
# Preliminary Environmental Information Report

# Volume 2

## Chapter 19: Cumulative Effects Assessment

# 19 Cumulative Effects Assessment

## 19.1 Introduction

19.1.1.1 This chapter sets out our approach to the Cumulative Effects Assessment (CEA) including initial findings and proposed actions to be completed as part of our ongoing Environmental Impact Assessment (EIA).

19.1.1.2 Our CEA will identify and characterise the potential for both inter-project and intra-project effects, and then assess the significance of these effects. These effects are defined as:

- Inter-project effects: This form of cumulative effect occurs as a result of the impacts of the proposed development interacting with the impacts of other developments in the vicinity.
- Intra-project effects: These effects occur between different environmental topics within the same proposal, as a result of that development's direct effects (IEMA, 2011).

19.1.1.3 Inter-project and intra-project effects result from multiple actions on receptors and resources over time. These can be:

- Additive – caused by other past, present or reasonably foreseeable actions together with the project itself; and/or,
- Interactive/Synergistic – the reaction between effects of a development on different aspects of the environment (IEMA, 2020c).

19.1.1.4 In this chapter, we do not present a full CEA as this can only be undertaken once the environmental topic assessments are complete as part of the Environmental Statement (ES). Instead we present an update of stages 1a and 1b of the inter-project effects assessment completed as part of our EIA Scoping Report (see Section 19.3.1 for further details).

19.1.1.5 Similarly, stages 2-4 of the intra-project effects assessment can only be undertaken once the environmental topic assessments are complete as part of the ES, so definitive intra-project effects cannot be identified at this PEIR stage and we only go as far as identifying a list of ‘shared receptors’ that have the potential to be changed by more than one topic/effect (see Section 19.3.2 for further details). The further work that will be completed for the CEA as part of the ES is summarised in Section 19.5.

## 19.2 Legislation, Policy and Guidance

19.2.1.1 We have used the following legislation, policy framework and guidance to inform the scope and content of this chapter and will further refer to these in the Environmental Statement (ES).

- Infrastructure Planning (Environmental Impact Assessment) Regulations 2017;
- National Policy Statement for Water Resources Infrastructure (Defra, 2023a);
- The Planning Inspectorate (2019) Advice Note Seventeen: Cumulative Effects Assessment;
- The Planning Inspectorate (2019) Advice Note Seven: Environmental Impact Assessment: Process, Preliminary Environmental Information and Environmental Statements;
- The Planning Inspectorate (2019) Advice Note Nine: Rochdale Envelope;
- The Institute of Environmental Management & Assessment (IEMA) (2011) Special Report – The State of Environmental Impact Assessment Practice in the UK; and
- IEMA (2020) Demystifying Cumulative Effects, Thought Pieces from UK Practice. Impact Assessment Outlook Journal, Volume 7: July 2020.

19.2.1.2 Furthermore, the professional judgement and knowledge of qualified EIA specialists is required for the CEA as the assessment is necessarily qualitative, in keeping with the need to ensure that it is proportionate.

## 19.3 Methodology

### 19.3.1 Approach to Assessing Inter-project Effects

19.3.1.1 Our methodology for assessing inter-project effects will follow the approach set out in Section 19.2 of the RTS EIA Scoping Report (Environment Agency and Surrey County Council, October 2022) (‘the EIA Scoping Report). Since the EIA Scoping Report, Stage 1a (establishing the project’s Zone of Influence) and Stage 1b (identifying the long list of ‘other developments’) have been revisited and updated and the results of this work are reported here.

19.3.1.2 **Stage 1a:** The Zones of Influence (ZOIs) which have been updated for this Preliminary Environmental Information Report (PEIR) have been defined by using the study area for each topic. The ZOIs are defined in the topic sub-sections of Chapter 5: Site Description and shown in the associated study area figures in Volume 3.

19.3.1.3 Topic study areas have been updated since the EIA Scoping Report to reflect the design parameters and project boundary for the EIA PEIR (see Section 2.4), although the resulting changes to topic study areas (and ZOIs) are minimal (see Chapter 5 'Site Description'), with the exception of Biodiversity.

19.3.1.4 For Biodiversity the 10, 20 and 30 kilometre study areas that were included in the EIA Scoping Report have been removed from the ZOI. These study areas covered Special Protection Areas (SPA), Special Area of Conservation (SAC) and Ramsar sites only. Effects on these sites will be assessed within the in-combination assessment of the Habitat Regulation Assessment (HRA), not within the main CEA for the project, which the ES will reference. This is in accordance with PINS Advice Note Seventeen which states that '*Where an Applicant is required to submit a Habitats Regulations Assessment (HRA) alongside an ES. The Applicant should ensure that information is not duplicated between assessments. The use of shared datasets is recommended.'*

19.3.1.5 The topic ZOIs were combined to identify a single, reasonable worst-case ZOI that represents the maximum spatial extent of the ZOI of the RTS (see Figure 19.1). This worst-case ZOI was used to identify the relevant 'other developments'.

19.3.1.6 Although long lists of 'other developments' are not being identified per topic at this stage, this approach to identifying the ZOI is a reasonable and precautionary worst case since it assumes that the identified effects will cover a larger area than is anticipated. The ZOIs used for the ES will be refined based on the outcome of the technical assessments, and in most cases will likely reduce in spatial extent, which may reduce the number of 'other developments' being considered and thereby reduce the scope of the inter-project effects assessment.

19.3.1.7 **Stage 1b:** The long list of 'other developments' has been revisited since the EIA Scoping Report. The criteria used to identify relevant 'other

developments' is set out in Section 19.2.3.3 of the EIA Scoping Report. The data on 'other developments' was collected within the worst-case ZOI from the relevant Local Planning Authority (LPAs) planning portals, the Planning Inspectorate's list of projects, consultation with the LPA Project Group and from the RTS Committed Development Register. The cut-off date for collating 'other development' information for the PEIR was 12th May 2023 (the RTS Committed Development Register was last reviewed on the 13th June 2023, although this did not result in any more 'other developments' being identified). This will be updated to inform the completion of the ES.

19.3.1.8 'Other developments' identified as part of the CEA that are expected to be completed before construction of the RTS will be considered within the ES as part of the future baseline within the environmental topic construction and operational assessments.

19.3.1.9 Stages 2-4 of the inter-project effects assessment will be completed and reported in the ES.

### 19.3.2 Approach to Assessing Intra-project Effects

19.3.2.1 Our methodology for assessing intra-project effects will follow the approach set out in Section 19.3 of the EIA Scoping Report.

19.3.2.2 As explained in paragraphs 19.3.1.2 – 19.3.1.4 of this chapter, the ZOIs have been updated for the PEIR, and were used for assessing intra-project effects.

19.3.2.3 **Stage 1** (individual assessments undertaken by topic assessments) were completed at a preliminary level for the PEIR and are reported in Chapters 6-18.

19.3.2.4 Stages 2-4 can only be completed once the environmental topic assessments are complete as part of the ES, so definitive intra-project effects cannot be identified at this PEIR stage.

19.3.2.5 **Stage 2** (using the topic assessment of effects to highlight receptors/resources changed by more than one topic/effect) of the intra-project effects assessment has been completed at a preliminary level for the PEIR, and was used to identify a list of 'shared receptors' that have the potential to be changed by more than one topic/effect.

19.3.2.6 **Stage 3** (using the receptor / resource groups, and the topic chapter assessments to identify the potential for intra -project effects) and **Stage 4** (assess the likelihood of the potential for the individual effects to interact to create a different or greater effect that could alter the assessment of significance) will be completed as part of the ES.

### 19.3.3 Stakeholder Engagement

19.3.3.1 Our proposed CEA methodology, and our preliminary approach described above (i.e. Stage 1a – establishing the project's ZOI; and Stage 1b – identifying the long list of 'other developments') were provided within the EIA Scoping Report for consultation.

19.3.3.2 As set out in Section 4.2 of this PEIR, the Planning Inspectorate (PINS) provided and adopted their EIA Scoping Opinion (dated 15 November 2022) ('the PINS Scoping Opinion') on behalf of the Secretary of State. We have considered the PINS Scoping Opinion when preparing this CEA for the PEIR and we will use it to inform the CEA for the ES.

19.3.3.3 Table 19-1 below summarises the comments and responses received on our EIA Scoping Report following formal submission to PINS and key comments received from statutory consultees. Full consultee comments on our EIA Scoping Report and our responses to these comments are provided in Appendix 4.1.

***Table 19-1: Responses to comments received on the EIA Scoping Report***

| Consultee or Organisation | Summary of Comment | Project Response |
|---|---|---|
| PINS | No matters have been proposed to be scoped out of the assessment. | Correct, in the Scoping Report we did not propose matters to be scoped out of the CEA. |
| LPA Project Group | The Project Group has no comments to make at this stage of the process on the proposed scope of the cumulative effects assessment (CEA) as set out the EIA Scoping Report. The proposed approach appears consistent with that recommended in Advice Note 17 for Nationally Significant Infrastructure Projects (NSIPs). The Project Group is content that the schemes listed in Appendix L as major developments for which planning applications has been sought is accurate at this time. The Project Group will engage with the Applicant to ensure that the CEA captures all relevant schemes as the project progresses. | Noted. We have engaged with the LPA Project Group to update the long-list of 'other developments' as part of the PEIR stage CEA. |
| LPA Project Group | Potential cumulative impacts could occur with the traffic related to the operation of the recent Shepperton Studios development. Filming tends to involve Heavy Good Vehicles (HGVs) for materials/supplies, welfare and to bring in sets and catering. | Shepperton Studios Development application reference 7210693 / 18/01212/OUT has been included on the long list of 'other developments' for consideration in the CEA. |
| Environment Agency | We are pleased to see that there is a discussion of fluvial and tidal interactions, and that modelling will look at effects downstream of Teddington Lock. The applicant should consider whether plans on other parts of the River Thames could impact on the RTS. For example, changes implemented as part of the Thames Estuary 2100 Plan (TE2100) are likely to impact the RTS, including alterations to the flood defences and Thames Barrier operations and location. | This will be covered in the flood risk assessment (FRA).<br><br>TE2100 has been included on the long list of 'other developments' for consideration in the CEA. |

### 19.3.4 Assumptions and Limitations

19.3.4.1 To ensure transparency within the EIA process, we have identified the following assumptions and limitations:

- The long list of 'other developments' collated for the inter-project CEA is based on publicly available data which it is not possible to verify and is limited in some cases e.g. when reviewing and updating the long list some of the projects identified only had EIA Screening requests available in the public domain, which do not provide a full project description, only a brief summary;
- To enable a precautionary CEA, it is assumed where planning permission for 'other developments' has been applied for but documentation/information could not be found on the project timeframes, that these 'other developments' could be constructed at the same time as the project, thus giving potential construction-related cumulative effects. The status of all 'other developments' will be reassessed at ES stage to ensure that the CEA is based on the most recent information available; and
- Proposed 'other developments' which are assessed as part of the CEA may be based on a different methodology which is not consistent with this project. This has the potential to cause variance / discrepancies.

19.3.4.2 Our preliminary environmental assessment for the PEIR is based on the best information available at this stage of the project. Further work will be required as the design develops between the PEIR and ES, and once the topic assessments are complete for the ES.

19.3.4.3 Cumulative greenhouse gas (GHG) emissions will be addressed in more detail in the ES, within the Climatic Factors ES chapter. This cumulative assessment will be set out separately from the cumulative assessments being carried out by other topics, given that GHG emissions do not have a local geographical limit, and therefore there is no basis for selecting any particular (or more than one) cumulative project that has GHG emissions for assessment over any other.

## 19.4 Assessment of Effects

### 19.4.1 Inter-project Effects Assessment

19.4.1.1 The long list of ‘other developments’ has been updated for the PEIR, and details of each development are presented in Appendix 19.1. Plate 19-1 displays the approximate timelines for the long list of ‘other developments’ (where this information was available) against the RTS timeframes for construction and operation, demonstrating the potential for inter-project effects. Where it has not been possible to obtain timeframes for ‘other developments’, the rows have been left blank.

Construction and Operation Timeframes

Construction | Operation | Estimated Start of Operation

| | | 2022 | | | | 2023 | | | | 2024 | | | | 2025 | | | | 2026 | | | | 2027 | | | | 2028 | | | | 2029 | | | | 2030 | | | | 2031 | | | | 2032 | | | | 2033 | | | | 2034 | | | | 2035 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 |
| | RTS Project Timeline | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | 2022 | | | | 2023 | | | | 2024 | | | | 2025 | | | | 2026 | | | | 2027 | | | | 2028 | | | | 2029 | | | | 2030 | | | | 2031 | | | | 2032 | | | | 2033 | | | | 2034 | | | | 2035 | | | |
| ID | Other developments and Planning Reference where applicable | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 |
| 1 | Western Rail Link to Heathrow - PINS - 129088-JAC-REP-EMF-000001 Rev A02 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | Expansion of Heathrow Airport - PINS - TR020003 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | Shepperton Studios Expansion - SCC Ref 18/01212/OUT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | Surrey County Hall - SCC Ref 21/03939/FUL / PP-10416630 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | Stroude Road Extraction - Surrey CC Ref 2009/0015 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6 | Whitehall Farm Extraction - Surrey CC Ref 2021/0023 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7 | Queen Mary Quarry - Surrey CC Ref 2021/0030, 2021/0013, 2020/0052 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8 | Queen Mary Quarry - Surrey CC Ref 2012/0061 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9 | Queen Mary Quarry - Surrey CC Ref 2019/0099, 2020/0049 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10 | Manor Farm Quarry - Surrey CC Ref 2021/0141 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 11 | Longcross Garden Village - RU.22/0393 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 12 | Animal and Plant Health Agency Scheme - RU.23/0292 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 13 | Norlands Lane landfill - RU.23/0470 and SCR/23/03 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 14 | Norlands Lane residential - RU.23/0374 and RU.18/0703 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 15 | Retirement Community - ELM - 2022/2127 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 16 | Brooklands College Redevelopment - ELM - 2022/2327 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 17 | St George Business Park - ELM - 2022/1392 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 18 | Weylands Old Treatment Works - ELM - 2022/1444 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 19 | Redevelopment at Sawyer Close - W&M - 23/00650/EIASCR | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 20 | Maidenhead Golf Course - W&M - 22/02683/EIASCO | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 21 | Land North And South Gays Lane Maidenhead - W&M - 22/02796/EIASCR | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 22 | Site B Open Field North of Lower Mount Farm - W&M - 22/03403/EIASCR | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 23 | Thames Valley Flood Scheme | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 24 | Datchet to Hythe End Flood Improvement Measures | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 25 | River Severn to River Thames Water Transfer | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 26 | South East Strategic Reservoir Option | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 27 | Teddington Direct River Abstraction | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 28 | Mogden Water Recycling Scheme | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 29 | Surrey Minerals Plan Primary Aggregates Development Plan 2009 - 2026 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 30 | Thames Estuary 2100 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

***Plate 19-1: Construction and Operation timeframes for the long list of 'other developments' compared to the RTS timeframes showing the construction (green) and operation (diagonal hatch) phases of development. The horizontal line represents the estimated start of operation for some of the developments.***

19.4.1.2 Our updates to the long list of 'other developments' since the EIA Scoping Report include removal of the following projects because they now fall outside of the reasonable worst-case ZOI:

- North London Heat and Power Project; and
- HS2 London to Birmingham.

19.4.1.3 Further updates since the EIA Scoping Report include removal of the below projects from the long list because they are due to be complete before construction of the RTS starts (and therefore will be treated as 'future baseline' projects – see paragraph 19.3.1.8 above):

- Silvertown Tunnel;
- Southampton to London Pipeline Project;
- M25 Junction 10/A3 Wisley Interchange;
- M4 Junctions 3 to 12 Smart Motorway;
- Thames Tideway Tunnel;
- Thorpe Park (RU.22/0374 & RU.22/1814);
- Twickenham Riverside Scheme;
- King George VI Reservoir (Surrey CC Ref 2019/0215);
- Watersplash Farm Quarry (Surrey CC Ref 2012/0173); and
- Shepperton Quarry, Littleton Lane, Shepperton (Surrey CC Ref 2021/0124).

19.4.1.4 We considered the following projects for inclusion on the long list but they were not included because they are due to be complete before construction of the RTS starts (and therefore will be treated as 'future baseline' projects – see paragraph 19.3.1.8 above):

- Slough Multifuel Extension Project; and
- Homer Farm sand and gravel extraction (Spelthorne 13/00141/SCA1 & 20/01214/SCC).

19.4.1.5 We identified the following additional projects through consultation with relevant LPAs for inclusion on the long list at PEIR stage:

- Longcross Garden Village (RU.22/0393);
- Animal and Plant Health Agency Scheme (RU.23/0292);
- Norlands Lane Landfill (RU.23/0470); and
- Norlands Lane Residential (RU.23/0374).

19.4.1.6 We identified the following additional projects through desk-based research of LPA planning portals for inclusion on the long list at PEIR stage:

- St George Business Park (2022/1392);
- Weylands Old Treatment Works (2022/1444);
- Retirement Community (2022/2127);
- Brooklands College Redevelopment (2022/2327);
- Development at Maidenhead Golf Course (22/02683/EIASC);
- Land North and South Gays Lane, Maidenhead (22/02796/EIASC);
- Site B, open field north of Lower Mount Farm (22/03403/EIASC); and
- Redevelopment at Sawyers Close (23/00650/EIASC).

19.4.1.7 We identified the following additional projects through desk-based research for inclusion on the long list at PEIR stage:

- Thames Valley Flood Scheme;
- Datchet to Hythe End Flood Improvement Measures;
- River Severn to River Thames Water Transfer;
- South East Strategic Reservoir Option;
- Teddington Direct River Abstraction; and
- Mogden Water Recycling Scheme.

19.4.1.8 We identified the following additional plan through desk-based research for inclusion on the long list at PEIR stage:

- Thames Estuary 2100.

### 19.4.2 Intra-project Effects Assessment

19.4.2.1 The combined effects of different environmental impacts from project activities on a single ‘shared receptor’ are known as ‘intra-project effects’. There is the potential for both positive and negative intra-project effects from construction and operation of the RTS.

19.4.2.2 We will undertake a full assessment of intra-project effects (Stages 2 to 4) and report on it in the ES, once the environmental assessments for the separate environmental topics have been completed for the ES.

19.4.2.3 Based on the outcome of the technical topic assessments completed for this PEIR, we have undertaken an initial scoping of intra-project effects of

the RTS; using the revised project ZOIs (see paragraph 19.3.1.5) and covering all construction and operation stage activities resulting in potential environmental effects (significant and non-significant) on 'shared receptors'.

19.4.2.4 Due to the preliminary assessment of likely significant environmental effects in the PEIR being based on the use of parameters (see Chapter 2) it has not been possible in the topic assessments to specify the effects on individual receptors, in many cases receptors are grouped together. Therefore it was not possible to scope intra-project effects on individual receptors, and instead the potential for likely significant effects on groups of receptors has been identified. This approach will be reviewed and updated at the ES stage.

19.4.2.5 To identify the 'shared receptors' at this preliminary PEIR stage, all receptors identified in the topic specific assessments have been collated into 16 shared receptor groups, as shown in Table 19-2. Table 19-2 shows how the receptor groups (left column) were defined by analysing similar types of receptors (middle column) identified in the topic assessments (right column), and grouping them together.

***Table 19-2: List of Receptors that form the Shared Receptor Groups***

| Shared Receptor Group | Receptor name used in Topic Assessment | Topic Assessment that receptor originates from |
|---|---|---|
| Ecological receptors | Habitats | Biodiversity |
| Ecological receptors | Protected and priority species | Biodiversity |
| Ecological receptors | Invertebrates | Biodiversity |
| Ecological receptors | Notable plants | Biodiversity |
| Ecological receptors | Ecological receptors | Air Quality |
| Ecological receptors | National Planning Policy Framework (NPPF) Categories (Water-compatible development) | Flood Risk |
| Designated Sites (Biodiversity) | Statutory protected sites | Biodiversity |
| Designated Sites (Biodiversity) | Local Nature Reserves | Biodiversity |
| Designated Sites (Biodiversity) | Sites of Nature Conservation Interest | Biodiversity |
| Designated Sites (Biodiversity) | Local Wildlife Sites | Biodiversity |

| Shared Receptor Group | Receptor name used in Topic Assessment | Topic Assessment that receptor originates from |
|---|---|---|
| Designated Sites (Biodiversity) | Nature conservation sites prized for their tranquillity | Noise and Vibration |
| Designated Sites (Biodiversity) | NPPF Categories (Water-compatible development) | Flood Risk |
| Designated Sites (Biodiversity) | Ecological receptors | Air Quality |
| Designated Assets (Cultural Heritage) | Designated Scheduled Monuments | Cultural Heritage |
| Designated Assets (Cultural Heritage) | Designated Conservation Areas | Cultural Heritage |
| Designated Assets (Cultural Heritage) | Designated Registered Park & Garden | Cultural Heritage |
| Designated Assets (Cultural Heritage) | Designated Listed Buildings | Cultural Heritage |
| Non-Designated Assets (Cultural Heritage) | Non-designated assets | Cultural Heritage |
| Palaeoenvironmental | Palaeoenvironmental | Cultural Heritage |
| Soils | Topsoil and subsoil | Materials and Waste / Soils and Land |
| Soils | Soil structure and chemistry | Materials and Waste |
| Soils | Soil structure | Soils and Land |
| Soils | Soil stability | Soils and Land |
| Soils | Agricultural soils | Soils and Land |
| Soils | Arable and pasture land | Soils and Land |
| Soils | NPPF categories (Water compatible development, Less Vulnerable) | Flood Risk |
| Landscape Receptors | RTS Landscape Character Area (LCA) | Landscape and Visual |
| Landscape Receptors | Green Belt | Landscape and Visual |
| Landscape Receptors | Regional park | Landscape and Visual |
| Landscape Receptors | LCA | Landscape and Visual |
| Landscape Receptors | National Character Area | Landscape and Visual |
| Landscape Receptors | NPPF Categories (Water-compatible development) | Flood Risk |
| Materials | Mineral resources | Materials and Waste / Soils and Land |
| Materials | Preferred future mineral extraction sites | Materials and Waste |
| Materials | Natural resources | Materials and Waste |
| Materials | Material resources | Materials and Waste |

| Shared Receptor Group | Receptor name used in Topic Assessment | Topic Assessment that receptor originates from |
|---|---|---|
| Materials | Active mineral extraction sites | Materials and Waste |
| Materials | Restoration sites | Materials and Waste |
| Materials | NPPF Categories (Water compatible development, Less Vulnerable) | Flood Risk |
| Waste | Active Inert Landfill sites | Materials and Waste |
| Waste | Active waste treatment centres | Materials and Waste |
| Waste | Active hazardous landfill sites | Materials and Waste |
| Waste | Historic landfill sites | Materials and Waste |
| Waste | Industrial Land Areas of Search | Materials and Waste |
| Waste | Future landfill site | Materials and Waste |
| Waste | NPPF Categories (More/Less Vulnerable) | Flood Risk |
| Residential | Residents at home | Landscape and Visual |
| Residential | Residential dwellings | Noise and Vibration |
| Residential | Residential houseboats | Noise and Vibration |
| Residential | Residential - care home | Noise and Vibration |
| Residential | Residential areas | Socio-Economic |
| Residential | Residents | Health |
| Residential | Human receptors | Air Quality / Soils and Land |
| Residential | Sensitive site with vulnerable groups | Health |
| Residential | Local communities | Socio-Economic |
| Residential | Construction route | Traffic and Transport |
| Residential | Workers | Health |
| Residential | Users of Public Highway | Landscape and Visual |
| Residential | Local Highway Network | Traffic and Transport |
| Residential | Transport network | Traffic and Transport |
| Residential | Users of the motorway and the railway line | Landscape and Visual |
| Residential | Buildings | Soils and Land |
| Residential | NPPF Categories (Highly Vulnerable (basement dwellings) /More Vulnerable (all other residential types)) | Flood Risk |
| Non-Residential | Hotel | Noise and Vibration |
| Non-Residential | Offices | Noise and Vibration |
| Non-Residential | Community hall / training centre | Noise and Vibration |
| Non-Residential | School | Noise and Vibration |

| Shared Receptor Group | Receptor name used in Topic Assessment | Topic Assessment that receptor originates from |
|---|---|---|
| Non-Residential | Preschool/Nursery | Noise and Vibration |
| Non-Residential | Marina | Noise and Vibration |
| Non-Residential | Community centre | Noise and Vibration |
| Non-Residential | Camping and Caravanning Site | Noise and Vibration |
| Non-Residential | Human receptors | Air Quality/ Soils and Land |
| Non-Residential | Human receptors (Non-residential) | Air Quality |
| Non-Residential | People at their places of work | Landscape and Visual |
| Non-Residential | Sensitive site with vulnerable groups | Health |
| Non-Residential | Buildings | Soils and Land |
| Non-Residential | Local communities | Socio-Economic |
| Non-Residential | Workers | Health |
| Non-Residential | Users of Public Highway | Landscape and Visual |
| Non-Residential | Users of the motorway and the railway line | Landscape and Visual |
| Non-Residential | Transport Network | Traffic and Transport |
| Non-Residential | Construction route | Traffic and Transport |
| Non-Residential | Local Highway Network | Traffic and Transport |
| Non-Residential | Businesses | Socio-Economic |
| Non-Residential | NPPF Categories (Essential Infrastructure, Highly/More/Less Vulnerable) | Flood Risk |
| Recreation | Recreational facilities | Socio-Economic |
| Recreation | Public Rights of Way | Traffic and Transport |
| Recreation | Equestrian centre | Noise and Vibration |
| Recreation | Sailing centre | Noise and Vibration |
| Recreation | Recording studio | Noise and Vibration |
| Recreation | Leisure centre | Noise and Vibration |
| Recreation | Users of Public Bridleway | Landscape and Visual |
| Recreation | Users of Public Footpath, public cycle route and leisure users of the River Thames | Landscape and Visual |
| Recreation | Users of Public Open Space | Landscape and Visual |
| Recreation | Users of Thorpe Park | Landscape and Visual |
| Recreation | Users of a Regional Park | Landscape and Visual |
| Recreation | Regional Park | Landscape and Visual |
| Recreation | Users of the recreational facility | Landscape and Visual |
| Recreation | Health club | Noise and Vibration |
| Recreation | River Navigation | Traffic and Transport |

| Shared Receptor Group | Receptor name used in Topic Assessment | Topic Assessment that receptor originates from |
|---|---|---|
| Recreation | Members of the public | Cultural Heritage |
| Recreation | Visitors | Health |
| Recreation | Human | Soils and Land |
| Recreation | Sensitive site with vulnerable groups | Health |
| Recreation | Workers | Health |
| Recreation | Users of the motorway and the railway line | Landscape and Visual |
| Recreation | Transport Network | Traffic and Transport |
| Recreation | Businesses | Socio-Economic |
| Recreation | NPPF Categories (Essential Infrastructure, Water compatible development, More/Less vulnerable) | Flood Risk |
| Economy (Socio-Economic) | Surrey economy | Socio-Economic |
| Groundwater | Aquifer - Bedrock | Soils and Land |
| Groundwater | Aquifer - Superficial | Soils and Land |
| Groundwater | Source Protection Zones | Soils and Land |
| Groundwater | Bedrock geology | Soils and Land |
| Groundwater | Superficial geology | Soils and Land |
| Groundwater | Groundwater body | Water Environment |
| Groundwater | Groundwater dependent terrestrial ecosystem | Water Environment |
| Surface Water | Statutory Main River surface water body | Water Environment |
| Surface Water | Ordinary Watercourse surface water body | Water Environment |
| Surface Water | Surface water dependent habitat | Water Environment |
| Surface Water | Lakes hydraulically connected with the RTS | Water Environment |
| Surface Water | Lakes hydraulically connected with the RTS supporting surface water dependent habitat | Water Environment |
| Surface Water | Lakes not hydraulically connected with the RTS | Water Environment |

19.4.2.6 Our intra-project assessment then considered where effects identified in the topic specific assessments act upon the same shared receptor groups; this is represented by the ticks in Table 19-3 and

19.4.2.7 Table 19-4. For example, in Table 19-3, ‘Ecological Receptors’ is the shared receptor group being affected and the ticks under the Air Quality, Biodiversity, Flood Risk, Noise and Vibration and Water Environment EIA Topics record that these topics have been identified as having a potential likely significant effect on that receptor group. Therefore, in this example, we are identifying the potential for intra-project effects from construction on the shared receptor group of ‘Ecological Receptors’.

19.4.2.8 We have determined that there is potential for intra-project effects on the shared receptor groups in Table 19-3 and

19.4.2.9 Table 19-4 that have more than one tick against different EIA topics. Where a shared receptor group only has one tick, this means that we have not identified the potential for intra-project effects at this stage. This will be reviewed and updated at the ES stage.

***Table 19-3: Table of potential intra-project effects from construction of the RTS***

| Shared Receptor Group Affected | Air Quality | Biodiversity | Climatic Factors | Cultural Heritage | Flood Risk | Health | Landscape and Visual Amenity | Materials and Waste | Noise and Vibration | Socio-Economic | Soils and Land | Traffic and Transport | Water Environment |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ecological Receptors | ✓ | ✓ | | | ✓ | | | | ✓ | | | | ✓ |
| Designated Sites (Biodiversity) | ✓ | ✓ | | | ✓ | | | | ✓ | | | | ✓ |
| Designated Assets (Cultural Heritage) | | | | ✓ | | | ✓ | | | | | | |
| Non-Designated Assets (Cultural Heritage) | | | | ✓ | | | ✓ | | | | | | |
| Palaeoenvironmental | | | | ✓ | ✓ | | | | | | | | ✓ |
| Soils | | | | | | | | ✓ | | | ✓ | | |
| Landscape Receptors | | | | | ✓ | | ✓ | | | | | | |
| Materials | | | | | | | | ✓ | | | ✓ | | |
| Waste | | | | | | | | ✓ | | | | | |
| Residential | ✓ | | | | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | |
| Non-Residential | ✓ | | | | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ |
| Recreational | ✓ | | | | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ |
| Economy (Socio-Economic) | | | | | | | | ✓ | | ✓ | | | |
| Groundwater | | | | | ✓ | | | ✓ | | | ✓ | | ✓ |
| Surface Water | | | | | ✓ | | | | | | | | ✓ |

***Table 19-4: Table of potential intra-project effects from operation of the RTS***

| Shared Receptor Group Affected | Air Quality | Biodiversity | Climatic Factors | Cultural Heritage | Flood Risk | Health | Landscape and Visual Amenity | Materials and Waste | Noise and Vibration | Socio-Economic | Soils and Land | Traffic and Transport | Water Environment |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ecological Receptors | ✓ | ✓ | | | ✓ | | | | | | | | ✓ |
| Designated Sites (Biodiversity) | | ✓ | | | ✓ | | | | ✓ | | | | ✓ |
| Designated Assets (Cultural Heritage) | | | | ✓ | ✓ | | ✓ | | | | | | |
| Non-Designated Assets (Cultural Heritage) | | | | ✓ | ✓ | | ✓ | | | | | | |
| Palaeoenvironmental | | | | | ✓ | | | | | | | | ✓ |
| Soils | | | | | ✓ | | | | | | ✓ | | |
| Landscape Receptors | | | | | ✓ | | ✓ | | | | | | |
| Materials | | | | | ✓ | | | ✓ | | | ✓ | | |
| Waste | | | | | | | | ✓ | | | | | |
| Residential | ✓ | | | | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | |
| Non-Residential | ✓ | | | | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ |
| Recreational | ✓ | | | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ |
| Economy | | | | | | | | | | ✓ | | | |
| Groundwater | | | | | ✓ | | | ✓ | | | ✓ | | ✓ |
| Surface Water | | | | | ✓ | | | | | | | | ✓ |

19.4.2.10 The shared receptor groups that we have identified as most likely to experience intra-project effects from construction are:

- Ecological Receptors;
- Designated Sites (Biodiversity);
- Designated Assets (Cultural Heritage);
- Non-Designated Assets (Cultural Heritage);
- Palaeoenvironmental;
- Soils;
- Landscape Receptors;
- Materials;
- Residential;
- Non-Residential;
- Recreational;
- Economy (Socio-Economic);
- Groundwater; and
- Surface Water.

19.4.2.11 The shared receptor groups that we have identified as most likely to experience intra-project effects from operation are:

- Ecological Receptors;
- Designated Sites (Biodiversity);
- Designated Assets (Cultural Heritage);
- Non-Designated Assets (Cultural Heritage);
- Palaeoenvironmental;
- Soils;
- Landscape Receptors;
- Materials;
- Residential;
- Non-Residential;
- Recreational;
- Groundwater; and
- Surface Water.

19.4.2.12 As mentioned above, it is difficult to detail the anticipated intra-project effects arising from the project at this preliminary assessment stage, but

some examples based on an early prediction and using professional judgement are provided below:

- Potential negative intra-project effects from construction on residential receptors may arise because of increased odour and dust arising from earthworks combined with a potential decrease in air quality as a result of increased traffic on the road network, as well as noise and vibration from construction activities. Residential receptors that are in closer proximity to the main project components (e.g. the flood channels, construction compounds and temporary material processing sites) have a higher likelihood of significant negative intra-project effects.
- A potential positive intra-project effect from operation on residential receptors may arise because of the reduction in flood risk to properties and local community infrastructure combined with an associated positive effect on health from a reduction in health risks such as anxiety and physical injury.

### 19.4.3 Mitigation

19.4.3.1 Our CEA will be undertaken assuming that primary (embedded), secondary (additional) and tertiary (standard practice) mitigation specified in the topic assessments are in place. Currently all topics are scoped in for assessing cumulative effects. If the CEA undertaken as part of the ES indicates that additional mitigation is required, this will be recommended and assessed.

## 19.5 Further Work for the EIA

### 19.5.1 Inter-project Effects Assessment

19.5.1.1 The long list of ‘other developments’ is subject to continued review and update. Any new developments, from the time of writing, will be scoped into the assessment if they meet the criteria provided in Section 19.2.3.3 of our EIA Scoping Report.

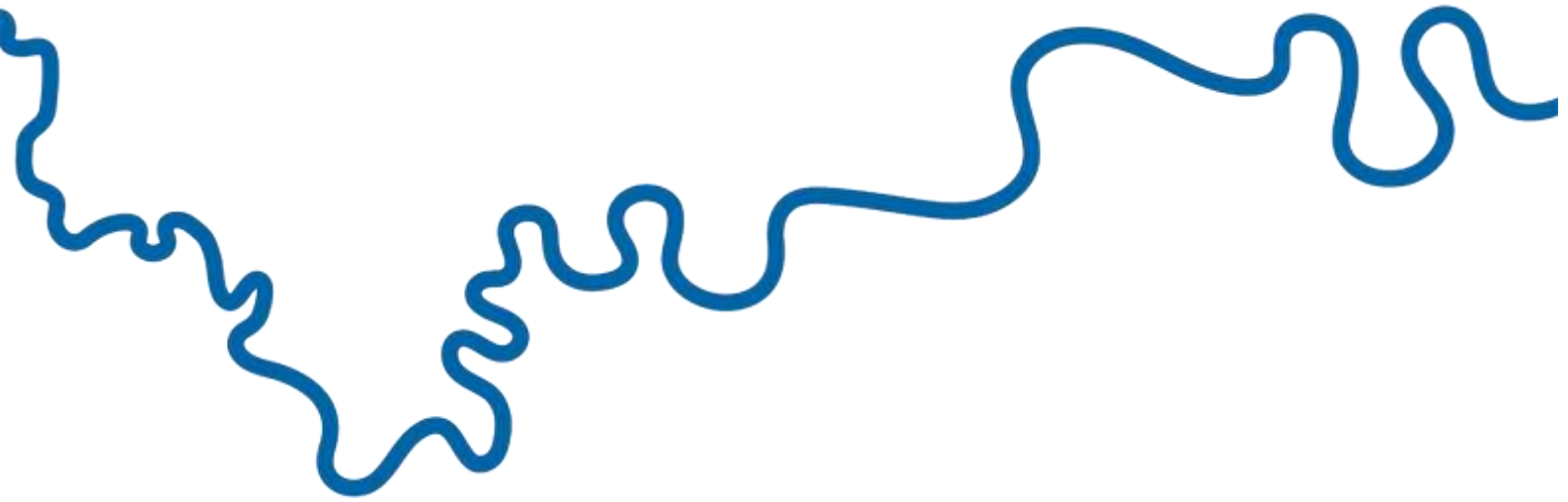
19.5.1.2 We welcome comments from statutory and non-statutory consultees on the revised long-list of ‘other developments’ compiled for the PEIR which can be found in Appendix 19.1.

19.5.1.3 Stages 2-4 of the inter-project effects assessment will be completed and reported in the ES.

### 19.5.2 Intra-project Effects Assessment

19.5.2.1 We welcome comments from statutory and non-statutory consultees on the preliminary assessment carried out for Stage 2 for the PEIR.

19.5.2.2 We will revisit Stages 1 and 2 of the intra-project effects assessment for the ES, and Stages 3 and 4 will be completed.



SURREY COUNTY COUNCIL

Environment Agency

The River Thames Scheme represents a new landscape-based approach to creating healthier, more resilient and more sustainable communities by reducing the risk of flooding and creating high quality natural environments.

River Thames
Scheme