



# **Preliminary Environmental Information Report**

## **Volume 2**

### **Chapter 4: Approach to the Environmental Assessment**

## 4 Approach to the Environmental Assessment

### 4.1 Introduction

4.1.1.1 Environmental Impact Assessment (EIA) is the process that identifies the key environmental effects of a development and suggests ways that these effects can be avoided, reduced or managed. It is a requirement of UK law for certain developments that are likely to cause significant environmental effects.

4.1.1.2 This chapter presents the key themes of the EIA process that we have used to inform the production of our Preliminary Environmental Information Report (PEIR). An overview is provided of the following:

- The scope of the assessment;
- The assessment methodology including the assessment criteria and approach to defining the current and future baseline environment;
- The approach to limitations and uncertainties;
- The approach to mitigation; and
- The approach to consideration of cumulative effects.

4.1.1.3 Our PEIR forms part of the EIA process under the Infrastructure Planning (EIA) Regulations 2017 and is produced as a key consultation tool for the Development Consent Order (DCO) statutory consultation stage. It provides an update on the ongoing EIA (including consideration of the PINS Scoping Opinion), consultation and design of the River Thames Scheme (RTS). Our PEIR also provides the information reasonably required for consultees, including the public, to develop an informed view of the likely significant environmental effects of the project, as understood at this stage.

4.1.1.4 Our PEIR:

- Reviews relevant legislation, policy and guidance;
- Reviews and updates the baseline (the environmental starting point), and how this is expected to change (the future baseline);
- Reviews the area in which each topic has the potential to experience likely significant effects (the study area);

- Updates or clarifies proposed assessment methods;
- Updates effects scoped into the EIA following the PINS Scoping Opinion plus changes to design and footprint of the project;
- Provides a preliminary assessment of the likely significance of scoped in environmental effects of the RTS; and
- Identifies potential mitigation measures to avoid, reduce or compensate for environmental effects.

## 4.2 Scope of the Assessment

### 4.2.1 EIA Screening

4.2.1.1 Screening in the EIA process involves determining whether a development is likely to have a significant effect on the environment. If the development is not likely to have a significant effect no further stages of the EIA process are required.

4.2.1.2 In October 2022, alongside our EIA Scoping Report (see 4.2.2), we confirmed that the RTS is likely to have a significant effect on the environment, and that an EIA would be carried out.

### 4.2.2 EIA Scoping

4.2.2.1 The EIA scoping process identifies the environmental ‘aspects’ and ‘matters’ (hereafter referred to as ‘topics’ and ‘receptors’ respectively for the RTS EIA) that are likely to experience significant effects (an example of a ‘topic’ is Biodiversity and an example of a ‘receptor’ would be badgers). These effects are described as being ‘scoped in’. Any environmental topics or receptors that are not likely to experience significant effects are ‘scoped out’. The EIA Regulations set out the environmental topics that need to be considered during the process.

4.2.2.2 We prepared and submitted the RTS EIA Scoping Report (Environment Agency and Surrey County Council, October 2022) (‘the EIA Scoping Report’) to the Planning Inspectorate (PINS) on 5 October 2022 with a request for a statutory scoping opinion. The EIA Scoping Report set out the environmental baseline, proposed assessment methodologies and effects proposed to be ‘scoped in’ and ‘scoped out’ of the assessment.

4.2.2.3 PINS provided and adopted their EIA Scoping Opinion ('the PINS Scoping Opinion') on 15 November 2022 on behalf of the Secretary of State. We have taken the PINS Scoping Opinion into account when preparing this PEIR and will use it to inform which topics and effects the Environmental Statement (ES) will assess.

4.2.2.4 The PINS Scoping Opinion and feedback from consultees is provided in Appendix 4.1 with project responses. A summary of key points from the PINS Scoping Opinion is provided below.

#### 4.2.3 Effects 'Scoped In' to the Assessment

4.2.3.1 The PINS Scoping Opinion agreed with all of the likely significant effects requiring assessment that are documented within the EIA Scoping Report and did not recommend that any effects should instead be scoped out.

4.2.3.2 We proposed to scope out the following effects (or they were not scoped in) within the EIA Scoping Report, however, they have subsequently been scoped in following comments provided within the PINS Scoping Opinion. The 'Engagement' sub-section in each of the topic chapters of our PEIR (i.e. Chapters 6 to 18) provides further detail:

- Effects arising from channel maintenance required in order to restore the design profile. These effects are identified and given a preliminary assessment in seven relevant topic chapters within our PEIR (Climatic Factors, Biodiversity, Flood Risk, Health, Landscape and Visual Amenity, Materials and Waste, and Water Environment);
- Air quality effects associated with Non-Road Mobile Machinery (NRMM) and associated emissions – see Chapter 6 Air Quality and Appendix 6.3 for further information;
- Air quality effects associated with vehicle movements transporting hazardous waste and materials – see Chapter 6 Air Quality and Appendix 6.3 for further information;
- Air quality effects from use of new green open spaces – see Chapter 6 Air Quality and Appendix 6.3 for further information;
- Air quality effects from ammonia – see Chapter 6 Air Quality and Appendix 6.3 for further information;
- Air quality effects to ecological receptors including statutory and non-statutory nature conservation sites in terms of annual mean NO<sub>x</sub> concentrations, nitrogen deposition, acid deposition and

concentrations of ammonia resulting from vehicle exhaust emissions associated with construction or operation of the project – see Chapter 6 Air Quality and Appendix 6.3 for further information;

- Air quality effects associated with the use of barges on the River Thames during construction – see Chapter 6 Air Quality and Appendix 6.3 for further information;
- Effects on the Windsor Great Park Special Area of Conservation (SAC) and Windsor Forest and Great Park Site of Special Scientific Interest (SSSI) – see Chapter 7 Biodiversity and Appendix 7.8 for further information.
- Climate related effects during the construction phase – see Chapter 8 Climatic Factors for further information;
- Effects from the transportation of non-hazardous material on heritage assets – see Chapter 9 Cultural Heritage for further information;
- Effects to heritage assets from the installation of new sources of lighting at new recreational facilities – see Chapter 9 Cultural Heritage for further information;
- Effects to flood risk as a result of construction activities – see Chapter 10 Flood Risk for further information;
- Effects from the loss of any existing public open space – see Chapter 11 Health for further information;
- Effects as a result of noise from the potential new green/blue open spaces – see Chapter 14 Noise and Vibration for further information;
- Effects from the influx of site personnel causing a disruption to community cohesion – see Chapter 15 Socio-economics for further information;
- Effects as a result of loss or reprofiling of land/soils and the impact on ecosystem services that the soils provide. Effects from general activities causing damage, compaction, erosion or instability of soils during construction. – see Chapter 16 Soils and Land for further information;
- Effects arising from the transportation of hazardous waste and materials – see Chapter 17 Traffic and Transport for further information;
- Effects associated with abnormal indivisible loads (AILs) - see Chapter 17 Traffic and Transport for further information;
- Effects on hydrology from mitigation used during construction - see Chapter 18 Water Environment for further information; and

- Effects arising from construction activities that have potential to lead to sediment disturbance and spill contamination – see Chapter 18 Water Environment for further information.

4.2.3.3 Furthermore, since the submission of the EIA Scoping Report, further design information has become available which has resulted in additional effects being scoped in to our PEIR. To mitigate for construction disturbance to traffic on roads local to the project boundary for the PEIR, six off-site car parks for construction workers are being considered (see Chapter 2: Project Description and Chapter 3: Alternatives for more information). Limited baseline information is currently available for these car park locations. Effects associated with these locations are therefore scoped in and have been assessed in our PEIR as significant for all topics as a precautionary measure. We have also proposed relevant mitigation for these effects including:

- A Construction Traffic Management Plan to ensure highways works are safe, planned and co-ordinated to secure expeditious movement of traffic on the road network, and minimise inconvenience to the public;
- A Construction Logistics Plan to detail the logistics of arrangements for worksites to minimise impacts on communities and the environment; and
- A Construction Travel Plan to proactively manage and influence workforce (and visitor) travel to and from worksites to limit traffic movement and reduce disruption in the vicinity of the site.

4.2.3.4 A summary of all potential likely significant and non-significant effects scoped into the assessment is provided in Appendices 6.3 (Air Quality), 7.8 (Biodiversity), 8.1 (Climatic Factors), 9.7 (Cultural Heritage), 10.1 (Flood Risk), 11.3 (Health), 12.2 (Landscape and Visual Amenity), 13.1 (Materials and Waste), 14.2 (Noise and Vibration), 15.3 (Socio-Economics), 16.1 (Soils and Land), 17.3 (Traffic and Transport) and 18.4 (Water Environment).

#### 4.2.4 Effects 'Scoped Out' of the Assessment

4.2.4.1 The PINS Scoping Opinion highlights the proposed aspects and matters that they agree can be scoped out of the assessment on the basis of the information provided in the EIA Scoping Report.

4.2.4.2 The PINS Scoping Opinion also states that they are content that the receipt of the scoping opinion should not prevent the applicant from subsequently agreeing with the relevant consultation bodies to scope further aspects and matters out of the assessment where further information is provided to justify the approach. Where this is the case, this will be explained and justified within the ES.

4.2.4.3 Any effects recommended by PINS to be scoped into the assessment have been included within our PEIR, with the exception of those noted in Table 4.1 below. These points are discussed further in the relevant topic chapters. Where appropriate, this PEIR and associated consultation seeks to achieve agreement from key stakeholders on this approach.

**Table 4.1: Effects recommended by PINS to be scoped in that are not proposed to be assessed in the PEIR/ES and justification for this**

Topic (and PINS Scoping Opinion ID)	Summary of PINS comment	Project response
Biodiversity (3.2.3)	<p>Re: Operational effect: changes to hydromorphological conditions at weirs on protected and notable habitats and species.</p> <p>PINS considered that there is insufficient evidence provided in the Scoping Report to establish the likely scale and nature of these effects and the specific receptors that could be affected by these changes. PINS stated the ES should contain an assessment of potential hydromorphological changes caused by capacity changes at weirs on ecological receptors where significant effects are likely to occur.</p>	<p>Further information in relation to fisheries has enabled us to identify that effects on fish from the capacity improvement works at Molesey, Sunbury and Teddington weirs could occur and will be scoped in and assessed in the Biodiversity chapter of the Environmental Statement. Effects on aquatic habitats and other notable and protected species will be scoped out as there is evidence that changes to the hydromorphology of the River Thames are within the range of variance of existing flood flow conditions. Further detail is provided within Chapter 7 Biodiversity.</p>
Cultural Heritage, Archaeology	<p>PINS noted the potential for buildings and other structures to be demolished as a result of RTS.</p>	<p>We have undertaken an initial assessment of all buildings potentially to be demolished using</p>

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Topic (and PINS Scoping Opinion ID)	Summary of PINS comment	Project response
and Built Heritage (3.4.3)	It was not stated in the Scoping Report whether these have any historic interest. It was noted that the ES should determine if demolition of these buildings is likely to impact historic receptors and if so, the ES should assess significant effects where they are likely to occur.	aerial photography, maps and historic records data. These are all modern buildings and are considered to have no historic value. This will be checked on the ground during the next phase of the setting study but is proposed to remain scoped out.
Flood Risk (3.5.7)	<p>Re: Operational effect: negative flood risk downstream during times of flood.</p> <p>PINS noted that the Scoping Report states mitigation will be embedded in the design of RTS to achieve the goal of reducing flood risk impacts. The Scoping Report states that the Flood Risk Assessment (FRA) will assess relevant effects from changes to flood flows downstream of the channels and Scoping Report Table 10-2 states that any increase in flood risk would be an impact of high magnitude suggesting it is possible for an increased flood risk at receptors. As this impact is dependent on the outcomes of the sediment and hydraulic modelling, PINS felt there was not enough information to scope this matter out. They recommended that the ES should assess significant effects from flood risk during operation where they are likely to occur.</p>	Our Flood Modelling Non-Technical Summary (WBi, 2023) demonstrates that for fluvial flooding there is no downstream detriment as a result of RTS. The Flood Risk Assessment (FRA) will address all relevant sources of flooding posed to and from the project for all stages of the intended lifetime of the project and this will be compliant with the National Policy Statement (NPS) for Water Resources Infrastructure, National Planning Policy Framework (NPPF) and Planning Policy Guidance (PPG). The conclusions of the FRA will be reported within the ES which will focus on the significant effects. The FRA will be a technical appendix to the ES and will draw upon modelling outputs.
Socio-economics (3.10.7)	Re: operational effect: Provision of road bridges altering access to communities and businesses.	The provision of new road bridges will not be a significant enhancement to the current road network as it is



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Topic (and PINS Scoping Opinion ID)	Summary of PINS comment	Project response
	<p>Scoping Report paragraph 15.5.2.1 states that provision of new road bridges is not likely to be a significant enhancement to the current network. PINS stated that the ES should explain how the provision of new accesses to communities and businesses will affect the operation of the existing road network.</p>	<p>proposed they will reinstate the existing road network over the flood channel thereby reducing potential severance of communities, but not enhancing traffic connections. Any existing accesses to local communities or businesses which would be disrupted by the construction of the project would be reinstated or reconnected to the existing road network. No new vehicular accesses to local communities or businesses are anticipated to be included as part of the project design. See also Chapter 15 Socio-Economics (Section 15.3 Engagement).</p>
<p>Water Environment (3.13.8)</p>	<p>Re: Operational effect – capacity improvement impacts resulting in downstream hydromorphological changes.</p> <p>The Scoping Report identifies that such changes are anticipated to be within the scale of natural changes from major flow events based on historic bathymetric surveys and that measures are embedded to avoid main weir pools and maintain operational flow so that weir structures are appropriately designed. These measures are currently not described therefore the PINS does not agree to scope this matter out.</p> <p>PINS stated that the ES should describe the measures to be employed and secured to reduce the potential effects from weir upgrades on downstream</p>	<p>The new gates at each weir will not be operated until all the existing weir gates have already been fully opened as per the current operational requirements. When they need to be opened, the flood in the River Thames will be well developed and the tailwater level downstream of each weir will be much higher than the normal level in non-flood conditions so the additional water added from opening the new gates will have no impact on non-flood condition levels. The modification of the direction of water flow by the new weir gates when in operation with the new gates, is likely to lead to only subtle changes in the pattern of scour and deposition immediately downstream. These changes are therefore localised and within the scale of changes that already occur</p>

Topic (and PINS Scoping Opinion ID)	Summary of PINS comment	Project response
	<p>hydromorphological change and assess significant effects where they are likely to occur or explain how measures reduce/avoid such effects.</p>	<p>during a particularly large flow event. As such, any changes to hydromorphology are expected to be within the normal range of baseline variance of existing flood flow conditions.</p> <p>The main weir pools at Sunbury and Teddington are upstream of the proposed new structures; therefore, no downstream hydromorphological changes will affect these. Whereas the Molesey main weir pool is approximately 250m downstream of the weir which is beyond the limit of any likely effect.</p> <p>Impacts to hydromorphology at weirs within the section bypassed by the flood channel remains scoped in and will be assessed. In addition, impacts from augmented flow and depleted water level to flow dependent habitats such as weir pools will be assessed.</p>

4.2.4.4 Since EIA Scoping we have been able to confirm that there is sufficient capacity at licenced waste disposal or recovery sites in proximity to the project boundary to receive non-hazardous material generated by the project that is not required or not suitable for re-use or recovery within the project design. The previously scoped in effects from the transportation of non-hazardous materials from the major road network and placement off-site is now proposed to be scoped out of the EIA. This is on the basis that transporting non-hazardous materials to these licenced sites would have been assessed and mitigated as part of their permitting processes. This rationale is now in line with that applied at EIA Scoping for the movement

of hazardous waste from the major road network and placement at licenced sites.

- 4.2.4.5 Transportation of non-hazardous materials and hazardous waste within the project boundary and to the major road network is still scoped into the EIA.

## 4.3 Assessment Methodology

### 4.3.1 Legislation, Policy and Guidance

- 4.3.1.1 Under Section 5(1) of the Planning Act 2008 (PA2008), National Policy Statements (NPS) are designated by the Secretary of State. These set out national policy in relation to specified descriptions of development. However, as there is no applicable NPS for the RTS Section 105 of PA2008 applies, meaning that in deciding the application the Secretary of State must have regard to: any local impact report; any prescribed matters in relation to the development the application relates to; and any other matters the Secretary of State think are important and relevant to their decision. For the purposes of Section 105(2)(c) PA2008, parts of the NPS for Water Resources Infrastructure (Defra, 2023a) may be important and relevant to the Secretary of State's consideration of the project as it is considered that water resources infrastructure projects are the closest projects in form to the RTS that are covered by an NPS. Notably, elements of Section 3 ('Assessment Principles') and Section 4 ('Generic Impacts') are particularly relevant to the RTS.
- 4.3.1.2 The EIA Scoping Report referred to the 2018 draft NPS. Since publication of the Scoping Report, the NPS has been updated and finalised. The final NPS retains some important parts of the draft but also makes some significant updates and expansions. Any relevant changes or additions to the NPS since the EIA Scoping Report are summarised within the topic chapters.
- 4.3.1.3 Compliance of the RTS with relevant policy will be documented in the DCO application is not detailed in this PEIR.
- 4.3.1.4 The Planning Inspectorate (PINS) 'Advice Note Seven: Environmental Impact Assessment – Preliminary Environmental Information, Screening

and Scoping’ and Advice Note Nine: ‘Rochdale Envelope’ has been used to inform the approach to our PEIR.

- 4.3.1.5 Any further relevant legislation, policy or guidance (including the relevant sections of the draft NPS for Water Resources Infrastructure) is outlined within Appendix M of the EIA Scoping Report. Where further legislation, policy or guidance has been published since the EIA Scoping Report, including the published NPS for Water Resources Infrastructure, this is documented within the relevant topic chapters of the PEIR.
- 4.3.1.6 The NPPF was updated on 5<sup>th</sup> September 2023 (i.e. after the publication of the EIA Scoping Report). These changes are minor and relate to policy on planning for onshore windfarm developments. These changes have no effect upon RTS and therefore are not reported within the individual topic chapters of this PEIR.

#### 4.3.2 Existing Baseline

- 4.3.2.1 In order to identify the impacts and likely significant environmental effects of the RTS, it is important to understand the environment that would be affected by the project (i.e. ‘the baseline’). Understanding the baseline allows the value of the environment (i.e. the sensitivity of receptors) and measurement of changes (i.e. the magnitude of change) that would be caused by the project to be fully appreciated.
- 4.3.2.2 Each topic chapter within the EIA Scoping Report has used appropriate data to inform the baseline understanding of defined study areas. Where appropriate the topic chapters within our PEIR present additional baseline information to account for comments made within the PINS Scoping Opinion or other information that has become available since the publication of the EIA Scoping Report (e.g. the results of recent surveys).
- 4.3.2.3 Our PEIR presents the baseline as understood at the time of writing. Chapter 5: Site Description provides a summary of the key baseline elements for each of the topics scoped in to the PEIR.
- 4.3.2.4 Where applicable each topic outlines further work required to inform the ongoing EIA and ES including the requirement for further baseline surveys, modelling or other studies to further enhance our understanding.

### 4.3.3 Future Baseline

4.3.3.1 The EIA Scoping Report also considers the likely evolution of the baseline without the implementation of the project (known as the ‘future baseline’). The future baseline may differ from the existing baseline as a result of any changes to and arising from local plans or policies, new legal obligations that may drive change or wider changes to the environment, such as changes in population or climate change.

4.3.3.2 Chapter 5: Site Description provides a summary of the future baseline for each of the topics scoped in to the PEIR.

4.3.3.3 Where there have been any changes to the description of the future baseline since EIA Scoping, this is presented within Chapter 5: Site Description.

### 4.3.4 Study Area

4.3.4.1 The project boundary for the PEIR has been developed to reflect the current project design, whilst following PINS Advice Note Nine: Rochdale Envelope (PINS, 2019a), which states that the assessment of likely significant environmental effects should establish relevant parameters for the purposes of the assessment.

4.3.4.2 Design development is ongoing and therefore parameters “likely to result in the maximum negative effect (the worst-case scenario)” (PINS, 2019a) have been developed to address uncertainties. The design parameters are described in Chapter 2: Project Description.

4.3.4.3 Each environmental topic defined a specific study area or series of study areas within the EIA Scoping Report. These necessarily differ between topics. Chapter 5: Site Description provides further commentary on the topic study areas including any changes as a result of the project boundary for the PEIR or other changes, for example, as a result of the PINS Scoping Opinion.

4.3.4.4 Topic study areas have been defined using professional judgement to include areas within the zone of influence of the project. Where study areas partially include a potential receptor, that receptor has been considered within the preliminary assessment of the relevant topic.

4.3.4.5 The design of the project, EIA and consultation is ongoing, hence the study area for topics may change to accommodate new data. Any changes to topic study areas will be reported further within the ES.

#### 4.3.5 Assessment Methodology and Criteria

4.3.5.1 Chapter 5 of the EIA Scoping Report outlines the approach used to identify likely significant effects. Each topic within the EIA Scoping Report provides further details of the proposed assessment methodology. Where there have been any changes or clarifications to the proposed methodology (e.g. as a result of the PINS Scoping Opinion or any change to relevant guidance) this is outlined within the relevant topic chapters of this PEIR. Where the assessment methodology for the preliminary environmental appraisal reported in the PEIR is different to that which will be used for the final assessment for the ES, this is also set out.

4.3.5.2 The sensitivity of a receptor (a receptor being a feature of the environment that responds to change) and magnitude (i.e. size) of change are both considered in determining the significance of effects. The methodology for doing this varies between environmental topics.

4.3.5.3 Where potential likely significant effects are identified the key project activities associated with the effect are noted within the 'Assessment of Effects' section within each topic chapter. A full list of associated project activities can be found in the potential likely significant effects and non-significant effects tables in the associated appendices (6.3 (Air Quality), 7.8 (Biodiversity), 8.1 (Climatic Factors), 9.7 (Cultural Heritage), 10.1 (Flood Risk), 11.3 (Health), 12.2 (Landscape and Visual Amenity), 13.1 (Materials and Waste), 14.2 (Noise and Vibration), 15.3 (Socio-Economics), 16.1 (Soils and Land), 17.3 (Traffic and Transport) and 18.4 (Water Environment)).

4.3.5.4 The two main categories of effect that are considered within our PEIR are construction effects and operation effects. These are recorded in the potential likely significant and non-significant effects summarised in topic Chapters 6 to 18 and the associated appendices listed in paragraph 4.3.5.3 above. Such effects can be either positive or negative.

4.3.5.5 There is no statutory definition of what constitutes a significant effect. For the purpose of our PEIR a significant effect is defined as any effect that is

likely to be of 'moderate' or 'major' significance. Any likely effects classed as 'minor' or 'negligible' are not significant, this approach is based on established EIA practice.

4.3.5.6 The duration of effects have typically been defined as being either temporary (short, medium or long-term) or permanent, unless otherwise defined by specific topic guidance. These are broadly defined as follows:

- Temporary:
  - Short-term: Effect continues during construction and up to one year following construction;
  - Medium-term: Effect continues for one to five years following construction; and
  - Long-term: Effect continues five to ten years following construction.
- Permanent:
  - Due to the subjectivity of human receptors to timeframes, those effects that continue for greater than 10 years following construction can be defined as permanent.

4.3.5.7 The ES may further refine the defined durations, possibly using topic specific approaches.

4.3.5.8 For the ES effects will also be classified as one of the following:

- Direct effects which arise from the impact of activities that form an integral part of the project (e.g. loss of habitat for flood channel construction);
- Indirect effects which result from impacts on the environment that are not a direct result of the project, often produced away from or as a result of a complex pathway (e.g. increased levels of ammonia at designated nature conservation sites in proximity to construction transport routes); and
- Secondary effects which arise as a result of an initial effect of the project (e.g. reduced amenity of a community facility as a result of construction noise).

4.3.5.9 Our ES will comply with Regulation 14 of the EIA Regulations, which sets out the information that an ES accompanying a DCO application must include. Our ES will describe the full assessment of the likely significant

effects that have been scoped in. It will provide the information reasonably required to reach a conclusion on the significant environmental effects of the proposed development, which takes account of current knowledge and assessment methods. See Chapter 21 section 21.2 for a summary of engagement and further work that will be undertaken to inform our ES, plus a summary of the proposed structure of the ES.

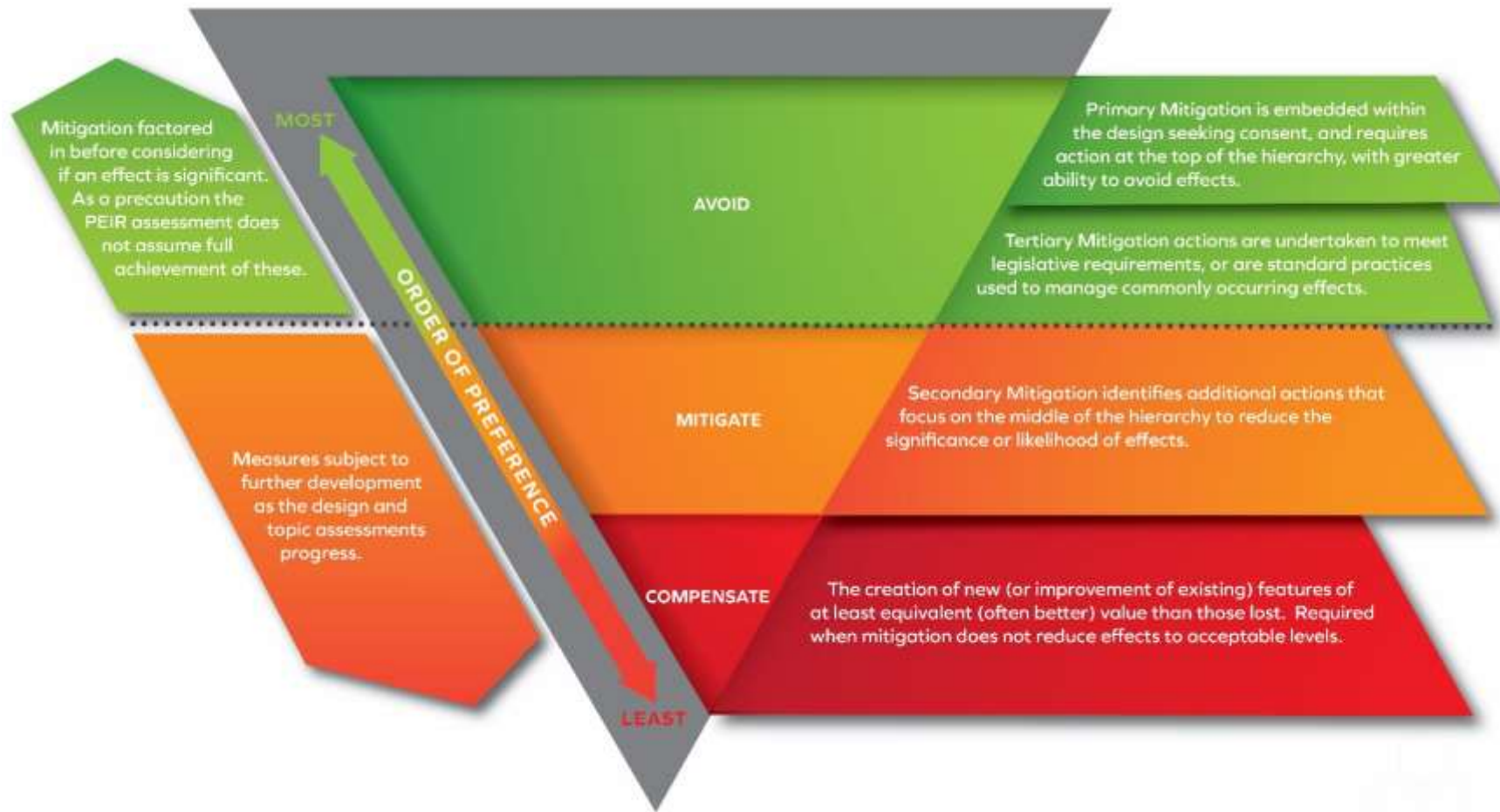
## 4.4 Approach to Limitations and Uncertainties

- 4.4.1.1 Our PEIR is based on the latest design parameters and the available construction information. As such the findings of the preliminary environmental appraisal presented within our PEIR may be subject to change as the design progresses or information from further studies becomes available. The final assessment of effects undertaken as part of the EIA and reported within the ES will be based on the latest information available at that time.
- 4.4.1.2 Assessments reported within our PEIR are considered a ‘worst case’ as a precautionary approach has been taken where design, construction or baseline information is incomplete, for example, if further surveys or design are required.
- 4.4.1.3 When assessing effects associated with ‘use of publicly accessible areas’, the assessment has assumed the worst case ‘use’ relevant to the topic receptor. This is due to the wide variety of facilities that are included within the parameters of the design of the green and blue open spaces and to ensure that a precautionary assessment of their likely significant effects is included in the PEIR.
- 4.4.1.4 Any gaps in information identified within our PEIR will be considered and addressed as part of the assessment during the production of the ES.

## 4.5 Approach to Mitigation

- 4.5.1.1 We are committed to including mitigation measures as necessary to address likely significant negative environmental effects as far as reasonably practicable. Mitigation proposed will follow the mitigation hierarchy to avoid, reduce or remediate/compensate for potential negative likely significant effects on receptors (see Plate 4-1).





***Plate 4-1: Illustration of the mitigation hierarchy and categories of mitigation.***

4.5.1.2 Where negative effects are identified, mitigation may be proposed to reduce these. In accordance with IEMA guidance (IEMA, 2016) mitigation is classified into three broad categories:

- Primary mitigation (embedded mitigation): This constitutes modifications to the location or design of the development made during the pre-application phase and that are an inherent part of the project and do not require additional action to be taken. The mitigation is embedded into the design;
- Tertiary mitigation (standard practice): This consists of actions that would occur with or without input from the EIA feeding into the design process. This includes actions that will be taken to meet other legislative requirements, or actions that are considered to be standard practice used to manage commonly occurring environmental effects; and
- Secondary mitigation (additional mitigation): This includes actions that require further activity in order to achieve the anticipated outcome. These may be secured as part of the DCO consenting process or be identified as necessary through the EIA and therefore included within the ES.

4.5.1.3 Both primary and tertiary mitigation are considered to form part of the RTS and have therefore been factored in before considering if a project effect is likely to be significant (see Plate 4-1). Each of the topic Chapters 6 to 18 includes a section titled 'Primary and Tertiary Mitigation', this section outlines the topic specific primary and tertiary mitigation measures that have been factored into the topic assessment. Several of these mitigation measures are still being developed, and therefore as a precaution, the preliminary assessment of effects for the PEIR does not assume full achievement of these in considering if a project effect is likely to be significant (Appendix 4.2 identifies the implementation status of each primary and tertiary mitigation for the PEIR assessment).

4.5.1.4 Furthermore, the potential likely significant effects reported within our PEIR have been assessed prior to the implementation of secondary mitigation measures as the precise nature and extent of any secondary mitigation measures is not known at this stage in the process. Each of the topic Chapters 6 to 18 includes a section titled 'Secondary Mitigation'. This section sets out some suggested types of topic specific secondary

mitigation measures that may be required to address potential likely significant negative effects. These secondary mitigation measures are the subject of further development; and given they are still being developed, are not able to be applied to develop a 'residual' effects assessment.

- 4.5.1.5 We will continue to develop the primary, tertiary and secondary mitigation measures through ongoing design and assessment. It is therefore possible that the secondary mitigation measures that are currently suggested in the PEIR may form part of the primary or tertiary mitigation measures set out in the ES or may not be required. We consider that the further development of the project design and mitigation measures, which will be reflected in the ES and DCO application, will enable reduction in the scale of identified negative likely significant effects set out in our PEIR.
- 4.5.1.6 Tertiary mitigation is typically expected to be secured through the receipt of relevant consents and permits (or equivalent provision within the DCO application). For example, any works requiring an environmental permit under the Environmental Permitting (England and Wales) Regulations 2016 will be subject to a range of assessments as part of the permitting process, which will be subject to scrutiny by the relevant regulator to ensure that they are robust. We will also have to propose and put in place suitable measures to mitigate effects on the environment to an acceptable level, which the relevant regulator will review and scrutinise in terms of their adequacy and appropriateness for mitigating the risks and impacts identified. An environmental permit will only be granted if the relevant regulator is satisfied that effects on human health and the environment are acceptable. The environmental permits will include appropriate permit conditions to limit effects on human health and the environment and ensure that the activities are subject to suitable controls.
- 4.5.1.7 Any works within or affecting landfills or involving waste will be subject to the requirement for an environmental permit. For the purposes of the assessments undertaken in our PEIR, controls set by environmental permits for waste have been included as tertiary mitigation.
- 4.5.1.8 Tertiary mitigation may also be required to adhere to the contractor's own Environmental Management System (EMS). Where relevant, mitigation actions will be documented within the Construction Environmental Management Plan (CEMP) or other relevant management plans.

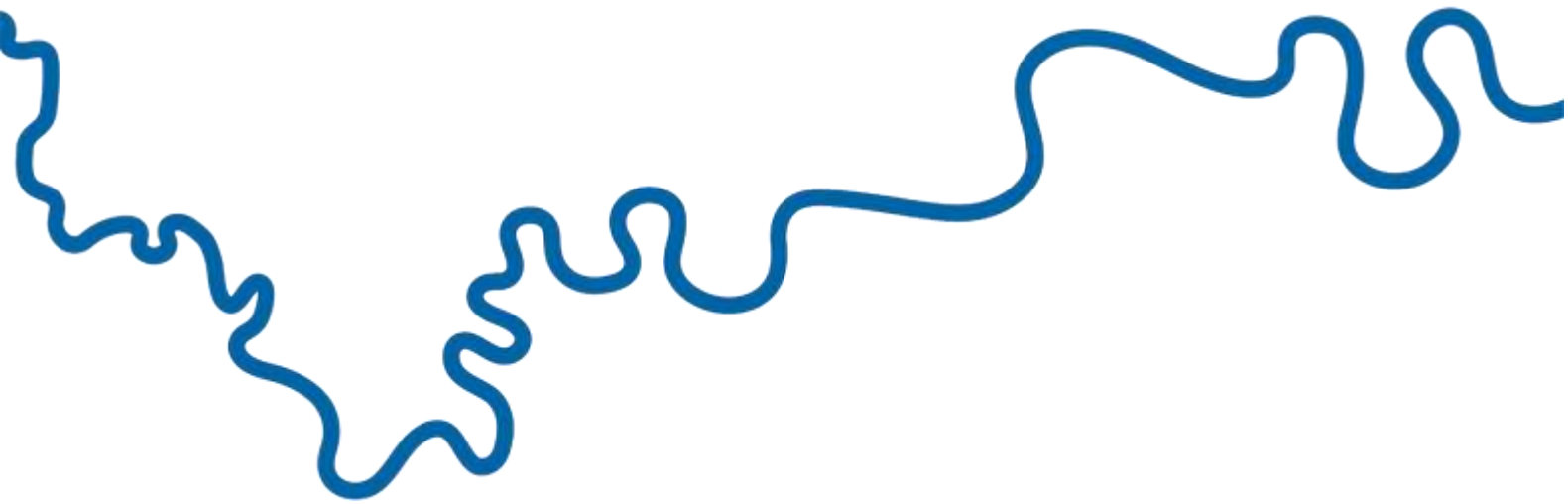
- 4.5.1.9 At this preliminary stage it is currently envisaged that the following management plans will be included within the CEMP (this is not an exhaustive list):
- Terrestrial Invasive Non Native Species (INNS) Management Plan;
  - Materials Management Strategy;
  - Site Waste Management Plan;
  - Emergency Response Plan;
  - Construction Surface Water Management Plan; and
  - Soil Resources Plan.
- 4.5.1.10 Other management plans such as a Traffic Management Plan, Construction Travel Plan, Aquatic INNS Management Plan and Aquatic Pathogen Management Plan are likely to form part of the DCO application and be referred to in the ES.
- 4.5.1.11 Further detail in relation to mitigation measures and how they might be secured will develop as the project evolves and will be documented in the ES and other documents submitted with the DCO application.
- 4.5.1.12 Effects that remain after the implementation of all mitigation are referred to as 'residual effects'. The assessment of significance of residual effects after mitigation is a key outcome of the EIA process and will be reported within the ES.
- 4.5.1.13 In some cases, EIA professionals and stakeholders involved in the EIA process will also identify or recommend opportunities for the project to achieve environmental outcomes (i.e. enhancements). It is therefore important that the EIA process takes place alongside the development of the RTS design in order to make the most of such opportunities.
- 4.5.1.14 For the purpose of our PEIR, only secondary mitigation for potential negative likely significant effects has been suggested. Enhancement measures will be considered as part of the ongoing EIA and design process and reported within the ES.

## 4.6 Consideration of Cumulative Effects

- 4.6.1.1 Cumulative effects are the result of multiple individual effects on a specific environmental receptor or resource. The Cumulative Effects Assessment

(CEA) (Chapter 19) defines, identifies and characterises the potential for inter-project and intra-project effects.

- 4.6.1.2 Inter- and intra- project effects result from multiple actions on receptors and resources over time and can be 'additive' (i.e. caused by other past, present or reasonably foreseeable actions together with RTS) or 'interactive' / 'synergistic' (i.e. the reaction between effects of RTS on different aspects of the environment).
- 4.6.1.3 The approach to assessing inter-project and intra-project effects is outlined in Section 19.3.
- 4.6.1.4 Consideration of 'In-Combination Climate Impact' (ICCI) has been undertaken for our PEIR in accordance with IEMA guidance (IEMA, 2020a). The ICCI assesses a future climate scenario and determines if that has the potential to influence the effects of the project; a statement is made in each topic chapter regarding the potential for influence. The ICCI is different in scope to the assessment of cumulative climate change effects. This is fully explained in Chapter 8: Climatic Factors and will be considered further in the ES.



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.