative effects are unlikely.	Refer to Chapter 7: Terrestrial ecology for the assessment of effects to the receptor.
Ancient woodland, and ancient and veteran trees	Terrestrial ecology	Effects to the LWS are covered only within Chapter 7: Terrestrial ecology, therefore, intra-project cumulative effects are unlikely.	Effects to the LWS are covered only within Chapter 7: Terrestrial ecology, therefore, intra-project cumulative effects are unlikely.	Refer to Chapter 7: Terrestrial ecology for the assessment of effects to the receptor.
Terrestrial habitats (habitats of principal importance)	Geology and soils Terrestrial ecology (construction only) Water environment	• Damage to soil function (Geology and soils). • Impacts on potential non-designated groundwater dependent terrestrial ecosystems due to changes in groundwater levels, flows and quality (Water environment). • Habitat loss and modification, hydrological changes, air quality changes and introduction and spread of INNS (Terrestrial ecology).	• Beneficial effects relating to an increase in soil functions (Geology and soils). • Impacts on potential non-designated groundwater dependent terrestrial ecosystems due to changes in groundwater levels, flows and quality (Water environment).	Where relevant, Chapter 7: Terrestrial ecology has considered the intra-project cumulative effects for terrestrial habitats of principal importance.
Terrestrial species	Terrestrial ecology	Effects to terrestrial species are covered only within Chapter 7: Terrestrial ecology, therefore, intra-project cumulative effects are unlikely.	Effects to terrestrial species are covered only within Chapter 7: Terrestrial ecology, therefore, intra-project cumulative effects are unlikely.	Refer to Chapter 7: Terrestrial ecology for the assessment of effects to the receptor.

Key Receptor Group	Aspects which have assessed effects on the key receptor group	Potential intra-project cumulative effects during construction	Potential intra-project cumulative effects during operation	Likelihood and location within the PEI Report of intra-project cumulative effects assessment
Aquatic habitats	Water environment Aquatic ecology	• Impacts on potential non-designated groundwater dependent terrestrial ecosystems due to changes in groundwater levels, flows and quality (Water environment). • Changes in flow/level, water quality, direct habitat loss/gain, and introduction/spread of INNS (Aquatic ecology).	• Impacts on potential non-designated groundwater dependent terrestrial ecosystems due to changes in groundwater levels, flows and quality (Water environment). • Changes in flow/level, water quality, direct habitat loss/gain, and introduction/spread of INNS (Aquatic ecology).	Chapter 6: Aquatic ecology has identified the potential for intra-project cumulative effects on aquatic habitats.
Aquatic species	Aquatic species	Effects to aquatic species are covered only within Chapter 6: Aquatic ecology, therefore, intra-project cumulative effects are unlikely.	Effects to aquatic species are covered only within Chapter 6: Aquatic ecology, therefore, intra-project cumulative effects are unlikely.	Refer to Chapter 6: Aquatic ecology for the assessment of effects to the receptor.
Global Climate	Greenhouse Gases	Effects to the global climate are covered only within Chapter 17: Greenhouse gases, therefore, intra-project cumulative effects are unlikely.	Effects to the global climate are covered only within Chapter 17: Greenhouse gases, therefore, intra-project cumulative effects are unlikely.	Refer to Chapter 17: Greenhouse gases for the assessment of effects to the receptor.
Agricultural land	Geology and Soils	Effects to agricultural land are covered only within Chapter 10: Geology and soils, therefore, intra-project cumulative effects are unlikely.	Effects to agricultural land are covered only within Chapter 10: Geology and soils, therefore, intra-project cumulative effects are unlikely.	Refer to Chapter 10: Geology and soils for the assessment of effects to the receptor.
Groundwater	Geology and Soils Water Environment	• Pollution of controlled waters due to ground disturbance (Geology and soils). • Impacts to groundwater levels and flows, impacts to groundwater quality, impacts on abstractions, springs and water supply receptors due to changes in groundwater quality, levels or flows (Water environment).	• Reduction in contamination mobilisation due to changes in pathways (Geology and soils). • Impacts to groundwater levels and flows, impacts to groundwater quality, impacts on abstractions, springs and water supply receptors due to changes in groundwater quality, levels or flows (Water environment).	The effects identified in the Geology and soils assessment during construction have been integrated into the assessment of effects on groundwater receptors contained in Chapter 5: Water environment. During operation the geology and soils effects identified would be beneficial, and therefore an intra-project cumulative effect is unlikely.
Surface water	Geology and Soils Water Environment	• Ground disturbance leading to pollution of controlled waters (Geology and soils). • Changes in fluvial geomorphology, surface water hydrology, surface water quality, surface water quantity and fluvial geomorphology, impacts on abstractions due to changes in groundwater quality, quantity and flow (Water environment).	• Reduction in contamination mobilisation due to changes in pathways (Geology and soils). • Changes in fluvial geomorphology, surface water hydrology, surface water quality, surface water quantity and fluvial geomorphology, impacts on abstractions due to changes in groundwater quality, quantity and flow (Water environment).	The effects identified in the Geology and soils assessment during construction have been integrated into the assessment of effects on surface water receptors contained in Chapter 5: Water environment. During operation the geology and soils effects identified would be beneficial, and therefore an intra-project cumulative effect is unlikely.
Soils	Geology and Soils	Effects to soils are covered only within Chapter 10: Geology and soils, therefore, intra-project cumulative effects are unlikely.	Effects to soils are covered only within Chapter 10: Geology and soils, therefore, intra-project cumulative effects are unlikely.	Refer to Chapter 10: Geology and soils for the assessment of effects to the receptor.
Urban land	Geology and Soils	Effects to urban land are covered only within Chapter 10: Geology and soils, therefore, intra-project cumulative effects are unlikely.	Effects to urban land are covered only within Chapter 10: Geology and soils, therefore, intra-project cumulative effects are unlikely.	Refer to Chapter 10: Geology and soils for the assessment of effects to the receptor.
The Project	Climate Resilience Water Environment	• Changes in pluvial, fluvial and groundwater flood risk to components of the Project (Water environment).	• Changes in pluvial, fluvial and groundwater flood risk to components of the Project (Water environment).	The relevant climate related risks to the project have been considered in Chapter 18: Climate resilience,

Key Receptor Group	Aspects which have assessed effects on the key receptor group	Potential intra-project cumulative effects during construction	Potential intra-project cumulative effects during operation	Likelihood and location within the PEI Report of intra-project cumulative effects assessment
		• Increased high temperatures, hotter summers, increased drought conditions, more frequent occupational heat stress days, increased extreme rainfall frequency/intensity, increased rainfall, increased river flows and increased fluvial flood frequency/intensity, increased pluvial flood frequency/intensity and increased rainfall and winter recharge to groundwater (Climate resilience).	• Hotter summers and heatwaves combined with drought, increased average temperatures, increased drought conditions, increased high temperatures, more frequent occupational heat stress days, increase in convective storms and high rainfall intensity, increased extreme rainfall frequency/intensity, increased pluvial flood frequency/intensity, increased rainfall and winter recharge to groundwater and increased rainfall, increased river flows and increased fluvial flood frequency/intensity (Climate resilience).	incorporating findings from the Water environment assessment. Chapter 18: Climate resilience also considers where there is a potential for a combined hazard (e.g. hot and dry events together).
Water discharges	Water Environment	Effects to water discharges are covered only within Chapter 5: Water environment, therefore, intra-project cumulative effects are unlikely.	Effects to water discharges are covered only within Chapter 5: Water environment, therefore, intra-project cumulative effects are unlikely.	Refer to Chapter 5: Water environment for the assessment of effects to the receptor.
Heritage Assets	Historic Environment	Effects to heritage assets are covered only within Chapter 8: Historic environment therefore, intra-project cumulative effects are unlikely.	Effects to heritage assets are covered only within Chapter 8: Historic environment therefore, intra-project cumulative effects are unlikely.	Refer to Chapter 8: Historic environment for the assessment of effects to the receptor.
Waste	Materials and Waste	Effects to waste are covered only within Chapter 11: Materials and waste therefore, intra-project cumulative effects are unlikely.	Effects to waste are covered only within Chapter 11: Materials and waste therefore, intra-project cumulative effects are unlikely.	Refer to Chapter 11: Materials and waste for the assessment of effects to the receptor.
Material resources	Materials and Waste	Effects to material resources are covered only within Chapter 11: Materials and waste therefore, intra-project cumulative effects are unlikely.	Effects to material resources are covered only within Chapter 11: Materials and waste therefore, intra-project cumulative effects are unlikely.	Refer to Chapter 11: Materials and waste for the assessment of effects to the receptor.
Landscape	Landscape and Visual	Effects to landscape receptors are covered only within Chapter 9: Landscape and visual therefore, intra-project cumulative effects are unlikely.	Effects to landscape receptors are covered only within Chapter 9: Landscape and visual therefore, intra-project cumulative effects are unlikely.	Refer to Chapter 9: Landscape and visual for the assessment of effects to the receptor.

20.10 Summary of likely significant effects and additional mitigation

20.10.1 This section summarises the expected effects that have been identified through the preliminary assessments of cumulative effects. It pulls out the key potential causes and receptors affected, and notes any additional mitigation that is being considered to address potential likely significant adverse effects. This additional mitigation identified has not been considered in the assessment presented here.

Inter-project cumulative effects

20.10.2 The potentially significant inter-project cumulative effects have been summarised below for each aspect chapter, based on the shortlist of other developments selected at this stage. Professional judgement has been used, following the aspect specific short-listing process, to identify where significant inter-project cumulative effects are not likely. In particular, it has been assumed that the other developments will implement standard good practice mitigation and legislatively required mitigation and the Project has implemented the mitigation identified in each aspect chapter for the Project alone.

20.10.3 There are a number of other developments in the shortlist for which very limited information is available, including the spatial location, scale or nature of the other development. It has not been possible to complete a preliminary assessment for these other developments for certain aspects at this stage (identified in Table 20.6), although some aspects have been able to complete an assessment using available information. The other developments which could not be assessed by all aspects comprise:

- Severn to Thames Transfer [OTH-0002]
- Thames to Southern Water Transfer [OTH-001]
- Farmoor Transfer [OTH-0004]
- Drayton to Didcot New Power Connection [OTH-0007]
- Wilts and Berks Canal [SAL-0023/ SAL-0034/ SAL-0093/ SAL-0151]
- Abingdon Flood Alleviation Scheme [SAL-0064]
- Frilford and Marcham improvements (Marcham bypass) [SAL-0021]
- Land for improvements to Featherbed Lane and Steventon Junction and Relief to Rowstock and Harwell to Didcot Busway [SAL-0053 / SAL-0111]
- Land for Grove Railway Station [SAL-0083]
- Land for Abingdon south bypass [SAL-0138]
- East Hanney Flood Alleviation Scheme [OTH-0005]
- Steventon Flood Alleviation Scheme [OTH-0006]
- Williams Racing, Grove [PLA-0197]

Water Environment

20.10.4 The short-listing process has identified potential significant cumulative effects with the following other developments:

- Reduction in a non-significant beneficial effect of the Project alone, but remaining potentially beneficial:
  - Wilts and Berks Canal [SAL-0023/ SAL-0034/ SAL-0093/ SAL-0151]
- Beneficial

- Abingdon Flood Alleviation Scheme [SAL-0064]
- East Hanney Flood Alleviation Scheme [OTH-0005]
- Steventon Flood Alleviation Scheme [OTH-0006]

- Adverse:
  - East Hanney Flood Alleviation Scheme [OTH-0005]
  - Steventon Flood Alleviation Scheme [OTH-0006]

20.10.5 The components of the Wilts and Berks Canal provided by the Project (i.e. the water channel) would result in a beneficial effect through provision of a WFD waterbody. With the effect with the Wilts and Berks Canal [SAL-0023] (i.e. converting to a navigable canal) this permanent beneficial effect is considered to be reduced as a result of connections to other waterbodies, greater disturbance and structures, however, the effect is likely to remain beneficial.

20.10.6 The three flood alleviation schemes (Abingdon [SAL-0064], East Hanney [OTH-0005] and Steventon [OTH-0006]) in conjunction with the Project would likely result in a permanent reduction in flood risk to communities and infrastructure located downstream during operation.

20.10.7 The adverse effects associated with East Hanney and Steventon Flood Alleviation Schemes [OTH-0005 and OTH-0006] are due to adverse water quality (temporary) and hydromorphological effects (permanent) to newly connected watercourses during construction.

20.10.8 No additional mitigation for the Wilts and Berks Canal has been identified at this stage, but this will be further explored at ES.

20.10.9 No additional mitigation is required for the beneficial effects. For adverse effects, additional mitigation is likely to be required to collaborate and cooperate with the third-party developers to manage the water quality and hydromorphological changes likely to occur.

Aquatic Ecology

20.10.10 The short-listing process has identified potential significant cumulative effects with the following other developments:

- Reduction in a significant beneficial effect of the Project, but remaining potentially not significant beneficial:
  - Wilts and Berks Canal [SAL-0023/ SAL-0034/ SAL-0093/ SAL-0151]
- Adverse:
  - Severn to Thames Transfer (STT) [OTH-0002]
  - Farmoor Transfer (SWOX Raw water transfer) [OTH-0004]
  - East Hanney Flood Alleviation Scheme [OTH-0005]
  - Steventon Flood Alleviation Scheme [OTH-0006]
  - Abingdon Flood Alleviation Scheme [SAL-0064]
  - River Thames Scheme [DCO-0004]

20.10.11 The components of the Wilts and Berks Canal provided by the Project (i.e. the water channel) would result in a beneficial effect through provision of aquatic habitat. With the

effect with the Wilts and Berks Canal [SAL-0023] (i.e. converting to a navigable canal) this permanent beneficial effects is considered to be reduced as a result of connections to other waterbodies, greater disturbance and structures, however, the effect is likely to remain beneficial but not significant. There is also a permanent adverse effect associated with the introduction and dispersal of INNS between newly connected waterbodies.

20.10.12 The permanent adverse effects associated with Severn to Thames Transfer (STT), Farmoor Transfer and the River Thames Scheme [OTH-0002, OTH-0004 and DCO-0004] are due to the potential transfer and dispersal of INNS during operation.

20.10.13 The adverse effects associated with East Hanney and Steventon Flood Alleviation Schemes [OTH-0005 and OTH-0006] are due to adverse water quality and hydromorphological effects during construction (temporary) and introduction of pathways for spreading INNS due to newly connected watercourses during construction and operation (permanent).

20.10.14 The temporary adverse effect associated with the Abingdon Flood Alleviation Scheme [SAL-0064] is due to impacts to fish from potential watercourse stoppages and, for example, need for overpumping during construction.

20.10.15 No additional mitigation has been identified for the Wilts and Berks Canal at this stage, but will be explored further at ES.

20.10.16 For adverse effects, additional mitigation is likely to be required to collaborate and cooperate with the third-party developers to:

- Manage water quality and hydromorphological changes during construction,
- Manage aquatic INNS during construction and operation
- Manage the timing of construction works and integrated fisheries mitigation planning during construction

Terrestrial Ecology

20.10.17 The short-listing process has identified potential significant cumulative effects with the following other developments:

- Adverse:
  - Wilts and Berks Canal [SAL-0023/ SAL-0034/ SAL-0093/ SAL-0151]
  - Severn to Thames Transfer (STT) [OTH-0002]
  - Thames to Southern Water Transfer (T2ST) [OTH-0001]
  - Farmoor Transfer (SWOX Raw water transfer) [OTH-0004]
  - Drayton to Didcot New Power Connection [OTH-0007]
  - Valley Park, Didcot [PLA-0215]
  - Monks Farm, North Grove [PLA-0217]
  - North-west of Grove [PLA-0155]
  - East Hanney Solar Farm [PLA-0036]
  - Willowfields Energy Park [PLA-0090]
  - Frilford and Marcham improvements (Marcham bypass) [SAL-0021]
  - Land for improvements to Featherbed Lane and Steventon Junction and Relief to Rowstock and Harwell to Didcot Busway [SAL-0053 / SAL-0111]

- Land for Grove Railway Station [SAL-0083]
- Land for Abingdon south bypass [SAL-0138]
- East Hanney Flood Alleviation Scheme [OTH-0005]
- Steventon Flood Alleviation Scheme [OTH-0006]
- Williams Racing, Grove (refurbish and enhance) [PLA-0197]

20.10.18 Effects with the Wilts and Berks Canal are due to the introduction of recreational disturbance in a currently undisturbed area in the baseline situation, and that is proposed to remain an undisturbed area through the Project. There is also a temporary adverse effect associated with the introduction and dispersal of INNS between newly connected waterbodies.

20.10.19 The temporary adverse effects associated with all developments listed above are due to habitat loss and fragmentation due to construction of both the Project and the other development occurring concurrently, identified due to the location of these other developments either within or directly adjacent to the draft Order limits.

20.10.20 Additional mitigation is likely to be required to collaborate and cooperate with the third-party developers to manage the ecological impacts.

Historic Environment

20.10.21 The short-listing process has identified potential cumulative effects with the Wilts and Berks Canal [SAL-0023/ SAL-0034/ SAL-0093/ SAL-0151]. It is not possible to determine if this effect would be significant at this stage. Reprovision of the Wilts and Berks Canal would likely be considered a benefit for shared above ground heritage assets. No additional mitigation is required.

20.10.22 Potential cumulative effects with Dalton Barracks Garden Village (SAL-0032/SAL-00087], Valley Park, Didcot [PLA-0215], East Hanney Solar Farm [PLA-0036] and Willowfields Energy Park [PLA-0090] have been identified relating to setting of heritage assets, however, these effects have not been able to be assessed due to the preliminary nature of the heritage setting assessment available for the Project at this stage.

Landscape and Visual

20.10.23 The short-listing process has identified potential significant permanent adverse cumulative effects with Willowfields Energy Park [PLA-0090]. As part of the Landscape and visual assessment, certain other developments have been assessed as part of the future baseline. Refer to Chapter 9: Landscape and visual for further information.

20.10.24 The permanent adverse effects associated with Willowfields Energy Park is due to the proposed ribbon of solar developments that would be created with the Project during both construction and operation.

20.10.25 Additional mitigation is likely to be required to provide visual separation between the solar provision as part of the Project and the solar development.

Geology and soils

20.10.26 A review of the short-listed developments was undertaken by this aspect and found no potential for significant cumulative effects associated with these developments as reasonable foreseeable mitigation for both the other developments and the Project would be sufficient to avoid cumulative effects.

20.10.27 An assessment of the cumulative effects to soils in line with IEMA guidance 'A New Perspective on Land and Soil in Environmental Impact Assessment' has been undertaken in Appendix 20.2: Cumulative soils assessment. The assessment has identified potential significant permanent adverse effects as the land loss for each land type as a proportion of the 5 year average land loss in England and as a proportion of the total area in the Vale of White Horse is above 1% in all cases. No additional mitigation has been identified for this effect at this stage.

Traffic and transport

20.10.28 The short-listing process has identified potential significant adverse cumulative effects with the following other developments:

- Dalton Barracks Garden Village [SAL-0032 / SAL-00087]
- Land Adjacent to Culham Science Centre [SAL-0027/PLA-0219]
- Valley Park, Didcot [PLA-0215]

20.10.29 The temporary and permanent adverse effects identified are due to severance, non-motorised user amenity, fear and intimidation, driver delay, public transport user delay, road user and pedestrian safety during construction and operation on common receptors comprising:

- In the vicinity of Marcham and Abingdon for Dalton Barracks Garden Village [SAL-0032 / SAL-00087]
- To receptors on the A415 in Abingdon, at the A34 Marcham interchange and on the A34 for Land Adjacent to Culham Science Centre [SAL-0027/PLA-0219]
- Around the A34 Milton interchange on the A34 and on the A417 particularly in the Rowstock area for Valley Park, Didcot [PLA-0215]

20.10.30 For adverse effects, additional mitigation is likely to be required comprising development of mitigation at affected links and junctions.

Air quality

20.10.31 A review of the short-listed developments was undertaken by this aspect and found no potential for significant cumulative effects associated with these developments as reasonable foreseeable mitigation for both the other developments and the Project would be sufficient to avoid cumulative effects.

Noise

20.10.32 The short-listing process has identified potential significant adverse cumulative effects with the following other developments:

- Dalton Barracks Garden Village [SAL-0032 / SAL-00087]

- Valley Park, Didcot [PLA-0215]
- Grove Airfield [PLA-0216]
- Monks Farm, North Grove [PLA-0217]
- North-west of Grove [PLA-0155]

20.10.33 The temporary adverse effects associated with the listed other developments are due to construction noise to receptors in the local vicinity.

20.10.34 Additional mitigation is likely to be required to collaborate and cooperate with the third-party developers to better understand the potential cumulative effects and measures to control noise during construction.

Socio-economics and communities

20.10.35 The short-listing process has identified potential significant cumulative effects with the following other developments:

- Beneficial:
  - Wilts and Berks Canal [SAL-0023/ SAL-0034/ SAL-0093/ SAL-0151]
- Adverse and beneficial:
  - Dalton Barracks Garden Village [SAL-0032 / SAL-00087]
  - Valley Park, Didcot [PLA-0215]
  - Grove Airfield [PLA-0216]
  - Monks Farm, North Grove [PLA-0217]
  - North-west of Grove [PLA-0155]
  - East Hanney Solar Farm [PLA-0036]
  - Willowfields Energy Park [PLA-0090]
  - Frilford and Marcham improvements (Marcham bypass) [SAL-0021]
  - Land for improvements to Featherbed Lane and Steventon Junction and Relief to Rowstock and Harwell to Didcot Busway [SAL-0053 / SAL-0111]
  - Land for Grove Railway Station [SAL-0083]
  - Land for Abingdon south bypass [SAL-0138]

20.10.36 The potentially significant permanent beneficial effects with the Wilts and Berks Canal [SAL-0023/ SAL-0034/ SAL-0093/ SAL-0151] are associated with the provision of recreational and amenity benefits for users of the canal.

20.10.37 The temporary adverse effects associated with Dalton Barracks Garden Village and Valley Park, Didcot [SAL-0032 / SAL-00087 and PLA-0215] are due to adverse effects to local amenity due to cumulative effects of traffic and transport and noise and vibration during construction.

20.10.38 The temporary adverse effects associated with the all the listed developments above, apart from Dalton Barracks Garden Village, are due to adverse effects on the amenity of users of PRoW within the vicinity due to combined closures and diversions during construction.

20.10.39 The temporary beneficial effects associated with all the listed developments above are on the economy from the creation additional employment during construction, if construction timescales overlap.

20.10.40 No additional mitigation is required for the beneficial effects. For adverse effects, additional mitigation is likely to be required to collaborate and cooperate with the third-party developers to determine temporary closures and diversions required for affected PRoW.

Human health

20.10.41 The short-listing process has identified potential significant cumulative effects with the following other developments:

- Beneficial:
  - Wilts and Berks Canal [SAL-0023/ SAL-0034/ SAL-0093/ SAL-0151]
- Adverse:
  - Dalton Barracks Garden Village [SAL-0032 / SAL-00087]
  - Land Adjacent to Culham Science Centre [SAL-0027/PLA-0219]
  - Valley Park, Didcot [PLA-0215]
  - Grove Airfield [PLA-0216]
  - Monks Farm, North Grove [PLA-0217]
  - Frilford and Marcham improvements (Marcham bypass) [SAL-0021]
  - Land for improvements to Featherbed Lane and Steventon Junction and Relief to Rowstock and Harwell to Didcot Busway [SAL-0053 / SAL-0111]
  - Land for Grove Railway Station [SAL-0083]
  - Land for Abingdon south bypass [SAL-0138]

20.10.42 The permanent beneficial effects with the Wilts and Berks Canal [SAL-0023/ SAL-0034/ SAL-0093/ SAL-0151]are due to the health related benefits of providing recreational and amenity access to the canal.

20.10.43 The temporary adverse effects associated with Dalton Barracks Garden Village [SAL-0032 / SAL-00087] are due to adverse effects to health and wellbeing of school communities at education facilities adjacent to the A34 during construction due to changes to environmental amenity which is a determinant of both physical and mental health.

20.10.44 The temporary and permanent adverse effects associated with all other developments listed above are due to changes in environmental amenity, which is a determinant of both physical and mental health, affecting health and wellbeing of the local communities during construction and operation. The communities potentially affected are:

- Culham (for Land Adjacent to Culham Science Centre [SAL-0027/PLA-0219])
- Harwell (for Valley Park, Didcot [PLA-0215])
- Grove (for Grove Airfield, Land for Grove Railway Station and Monks Farm, North Grove [PLA-0216, SAL-0083, PLA-0217])
- Marcham (for Frilford and Marcham improvements (Marcham bypass) [SAL-0021])
- Harwell, Milton Heights and East Hendred (for Land for improvements to Featherbed Lane and Steventon Junction and Relief to Rowstock and Harwell to Didcot Busway [SAL-0053 / SAL-0111])
- Caldecott and users of Drayton Road Allotments (for Land for Abingdon south bypass [SAL-0138])

20.10.45 No additional mitigation is required for the beneficial effect. For adverse effects, the Human health assessment relies upon the additional mitigation supplied by the other aspect assessments in addressing environmental amenity effects arising from changes in traffic, air quality and the noise and visual environments.

Intra-project cumulative effects

20.10.46 A preliminary assessment of the intra-project cumulative effects has been undertaken, based on each aspect preliminary assessment. The key receptor group where the potential for intra-project cumulative effects have been identified comprise:

- People receptors:
  - Local residents
  - Users of active travel routes
  - Users of allotments
  - Users of public open space
  - Road users
  - Users of education facilities
  - Users of health services
  - Users of recreational facilities
  - Owners, workers and customers of businesses
  - Users of the River Thames
  - Users of rail services
  - Users of crematoriums/cemeteries)
- Biodiversity non-statutory designated sites
  - Marcham Salt Spring Local Wildlife Site
  - The Cuttings and Hutchins Copse Local Wildlife Site
  - Cowslip Meadows Local Wildlife Site
- Groundwater and surface water receptors
- The Project

20.10.47 Effects on people receptors are assessed across Air quality, Geology and soils, Landscape and visual, Noise and vibration, Water environment, Traffic and transport, Human health and Socio-economics and communities aspects. Where the potential for an intra-project cumulative effect has been identified this is assessed in Chapter 15: Socio-economics and communities where the intra-project cumulative effects relate to amenity and access, or Chapter 16: Human health where the intra-project cumulative effect relates to health outcomes at a population level.

20.10.48 Effects on biodiversity designated sites are explicitly assessed across the Aquatic ecology, Terrestrial ecology, Air quality and Water environment aspects. Where potential for an intra-project cumulative effect has been identified this is assessed in Chapter 6: Aquatic ecology and Chapter 7: Terrestrial ecology as relevant to their assessment.

20.10.49 Effects on groundwater and surface water receptors are assessed in the Geology and soils and Water environment assessments. Where potential for an intra-project cumulative effect has been identified this is assessed in Chapter 5: Water environment.

20.10.50 Effects on the Project are assessed in the Water environment and Climate resilience aspects. The relevant climate related risks to the Project have been considered in Chapter 18: Climate Resilience, incorporating findings from the Water environment assessment. Chapter 18: Climate Resilience also considers where there is a potential for a combined hazard (e.g. hot and dry events together).

20.10.51 Where additional mitigation is likely to be required for these effects it is identified within the signposted aspect chapter.

20.11 Next steps

20.11.1 As part of next steps, the Project is proactively developing the design, refining the construction approach and continuing to define the environmental baseline, in conjunction with ongoing consultation and engagement. These activities will inform the EIA process and provide a robust evidence base for the ES. The aim is that where initial likely significant effects are identified at this stage, these may ultimately be determined as not significant in the ES once data gaps are addressed, and the design and mitigation proposals are further developed. Effects that remain after the implementation of all mitigation are referred to as 'residual effects'. These effects are not reported in the PEI Report as additional mitigation is not assumed to be implemented at this stage of the assessment. The assessment of the significance of residual effects after all mitigation is applied is a key outcome of the EIA process and will be reported within the ES, which will be submitted with the DCO application.

20.11.2 The next steps anticipated to be undertaken in relation to the Cumulative effects assessment prior to completion of the ES and submission of the DCO application are explained below.

Further exploration of additional mitigation

20.11.3 A key aspect of the next steps is to further explore additional mitigation that may reduce adverse effects that the preliminary assessment has initially identified as likely to be significant. Additional mitigation that has been identified for the Cumulative effects assessment is noted in Section 20.10: Summary of likely significant effects and additional mitigation, in relation to additional mitigation for aspect assessments. Further additional mitigation that is being explored specifically for the Cumulative effects assessment is listed in Table 20.8.

20.11.4 As noted previously above, the preliminary assessment presented in the PEI Report assumes that additional mitigation is not yet applied, as the precise nature and extent of any additional mitigation measures are not confirmed at this stage in the EIA process.

Table 20.8 Additional mitigation identified to date in relation to the Cumulative effects assessment

Additional mitigation ID	Additional mitigation name	Description of additional mitigation measure
AM-50	Inter-project additional mitigation for Severn to Thames Transfer (STT)	Collaboration and cooperation with third party developers as part of the management of aquatic INNS (identified for the Project alone as ED-32 and additional mitigation 'Measures to reduce INNS dispersal resulting from abstractions and

Additional mitigation ID	Additional mitigation name	Description of additional mitigation measure
		discharges AM-49' in Chapter 6: Aquatic ecology) and the management of ecology impacts (identified for the Project alone as SGP-06).
AM-51	Inter-project additional mitigation for Thames to Southern Water Transfer (T2ST)	Collaboration and cooperation with third party developers as part of the management of ecology impacts (identified for the Project alone as SGP-06).
AM-52	Inter-project additional mitigation for Farmoor Transfer	Collaboration and cooperation with third party developers as part of the management of aquatic INNS (identified for the Project alone as ED-32 and additional mitigation 'Measures to reduce INNS dispersal resulting from abstractions and discharges AM-49' in Chapter 6: Aquatic ecology) and the management of ecology impacts (identified for the Project alone as SGP-06).
AM-53	Inter-project additional mitigation for Drayton to Didcot New Power Connection	Collaboration and cooperation with third party developers as part of the management of ecology impacts (identified for the Project alone as SGP-06).
AM-54	Inter-project additional mitigation for Abingdon Flood Alleviation Scheme	Collaboration and cooperation with third party developers as part of the management of ecology impacts in particular in relation to fish and to the timing of construction works (identified for the Project alone as SGP-06 and SGP-07).
AM-55	Inter-project additional mitigation for Dalton Barracks Garden Village	Measures to address the proposed access roundabout on the A415, which would require a fourth arm to serve Dalton Barracks and provide additional capacity; with the potential for further improvements to the A415, A34 Marcham interchange, junctions east of the A34 into Abingdon, and potentially other junctions in the area to the north of the Project (in addition to additional mitigation 'Highways improvements to reduce effects on the wider transport network AM-08' identified in Chapter 12: Traffic and transport identified for the Project alone). Collaboration and cooperation with third party developers as part of the management of construction noise (identified for the Project alone as SGP-25).
AM-56	Inter-project additional mitigation for Land Adjacent to Culham Science Centre	Development of mitigation for the A34 Marcham interchange and for other locations in Abingdon (in addition to additional mitigation 'Highways improvements to reduce effects on the wider

Additional mitigation ID	Additional mitigation name	Description of additional mitigation measure
		transport network AM-08' identified in Chapter 12: Traffic and transport for the Project alone).
AM-57	Inter-project additional mitigation for Valley Park, Didcot	Collaboration and cooperation with third-party developers as part of: - Measures to control noise during construction (as required for the Project alone in SGP-25). - Management of ecology impacts (identified for the Project alone as SGP-06). - Determining temporary closures and diversions required for PRoW 243/3/10 (identified for the Project alone as SGP-49). Development of additional mitigation for the A34 Milton interchange, if required (in addition to additional mitigation 'Highways improvements to reduce effects on the wider transport network AM-08' identified in Chapter 12: Traffic and transport for the Project alone).
AM-58	Inter-project additional mitigation for Grove Airfield	Collaboration and cooperation with third-party developers as part of: - Measures to control noise during construction (as required for the Project alone in SGP-25). - Determining temporary closures and diversions required for PRoW 188/2/20, 196/11/10, 235/7/10 and 235/12/50 (identified for the Project alone as SGP-49).
AM-59	Inter-project additional mitigation for Monks Farm, North Grove	Collaboration and cooperation with third-party developers as part of: - Management of ecology impacts (identified for the Project alone as SGP-06). - Measures to control noise during construction (as required for the Project alone in SGP-25). - Determining temporary closures and diversions required for PRoW 235/12/50, 235/12/40, 235/7/10, and 402/11/10 (identified for the Project alone as SGP-49).
AM-60	Inter-project additional mitigation for North-west of Grove	Collaboration and cooperation with third-party developers as part of: - Management of ecology impacts (identified for the Project alone as SGP-06). - Measures to control noise during construction (as required for the Project alone in SGP-25). - Determining temporary closures and diversions required for PRoW 235/12/50, 235/12/40, 235/7/10, and 402/11/10 (identified for the Project alone as SGP-49).

Additional mitigation ID	Additional mitigation name	Description of additional mitigation measure
AM-61	Inter-project additional mitigation for East Hanney Solar Farm	Collaboration and cooperation with third-party developers as part of: - Management of ecology impacts (identified for the Project alone as SGP-06). - Determining temporary closures and diversions required for PRoW 198/3/10 and 198/20/10 (identified for the Project alone as SGP-49).
AM-62	Inter-project additional mitigation for Willowsfields Energy Park	Collaboration and cooperation with third-party developers as part of: - Management of ecology impacts (identified for the Project alone as SGP-06). - Determining temporary closures and diversions required for PRoW 222/3/10, 222/4/20, 221/16/30, and 222/4/10 (identified for the Project alone as SGP-49). Measures to provide visual separation between the Project and the solar development (in addition to additional mitigation 'Design and establishment of planting, habitats, and/or landform to help control, limit, soften and filter views of new infrastructure AM-23' and 'Phase the works to enable early establishment of woodland/structural planting between the development and sensitive visual receptors AM-36' identified for the Project alone in Chapter 9: Landscape and visual).
AM-63	Inter-project additional mitigation for Frilford and Marcham improvements (Marcham bypass)	Collaboration and cooperation with third-party developers as part of: - Management of ecology impacts (identified for the Project alone as SGP-06). - Determining temporary closures and diversions required for PRoW 293/16/20 and 293/15/20 (identified for the Project alone as SGP-49).
AM-64	Inter-project additional mitigation for Land for improvements to Featherbed Lane and Steventon Junction and Relief to Rowstock and Harwell to Didcot Busway	Collaboration and cooperation with third-party developers as part of: - Management of ecology impacts (identified for the Project alone as SGP-06). - Determining temporary closures and diversions required for PRoW 99/3/10, 199/16/50 and 299/13/40 (identified for the Project alone as SGP-49).
AM-65	Inter-project additional mitigation for Land for Grove Railway Station	Collaboration and cooperation with third-party developers as part of: - Management of ecology impacts (identified for the Project alone as SGP-06). - Determining temporary closures and diversions required for PRoW 235/3/30, 235/7/10 and

Additional mitigation ID	Additional mitigation name	Description of additional mitigation measure
		235/12/50 (identified for the Project alone as SGP-49).
AM-66	Inter-project additional mitigation for Land for Abingdon south bypass	Collaboration and cooperation with third-party developers as part of: - Management of ecology impacts (identified for the Project alone as SGP-06). - Determining temporary closures and diversions required for PRoW 192/28/10, 192/5/60, 192/7/10, 192/8/10 (identified for the Project alone as SGP-49).
AM-67	Inter-project additional mitigation for East Hanney Flood Alleviation Scheme	Collaboration and cooperation with third-party developers as part of: - Management of ecology impacts (identified for the Project alone as SGP-06). - Measures to manage water quality, hydromorphological changes and aquatic INNS (identified for the Project alone as SGP-02 and SGP-08).
AM-68	Inter-project additional mitigation for Steventon Flood Alleviation Scheme	Collaboration and cooperation with third-party developers as part of: - Management of ecology impacts (identified for the Project alone as SGP-06). - Measures to manage water quality, hydromorphological changes and aquatic INNS (identified for the Project alone as SGP-02 and SGP-08).
AM-69	Inter-project additional mitigation for Williams Racing, Grove (refurbish and enhance)	Collaboration and cooperation with third-party developers as part of the management of ecology impacts (identified for the Project alone as SGP-06).
AM-70	Inter-project additional mitigation for River Thames Scheme	Collaboration and cooperation with third party developers as part of the management of aquatic INNS (identified for the Project alone as ED-32 and additional mitigation 'Measures to reduce INNS dispersal resulting from abstractions and discharges AM-49' in Chapter 6: Aquatic ecology).

Other next steps

20.11.5 Other steps that are continuing or are planned to be undertaken to support the Cumulative effects assessment prior to completion of the ES and submission of the DCO application are noted below with an explanation of how these will inform the EIA process:

- The next steps required for aspect chapters 5 to 19 will be used to review and update the assessment of inter-project and intra-project cumulative effects (for example the heritage asset setting assessment, or more detailed transport modelling) This will allow the development of further understanding as to whether there are receptors and

impact pathways in common with other developments for the inter-project cumulative assessment, and between aspects for the intra-project cumulative effects assessment.

- The full assessment methodology as set out in Section 20.4 will be completed and updated where relevant for the ES, based on the refined design, updated baseline information and relevant comments from Statutory Consultation and ongoing stakeholder engagement. This will enable a robust assessment of likely significant effects to be prepared for the ES and provide a thorough audit trail to support the assessment.
- Further engagement with third party developers will be undertaken where practicable to better understand the other developments, refine the assessment of cumulative effects and mitigation required. This will allow an assessment of cumulative effects to be completed where 'TBC' has been used in the preliminary assessment, and enable a robust understanding of inter-project cumulative effects.
- The long list of other developments will be updated as new information becomes available for existing applications, or new applications come forward. This will ensure that the cumulative effects assessment is relevant and as accurate as possible for the ES.
- Further engagement with the planning authorities will be undertaken to confirm the long list and discuss the short-list of other developments. This will verify that the key other developments have been taken into account in the assessment, and that the assumptions made have been validated where practicable (e.g. expected construction timescales).

References

It should be noted that the Institute of Environmental Management and Assessment (IEMA) has recently rebranded as the Institute of Sustainability and Environmental Professionals (ISEP). Guidance that was historically published by IEMA is still referenced under that institute name.

Department for Environment, Food & Rural Affairs (2025) National Policy Statement for water resources infrastructure. Accessed August 2025. https://www.gov.uk/government/publications/national-policy-statement-water-resources-infrastructure

Environment Agency (2022a). Thames River Basin District Flood Risk Management Plan 2021 to 2027. Accessed July 2025. https://assets.publishing.service.gov.uk/media/6380a45d8fa8f56ea9d462d8/Thames-FRMP-2021-2027.pdf

Environment Agency (2022b). Thames river basin district river basin management plan: updated 2022. Accessed July 2025. https://www.gov.uk/guidance/thames-river-basin-district-river-basin-management-plan-updated-2022 https://www.gov.uk/guidance/thames-river-basin-district-river-basin-management-plan-updated-2022

Institute of Environmental Management and Assessment (IEMA) (2022a). A New Perspective on Land and Soil in Environmental Impact Assessment. Accessed April 2025. https://www.iema.net/media/3xejdu0u/2022-iema_land_and_soils_guidance.pdf

IEMA (2022b). Assessing Greenhouse Gas Emissions and Evaluating their Significance. Accessed January 2025. https://www.iema.net/preview-document/assessing-greenhouse-gas-emissions-and-evaluating-their-significance#:~:text=GHG%20emissions%20should%20be%20assessed,increase%20or%20decrease%20in%20emissions

IEMA (2020c) IEMA: Environmental Impact Assessment Guide to: Climate Change Resilience & Adaptation. Accessed January 2025. https://www.iema.net/media/mabhqino/iema-eia-climate-change-resilience-june-2020.pdf

Landscape Institute and IEMA (2013). Guidelines for Landscape and Visual Impact Assessment, 3rd Edition (GLVIA3). Oxon:Routledge.

Ministry of Housing, Communities & Local Government (MHCLG) (2024). National Planning Policy Framework. Accessed June 2025. https://assets.publishing.service.gov.uk/media/67aafe8f3b41f783cca46251/NPPF_December_2024.pdf

MHCLG (2025). National Planning Policy Framework. Accessed July 2025. https://www.gov.uk/government/publications/national-planning-policy-framework--2

Oxford City Council (2020). Oxford Local Plan 2036. Accessed June 2025. https://www.oxford.gov.uk/downloads/file/1637/adopted-oxford-local-plan-2036

Planning Inspectorate (2018). Nationally Significant Infrastructure Projects - Advice Note Nine: Rochdale Envelope. Accessed June 2025. https://www.gov.uk/government/publications/nationally-significant-infrastructure-projects-advice-note-nine-rochdale-envelope/nationally-significant-infrastructure-projects-advice-note-nine-rochdale-envelope

Planning Inspectorate (2020). Nationally Significant Infrastructure Projects - Advice Note Seven: Environmental Impact Assessment: process, preliminary environmental information and environmental statements. Accessed June 2025. https://www.gov.uk/government/publications/nationally-significant-infrastructure-projects-advice-note-seven-environmental-impact-assessment-process-preliminary-environmental-information-an/nationally-significant-infrastructure-projects-advice-note-seven-environmental-impact-assessment-process-preliminary-environmental-information-an

Planning Inspectorate (2024a). Nationally Significant Infrastructure Projects: Advice on Cumulative Effects Assessment. Accessed March 2025. https://www.gov.uk/guidance/nationally-significant-infrastructure-projects-advice-on-cumulative-effects-assessment

Planning Inspectorate (2024b). Scoping Opinion - Proposed South East Strategic Reservoir Option (SESRO. Accessed June 2025. https://nsip-documents.planninginspectorate.gov.uk/published-documents/WA010005-000017-SESRO%20Scoping%20Opinion%202017%20EIA%20Regs%20FINAL.pdf

South Oxfordshire District Council (2020). South Oxfordshire Local Plan 2011-2035. Accessed June 2025. https://www.southoxon.gov.uk/wp-content/uploads/sites/2/2021/02/SODC-LP2035-Publication-Feb-2021.pdf

South Oxfordshire District Council and Vale of White Horse District Council (2024). Joint Local Plan 2041 (Publication version). Accessed July 2025. https://www.whitehorsedc.gov.uk/vale-of-white-horse-district-council/planning-and-development/local-plan-and-planning-policies/local-plan-2041/

Stapleton, C., Reed, E., Gemmell,L., Adams, K. (eds) (2021) IEMA Guide: A New Perspective on Land and Soil in Environmental Impact Assessment.

Taylor Wimpey and Persimmon Homes (2024). Valley Park Didcot. Accessed July 2025. https://valleyparkdidcot.co.uk/

Taylor Wimpey UK Ltd., Persimmon Homes and Hallam Land Management Ltd (2014) Environmental Statement, Chapter 2: Project Description.

Thames Water (2022a). Strategic Regional Water Resource Solutions: Detailed Feasibility and Concept Design - Standard Gate Two Submission for River Severn to River Thames Transfer (STT). Accessed May 2025. https://www.thameswater.co.uk/media-library/bcvpn3ku/stt-g2-s1-001-stt-detailed-feasibility-and-concept-design.pdf

Thames Water (2022b). Strategic regional water resource solutions: detailed feasibility and concept design - Standard Gate Two Submission for Thames Water to Southern Water Transfer (T2ST).

Accessed May 2025. https://www.thameswater.co.uk/media-library/zxuekyb5/t2st-rapid-gate-2-report.pdf

Thames Water (2022c). Drought Plan 2022. Accessed July 2025. https://www.thameswater.co.uk/media-library/afqhcxiq/thames-water-drought-plan-2022.pdf

Thames Water (2023). Our Drainage and Wastewater Management Plan 2025 – 2050. Accessed July 2025. https://www.thameswater.co.uk/about-us/regulation/drainage-and-wastewater-management/our-dwmp

Thames Water (2024). South East Strategic Reservoir Option EIA Scoping Report. Accessed April 2025. https://nsip-documents.planninginspectorate.gov.uk/published-documents/WA010005-000010-SESRO%20EIA%20Scoping%20Report.pdf

Thames Water (2025). South East Strategic Reservoir Option (SESRO) - Non-statutory Public Consultation 2024 - Our Statement of Response. Accessed July 2025. https://thames-sro.co.uk/media/mpicfw51/sesro-statement-of-response-to-our-non-statutory-public-consultation-2024.pdf

The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (as amended). Accessed July 2025. https://www.legislation.gov.uk/uksi/2017/572/contents

The Town and Country Planning (Development Management Procedure) (England) Order 2015. Accessed July 2025. https://www.legislation.gov.uk/uksi/2015/595/contents

Vale of White Horse District Council (2016). Local Plan 2031 Part 1. Accessed July 2025. https://www.whitehorsedc.gov.uk/wp-content/uploads/sites/3/2020/10/Local-Plan-2031-Part-1.pdf

Vale of White Horse District Council (2019). Local Plan 2031 Part 2. Accessed July 2025. https://www.whitehorsedc.gov.uk/wp-content/uploads/sites/3/2019/07/Lo-res-Local-Plan-2031-Part-2-LPP2PS.pdf

Vale of White Horse District Council (n.d.). Planning application P20/V3113/O – Outline application for residential development, new access points, strategic landscaping, and green infrastructure on land North-West of Grove Airfield, South of Denchworth Road, Grove. Accessed July 2025. https://data.whitehorsedc.gov.uk/java/support/Main.jsp?MODULE=ApplicationDetails&REF=P20/V3113/O

West Oxfordshire District Council (2018). West Oxfordshire Local Plan 2031. Accessed July 2025. https://www.westoxon.gov.uk/planning-and-building/planning-policy/local-plan-2031/

It's everyone's water