

Southampton to London Pipeline Project

Volume 6

Environmental Statement (Volume B)
Chapter 15: Cumulative Effects

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15 Cumulative Effects Assessment

15.1 Introduction

- 15.1.1 This chapter outlines the likely significant cumulative effects associated with the project. Cumulative effects occur when impacts caused by past, present and reasonably foreseeable activities combine to create an increased level of effect. They can occur during construction, operation and decommissioning phases of a project.
- 15.1.2 Cumulative effects are the result of multiple actions on environmental receptors or resources. There are two major sources of cumulative effects; 'intra-project' and 'inter-project' effects (Institute of Environmental Management and Assessment - IEMA, 2011):
- Intra-project effects (also referred as 'interrelationships between topics' (Planning Inspectorate, 2015)): These occur when a resource or receptor or group of receptors are potentially affected by more than one source of environmental impact from the same development. These impacts act together in an additive and/or synergistic manner (IEMA, 2011). For example, an aquifer might be affected by discharge of surface water drainage or groundwater abstraction (identified in Chapter 8 Water) as well as affected groundwater and leachates (identified by Chapter 11 Soils and Geology) during the installation of the pipeline.
 - Inter-project effects (also referred to as 'Cumulative Effects' (Planning Inspectorate, 2015)): These occur when a resource or receptor or group of receptors are potentially affected by more than one development at the same time and the impacts act together additively and/or synergistically (IEMA, 2011). For example, construction traffic effects of the project combined with the construction traffic effects of another major development may result in cumulative effects on the surrounding highway network.
- 15.1.3 This chapter is supported by Figure 15.1 Short List of Other Developments, Appendix 15.1 Long List of Other Developments, Appendix 15.2 Intra-project Effects Assessment and Appendix 15.3 Inter-project Effects Assessment.

Legislative and Policy Background

- 15.1.4 Chapter 2 Regulatory and Policy Context sets out the overarching policy relevant to the project including the Overarching National Policy Statement for Energy (EN-1). EN-1 contains the following paragraphs relating to cumulative effects which have been considered within this chapter:
- Paragraph 4.1.3 states '*In considering any proposed development, and in particular when weighing its adverse impacts against its benefits, the IPC [Planning Inspectorate] should take into account its potential adverse impacts, including any long term and cumulative adverse impacts, as well as any measures to avoid, reduce or compensate for any adverse impacts.*'; and
 - Paragraph 4.2.5 states '*When considering cumulative effects, the ES [Environmental Statement] should provide information on how the effects of the applicant's proposal would combine and interact with the effects of other development (including projects for which consent has been sought or granted, as well as those already in existence)*'.



15.1.5 In addition, Appendix 2.1 Environmental Legislation and Policy includes legislation and national policy relevant to cumulative effects. Appendix 2.2 Regional and Local Planning Policy provides a review of local policy considerations relevant to cumulative effects.

15.2 Approach and Methods

15.2.1 This section describes the methods and the approach used to consider and assess the potential intra-project and inter-project cumulative effects arising from the project. The methodology draws on Advice Note 17 Cumulative Effects Assessment (Planning Inspectorate, 2015).

Scope of Assessment

15.2.2 The scope of the cumulative effect assessment (CEA) has been informed by the Scoping Opinion provided by the Planning Inspectorate in September 2018, on behalf of the Secretary of State, following the submission of the Scoping Report (Esso, 2018). It has also been informed through engagement with the relevant planning authorities on the long and shortlist of developments.

15.2.3 The Scoping Report (Esso, 2018) presented a preliminary assessment of potential likely significant effects on receptors due to intra-project and inter-projects effects, based on a source-pathway-receptor approach. This identified matters that would be scoped into the assessment and those matters that could be scoped out of the assessment and the associated justification.

15.2.4 Table 15.1 summarises the scope of the assessment for the CEA. This table includes the references (for example ID 4.6.1) to the relevant paragraph response from the Planning Inspectorate in the Scoping Opinion. The boxes shaded in grey are the matters that have been scoped out of the assessment following the feedback from the Planning Inspectorate.

15.2.5 The CEA does not include in-combination effects on European Sites, which can be found in the Habitats Regulations Assessment report (**application document 6.5**).

Table 15.1: Matters Scoped In and Out of Assessment (Grey Shading Indicates Matters Scoped Out Following Feedback from the Planning Inspectorate)

Receptor	Matter / Potential Effect	Conclusion in the SR (July 2018)	Comments from the Planning Inspectorate in the Scoping Opinion (September 2018)
Receptors of inter-project cumulative effects from Local Development Plans	Effects on Local Development Plans	Scoped out	(ID 4.10.1) The assessment should include reasonably foreseeable developments and the approach should be agreed with relevant consultation bodies. Scoped in.
Receptors of inter-project cumulative effects	Pre-2017 applications	Scoped out	(ID 4.10.2) This may exclude some very large and complex developments from consideration that should be included. The approach should be agreed with relevant consultation bodies. Scoped in.
Receptors of intra-project	Operational intra-development effects	Scoped Out	(ID 4.10.3) The Scoping Report proposes to scope out operational intra-development cumulative effects on the



Receptor	Matter / Potential Effect	Conclusion in the SR (July 2018)	Comments from the Planning Inspectorate in the Scoping Opinion (September 2018)
effects during operational phase.			basis that no single receptor has been identified at this stage which has the potential to be affected by more than one impact arising from the project during its operational phase. The Inspectorate agrees that significant operational intra-development effects are unlikely and this matter can be scoped out of the ES. Scoped out
Receptors of inter-project cumulative effect with Heathrow Expansion	Heathrow Expansion	All topics except traffic were scoped out.	(ID 4.10.7) Given the potential temporal overlap and the proximity between the developments, the ES should consider the potential for cumulative impacts with this project for all relevant aspects, where significant effects are likely to occur. Scoped in for all topics.

15.2.6 In addition to the points noted in Table 15.1, the Planning Inspectorate also raised the following comments to consider within the assessment (listed below, along with an explanatory response):

- (ID 4.10.1) Baseline Conditions: The ES should provide an in-depth description of the baseline for the assessment of cumulative effects, including cross referencing and signposting to the relevant sections of other aspect chapters that are being relied upon. The baseline conditions are described in 15.3 with cross referencing where required.
- (ID 4.10.5) Professional Judgement: The application of professional judgement used within the assessment should be clearly identified and fully justified in the ES. References to professional judgement have been included, where relevant.
- (ID 4.10.3) Construction intra-development cumulative effects assessment: The Scoping Report states that intra-development cumulative effects during construction will be scoped within the aspect chapters of the ES and summarised within the cumulative effects chapter. The Applicant should also ensure that the ES contains an overarching section explaining the methodology used for the assessment of these effects and how this was applied to each individual aspect. The methodology is set out in this chapter. Appendix 15.2 Intra-project Cumulative Effects Assessment includes cross referencing to other technical chapters.
- (ID 4.10.8) Water infrastructure projects in Hampshire: Professional Judgement: Water infrastructure projects in Hampshire have been identified as scoped into the CEA. However, these projects do not appear on the accompanying figure. All projects scoped into the CEA should be identified on any accompanying figure within the ES. All projects included on the shortlist are included in Figure 15.1.
- (ID 4.10.9) Construction intra-development CEA: The ES should contain an overarching section explaining the methodology used for the assessment of these effects and how this was applied to each individual aspect. The methodology is set out in this chapter.



- (ID 4.10.1) The ES needs to clearly define the expected construction period and that for the purposes of inter-development cumulative effects, the appropriate projects have been identified. The temporal scope of the CEA is defined below.

Temporal Scope of the Cumulative Effects Assessment

15.2.7 The proposed construction schedule can be found in Appendix 3.2. This shows that installation of the pipeline is expected to run from January 2021 until January 2023 with mobilisation commencing after grant of the Development Consent Order (DCO). Operation would commence from early 2023. As construction phase and operation of the pipeline occur at different times, they do not act cumulatively with each other.

Methodology for Assessment – Intra-project Effects

- 15.2.8 The intra-project effect assessment has used the same study areas set within the individual topic chapters for consistency. Therefore, these are different depending on the receptor that is being assessed.
- 15.2.9 There is no standard approach to the assessment of intra-project effects, so a checklist matrix was used to scope-in receptors with multiple effects. The matrix approach was useful as a tool to visually identify relationships between project impacts and environmental components, and later to concisely summarise the results of the assessment.
- 15.2.10 Representative groups and/or individual receptors (where appropriate) were identified for each topic. These represented the areas that are most sensitive to impact interactions as described in the relevant chapters. This was undertaken in discussion with the relevant specialists to capture the potential synergistic effects between topics and to identify those that could be significant.
- 15.2.11 The topic specialists completed the matrix and identified the receptors with the potential to experience one or more effects. This assessment identified the receptors which were assessed to have minor, moderate or major significance of effects. Receptors with negligible effects were not included within the assessment. If the same receptor was identified in more than one chapter, this indicated a spatial overlap. These effects are then checked for a temporal overlap. If both a spatial and temporal overlap exists, then the receptor was assessed for intra-project effects.
- 15.2.12 This also identified where multiple effects on single receptors had already been considered within the topic chapters. These links are recorded in the intra-project effects assessment but are not reassessed to avoid duplication. The assessment was undertaken with the relevant specialists who described the potential intra-project effect and whether this was likely to be significant or not. The assessment was reported in the intra-project effects assessment tables.

Methodology for Assessment – Inter-project Cumulative Effects

- 15.2.13 The Planning Inspectorate's Advice Note 17 'Cumulative Effects Assessment' provides detailed advice for the assessment of cumulative effects with other major developments. This chapter has followed the guidelines and the staged approach detailed in Advice Note 17 and the assessment is structured into these stages.



Stage 1a: Identify Zone of Influence

- 15.2.14 The Zone of Influence (ZOI) for the project is the geographic area within which the project’s environmental receptors are located. The ZOI, stated as a distance from the proposed development Order Limits, varies according to the individual environmental topic and was based on professional judgement and experience from similar schemes. The ZOI for each topic is listed in Table 15.2.
- 15.2.15 At the Scoping Stage, 5km was considered for the traffic assessment. Further assessment based on knowledge of the likely effects of the project suggested that this could be reduced to 1km. This is because it is unlikely that committed developments further away than 1km would provide sufficient traffic information to allow for a meaningful spatial consideration of effects. Also, the scale of development must increase for there to be significant cumulative effects for developments that are further away from the roads affected by the project. 1km was considered a suitable limit beyond which traffic from larger developments may be likely to be sufficiently dispersed and there is unlikely to be significant cumulative effects with the project.
- 15.2.16 The updated ZOI table was included within a technical note that was issued to the relevant local planning authorities for comment in January 2019. No comments were received on the ZOI and therefore these ZOI have been used in the assessment.

Table 15.2: Environmental topics and Zone of Influence

Environmental Aspects	Zone of Influence
Biodiversity, groundwater, designated heritage assets, landscape and visual, geology (only Water Lane SINC)	1km
Surface water, local communities	500m
Historic environment	500m
Contaminated land	250m
Dust	200m
Noise (Urban - Residential)	55m
Noise (Rural - Residential)	50m
Noise (Urban - Others)	545m
Noise (Rural - Others)	160m
Vibration (due to ground compaction)	60m
Vibration due to trenchless construction	20m
Land Use	Order Limit
Soils and Mineral	Order Limit
Traffic	1km

Stage 1b: Identify ‘Longlist’ of Other Developments

- 15.2.17 The next step was to identify the longlist of developments with the potential to share a ZOI with the project i.e. developments within the 1km ZOI. A 1km ZOI was chosen based on the largest ZOI in Table 15.2. Advice Note 17 (Planning Inspectorate, 2015) identifies three tiers of development based on where they are in the planning process and recognising that the amount of information available to inform the assessment



would vary according to which tier it fits in to. Details of the tiers are set out in Advice Note 17 and are as follows:

Tier 1: most certain with high level of information publicly available.

- Projects under construction
- Permitted application(s), whether under the Planning Act 2008 or other regimes, but not yet implemented; and
- Submitted application(s) whether under the PA 2008 or other regimes but not yet determined;

Tier 2

- Projects on the Planning Inspectorate's Programme of Projects or in the Local Planning Authorities' portal where a Scoping Report has been submitted.

Tier 3: least certain and most likely to have limited publicly available information to inform assessments

- Projects on the Planning Inspectorate's Programme of Projects or in Local Planning Authorities' portal 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 much information on any relevant proposals would be limited; and
- 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.

15.2.18 A review of proposed developments along the route was undertaken in January 2019. Planning applications held by the local planning authorities and those held on the Planning Inspectorate's Programme of Projects and in Local Planning Authorities' portal, were reviewed at this point. Reasonably foreseeable developments (as defined by Advice Note Seventeen) were identified.

15.2.19 The search areas for each development type are presented in Table 15.3. A 1km study area was used in general based on the ZOI identified in Table 15.2. The ZOI was developed using professional judgement to determine the likely maximum distance (1km) that likely significant effects could occur over, using knowledge of other schemes with similar effects. This study area is considered sensible given the potential scale of effects from the project.

15.2.20 The criteria for determining the longlist of projects and the longlist used within the assessment was included within a technical note that was issued to the relevant local planning authorities for comment on 18 January 2019. Comments were received from 31 January 2019 and have been reviewed as part of the assessment. As there were no comments recommending different ZOI or other criteria, the assessment has been based on the proposals set out in the technical note.



Table 15.3: Search Area of Other Developments

Other Developments	Location	Comments
NSIPs/Significant Development on the Planning Inspectorate's Programme of Projects	Within 1km of the project	In the Scoping Report, the search area was defined as 5km to include traffic effects from certain DCOs. However, it is anticipated that any traffic related effects (e.g. construction traffic, road closure or diversion) from the project would be very localised and in general would be less than four weeks duration. Professional judgement has been used to reduce the search area for DCOs to 1km which is considered reasonable given the scale of the anticipated effects.
Major Planning Applications - Major Developments (as defined under Development Management Procedure (England) Order 2010) (as amended)	Within 1km of the project	Scoped in. Professional judgement has been used to set a search area at 1km, considered reasonable given the scale of the anticipated effects.
Local Development Plans	Within 1km of the project	Scoped in, in response to the Scoping Opinion.
All Minor Planning Applications	Excluded	The Scoping Report stated that these developments were scoped in. However, these are now excluded after consideration has been given to the likely type and scale of impacts generated from these developments, as well as their potential to interact with similar types of effects from the project. Minor developments have been scoped out of the assessment.

15.2.21 The longlist includes applications dating back to 2011 for consideration as part of the CEA, following comments from the Planning Inspectorate relating to timescales in the Scoping Opinion. A 10-year search period going back from the start of construction year of this project (2021) has been set as the time limit to cater for these developments. Each development included in the longlist was assigned to a tier, based on planning status.

Stage 2: Identify Shortlist of Selected Developments

15.2.22 The next step was to create the shortlist of projects for the assessment. This involved taking the developments screened into the longlist and determining if these had the potential to give rise to significant effects in combination with the project.

15.2.23 Professional judgement was used during the application of threshold criteria to decide whether developments should be scoped in or out, for example, developments that are close to the thresholds and have characteristics likely to give rise to a significant environmental effect.

15.2.24 Professional judgement was used to identify whether potential cumulative impacts were likely to be significant, with consideration to the inclusion / exclusion criteria set out in Table 15.4. Only potential significant effects were taken forward to the next stage of assessment.



15.2.25 As the ES topic chapters have reported no residual operational effects, these have been scoped out of the assessment. However, some construction effects, such as tree and habitat clearance, could extend into the post-construction phase, although it would be for a short period until vegetation re-establishes. The CEA has therefore taken a precautionary approach for landscape and ecology and has considered a longer temporal scope for this assessment which extends to 15 years after construction to consider cumulative effects for these topics.

Table 15.4: CEA Stage 2 Inclusion and Exclusion Criteria

Consideration	Criteria
Temporal scope	Other development with overlapping construction phases (2021-2038, including 15 years post construction for landscape and visual impacts) have been scoped into the assessment. Other development with temporal scopes outside these periods were scoped out of the CEA.
Scale and nature of development	Development identified as Schedule 1 and 2 developments in the Infrastructure Planning (EIA) Regulations 2017 (as amended) have been considered further. Other development not identified as Schedule 1 or 2 development were scoped out of the CEA.
Sensitivity of the receiving environment	Where there are potential source-pathway-receptor linkages between other developments and the project, cumulative effects have been considered further. Other developments with no clear source-pathway-receptor linkage were scoped out of the CEA.

15.2.26 Allocations within Local Development Plans and other plans and programmes were scoped out because, as tier 3 developments, the amount of information available and the resulting certainty around the assessment of cumulative effects were limited. It is expected that future developers bringing forward projects in line with those allocations would carry out their own assessment of cumulative effects.

15.2.27 The relevant local planning authorities were consulted on the developments identified within shortlist. Their comments have been reviewed as part of the assessment.

Stage 3: Information Gathering

15.2.28 The next stage involved gathering detailed information about each development to support the assessment. This included:

- development location, application boundary and description;
- construction programme;
- relevant environmental assessment information (if available) and any other relevant documentation (such as Planning Statements, Design and Access Statements) to understand more about the potential for cumulative environmental effects; and
- any other publicly available information deemed to be of relevance.

Stage 4: Assessment

15.2.29 All developments in the shortlist were assessed for cumulative effects using the available information. The initial assessment was undertaken by the topic specialists to determine the potential for cumulative effects. Professional judgement was used to determine the potential for cumulative effects. Effects have been identified as direct, indirect, short term or long term, permanent or temporary. The assessment does not



assign magnitude to the effects but assesses simply whether effects are significant or not with supporting reasons.

- 15.2.30 The assessment has been summarised in a table format similar to Appendix 2 of the Planning Inspectorate Advice Note 17, also known as Matrix 2.

Engagement

- 15.2.31 A technical memo was submitted to the relevant local planning authorities on 18 January 2019. This set out the proposed methodology for the inter-project effects assessment (including updated ZOI) and the list of developments contained in both the long and shortlists.
- 15.2.32 Hampshire County Council were unable to comment on the precise content of either the long or shortlists due to the large area of coverage and that they do not have all sources of information available. However, they commented that the methodologies proposed for the inter-project effect assessment appeared reasonable and in line with best practice and that the criteria used to shortlist was relevant and applicable.
- 15.2.33 Hampshire County Council also requested that the ES outlines the limitations with respect to whether adequate information/evidence would be available for many of the shortlisted developments to allow for a meaningful cumulative assessment to be undertaken. The limitations of the CEA have been set out in the next section.
- 15.2.34 Surrey County Council noted that they are a planning authority in their own right and that minerals and waste plans would be under their planning remit. They noted that minerals operations are ongoing and therefore do not follow the usual construction and operational phases of most other developments. Relevant sites comprise:
- Manor Farm: Planning permission has been granted and a further permission deals with amendments to the conveyor. Aggregates extracted from Manor Farm will be processed at the Queen Mary Reservoir processing plant. The start date is uncertain but could run into 2022 after the current operation to extract aggregate from the Queen Mary Reservoir is completed.
 - Queen Mary Reservoir: Currently an ongoing processing and recycling operation on land immediately to the west of the reservoir is in place. A planning permission (16/01164/SCRVC) was in place to enable winning of minerals from the reservoir till October 2018.
 - Littleton Lane, Shepperton (Home Farm Quarry): Restoration of Shepperton Quarry is ongoing.
 - Homers Farm: Planning permission has been granted and mineral extraction is currently taking place with processing at Hengrove Farm.
- 15.2.35 As these mineral extractions are already taking place, they have been assessed as part of the project baseline and are therefore scoped out of the CEA (see Appendix 15.1).



15.2.36 East Hampshire requested that we include draft allocations from their emerging Local Plan within the inter-project effects assessment. These have been included within the longlist of developments.

Limitations of Assessment

15.2.37 This assessment is limited based on the available information about third-party developments. It is not within the scope of this assessment to assess the individual effects of third-party developments. The amount of information available about third-party developments is varied and, in some instances, may not be adequate for some of the developments to allow for a meaningful cumulative assessment to be undertaken.

15.3 Baseline Conditions

15.3.1 This chapter has followed the same baseline as the other topic chapters. The baseline conditions for each of the topics have been detailed in the respective chapters from Chapter 7 to 13 of this ES, Chapter 14 Major Accidents is not part of CEA. Table 15.5 shows the topics and the corresponding chapter numbers in the ES.

Table 15.5: Topics and Their Corresponding Chapter Number Within the ES

Topic	Chapter where covered
Biodiversity	Chapter 7
Water	Chapter 8
Historic Environment	Chapter 9
Landscape and Visual	Chapter 10
Soils and Geology	Chapter 11
Land Use	Chapter 12
People and Communities	Chapter 13
Traffic and Transport	Appendix 13.1

15.3.2 The baseline conditions have been defined in the relevant topic chapters and are not repeated in this chapter.

15.4 Potential Impacts

15.4.1 The cumulative assessment reported herein is based on the information provided in the earlier technical chapters (7-13) of this ES. It is assumed that any good practice design measures and mitigation measures to avoid or reduce any adverse impacts identified with the earlier chapters is in place prior to undertaking the CEA.

Intra-Project Effects

15.4.2 The intra-project effects from the project on receptors have been considered during the construction phase and 15 years post-construction phase only. Operational phase intra-project cumulative effects have not been considered in the assessment. This is because no potential significant effect has been identified by any topics during the operation of the pipeline and hence potential for an operational phase cumulative effect



is not expected. This approach has been accepted by the Planning Inspectorate (See Table 15.1).

- 15.4.3 Appendix 15.2 summarises the scoping stage of the intra-project effects assessment based on the individual effects reported in the topic chapters. Many of the effects had already been cumulatively assessed within the earlier ES chapters. For example, the effects of visual change, community severance and construction traffic, noise and vibration have been covered for each group of receptors within Chapter 13 People and Communities. There was only one intra-project effect identified during the scoping process that had not already been considered within the earlier chapters. This is summarised on Table 15.6.

Table 15.6: Intra-project Effects Assessment

Receptor	Chapters Reporting	Effect Reported in the Chapter	Assessment of the Effects
Aquifers (indicated by Soils & Geology in Appendix 15.2)	Water	Surface water drainage discharges to ground - minor Discharge of groundwater abstracted for trenchless crossings - minor	The chapters have assessed impacts on aquifers in a complementary fashion so that they are not double counted. Due to the cross-over of effects between topics and inherent inter-linkages between chapters like Water and Soils and Geology, it has been assessed that the multiple effects on aquifers reported by multiple chapters are not cumulative in nature. Thus, there is no potential for intra-project cumulative effects on this receptor.
	Soils and Geology	The pipeline installation could create a new pathway for the migration of leachate and impacted groundwater. Contaminants could migrate vertically into underlying aquifers.	

- 15.4.4 Further consideration of the above issue concluded that there was no potential for intra-project cumulative effects on this receptor, and thus no intra-project cumulative effects were identified for the project.

Inter-project Cumulative Effects

- 15.4.5 The longlist of developments is included in Appendix 15.1. This identified 36 projects that were taken forward to the shortlist along with justification as to why the other projects were scoped out.
- 15.4.6 Appendix 15.3 assesses the inter-project effects for each topic. The assessment has been summarised in Table 15.7.

Construction Phase

- 15.4.7 The assessment shows that although there is potential for inter-project effects as a result of the project acting cumulatively with other developments, these are not identified as being significant for the reasons set out in Table 15.7.

Operation Phase

- 15.4.8 No operational effects were identified by any of the topic chapters. Hence there are no inter-project cumulative effects reported by this chapter.



15.5 Mitigation

- 15.5.1 The assessment has concluded that there are no significant intra-project or inter-project effects during construction or operation. Therefore, no mitigation has been identified.

15.6 Residual Effects

Intra-Project Effects

- 15.6.1 The assessment has concluded that there are no significant residual intra-project or inter-project effects during construction or operation.



Table 15.7: Summary of Potential Inter-project Cumulative Effects

Topics	DCOs/ Other Significant Developments	Major Planning Applications
Biodiversity	<p>No inter-project cumulative effects are anticipated in respect to the construction and operation of the two DCOs Heathrow Expansion, and Southern Rail Link to Heathrow as impacts caused by the project are very localised and therefore there are no overlap with impacts from these schemes.</p> <p>Although River Thames Scheme (major project) is immediately adjacent to the project just north of Dumsey Meadow SSSI, the project is constructed using trenchless technologies in this location.</p>	<p>For Surrey Heath Borough Council 12/0546 and Hart District Council 17/00471/OUT planning applications, there is a potential for cumulative impact on bats and dormice as both schemes could result in loss of trees. The application of good practice measures would avoid or reduce the significance of any effect from the project. Both the project and the other developments would require a licence from Natural England if impacts to bats or dormice were anticipated. A licence would only be granted subject to approval of a suitable mitigation strategy to maintain the favourable conservation status of the species concerned. In addition, vegetation from the project would be reinstated after installation where practicable. Given the above, the impact has been assessed as not significant for cumulative effects for construction or operation.</p> <p>For the rest of the planning applications, no potential inter-project cumulative effects have been identified. This is due to one or more of the following reasons:</p> <ul style="list-style-type: none"> • geographical distance; • low ecological value of habitats within the ecological study area; • existence of various built environment (for example roads, towns and buildings, industrial units); or • very localised impacts of both the project and the other developments.
Water	<p><u>Groundwater:</u> No inter-project cumulative effects on groundwater are anticipated in respect to the construction and operation of the two DCOs as any impacts like dewatering activities from the project during constructions are short term and localised and hence there would be no overlap of impacts from these developments. Furthermore, there would not be any dewatering for the project's pipeline's trenchless crossing under M25 and River Thames (using directional drilling technique). This further reduces the potential for any groundwater-related inter-project effects with these developments.</p> <p><u>Flood Risk:</u> Although Heathrow Expansion and Southern Rail impinges on the Thames floodplain</p>	<p><u>Groundwater:</u></p> <p>The following developments were identified to have potential inter-project cumulative effects with the project:</p> <ul style="list-style-type: none"> • Runnymede Borough Council RU.17/1136 • Rushmoor Borough Council 17/00866/FULPP • Spelthorne Borough Council 12/01132/SCC <p>All these developments are situated where dewatering is required for the project's trenchless crossing at the respective locations. If these developments undertake their own dewatering activities at the same time as the project, then there could be potential for cumulative effects. One of the project's good practice measures is that the project would be run in compliance with all relevant legislation, consents and permits (G44). It is reasonable to assume that all other developments would similarly comply with relevant legislation, consents and permits, and that this would require discussion with the Environment Agency. Any simultaneous dewatering activities would thus be evident and the risk of cumulative effects would be managed through the regulatory process. Given the</p>



Topics	DCOs/ Other Significant Developments	Major Planning Applications
	<p>upstream of the project, no inter-project cumulative effects are anticipated due to the spatial separation between these developments and the low risks of fluvial and surface water flooding anticipated for the project.</p> <p>The River Thames Scheme intersects the project north of the River Thames and M3. There is potential for cumulative effects due to simultaneous working in the floodplain. However, these are expected to be minor in nature and not significant.</p> <p><u>Geomorphology and Water Framework Directive (WFD):</u></p> <p>No inter-project cumulative effects are likely for geomorphology or WFD with Heathrow Expansion Scheme and Southern Rail Link to Heathrow Scheme.</p> <p>Although Flood Channel Section 3 of River Thames Scheme and the project are situated in immediate vicinity of each other, the pipeline has a trenchless crossing at this location, so it is unlikely that there would be any significant, cumulative impacts.</p> <p>No inter-project cumulative effects are anticipated for WFD by the project and River Thames Scheme.</p>	<p>above, the impact has been assessed as not significant for cumulative effects for construction or operation.</p> <p>For the remaining planning applications, no inter-project effects are anticipated due to the distance of the schemes from the project or short term and localised nature of the dewatering activities impacts.</p> <p><u>Flood risk:</u></p> <p>The assessment identified minor inter-project cumulative effect on flood risks from the project and the following developments:</p> <ul style="list-style-type: none"> • Eastleigh Borough Council F/15/76235, O/12/71514, O/15/75953, O/16/79600 • Hart District Council 16/00564/OUT, 17/00471/OUT, 18/00694/OUT • Runnymede Borough Council RU.15/0855 • Rushmoor Borough Council 13/00187/OUT, 17/00866/FULPP • Surrey Heath Borough Council 12/0546 <p>All of these other developments have the potential to increase the flood risk cumulatively with the project due to their location or nature of development for example either proximity to a watercourse or increase of impermeable area or construction on a Flood Zone 1 area. However, with low risk of fluvial and surface water flooding for the project, and the relatively short duration for construction, the risk of cumulative effects is considered to be low. Additionally, due to the project implementing trenchless crossings near watercourses WCX002, any inter-project cumulative effect with other developments that are situated near these watercourses is not significant</p> <p>For the remaining developments, no potential inter-project cumulative effects on flood-risk have been identified due to the spatial separation of the project and these schemes.</p> <p><u>Geomorphology and Water Framework Directive (WFD):</u></p> <p>No inter-project cumulative effects in relation to geomorphology or WFD were identified between the project and any of the other developments.</p>
Soils and Geology	<p>No inter-project cumulative effects on soils and geology are anticipated in respect to the construction and operation of Heathrow Expansion and Southern Rail Link to Heathrow as receptors</p>	<p>The following schemes were assessed and found to have potential for inter-project cumulative effects on Soils and Geology:</p> <ul style="list-style-type: none"> • Hart District Council 16/00564/OUT; 18/00694/OUT • Runnymede Borough Council RU.15/0855



Topics	DCOs/ Other Significant Developments	Major Planning Applications
	<p>affected by these schemes are situated outside of the soils and geology study area.</p> <p>The River Thames Scheme transects the project in areas of former landfilling (Sites 30,32,33,34) and within current Environmental Permit boundaries (Sites 30,34). There is potential for further mobilisation of contaminants contained within landfilled wastes into groundwater and surface water features. The scheme also has the potential to create new migration pathways for landfill gas and leachate. The project assumes that good practice measures would be secured through the project's DCO requirements. With these measures in place for the project, the cumulative effect is not expected to be significant.</p>	<ul style="list-style-type: none"> • Spelthorne Borough Council 15/00140/FUL • Surrey Heath Borough Council 12/0546 <p>These schemes are located within the study area as well as on potentially contaminated sites, some of which are also crossed by the project. There is potential for further mobilisation of contaminants contained within shallow soils to enter groundwater and migrate to surface water during construction of the schemes. There may also be potential to create new migration pathways for landfill gas and leachates for some of these developments. The project assumes that good practice measures would be secured through the project's DCO requirements. With these measures in place for the project, the cumulative effect is not expected to be significant.</p> <p>The following schemes were assessed and, although these are located within the soils and geology study area, no potential sources of contamination were identified within the Order Limits and therefore no potential effects to receptors are anticipated. Therefore, no inter-project cumulative effects are anticipated.</p> <ul style="list-style-type: none"> • Eastleigh Borough Council F/15/76235; O/12/71514; O/16/79600 • Hampshire County Council CS/18/82664 • Runnymede Borough Council RU.17/1136; RU18/1280;17/1815 • Rushmoor Borough Council 13/00187/OUT • Spelthorne Borough Council/ Surrey CC 12/01132/SCC <p>For the remaining planning applications, no inter-project cumulative effects are anticipated in respect to the construction and operation of the schemes as receptors affected by these schemes are situated outside of the 250m study area adopted for the soils and geology assessment.</p>
Historic Environment	<p>None of the shortlisted developments are anticipated to produce inter-project cumulative effect on the historic environment either because of the very localised impacts of the project (cumulatively with those developments which are located at a distance) or absence of heritage assets within the study area which could be affected both by the project and the other scheme.</p>	<p>None of the shortlisted developments are anticipated to produce inter-project cumulative effect on historic environment either because of the very localised impacts of the project (cumulatively with those developments which are located at a distance) or absence of heritage assets within the study area which could be affected both by the project and the other scheme.</p>
Landscape and Visual	<p>No inter-project cumulative effects on landscape and visual amenity are anticipated in respect to the construction and operation of Heathrow Expansion</p>	<p>There is a potential for inter-project cumulative effect on landscape and visual amenities arising from the following planning applications:</p> <ul style="list-style-type: none"> • Eastleigh Borough Council O/12/71514; O/16/79600; F/15/76235



Topics	DCOs/ Other Significant Developments	Major Planning Applications
	<p>and Southern Rail Link to Heathrow due to the distance between these developments and the project and the extent of intervening built development.</p> <p>The River Thames Scheme transects the project's study area and there may be inter-project cumulative effects as a result of combined views of temporary construction activity and potential combined localised vegetation loss. Cumulative construction effects are not expected to be significant due to being temporary and localised in nature. There would be no cumulative operational effects because the pipeline would be underground and vegetation would be reinstated.</p>	<ul style="list-style-type: none"> • Hart District Council 16/00564/OUT • Runnymede Borough Council RU.17/1136; RU18/1280 • Rushmoor Borough Council 13/00187/OUT; 17/00866/FULPP • Spelthorne Borough Council/ Surrey CC 12/01132/SCC <p>The potential inter-project cumulative effects are due to combined views of temporary construction activity and potential combined localised vegetation loss. Cumulative construction effects are likely to be not significant due to the temporary and localised nature. Potential cumulative operational effects are not anticipated because the pipeline would be underground and vegetation would be reinstated.</p> <p>For the remaining developments, no inter-project cumulative effects are anticipated due to distance between Order Limits and the applications along with the extent of intervening built development.</p>
Land Use	<p>No inter-project cumulative effects on land-use are anticipated in respect to the construction and operation of Heathrow Expansion and Southern Rail Link to Heathrow as land interests affected by these developments are situated outside the study area adopted by the land use assessment.</p> <p>The River Thames Scheme transects the project's study area adopted by the land use assessment. Commercial and agricultural land use types are affected by both projects. The project only has temporary and localised effects on land use, therefore significant cumulative effects are not anticipated.</p>	<p>The project would involve the permanent use of only small areas of land for infrastructure such as the pigging station and valves, and hence if there are any cumulative effects on land use, it would be localised. The following applications transects the study area adopted for land use assessment for the project and hence were assessed for potential cumulative effects:</p> <ul style="list-style-type: none"> • Eastleigh Borough Council Application Ref O/16/79600: Agricultural land use is affected by both projects therefore cumulative effects are anticipated on land use and disruption of boundary features and access. However, given the temporary and minimal effects on agricultural land, the cumulative effects are short term and are not anticipated to be significant. • Hart District Council 16/00564/OUT and 18/00694/OUT: Both applications transect the project's study area however the land in question is currently unoccupied and awaiting commercial developments, therefore no land-use cumulative effects are anticipated. • Runnymede RU.17/1136: Community land use is affected by both projects therefore cumulative effects are anticipated on land use and disruption of boundary features and access. However, given the temporary and minimal effects on community land, the cumulative effects are short term and are not anticipated to be significant. • Spelthorne Borough Council 12/01132/SCC: Commercial/industrial and agricultural land use types are affected by both projects therefore cumulative effects are anticipated land use and disruption of boundary features and access. However, given



Topics	DCOs/ Other Significant Developments	Major Planning Applications
		<p>the temporary and minimal effects on land use, cumulative effects are not anticipated to be significant.</p> <p>Land interests from the remaining planning applications are situated outside the study area adopted by the land use assessment for the project and hence no inter-project cumulative effects are anticipated.</p>
People and Communities	<p>No inter-project cumulative effects on people and communities are anticipated in respect to the construction and operation of Heathrow Expansion and Southern Rail Link to Heathrow as receptors affected by this scheme are situated outside of the 500m study area adopted for the people and communities assessment.</p> <p>The River Thames Scheme transects the project's study area. Given the location and proposed timing of works related to the River Thames Scheme, there is the potential for minor inter-project cumulative effects on a very limited number of sensitive receptors (residential, community and commercial) within these sections. These are assessed as not significant in the CEA due to the short term duration and scale of the works.</p>	<p>The following applications either transect the project at various locations or are located fully or partially within the project study area pertaining to People and Communities:</p> <ul style="list-style-type: none"> • Hart District Council 16/00564/OUT; 17/00471/OUT • Runnymede Borough Council RU.13/0857; 15/0855; 17/1136; 18/1280; 17/1815 • Rushmoor Borough Council 13/00187/OUT; 16/00837/FULPP • Spelthorne Borough Council/ Surrey CC 12/01132/SCC • Surrey Heath 12/0546 <p>Given the location and proposed timing of works related to this scheme, there is the potential for inter-project cumulative effects on a very limited number of sensitive receptors (residential, community and commercial) located within the study area. However, these are assessed as not significant in the CEA due to the short term duration and scale of the works.</p> <p>For the remaining planning applications, no inter-project cumulative effects are anticipated as the effects of the project on sensitive receptors (residential, community, and commercial) and tourism receptors within the 500m study area are anticipated to be negligible.</p>
Traffic	Construction traffic associated with the project is sufficiently low that there are unlikely to be significant cumulative effects with any of the other schemes.	Construction traffic associated with the project is sufficiently low that there are unlikely to be significant cumulative effects with any of the other developments.



15.7 References

Esso (2018). Southampton to London Pipeline Project: Scoping Report. Planning Inspectorate Reference Number EN070005. July 2018.

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