



The Great Grid Upgrade

Sea Link

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Part 3 Kent

Chapter 12

Kent Onshore Scheme Intra-Project Cumulative Effects

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12. Kent Onshore Scheme Intra-Project Cumulative Effects

12.1 Introduction

- 12.1.1 This chapter of the Environmental Statement (ES) presents how the intra-project cumulative effects assessment for the Proposed Project in relation to the Kent Onshore Scheme. This assessment considers the potential significant cumulative effects that may arise when multiple aspects of a project impact a single receptor worsening the resultant effect). A description of intra-project cumulative effects and the methodology is presented in **Application Document 6.3.1.5.A Appendix 1.5.A Cumulative Effects Assessment Methodologies**. The regulatory and planning context relevant to this Chapter is present in **Application Document 6.2.1.5 Part 1 Introduction Chapter 5 EIA Approach and Methodology**, with any relevant points raised in the scoping opinion presented in **Application Document 6.2.1.6 Part 1 Introduction Chapter 6 Scoping Opinions and EIA Consultation**. The methodology used for the assessment in this chapter follows the guidance on 'Interrelationships and combined effects' within the Planning Inspectorate's 'Nationally Significant Infrastructure Projects: Advice on Cumulative Effects Assessment' published in September 2024.
- 12.1.2 The Order Limits, which illustrate the boundary of the Proposed Project, are illustrated on **Application Document 2.2.1 Overall Location Plan** and the Kent Onshore Scheme Boundary is illustrated on **Application Document 2.2.3 Kent Location Plan**.
- 12.1.3 This chapter should be read in conjunction with:
- **Application Document 6.2.1.3 Part 1 Introduction Chapter 3 Main Alternatives Considered;**
 - **Application Document 6.2.1.4 Part 1 Introduction Chapter 4 Description of the Proposed Project;**
 - **Application Document 6.2.1.5 Part 1 Introduction Chapter 5 EIA Approach and Methodology;**
 - **Application Document 6.2.1.6 Part 1 Introduction Chapter 6 Scoping Opinion and EIA Consultation;**
 - **Application Document 7.5.3 Onshore Construction Environmental Management Plan;**
 - **Application Document 7.5.3.1 CEMP Appendix A Outline Code of Construction Practice;** and
 - **Application Document 7.5.3.2 CEMP Appendix B Register of Environmental Actions and Commitments (REAC).**
- 12.1.4 This chapter is supported by the following appendices:
- **Application Document 6.3.1.5.A Appendix 1.5.A Cumulative Effects Methodologies;** and

- **Application Document 6.3.3.12.A Appendix 3.12.A Kent Onshore Scheme Intra-Project Cumulative Effects Screening Tables.**

- 12.1.5 Intra-project cumulative effects (sometimes referred to as combined or interactive effects) occur where a single receptor is affected by more than one source of impact arising from different aspects on the Proposed Project. An example of an intra-project effect would be where a local community (the 'receptor') is affected by dust, noise, and traffic disruption during the construction of the Proposed Project, with the result being a greater level of nuisance than arising from each individual effect alone.
- 12.1.6 The assessment of intra-project cumulative effects has been undertaken using a three-stage approach. The first stage consisted of a pre-screening exercise to determine whether a receptor is exposed to more than one type of effect. Those receptors identified as experiencing more than one type of effect were taken through to the second stage. The second stage consisted of a screening exercise to identify the significance each type of effect has on each receptor. Those receptors exposed to two or more types of effect, with a significance of effect greater than negligible, were taken forward to the third stage. The third stage is the main intra-project assessment, which considers if the combination of effects is likely to lead to overall effects of greater significance. Plate 12.1 presents this three-stage approach.

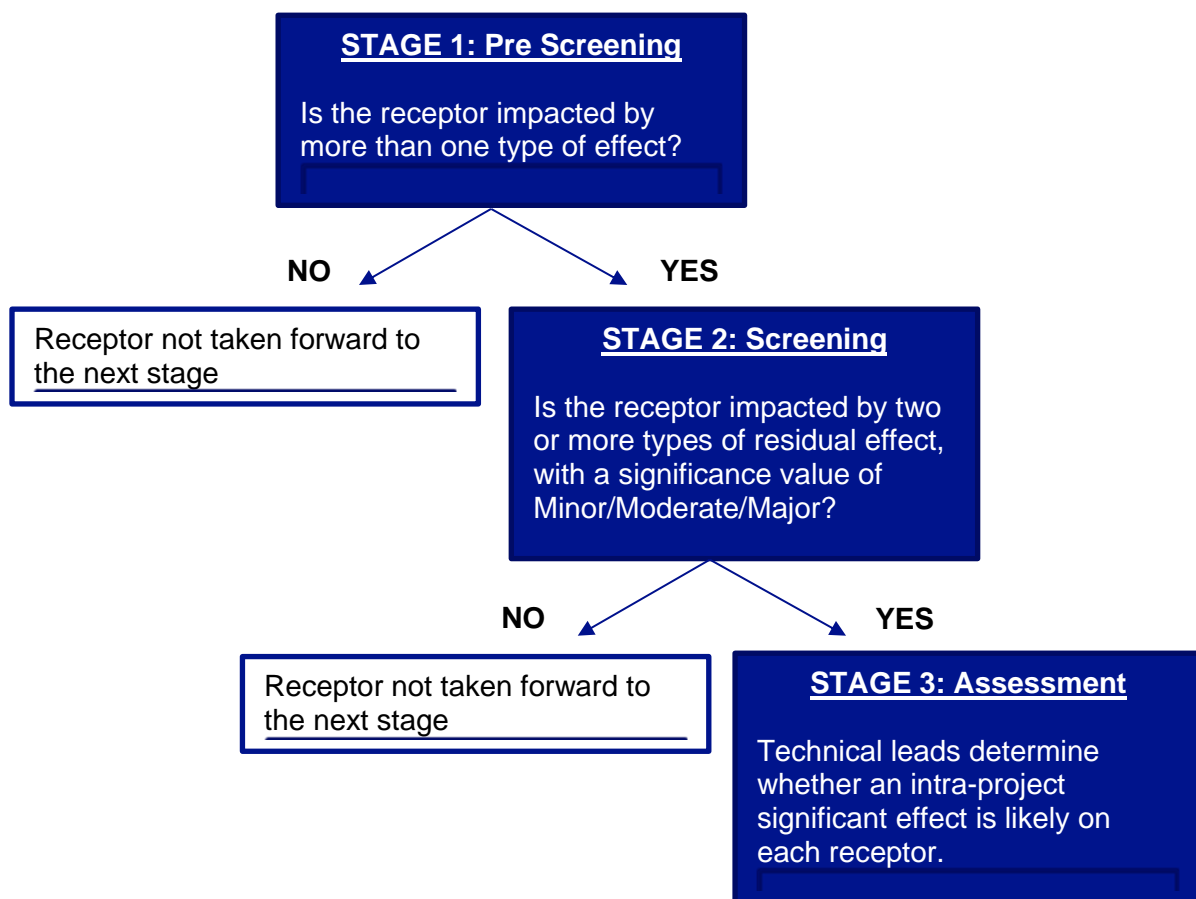


Plate 12.1 Methodological approach to identifying intra-project cumulative effects

12.1.7 Further details are presented in **Application Document 6.3.1.5.A Appendix 1.5.A Cumulative Effects Assessment Methodologies**. The text below provides the Pre-screening assessment matrix which identifies the shared receptors and the relevant topics which determine whether a significant cumulative intra-project effect is likely.

Table 12.1 Stage 1 – Pre-Screening (shared receptors)

	Landscape and Visual	Ecology and Biodiversity	Cultural Heritage	Water Environment	Geology and Hydrology	Agriculture and Soils	Traffic and Transport	Air Quality	Noise and Vibration	Socio-Economics	Health and Wellbeing
Residential Receptors											
Ecological Receptors											
Designated/non-designated heritage assets											
Designated Sites											

	Landscape and Visual	Ecology and Biodiversity	Cultural Heritage	Water Environment	Geology and Hydrology	Agriculture and Soils	Traffic and Transport	Air Quality	Noise and Vibration	Socio-Economics	Health and Wellbeing
Water resources (existing abstractions and discharges)											
Watercourses and Waterbodies											
Soils											
Public Rights of way											
Transport											
Recreation & Communities											
Human Health											

12.1.8 Receptors in the following groups were identified as having the potential for an intra-project effect as detailed in **Application Document 6.3.3.12.A Appendix 3.12.A Kent Onshore Scheme Intra-Project Cumulative Effects Screening Tables** and taken through to screening (stage 2) assessment.

- Residential Receptors (residents and housing);
- Transport Receptors (highway network e.g. road links and junctions, railways, drivers, walking and cycling routes and users of);
- Ecological Receptors;
- Designated/non-designated heritage assets (assets and people visiting the heritage sites);
- Designated/ Non-Designated Sites;
- Water Resources (Existing Abstractions);
- Watercourses and waterbodies;
- Soils;
- Recreational Resources & Communities (Recreational users and community groups);
- Public Rights of Way (the path itself and the people using it); and
- Human Health.

12.1.9 Table 12.2 presents the assessment of intra-project cumulative effects for the Kent Onshore Scheme.

Table 12.2 Assessment of intra-project cumulative effects

Receptor	Project Phase/sources of minor and above effects	Residual Significance of Effects	Intra-Project Cumulative Effect?
Residential Receptors	<p>Construction:</p> <ul style="list-style-type: none"> • Visual Amenity • Noise and Vibration: • Health and Wellbeing • Traffic and Transport 	<p>Noise and vibration from construction activities was deemed to have a Minor adverse (not significant) effect upon residential receptors. Noise from construction traffic was deemed to have a Negligible adverse (not significant) effect upon residential receptors.</p> <p>An adverse effect on visual amenity for nearby residential properties in proximity to viewpoints 5, and 11 was judged to be Moderate adverse (significant), whilst residential properties in proximity to viewpoints 9, 12 and 13 were judged to be Minor adverse (not significant).</p> <p>Residential dwellings are considered within the sensitivity levels attributed in the traffic and transport assessment and so these contribute to the overall assessment of the significance of effects. Several temporary impacts were judged to be Minor adverse (not significant) for these receptors (road links and junctions) during the construction phase including for Sandwich Road, the A299/B2190/Tothill Street (Minster) Roundabout and the Sandwich Road/Ebbsfleet Lane Signalised Junction, relating to at least one of the following criteria: severance and pedestrian delay. In the context of intra-project cumulative assessment, residential properties in close proximity to these</p>	<p>There is potential for a significant intra-project cumulative effect to occur. Visual amenity effects were assessed as significant for residential receptors and some of these residential receptors may also be subject to minor adverse noise, traffic and transport and health and wellbeing effects. These effects are expected to result in a significant intra-project cumulative effect upon residential receptors in proximity to viewpoints 5, and 11. Significant effect.</p>

Receptor	Project Phase/sources of minor and above effects	Residual Significance of Effects	Intra-Project Cumulative Effect?
		<p>roads and junctions are therefore judged to experience Minor adverse (not significant) effects.</p> <p>No permanent effects on residential properties (in terms of physical changes or disruptions to residential communities) within the study area are anticipated during the construction phase that would affect the social environment or community cohesion in these settlements. Hence, health and wellbeing from construction activities was deemed to have a Minor adverse (not significant) effect upon residential receptors.</p>	
Residential Receptors	Operation and maintenance: <ul style="list-style-type: none"> Visual 	<p>Year 1: An adverse effect on visual amenity for nearby residential properties in proximity to viewpoints 5, and 11 was judged to be Moderate adverse (significant), whilst residential properties in proximity to viewpoints 12 and 13 were judged to be Minor adverse (not significant).</p> <p>Year 15: An adverse effect on visual amenity for nearby residential properties in proximity to viewpoints 5 and 11 was judged to be Moderate adverse (significant), whilst residential properties in proximity to viewpoints 12 and 13 were judged to be Minor adverse (not significant).</p>	As effects have only been identified on this receptor from one topic (Landscape and Visual) for the operation and maintenance phase, there is no potential for an intra-project cumulative effect. No significant cumulative effect.
Residential Receptors	Decommissioning: <ul style="list-style-type: none"> Visual Amenity 		

Receptor	Project Phase/sources of minor and above effects	Residual Significance of Effects	Intra-Project Cumulative Effect?
	<ul style="list-style-type: none"> Noise and Vibration: Health and Wellbeing Traffic and Transport 	The residual significance of effects is expected to be the same as for Construction, see above.	The residual significance of effects is expected to be the same as for Construction, see above.
Ecological Receptors (excluding designated sites, see below)	Construction: <ul style="list-style-type: none"> Ecology and Biodiversity 	<p>Overall habitat loss and habitat loss for ornithology was deemed to be a Moderate adverse effect in the medium term but Moderate beneficial (Significant) in the long-term due to habitat creation as part of Minster Converter Station and Substation proposals and taking account of enhancement of 10 ha of arable off-site to address permanent losses for farmland birds.</p> <p>Habitat loss for bats, riparian mammals, reptiles and terrestrial invertebrates was deemed to be a Minor adverse (Not significant) effect in the medium term but Moderate beneficial (Significant) in the long term.</p> <p>The spread of invasive species was deemed to be Minor beneficial (Not Significant) due to control measures.</p>	As effects have only been identified on this receptor from one topic (Ecology and Biodiversity) for the construction phase, there is no potential for an intra-project cumulative effect. No significant cumulative effect.
Ecological Receptors (excluding designated sites, see below)	Operation and maintenance: <ul style="list-style-type: none"> Ecology and Biodiversity 	Overall habitat loss and habitat loss for ornithology, badger, bats, reptiles, dormouse, riparian mammals and terrestrial invertebrates was deemed to be Moderate beneficial (Significant) in the long-term due to habitat creation as part of Minster Converter Station and Substation proposals and taking	As effects have only been identified on this receptor from one topic (Ecology and Biodiversity) for the operation and maintenance phase, and this is the beneficial effect of habitat creation in the long-term, there is no potential for

Receptor	Project Phase/sources of minor and above effects	Residual Significance of Effects	Intra-Project Cumulative Effect?
		account of enhancement of 10 ha of arable off-site to address permanent losses for farmland birds.	an intra-project cumulative effect. No significant cumulative effect.
Ecological Receptors (excluding designated sites, see below)	Decommissioning: <ul style="list-style-type: none"> Ecology and Biodiversity 	The residual significance of effects is expected to be the same as for Construction, see above.	The residual significance of effects is expected to be the same as for Construction, see above.
Designated/non-designated heritage assets	Construction: <ul style="list-style-type: none"> Landscape and Visual Cultural Heritage 	Physical impacts on non-designated assets located throughout the Kent Onshore Scheme are considered to be Negligible to Minor Adverse (Not Significant) . There will be no physical impacts on designated assets. An adverse effect on visual amenity from the viewing tower within Richborough Fort (viewpoint 8) was judged to be a Minor adverse (not significant) effect.	Potential effects have only been identified on designated and non-designated assets from one additional topic (Landscape and Visual) for the construction phase, which identified a Minor effect on Richborough Fort. The visual and cultural heritage effects are however not expected to combine in such a way as to lead to a significant intra-project cumulative effect upon designated/non-designated heritage assets. No significant cumulative effect.
Designated/non-designated heritage assets	Operation and maintenance: <ul style="list-style-type: none"> Landscape and Visual Cultural Heritage 	Impacts on the setting of designated/non-designated assets resulting from the Operational and Maintenance phase of the Kent Onshore Scheme are considered to be Negligible to Minor Adverse (Not Significant) . An adverse effect on visual amenity from the viewing tower within Richborough Fort (viewpoint 8) was judged to be a Minor adverse (not significant) effect.	Potential effects have only been identified on designated and non-designated assets from one additional topic (Landscape and Visual) for the operation and maintenance phase, which identified a Minor effect on Richborough Fort. The visual and cultural heritage effects are however not expected to combine in such a way as to lead to a significant intra-project cumulative effect upon designated/non-

Receptor	Project Phase/sources of minor and above effects	Residual Significance of Effects	Intra-Project Cumulative Effect?
			designated heritage assets. No significant cumulative effect.
Designated/non-designated heritage assets	Decommissioning: <ul style="list-style-type: none"> Landscape and Visual Cultural Heritage 	The residual significance of effects is expected to be the same as for Construction, see above.	The residual significance of effects is expected to be the same as for Construction, see above.
Designated Sites	Construction: <ul style="list-style-type: none"> Ecology and Biodiversity 	<p>Due to the seasonal restriction on site preparation, earthworks and foundation creation for the Minster Converter Station and Substation, disturbance to Sandwich Bay to Hacklinge Marshes SSSI has been assessed as a Minor adverse (Not Significant) effect.</p> <p>As a form of mitigation for habitat loss at Ash Level and South Richborough Pasture Local Wildlife Site, the enhancement of riparian habitat along River Stour and localised introduction of Azolla weevil to control invasive Azolla fern has been deemed minor beneficial (not significant) effect.</p> <p>Habitat loss at the ton-Statutory Site TH12 (Woods & Grassland, Minster Marshes) has been deemed a Minor adverse (Not Significant) effect.</p>	[As effects have only been identified on this receptor from one topic (Ecology and Biodiversity) for the Operation and Maintenance phase, there is no potential for an intra-project cumulative effect. No significant cumulative effect.
Designated Sites	Operation and maintenance: <ul style="list-style-type: none"> Ecology and Biodiversity 	<p>.</p> <p>As a form of mitigation for habitat loss at Ash Level and South Richborough Pasture Local Wildlife Site, the enhancement of riparian habitat along River Stour and localised introduction of Azolla weevil to</p>	As effects have only been identified on this receptor from one topic (Ecology and Biodiversity) for the Operation and Maintenance phase, there is no potential for an intra-project cumulative effect. No significant cumulative effect.

Receptor	Project Phase/sources of minor and above effects	Residual Significance of Effects	Intra-Project Cumulative Effect?
		control invasive Azolla fern has been deemed Minor beneficial (Not Significant) .	
		Habitat loss at the non-Statutory Site TH12 (Woods & Grassland, Minster Marshes) has been deemed a Minor adverse (Not Significant) effect.	
Designated Sites	Decommissioning: <ul style="list-style-type: none"> Ecology and Biodiversity 	The residual significance of effects is expected to be the same as for Construction, see above.	The residual significance of effects is expected to be the same as for Construction, see above.
Water resources (existing abstractions and discharges)	Construction: <ul style="list-style-type: none"> Water Environment Geology and Hydrology 	<p>The temporary deterioration of water quality due to receiving/supporting watercourses being degraded is judged have Negligible to Minor adverse (not significant) indirect effects in terms of detriment to existing abstraction and discharge licence holders.</p> <p>The mobilisation of existing contamination within groundwater is judged to be a Minor adverse (not significant) effect for groundwater abstractions.</p>	The intra-project cumulative effect on water resources is judged to be not significant as none of the effects, summarised to the left, when combined, are considered to result in additional or exacerbated effects on the receptors that are greater than the individual effects already defined. No significant cumulative effect.
Water resources (existing abstractions and discharges)	Operation and maintenance: <ul style="list-style-type: none"> Water Environment Geology and Hydrology 	<p>Deterioration of water quality due to receiving/supporting watercourses being degraded due to receipt of operational drainage discharges from Project infrastructure is judged to have Negligible (not significant) indirect effects in terms of detriment to existing abstraction and discharge licence holders.</p> <p>The mobilisation of existing contamination within groundwater is judged to be a Minor adverse (not significant) effect for groundwater abstractions.</p>	The intra-project cumulative effect on water resources is judged to be not significant as none of the effects, summarised to the left, when combined, are considered to result in additional or exacerbated effects on the receptors that are greater than the individual effects already defined. No significant cumulative effect.

Receptor	Project Phase/sources of minor and above effects	Residual Significance of Effects	Intra-Project Cumulative Effect?
Water resources (existing abstractions and discharges)	Decommissioning: <ul style="list-style-type: none"> Water Environment Geology and Hydrology 	The residual significance of effects is expected to be the same as for Construction, see above.	The residual significance of effects is expected to be the same as for Construction, see above.
Watercourse and Waterbodies	Construction: <ul style="list-style-type: none"> Ecology and Biodiversity Water Environment 	<p>Habitat loss of aquatic macrophytes was deemed to be Minor adverse (Not Significant) in the medium-term but Moderate beneficial (Significant) in the long-term due to wetland creation as part of Minster Converter Station and Substation proposals.</p> <p>The temporary deterioration of water quality due to pollution from silt, oils, hydrocarbons, bentonite along with physical disturbance of channel and banks causing changes to flow regimes is judged to have Negligible to Minor adverse (not significant) effects on watercourses. Increased run off rates, impacts to land drainage, the temporary loss of floodplains and increased flood risk is judged to have Negligible to Minor adverse (not significant) effects on floodplains, watercourses, land drains and existing land uses.</p> <p>Adverse effects on ecological receptors within watercourses and banks of watercourses due to installation of temporary culverts is judged to be Minor Adverse (not significant).</p>	The intra-project cumulative effect on watercourses and waterbodies is judged to be not significant as none of the effects, summarised to the left, when combined, are considered to result in additional or exacerbated effects on the receptors that are greater than the individual effects already defined. No significant cumulative effect.
Watercourse and Waterbodies	Operation and maintenance <ul style="list-style-type: none"> Ecology and Biodiversity 	Habitat loss of aquatic macrophytes and macroinvertebrates, due to infilled ditches, culverts and outfalls, was deemed to be a Minor adverse (Not Significant) effect.	As effects have only been identified on this receptor from one topic (Ecology and Biodiversity) for the operation and maintenance phase, there is no potential for an intra-project cumulative

Receptor	Project Phase/sources of minor and above effects	Residual Significance of Effects	Intra-Project Cumulative Effect?
			effect. No significant cumulative effect.
Watercourse and Waterbodies	Decommissioning: <ul style="list-style-type: none"> Ecology and Biodiversity Water Environment 	The residual significance of effects is expected to be the same as for Construction, see above.	The residual significance of effects is expected to be the same as for Construction, see above.
Soils	Construction <ul style="list-style-type: none"> Agriculture and Soils Geology and Hydrology 	<p>The impacts on soils have the potential to occur across the land within the Order Limits, adversely affecting the ecosystem services the soils provide, this is deemed to have a moderate to minor adverse significant effect.</p> <p>During construction there would be a temporary loss of Best and Most Versatile (BMV) land from agricultural production within the Order Limits and this is deemed to be a moderate to major adverse significant effect.</p> <p>Upon the return of that land only required temporarily, there will still be a permanent loss of BMV land, this is assessed to be a moderate to major adverse effect.</p> <p>The potential temporary construction impacts on groundwater and hydrology, which could impact the soil resource, are considered to be small. For groundwater and groundwater receptors (very high to high sensitivity) this would result in a minor effect and only in respect of mobilisation of (any) contamination and which would be not significant.</p>	The intra-project cumulative effect on soils is judged to be not significant as none of the effects, summarised to the left, when combined, are considered to result in additional or exacerbated effects on soils that are greater than the individual effects already defined. No significant cumulative effect.

Receptor	Project Phase/sources of minor and above effects	Residual Significance of Effects	Intra-Project Cumulative Effect?
		Any indirect effects on soils as a result of these hydrological changes are therefore expected to be a negligible-minor adverse effect.	
Soils	Operation and maintenance <ul style="list-style-type: none"> Agriculture and Soils 	Based on the short-term and temporary nature of the maintenance activities, it is assessed that these would have only a minor (not significant) effect on soil and its ecosystem services.	As effects have only been identified on this receptor from one topic (Agriculture and Soils) for the operation and maintenance phase, there is no potential for an intra-project effect. No significant cumulative effect.
Soils	Decommissioning: <ul style="list-style-type: none"> Agriculture and Soils Geology and Hydrology 	<p>The impacts on soils have the potential to occur across the land within the Order Limits, adversely affecting the ecosystem services provided. This is deemed to be a moderate to minor adverse significant effect.</p> <p>During decommissioning there would be a temporary loss of Best and Most Versatile (BMV) land from agricultural production from within the Order Limits and this is deemed to be a moderate to major adverse significant effect.</p> <p>Following decommissioning of the infrastructure and the reinstatement of the land, there would be a moderate to major beneficial significant effect.</p> <p>The potential temporary decommissioning impacts on groundwater and hydrology, which could impact the soil resource, are considered to be small. As for construction, for groundwater and groundwater receptors (very high to high sensitivity) this would</p>	The intra-project cumulative effect on soils is judged to be not significant as none of the effects, summarised to the left, when combined, are considered to result in additional or exacerbated effects on soils that are greater than the individual effects already defined. No significant cumulative effect.

Receptor	Project Phase/sources of minor and above effects	Residual Significance of Effects	Intra-Project Cumulative Effect?
		result in a minor effect and only in respect of mobilisation of (any) contamination and which would be not significant. Any indirect effects on soils as a result of these hydrological changes are therefore expected to be a negligible-minor adverse effect.	
Public Rights of Way and their users	Construction <ul style="list-style-type: none"> • Landscape and Visual • Traffic and Transport • Socio-economics • Health and Wellbeing 	<p>With respect to traffic and transport, temporary impacts including Severance, Pedestrian Delay, Non-Motorised User Amenity, Fear and Intimidation and PRow Diversions and Closures during construction were judged to be Minor adverse (not significant) for PRow TE37.</p> <p>With respect to traffic and transport, temporary impacts including Severance, Pedestrian Delay and PRow Diversions and Closures during construction were judged to be Minor adverse (not significant) for PRow TE39.</p> <p>With respect to traffic and transport, PRow Diversions and Closures were judged to have a Minor adverse (not significant) effect on PRow TE26 and PRow EE42 during construction.</p> <p>In terms of the socio-economic assessment, the temporary closure of byways and footpaths (TE35, TE26, EE42 and Saxon Shore Way) has been deemed to have a minor adverse (not significant effect) upon PRow users. A minor adverse (not significant) effect in terms of changes to user experience and local travel patterns were found in</p>	<p>The intra-project cumulative effect on PRow users of TE26, EE42, TE39, TR15, TR33, the King Charles III England Coast Path and the Contra Trail is judged to be not significant as none of the effects, summarised to the left, when combined, are considered to result in additional or exacerbated effects on the receptors that are greater than the individual effects already defined. No significant cumulative effect.</p> <p>There is potential for a significant intra-project cumulative effect to occur on PRow users of TE37 and the Saxon Shore Way as visual amenity effects were assessed as significant at some locations within the Landscape and Visual chapter and the regional trail may also be subject to minor traffic and transport, socio-economic and health and well-being effects. When combined, these effects are expected to result in a significant intra-project cumulative</p>

Receptor	Project Phase/sources of minor and above effects	Residual Significance of Effects	Intra-Project Cumulative Effect?
		<p>association with use of Footpaths TE39, TR15 and TR33.</p> <p>An adverse impact on visual amenity (from viewpoint 2) for users of the King Charles III England Coast Path was judged to be Minor adverse (not significant).</p> <p>An adverse impact on visual amenity (from viewpoint 3 and 10) for users of the Saxon Shore Way was judged to be Moderate adverse (significant) and Minor adverse (not significant) respectively.</p> <p>An adverse impact on visual amenity (from viewpoint 6 and 4) for users of public footpath 0173/TE32/1 and public footpath at the boundary of 0173/TE40/1 and 0173/TE37/2 respectively. These were judged to be Moderate adverse (significant) and Major adverse (significant) respectively.</p> <p>With respect to health and wellbeing, impacts on PRow and other active travel networks would not be considered significant as any impacts arising on community connectivity and accessibility, would be experienced by a small proportion of the population and on a temporary basis. Given this, there is potential for only minor changes to quality-of-life and effects were assessed to be Minor adverse (not significant).</p>	<p>effect. Significant cumulative effect. This cumulative effect is largely driven by the effects on visual amenity and further mitigation is unlikely to be feasible.</p>

Receptor	Project Phase/sources of minor and above effects	Residual Significance of Effects	Intra-Project Cumulative Effect?
Public Rights of Way and their users	Operation and maintenance: <ul style="list-style-type: none"> • Landscape and Visual • Traffic and Transport • Socio-economics • Health and Wellbeing 	<p>As a regularly used and valued national trail, The Contra Trail was assessed to have high sensitivity however impacts were deemed to have a minor adverse (not significant) effect.</p> <p>An adverse impact on visual amenity (from viewpoint 3 and 10) for users of the Saxon Shore Way was judged to be Minor adverse (not significant) respectively.</p> <p>An adverse impact on visual amenity (from viewpoint 6 and 4) for users of the local PRow network within the study area was judged to be Moderate adverse (significant) and Major adverse (significant) respectively.</p> <p>With respect to health and wellbeing, impacts on PRow and other active travel networks would not be considered significant. Given this, there is potential for only minor changes to quality-of-life and effects were assessed to be Minor adverse (not significant).</p>	<p>Overall, the intra-project cumulative effect on PRow users is judged to be not significant as none of the effects, summarised to the left, when combined, are considered to result in additional or exacerbated effects on the receptors that are greater than the individual effects already defined. No significant cumulative effect.</p>
Public Rights of Way and their users	Decommissioning	The residual significance of effects is expected to be the same as for Construction, see above.	The residual significance of effects is expected to be the same as for Construction, see above.
Transport and users	Construction: <ul style="list-style-type: none"> • Traffic and Transport 	With respect to traffic and transport, several temporary impacts including Severance and Pedestrian Delay were judged to be Minor adverse (not significant) for the highway network (road	The intra-project cumulative effect on users of the highway network is judged to be not significant as none of the effects, summarised to the left, when

Receptor	Project Phase/sources of minor and above effects	Residual Significance of Effects	Intra-Project Cumulative Effect?
	<ul style="list-style-type: none"> Landscape and Visual Health and Wellbeing 	<p>links and junctions) during the construction phase including for Sandwich Road, the A299/B2190/Tothill Street (Minster) Roundabout and the Sandwich Road/Ebbsfleet Lane Signalised Junction.</p> <p>In addition, several temporary impacts in terms of Road Safety were judged to be Minor adverse (not significant) for the highway network (road links and road junctions) during the construction phase, including for the A299 Hengist Way, A256 Richborough Road, the A299/A253/Willetts Hill (Monkton) Roundabout, A299/B2190/Tothill Street (Minster) Roundabout and A299/A256/Cottingham Link Road (Sevenscore) Roundabout.</p> <p>With respect to traffic and transport, several temporary impacts including Severance, Pedestrian Delay, Non-Motorised User Amenity, Fear & Intimidation and PRow Diversions and Closures were judged to be Minor adverse (not significant) for the walking and cycling network during the construction phase. This includes PRow TE37 for each of the above criteria, as well as PRow TE39 for Severance, Pedestrian Delay and PRow Diversions and Closures, and PRow TE26 and EE42 for PRow Diversions and Closures only.</p> <p>An adverse impact on visual amenity for cyclists using NCN 1 and 15 was judged to be Minor adverse (not significant) from viewpoints 2, 9, 13.</p>	<p>combined, are considered to result in additional or exacerbated effects on the receptors that are greater than the individual effects already defined. No significant cumulative effect.</p> <p>The intra-project cumulative effect on PRow users is judged to be not significant as none of the effects, summarised to the left, when combined, are considered to result in additional or exacerbated effects on the receptors that are greater than the individual effects already defined. No significant cumulative effect.</p>

Receptor	Project Phase/sources of minor and above effects	Residual Significance of Effects	Intra-Project Cumulative Effect?
		<p>The impact on cyclists using the Viking Coastal Trail the impact was judged to be Moderate adverse (significant) from VP 5 and Minor adverse (not significant) from VP's 13 and 14.</p> <p>An adverse impact on visual amenity for drivers using major A roads including the A256 and A299 was judged to be Minor adverse (not significant) from VP 11.</p> <p>An adverse impact on visual amenity for drivers using B roads and the local highway network [] was judged to be Moderate adverse (significant) from VP 5 and 11, and Minor adverse (not significant) from VP 9.</p> <p>An adverse impact on visual amenity for passengers on the railway route between Sandwich and Minster and between Ramsgate and Canterbury was judged to be Moderate adverse (significant) from VP 6 and Minor adverse (not significant) from VP 4.</p> <p>Health and wellbeing effects arising from transport, access and connection impacts during the construction phase were assessed to be a minor adverse effect (not significant).</p>	
Transport and users	Operation and maintenance: <ul style="list-style-type: none"> Traffic and Transport 	<p>An adverse impact on visual amenity for cyclists using NCN 1 and 15 was judged to be Minor adverse (not significant) from viewpoint 13. The impact on cyclists using the Viking Coastal Trail the impact was judged to be Moderate (significant)</p>	<p>Overall, the intra-project cumulative effect on transport and users is judged to be not significant as none of the effects, summarised to the left, when combined, are considered to result in</p>

Receptor	Project Phase/sources of minor and above effects	Residual Significance of Effects	Intra-Project Cumulative Effect?
	<ul style="list-style-type: none"> Landscape and Visual Health and Wellbeing 	<p>from VP 5 and Minor adverse (not significant) from VP 13.</p> <p>An adverse impact on visual amenity for drivers using major A roads including the A256 and A299 was judged to be Minor adverse (not significant) from VP 11.</p> <p>An adverse impact on visual amenity for drivers using B roads and the local highway network was judged to be Moderate adverse (significant) from VP 5 and 11. After 15 years in operation the impact from VP 11 will be reduced to Minor adverse (not significant).</p> <p>An adverse impact on visual amenity for passengers on the railway route between Sandwich and Minster and between Ramsgate and Canterbury was judged to be Moderate adverse (significant) from VP 6 and Minor adverse (not significant) from VP 4.</p> <p>Health and wellbeing effects arising from transport, access and connection impacts during the operational and maintenance phase was deemed to be a minor adverse effect (not significant).</p>	<p>additional or exacerbated effects on the receptors that are greater than the individual effects already defined. No significant cumulative effect.</p>
Transport and users	Decommissioning	The residual significance of effects is expected to be the same as for Construction, see above.	The residual significance of effects is expected to be the same as for Construction, see above.
Communities	Construction: <ul style="list-style-type: none"> Landscape and Visual 	The direct, indirect and induced employment generated from the construction of the Kent Onshore Scheme, along with the increase in GVA	The intra-project cumulative effect on communities during construction is judged to be not significant as none of

Receptor	Project Phase/sources of minor and above effects	Residual Significance of Effects	Intra-Project Cumulative Effect?
	<ul style="list-style-type: none"> Socio-economics 	<p>generation is assessed to have a Minor beneficial (not significant) effect.</p> <p>An adverse effect on visual amenity for people visiting Pegwell Bay Country Park and Richborough Roman Fort is assessed to be Minor adverse (not significant).</p>	the effects, summarised to the left, when combined, are considered to result in additional or exacerbated effects on the receptors that are greater than the individual effects already defined. No significant cumulative effect.
Communities	<p>Operation and maintenance:</p> <ul style="list-style-type: none"> Landscape and Visual 	An adverse effect on visual amenity for people visiting Richborough Roman Fort was judged to be Minor adverse (not significant) .	As effects have only been identified on this receptor from one topic (Landscape and Visual) for the operation and maintenance phase, there is no potential for an intra-project effect. No significant cumulative effect.
Communities	<ul style="list-style-type: none"> Decommissioning: Landscape and Visual Socio-economics 	The residual significance of effects is expected to be the same as for Construction, see above.	The residual significance of effects is expected to be the same as for Construction, see above.
Human Health ¹	<p>Construction:</p> <ul style="list-style-type: none"> Health and Wellbeing Noise and Vibration Socio-economics 	<p>Reduced access to healthcare other social infrastructure, open spaces and leisure activities is judged to have a Negligible to Minor adverse (not significant) effect on human health.</p> <p>Increased exposure to dust and particulate matter emissions is judged to have Negligible to minor adverse (not significant) effects on human health.</p>	The intra-project cumulative effect on human health receptors during the construction phase is judged to be not significant as none of the effects, summarised to the left, when combined, are considered to result in additional or exacerbated effects on the receptors that are greater than the individual effects already defined. Importantly, the

¹ All relevant Human Health factors mentioned in the Human Health chapter are included, despite some overlap with the receptors discussed above.

Receptor	Project Phase/sources of minor and above effects	Residual Significance of Effects	Intra-Project Cumulative Effect?
		<p>Increased exposure to noise pollution is judged to have a minor adverse (not significant) effect on human health.</p> <p>Potential adverse impact on journeys made by active travel modes is judged to lead to a minor adverse (not significant) effect on health and wellbeing.</p> <p>Potential beneficial economic impacts arising from employment, training and income opportunities for those working on the Proposed Project is judged to be minor beneficial (not significant) effect which could impact human health positively.</p> <p>Disruption to community connectivity and potential changes to landscape and visual amenity is judged to have minor adverse (not significant) effect on health and wellbeing.</p> <p>Reduced access to community facilities, open spaces, tourism attractions as well as amenity impacts and a hindrance to others development land has been judged to have a minor adverse (not significant) effect upon human health.</p>	<p>health and wellbeing assessment already incorporates the findings and conclusions of relevant environmental disciplines, including landscape and visual, traffic and transport, noise and vibration, socio-economics, recreation, and tourism, on receptors. No significant cumulative effect.</p>
Human Health	Operation and maintenance: <ul style="list-style-type: none"> • Health and Wellbeing • Noise and Vibration 	<p>Increased exposure to dust and particulate matter emissions is judged to have Minor adverse (not significant) effects on human health.</p>	<p>The intra-project cumulative effect on human health receptors during the operation and maintenance phase is judged to be not significant as none of the effects, summarised to the left, when combined, are considered to</p>

Receptor	Project Phase/sources of minor and above effects	Residual Significance of Effects	Intra-Project Cumulative Effect?
	<ul style="list-style-type: none"> Socio-economics 	<p>Increased exposure to noise pollution is judged to have a minor adverse (not significant) effect on human health.</p> <p>Disruption to community connectivity and potential changes to landscape and visual amenity is judged to have minor adverse (not significant) effect on health and wellbeing.</p>	<p>result in additional or exacerbated effects on the receptors that are greater than the individual effects already defined. Importantly, the health and wellbeing assessment already incorporates the findings and conclusions of relevant environmental disciplines, including landscape and visual, traffic and transport, noise and vibration, socio-economics, recreation, and tourism, on receptors. No significant cumulative effect.</p>
Human Health	Decommissioning	The residual significance of effects is expected to be the same as for Construction, see above.	The residual significance of effects is expected to be the same as for Construction, see above.

12.2 Summary

- 12.2.1 The assessment of intra-cumulative effects resulting from the Kent Onshore Scheme has been assessed in accordance with the methodology set out in **Application Document 6.3.1.5.A Appendix 1.5.A Cumulative Effects Methodologies**. Shared receptors (receptors that are identified in more than one chapter) have been considered and an assessment of intra-project effects has been undertaken.
- 12.2.2 Whilst no significant intra-project cumulative effects were identified for most of the receptors reviewed, likely significant adverse effects were identified for the following receptors:
- For a small number of residential receptors, there is likely to be a significant intra-project cumulative effect during construction and decommissioning for those residential receptors which are likely to be subject to minor adverse noise effects as assessed in the Noise and Vibration chapter and where visual amenity effects at these same locations were assessed as significant within the Landscape and Visual chapter. Further mitigation to address the cumulative effect is unlikely to be available.
 - For PRoW TE37 and the Saxon Shore Way there is likely to be a significant intra-project cumulative effect during construction and decommissioning on PRoW users. Visual amenity effects were assessed as significant within the Landscape and Visual chapter and the regional trail may also be subject to minor adverse socio-economic, traffic and transport and health and well-being effects. Further mitigation to address the cumulative effect is unlikely to be available.

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