



The Great Grid Upgrade

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Part 2 Suffolk

Chapter 12

Suffolk Onshore Scheme Intra-Project Cumulative Effects

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12. Suffolk Onshore Scheme Intra-Project Cumulative Effects

12.1 Introduction

- 12.1.1 This chapter of the Environmental Statement (ES) presents the intra-project cumulative effects assessment for the Proposed Project in relation to the Suffolk 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 presented 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 (Planning Inspectorate, 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 Suffolk Onshore Scheme Boundary is illustrated on **Application Document 2.2.2 Suffolk 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 6.3.2.12.A Appendix 2.12.A Suffolk 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 a local community (the ‘receptor’) being 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.

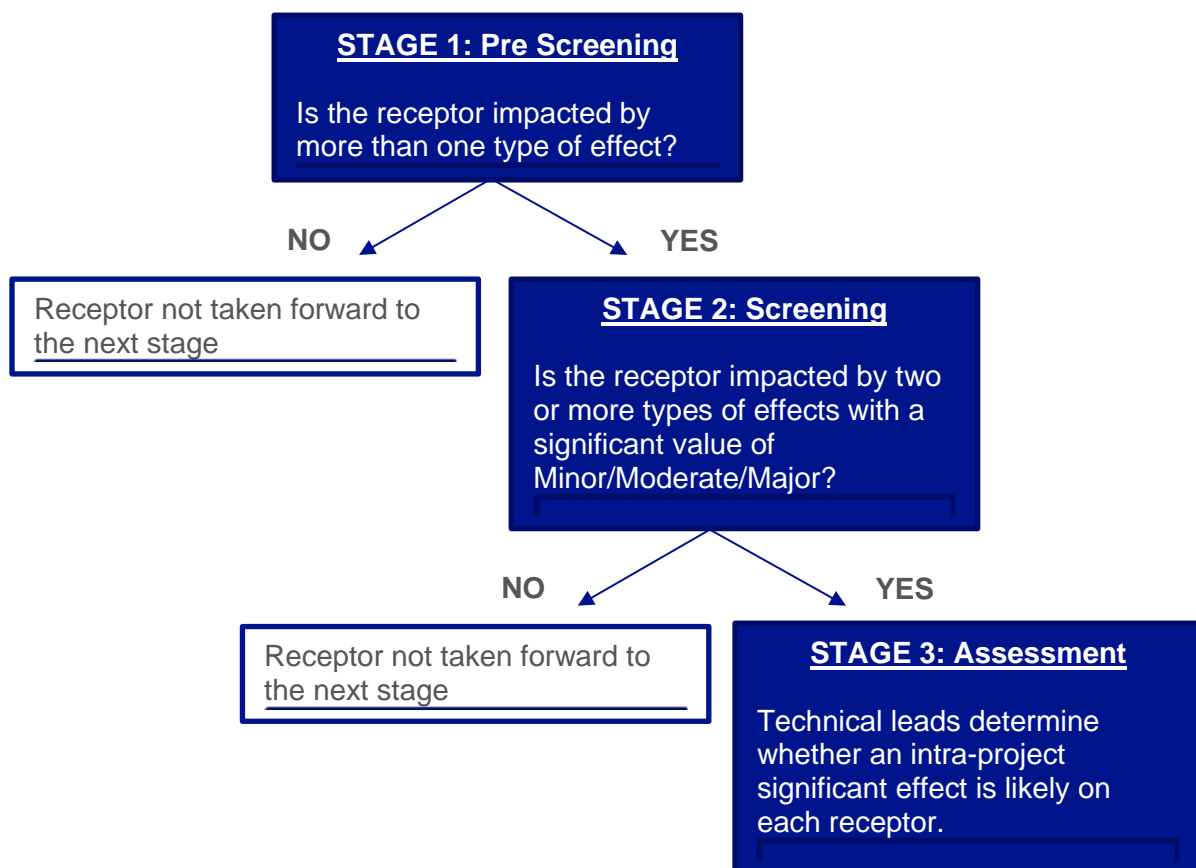


Plate 12.1 Methodological approach to identifying intra-project cumulative effects

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 share 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)											
Watercourse 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 6.3.2.12.A Appendix 2.12.A Suffolk Onshore Scheme Intra-Project Cumulative Effects Screening Tables** and taken through to screening (stage 2) assessment:

- Residential Receptors (residents and housing);
- 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);
- Transport Receptors (highway network e.g. road links and junctions, railways, drivers, walking and cycling routes and users of); and
- Human Health.

Table 12.2 Assessment of intra-project cumulative effects for Suffolk Onshore Scheme

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 • Noise and Vibration • Health and Wellbeing • Traffic and Transport 	<p>Overall, changes to visual amenity for residents from nearby settlements and properties ranges from Minor adverse (Not Significant) to Major adverse (Significant). The significance varies depending on location and proximity (defined as viewpoints) to the Proposed Project.</p> <p>The adverse effect on visual amenity when considering Friston scenario 1 and scenario 2¹ (refer to Application Document 6.2.1.4 Part 1 Introduction Chapter 4 Description of the Proposed Project for an explanation of the Friston scenarios), differs slightly at various Viewpoints (VPs).</p> <p>When considering Friston scenario 2, the adverse effects of the Proposed Project on visual amenity are greater and deemed Minor adverse (not significant) to Moderate adverse (Significant), compared to a Minor adverse (not significant) effect of the Proposed Project when applying Friston scenario 1. However, it is noted that under scenario 1 cumulative effects may change from an intra-project effect to an inter-project effect (see Application Document</p>	<p>For Friston scenario 1, noise, vibration, traffic and transport, health and wellbeing, and views of the construction activity are all predicted to be minor effects (see left) and are not expected to combine in such a way as to lead to a significant intra-project cumulative effect upon residential receptors. No Significant Effect.</p> <p>For Friston scenario 2, the intra-project cumulative effect is judged to be up to significant during construction as visual amenity effects were assessed as moderate within the Landscape and Visual chapter and there would be additional noise, traffic and transport, and health and wellbeing effects, albeit these are assessed to be minor. These effects are</p>

¹ Scenario 1 is where Friston Substation is constructed under the development consent granted to Scottish Power Renewables (SPR), pursuant to 'The East Anglia ONE North (EA1N) Offshore Wind Farm Order 2022' and 'The East Anglia TWO (EA2) Offshore Wind Farm Order 2022'. Scenario 2 is where Friston Substation is built as part of the Proposed Project.

Receptor	Project Phase/sources of minor and above effects	Residual Significance of Effects	Intra-Project Cumulative Effect?
		<p>6.2.2.13 Part 2 Suffolk Chapter 13 Suffolk Onshore Scheme Inter-Project Cumulative Effects).</p> <p>For both scenarios, noise and vibration from construction activities such as HDD works, and underground cable construction was deemed to have a Minor adverse (not significant) effect upon residential receptors.</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 significant of effects. Several temporary impacts were judged to be Minor adverse (not significant) for these receptors (road links and junctions) for both scenarios during the construction phase including for the A12 (south of the A1094), B1121 Main Road, the A1094, B1069, A12/A1094 junction, B1121 Main Road/ B1121 Church Hill junction and the A1094/B1069 junction, relating to at least one of the following criteria: Severance, Pedestrian Delay, Fear & Intimidation. In the context of intra-project cumulative assessment, residential properties in close proximity to these 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</p>	<p>expected to result in a combined significant intra-project cumulative effect upon some residential receptors during construction. Up to Significant Effect for some receptors.</p> <p>No mitigation has been confirmed at this stage.</p>

Receptor	Project Phase/sources of minor and above effects	Residual Significance of Effects	Intra-Project Cumulative Effect?
		settlements. Hence, health and wellbeing from construction activities was deemed to have a Minor adverse (not significant) effect upon residential receptors.	
Residential Receptors	Operation and maintenance: <ul style="list-style-type: none"> • Visual • Noise • Health and Wellbeing 	<p>Overall, changes to visual amenity for residents from nearby settlements and properties ranges from Major adverse (Significant) to Minor adverse (Not Significant). The significance varies depending on location and proximity (defined as VP's) to the Proposed Project.</p> <p>The adverse effect on visual amenity when considering Friston scenario 1 and scenario 2, differs slightly at various VPs.</p> <p>When considering Friston scenario 2, the adverse effects on visual amenity are greater and deemed Minor adverse (not significant) to Moderate adverse (Significant), compared to a Negligible (not significant) effect when applying Friston scenario 1.</p> <p>Operational noise from the proposed Saxmundham Converter Station along with other maintenance activities was judged to have a Minor adverse (not significant) effect upon residential receptors.</p> <p>No permanent effects on residential properties (in terms of physical changes or disruptions to residential communities) within the study area are anticipated, including any required access during the operational and maintenance phase, that would affect the social environment or community cohesion in these</p>	<p>For Friston scenario 1, noise, vibration, health and wellbeing, and views of the proposed Saxmundham Converter Station and Friston Substation are all judged to have minor effects (see left) and are not expected to combine in such a way as to lead to a significant intra-project cumulative effect upon residential receptors. No Significant Effect.</p> <p>However, for Friston scenario 2, whilst noise, and health and wellbeing are predicted to be minor effects, visual effects are deemed to be moderate (see left). These effects are expected to combine to produce a significant intra-project cumulative effect on residential receptors. Up to Significant Effect for some receptors.</p> <p>No mitigation has been confirmed at this stage.</p>

Receptor	Project Phase/sources of minor and above effects	Residual Significance of Effects	Intra-Project Cumulative Effect?
		settlements. The health and wellbeing from construction activities was assessed as having a Minor adverse (not significant) effect upon residential receptors.	
Residential Receptors	Decommissioning: <ul style="list-style-type: none"> Visual Noise Health and Wellbeing 	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"> Visual Traffic and Transport Noise Health and Wellbeing 	<p>Changes to visual amenity for cyclists using the Wolf Way cycling route and the Suffolk Coastal Cycle Way were judged to be Moderate adverse (significant) to Major adverse (significant). The locations of these routes are detailed in Application Document 6.4.2.7.4 Walking and Cycling Routes (including PRow) - Suffolk Onshore Scheme. No further significant construction effects were defined specifically for these users (although they are expected to be subject to the effects described below, applicable to all relevant road users).</p> <p>Changes to visual amenity for drivers using the A1094 (VP 10) was judged to be minor adverse (Not significant) and changes to visual amenity for drivers using 'B' roads (including the B1119 and the B1121) and the local road network were judged to be Major adverse to Moderate adverse (significant).</p> <p>With respect to traffic and transport, several temporary impacts relating to one or more of the following criteria; Severance, Pedestrian Delay, Fear & Intimidation, Driver Delay and Road Safety are</p>	<p>There is potential for a significant intra-project cumulative effect during construction. Several visual amenity effects are assessed as significant for road users and whilst noise and vibration and traffic and transport impacts including severance, pedestrian delay, fear and intimidation are minor, these factors may combine in such a way as to lead to a significant intra-project cumulative effect upon transport and users. Significant Effect during construction for some routes.</p> <p>No mitigation has been confirmed at this stage.</p>

Receptor	Project Phase/sources of minor and above effects	Residual Significance of Effects	Intra-Project Cumulative Effect?
		<p>judged to be Minor adverse (not significant) for the highway network (road links and junctions) during the construction phase including for the A12 (south of the A1094), B1121 Main Road, the A1094, B1069, A12/A1094 junction, B1121 Main Road/ B1121 Church Hill junction and the A1094/B1069 junction.</p> <p>With respect to traffic and transport, temporary impacts relating to one or more of the following criteria; Severance, Pedestrian Delay, Non-Motorised User Amenity, Fear and Intimidation and PRow Diversions and Closures for the walking and cycling network during construction are judged to be Minor adverse (Not Significant) for PRow E-103/016/0, E-260/013/A, E-354/002/0, E-354/006/0, E-260/017/0, E-260/016/0, E-491/010/0, E-491/006/0, E-491/005/0 and E-460/023/0, as well as for Sandlings Walk and Regional Cycle Route 42.</p> <p>Noise from construction activities was deemed to have a Negligible to Minor adverse (Not significant) effect on drivers using roads in close proximity to the Proposed Project.</p> <p>Health and wellbeing effects arising from transport, access and connection impacts during the construction phase was deemed to be a minor adverse effect (not significant).</p>	
Transport and users	Operation and maintenance: <ul style="list-style-type: none"> • Visual • Traffic and Transport 	<p>Changes to visual amenity for cyclists using the Wolf Way cycling route and the Suffolk Coastal Cycle Way were judged to be Moderate adverse (significant) to Major adverse (significant). No further significant</p>	<p>There is potential for a significant intra-project cumulative effect in operation as several visual amenity effects</p>

Receptor	Project Phase/sources of minor and above effects	Residual Significance of Effects	Intra-Project Cumulative Effect?
	<ul style="list-style-type: none"> Health and Wellbeing 	<p>construction effects were defined specifically for these users (although they are expected to be subject to the effects described below, applicable to all relevant road users).</p> <p>Changes to visual amenity for drivers using the A1094 (VP 10) was judged to be minor adverse (Not significant).</p> <p>Changes to visual amenity for drivers using 'B' roads (including the B1119 and the B1121) and the local road network were judged to be major adverse to moderate adverse (significant).</p> <p>With respect to traffic and transport, permanent impacts relating to PRow Diversions and Closures during operation and maintenance were judged to be Minor adverse (Not Significant) for PRow E-354/006/0 and PRow E-491/005/0.</p> <p>Health and wellbeing effects arising from transport, access and connection impacts during the operational and maintenance phase is deemed to be a minor adverse effect (not significant).</p>	<p>were assessed as significant for people using roads, and there will be several permanent diversions and closures of PRow. Whilst noise and vibration, and traffic and transport impacts including severance, pedestrian delay, fear and intimidation are minor in this phase of the development, these impacts may combine to produce a significant intra-project cumulative effect upon transport users. Significant Effect during operation.</p> <p>No mitigation has been confirmed at this stage.</p>
Transport and users	Decommissioning: <ul style="list-style-type: none"> Visual Traffic and Transport Noise Health and Wellbeing 	As for Construction, see above.	The residual significance of effects is expected to be the same as for Construction, see above.

Receptor	Project Phase/sources of minor and above effects	Residual Significance of Effects	Intra-Project Cumulative Effect?
Ecological Receptors (excluding designated sites, see below)	Construction: <ul style="list-style-type: none"> Ecology and Biodiversity Water Environment 	<p>Overall habitat loss was deemed to be Minor adverse (Not Significant) in the medium-term, but Moderate beneficial (Significant) in the long-term due to habitat creation as part of Saxmundham Converter Station and Friston Substation proposals.</p> <p>Habitat loss for birds was deemed to be Moderate adverse (Significant) in the medium-term, taking account of enhancement of 6 ha of acid grassland to address construction period losses of acid grassland, but Moderate beneficial (Significant) in the long-term due to habitat creation as part of Saxmundham Converter Station and Friston Substation proposals with disturbance having a Minor adverse (Not Significant) effect.</p> <p>Habitat loss for bats, terrestrial invertebrate, reptiles, riparian mammals was deemed to be Minor adverse (Not Significant), but Moderate beneficial (Significant) in the long-term for riparian mammals.</p> <p>The spread of invasive species was deemed to be Minor Beneficial (Not Significant), due to control measures.</p> <p>Adverse effects on ecological receptors within watercourses and banks of watercourses due to installation of temporary culverts was judged to be Minor adverse (not significant).</p>	No significant adverse intra-project cumulative effect is identified on ecological receptors during construction as habitat loss is minor adverse (and beneficial in the longer term) and impacts on water courses are also judged to be minor adverse. These factors are not expected to combine in such a way as to lead to a significant intra-project cumulative effect upon ecological receptors. No significant effect.
Ecological Receptors	Operation and maintenance:	Overall habitat loss was deemed to be Moderate beneficial (Significant) in the long-term due to	No wider impacts have been identified on ecological receptors in the operation and

Receptor	Project Phase/sources of minor and above effects	Residual Significance of Effects	Intra-Project Cumulative Effect?
(excluding designated sites, see below)	<ul style="list-style-type: none"> Ecology and Biodiversity Water Environment 	<p>habitat creation as part of Saxmundham Converter Station and Friston Substation proposals.</p> <p>Habitat loss for birds was deemed to be Moderate beneficial (Significant) in the long-term due to the enhancement of 12 ha of arable land for ground nesting farmland birds, particularly skylark, maintained favourably for the lifetime of the Proposed Project.</p> <p>Habitat loss for dormouse, badgers, bats, reptiles, riparian mammals and terrestrial invertebrates was deemed to be Moderate beneficial (Significant) in the long-term due to habitat creation as part of Saxmundham Converter Station and Friston Substation proposals.</p>	<p>maintenance phase other than those associated with habitat loss and so there would be no significant intra-project cumulative effect. No significant effect.</p>
Ecological Receptors (excluding designated sites, see below)	Decommissioning	<p>Disturbance to birds was deemed to be Minor adverse (Not Significant) due to the avoidance of direct illuminating light on sensitive features.</p> <p>Adverse effects on ecological receptors within watercourses and banks of watercourses due to installation of temporary culverts was judged to be Minor Adverse (not significant).</p>	<p>It is judged that there is no significant intra-project effect during decommissioning, given that only two minor effects have been identified and they are likely to be highly localised, and therefore are not expected to combine in such a way as to cause a significant intra-project cumulative effect No significant effect.</p>
Designated/ Non-Designated Sites	Construction: <ul style="list-style-type: none"> Landscape and Visual 	<p>Impact on the visual amenity of Suffolk Coast and Heaths AONB was judged to be Minor adverse (not significant).</p>	<p>Effects have only been identified on Suffolk Coast and Heaths AONB from one topic</p>

Receptor	Project Phase/sources of minor and above effects	Residual Significance of Effects	Intra-Project Cumulative Effect?
	<ul style="list-style-type: none"> Ecology and Biodiversity 	The loss of functionally linked land, was deemed to have a Minor adverse (Significant) effect on Sandlings SPA, Leiston-Aldeburgh SSSI and RSPB North Warren Reserve.	(Landscape and Visual) and Sandlings SPA, Leiston-Aldeburgh SSSI and RSPB North Warren Reserve from one topic (Ecology and Biodiversity) . Therefore, there is no significant intra-project cumulative effect, on any single designated site, during the construction period. No significant effect.
Designated/ Non-Designated Sites	Operation and maintenance: <ul style="list-style-type: none"> Landscape and Visual 	Impact on the visual amenity of Suffolk Coast and Heaths AONB was judged to be Minor adverse (not significant) after 1 year of operation and decreases to negligible (not significant) after 15 years of operation).	Effects have only been identified on this receptor from one topic (Landscape and Visual) for the operation and maintenance phase and so there is no significant intra-project cumulative effect on designated/non-designated sites. No significant effect.
Designated/ Non-Designated Sites	Decommissioning: <ul style="list-style-type: none"> Landscape and Visual 	Impact on the visual amenity of Suffolk Coast and Heaths AONB was judged to be Minor adverse (not significant) .	Effects have only been identified on this receptor from one topic (Landscape and Visual) for the decommissioning phase and so there would be no significant intra-project cumulative effect on designated/non-designated sites. No significant effect.
Designated/non-designated heritage assets	Construction: <ul style="list-style-type: none"> Cultural Heritage Landscape and Visual 	Physical impacts on non-designated assets located throughout the Suffolk Onshore Scheme are considered to be Negligible to Minor Adverse (Not Significant) .	Potential effects have only been identified on non-designated assets from two additional topics (Landscape and Visual and Noise and vibration) for the

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 	<p>There will be no physical impacts on designated assets.</p> <p>Impact on the visual amenity of Suffolk Heritage Coast was judged to be Minor adverse (Not significant).</p> <p>Noise and vibration from construction activities was deemed to have a Negligible to Minor adverse (Not significant) effect on physical heritage assets, as well as the people visiting the heritage sites.</p>	<p>construction phase, both of which identified Negligible or Minor effects, and are 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 effect.</p>
Designated/non-designated heritage assets	<p>Operation and maintenance:</p> <ul style="list-style-type: none"> Cultural Heritage Visual Noise and Vibration 	<p>Impacts on the setting of designated/non-designated assets resulting from the Operational and Maintenance phase of the Suffolk Onshore Scheme are considered to be Negligible to Minor Adverse (Not Significant).</p> <p>Impact on the visual amenity of Suffolk Heritage Coast was judged to be Minor adverse (not significant) after 1 year of operation and decreases to negligible (not significant) after 15 years of operation).</p> <p>Operational noise from the proposed Saxmundham Converter Station and Friston Substation was deemed to have a Minor adverse (Not significant) effect on physical heritage assets, as well as the people visiting the heritage sites.</p>	<p>Potential effects on designated and non-designated assets from two additional topics (Landscape and Visual and Noise and Vibration) for the operational and maintenance phase, have both identified Negligible or Minor effects, and are 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 effect.</p>
Designated/non-designated heritage assets	<p>Decommissioning:</p> <ul style="list-style-type: none"> Cultural Heritage Visual Noise and Vibration 	<p>The residual significance of effects is expected to be the same as for Construction, see above.</p>	<p>The residual significance of effects is expected to be the same as for Construction, see above.</p>

Receptor	Project Phase/sources of minor and above effects	Residual Significance of Effects	Intra-Project Cumulative Effect?
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 Minor adverse (not significant) for groundwater abstractions.</p>	The effects identified on water resources during the construction phase are assessed to be negligible to minor and it is not expected that these impacts will result in a significant intra-project cumulative effect. No significant effect.
Water Resources (existing abstractions and discharges)	Operation and maintenance: <ul style="list-style-type: none"> Water Environment Geology and Hydrology 	[There is very limited potential for degradation of surface and groundwater quality during operation and maintenance of the Project. There would therefore be Negligible (not significant) indirect effects in terms of detriment to existing abstraction and discharge licence holders.]	There is no potential for an intra-project cumulative effect during the operation and maintenance phase for water resources. No significant effect.
Water Resources (existing abstractions and discharges)	Decommissioning: <ul style="list-style-type: none"> Geology and Hydrology 	The mobilisation of existing contamination within groundwater is judged to be Minor adverse (not significant) for groundwater abstractions.	As effects have only been identified on this receptor for one topic (Geology and Hydrology) for the decommissioning phase, there is no potential for an intra-project cumulative effect. No significant effect.
Watercourses and water bodies	Construction: <ul style="list-style-type: none"> Water Environment 	<p>Water quality deterioration from silt, oil, and hydrocarbon pollution is deemed to have Minor adverse (not significant) effects on watercourses and temporary drainage outfalls.</p> <p>Pollution from vehicle fuelling and storage is deemed to have a minor adverse to negligible (not significant) effect.</p>	As effects have only been identified on this receptor for one topic (Water Environment) for the construction phase, there is no potential for an intra-project cumulative effect. No significant effect.

Receptor	Project Phase/sources of minor and above effects	Residual Significance of Effects	Intra-Project Cumulative Effect?
		<p>Due to the creation of impermeable areas, run off rates may increase which will have a minor adverse to negligible (not significant) effect on land drains.</p> <p>Impacts to hydromorphology including, changes in channel flows and profile, flood plain connectivity and loss of floodplain is considered to be Minor adverse (not significant) but it is considered that the Proposed Project would have a negligible (not significant) impact on the flood storage and floodplain flow attributes.</p>	
Watercourses and water bodies	Operation and maintenance: <ul style="list-style-type: none"> Water Environment 	<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.</p> <p>The mobilisation of existing contamination within groundwater is judged to be a Minor adverse (not significant) effect for groundwater abstractions.</p>	There is considered to be no potential for an intra-project cumulative effect during the operation and maintenance phase for watercourses and bodies. No significant effect.
Watercourses and water bodies	Decommissioning: <ul style="list-style-type: none"> 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 	<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</p>	As effects have only been identified on this receptor from one topic (Agriculture and Soils) for the construction phase, there is no potential for an intra-project cumulative effect. No significant effect

Receptor	Project Phase/sources of minor and above effects	Residual Significance of Effects	Intra-Project Cumulative Effect?
		<p>agricultural production from 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, which is only required temporarily, there will still be a permanent loss of BMV land and this is deemed as a moderate to major adverse significant effect.</p>	
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 this would have 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 effect.
Soils	Decommissioning	<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>	As effects have only been identified on this receptor from one topic (Agriculture and Soils) for the decommissioning phase, there is no potential for an intra-project effect. No significant effect.

Receptor	Project Phase/sources of minor and above effects	Residual Significance of Effects	Intra-Project Cumulative Effect?
Public Rights of Way and users	<p>Construction:</p> <ul style="list-style-type: none"> • Landscape and Visual • Health and Wellbeing • Socio-economics • Traffic and Transport 	<p>Overall, changes to visual amenity for PRow ranges from Major adverse (Significant) to Minor adverse (Not Significant). The significance varies depending on location and proximity (defined as viewpoints) to the Proposed Project.</p> <p>Major adverse (Significant) effects have been concluded on users of the Suffolk Coast Path, the Sailors' Path recreational route several local footpaths/bridleways. Minor adverse (Not Significant) effects have been concluded on users of the King Charles III England Coastal Path, Sandlings Walk and local footpaths/bridleways.</p> <p>When applying Friston scenario 2, the adverse effects on visual amenity are greater and deemed Minor adverse (not significant) to Moderate adverse (Significant), compared to a Minor adverse (not significant) effect when applying Friston scenario 1.</p> <p>With respect to traffic and transport, temporary impacts relating to one or more of the following criteria; 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 E-103/016/0, E-260/013/A, E-354/002/0, E-354/006/0, E-260/017/0, E-260/016/0, E-491/010/0, E-491/006/0, E-491/005/0 and E-460/023/0.</p> <p>In terms of the socio-economic assessment, changes to user experience, route value, journey times and</p>	<p>The intra-project cumulative effect on PRow users of Footpaths 103/016/0, 354/007/A, 354/006/0, 260/015/0, 260/013/A, 260/016/0, 260/017/0, 491/005/0, Bridleway 354/002/0, Aldeburgh and Thorpeness Walk and King Charles III England Coastal Path is judged to be not significant as none of the effects, summarised to the left, when combined, are not considered to result in additional or exacerbated effects on the receptors that are greater than the individual effects already defined. No significant effect.</p> <p>There is potential for a significant intra-project cumulative effect to occur on PRow users of 491/010/0 as visual amenity effects were assessed as major adverse within the Landscape and Visual chapter, changes to user experience and local travel patterns were assessed as minor adverse in Socio-Economics, Recreation and Tourism chapter and the PRow</p>

Receptor	Project Phase/sources of minor and above effects	Residual Significance of Effects	Intra-Project Cumulative Effect?
		<p>local travel patterns were judged to have Minor adverse (not significant) impacts upon several users of bridleways and footpaths, including 260/013/A, 260/016/0, 491/006/0, 491/005/0, Aldeburgh and Thorpeness Walk and King Charles III England Coastal Path.</p> <p>With respect to health and wellbeing, any impacts arising on community connectivity and accessibility during the construction phase, including PRoW and other active travel networks, would be experienced by a small proportion of the population and for a short-term. Additionally, alternative nearby routes are available within the wider PRoW network, meaning there is maintained accessibility to PRoW networks for physical activity. As a result, health and wellbeing effects are deemed to be minor adverse (not significant).</p>	<p>may also be subject to minor adverse traffic and transport effects. These effects, when combined, are considered to result in a significant intra-project cumulative effect. Significant effect.</p> <p>No mitigation has been confirmed at this stage.</p> <p>As effects on the Suffolk Coast Path and Sailors Path have only been identified on this receptor from one topic (Landscape and Visual) for the construction phase, there is judged to be no potential for an intra-project cumulative effect. No significant effect.</p>
Public Rights of Way and users	Operation and maintenance: <ul style="list-style-type: none"> • Landscape and Visual • Health and Wellbeing • Socio-economics • Traffic and Transport 	<p>Overall, changes to visual amenity for PRoW ranges from Major adverse (Significant) to Minor adverse (Not Significant). The significance varies depending on location and proximity (defined as VP's) to the Proposed Project.</p> <p>Major adverse (Significant) effects have been concluded on users of the Suffolk Coast Path, the Sailors' Path recreational route several local footpaths/bridleways but decrease to Moderate adverse (Significant) after 15 years of operation.</p>	<p>The intra-project cumulative effect on PRoW users of Footpaths 260/016/0, 491/005/0, 260/017/0 and 354/006/0 is not expected to be 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</p>

Receptor	Project Phase/sources of minor and above effects	Residual Significance of Effects	Intra-Project Cumulative Effect?
		<p>Minor adverse (Not Significant) effects have been concluded on users of the King Charles III England Coast Path, Sandlings Walk and local footpaths/bridleways.</p> <p>When considering Friston scenario 2, the adverse effects on visual amenity are greater and deemed Minor adverse (not significant) to Moderate adverse (Significant), compared to a Negligible adverse (not significant) effect when applying Friston scenario 1.</p> <p>With respect to traffic and transport, permanent impacts relating to PRoW Diversions and Closures during operation and maintenance were judged to be Minor adverse (Not Significant) for PRoW E-354/006/0 and PRoW E-491/005/0.</p> <p>With respect to health and wellbeing, permanent impacts to Footpath 260/017/0, Footpath 491/005/0 and Footpath 260/016/0 are not expected to be significant as operational vehicle movements on the permanent access road are anticipated to be minimal and unlikely to create disruption for users of the PRoW. Given this, there is potential for only minor changes to quality-of-life and effects are deemed to be Minor adverse (not significant).</p>	the individual effects already defined. No significant effect.
Public Rights of Way and users	Decommissioning: <ul style="list-style-type: none"> • Landscape and Visual • Health and Wellbeing • Socio-economics 	Overall, changes to visual amenity for PRoW ranges from Major adverse (Significant) to Minor adverse (Not Significant) . The significance varies depending on location and proximity (defined as VP's) to the Proposed Project.	The intra-project cumulative effect on PRoW users of Footpaths 103/016/0, 354/007/A, 354/006/0, 260/015/0, 260/013/A, 260/016/0,

Receptor	Project Phase/sources of minor and above effects	Residual Significance of Effects	Intra-Project Cumulative Effect?
	<ul style="list-style-type: none"> Traffic and Transport 	<p>Major adverse (Significant) effects have been concluded on users of the Suffolk Coast Path, the Sailors' Path recreational route and several local footpaths/bridleways. Minor adverse (Not Significant) effects have been concluded on users of the King Charles III England Coast Path, Sandlings Walk and local footpaths/bridleways.</p> <p>When applying Friston scenario 2, the adverse effects on visual amenity are greater and deemed Minor adverse (not significant) to Moderate adverse (Significant), compared to a Minor adverse (not significant) effect when applying Friston scenario 1.</p> <p>With respect to traffic and transport, temporary impacts relating to one or more of the following criteria; Severance, Pedestrian Delay, Non-Motorised User Amenity, Fear and Intimidation and PRow Diversions and Closures during decommissioning were judged to be Minor adverse (Not Significant) for PRow E-103/016/0, E-260/013/A, E-354/002/0, E-354/006/0, E-260/017/0, E-260/016/0, E-491/010/0, E-491/006/0, E-491/005/0 and E-460/023/0.</p> <p>In terms of the socio-economic assessment, changes to user experience, route value, journey times and local travel patterns were judged to have Minor adverse (not significant) impacts upon several users of bridleways and footpaths, including 260/013/A, 260/016/0, 491/006/0, 491/005/0,</p>	<p>260/017/0, 491/005/0, Bridleway 354/002/0, Aldeburgh and Thorpeness Walk and King Charles III England Coastal Path 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 effect.</p> <p>There is potential for a significant intra-project cumulative effect to occur on PRow users of 491/010/0 as visual amenity effects were assessed as major adverse within the Landscape and Visual chapter, changes to user experience and local travel patterns were assessed as minor adverse in Socio-Economics, Recreation and Tourism chapter and the PRow may also be subject to minor adverse traffic and transport effects. These effects are expected to combine to result in a significant intra-project cumulative effect upon PRow</p>

Receptor	Project Phase/sources of minor and above effects	Residual Significance of Effects	Intra-Project Cumulative Effect?
		Aldeburgh and Thorpeness Walk and King Charles III England Coastal Path.	491/010/0 users. Significant effect. No mitigation has been confirmed at this stage. As effects on the Suffolk Coast Path and Sailors Path have only been identified on this receptor from one topic (Landscape and Visual) for the decommissioning phase, there is no potential for an intra-project effect. No significant effect.
Recreational Receptors and Communities	Construction: <ul style="list-style-type: none"> • Landscape and Visual • Health and Wellbeing • Noise • Socio-economics 	<p>Changes to visual amenity for people using or visiting the Aldeburgh Golf Course (VP 11) and Knodishall Common (VP 9) were judged to be Minor adverse (not significant).</p> <p>Employment and Gross Value Added (GVA) generation (short-term, temporary) is judged to have a Minor beneficial (not significant) effect on communities.</p> <p>Pressure on social infrastructure from inflows of construction workers (short term, temporary) which was judged to be Minor adverse (Not significant).</p> <p>Land take, amenity impacts, connectivity impacts and hindrance to other developments are judged as</p>	The intra-project cumulative effect on recreational receptors and communities is judged to be not significant as none of the effects during construction, 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 upon recreational receptors and communities . No significant effect.

Receptor	Project Phase/sources of minor and above effects	Residual Significance of Effects	Intra-Project Cumulative Effect?
		<p>Minor adverse (not significant) impacts upon communities, recreational user and tourists.</p> <p>Construction noise from access construction, HDD works and underground cable construction was deemed to have a Minor adverse (not significant) effect upon residential receptors.</p> <p>With respect to health and wellbeing, effects on residential properties (in terms of physical changes or disruptions to residential communities), including any required access during the construction phase, would not have a significant effect on the social environment or community cohesion in these settlements and would only be temporary. Hence, health wellbeing effects on residential receptors and communities are deemed Minor adverse (not significant).</p>	
Recreational Receptors and Communities	Operation and maintenance: <ul style="list-style-type: none"> • Health and Wellbeing • Noise • Visual 	<p>Changes to visual amenity for people using or visiting the Aldeburgh Golf Course (VP 11) was judged to be Minor adverse (not significant) after 1 year of operation.</p> <p>Operational noise from proposed Saxmundham Converter Station and Friston Substation and other maintenance activities was judged to be a Minor adverse (not significant) upon residential receptors.</p> <p>With respect to health and wellbeing, effects on residential properties (in terms of physical changes or disruptions to residential communities), including any required access during the operational and maintenance phase, would not have a significant</p>	The intra-project cumulative effect on recreation and communities is judged to be not significant as the minor effects, (see left) and are not expected to combine in such a way as to lead to a significant intra-project cumulative effect upon residential receptors. No significant effect.

Receptor	Project Phase/sources of minor and above effects	Residual Significance of Effects	Intra-Project Cumulative Effect?
		effect on the social environment or community cohesion in these settlements and would only be temporary. Hence, health wellbeing effects on residential receptors and communities are deemed Minor adverse (not significant) .	
Recreational Receptors and Communities	Decommissioning: <ul style="list-style-type: none"> • Human Health • Socio-economics • Noise • Visual 	<p>Changes to visual amenity for people using or visiting the Aldeburgh Golf Course (VP 11) and Knodishall Common (VP 9) were judged to be Minor adverse (not significant).</p> <p>Employment and GVA generation (short-term, temporary) is judged to have a Minor beneficial (not significant) effect on communities. However, pressure on local accommodation facilities from inflows of construction workers and pressure on local construction labour supply (short term, temporary) was judged to be Negligible (not significant) as well as pressure on social infrastructure from inflows of construction workers (short term, temporary) which was judged to be Minor adverse (Not significant).</p> <p>Land take, amenity impacts, connectivity impacts and hindrance to other developments are judged as Minor adverse (not significant) impacts upon communities, recreational user and tourists.</p> <p>Noise from maintenance activities is judged to have Negligible to Minor adverse (not significant) effects on residential receptors.</p>	The intra-project cumulative effect on recreation and communities is judged to be not significant as the effects during decommissioning, (see left) and are not expected to combine in such a way as to lead to a significant intra-project cumulative effect. No significant effect.

Receptor	Project Phase/sources of minor and above effects	Residual Significance of Effects	Intra-Project Cumulative Effect?
		With respect to health and wellbeing, effects on residential properties (in terms of physical changes or disruptions to residential communities), including any required access during the decommissioning phase, would not have a significant effect on the social environment or community cohesion in these settlements and would only be temporary. Hence, health wellbeing effects on residential receptors and communities are deemed Minor adverse (not significant) .	
Human Health	Construction: <ul style="list-style-type: none"> • Human Health • Air Quality • Traffic and Transport • Socio-economics • Noise • Visual 	<p>Access to open spaces and leisure activities is judged to have a 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> <p>Increased exposure to noise pollution is judged to have a Minor adverse (not significant) impact on human health.</p> <p>Potential adverse impacts on journeys made by active travel modes is judged to be 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) which could impact human health positively.</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. Furthermore, the health and wellbeing assessment inherently incorporates the findings and conclusions of relevant environmental disciplines, including landscape and visual, traffic and transport, air quality, noise and vibration, socio-economics, recreation, and tourism, on receptors. No significant effect.

Receptor	Project Phase/sources of minor and above effects	Residual Significance of Effects	Intra-Project Cumulative Effect?
		<p>Disruption to community connectivity and potential changes to landscape and visual amenity is judged to have Minor adverse (not significant) impacts 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>	
Human Health	Operation and maintenance: <ul style="list-style-type: none"> • Human Health • Air Quality • Traffic and Transport • Socio-economics • Noise • Visual 	<p>Access to open spaces and leisure activities is judged to have a 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> <p>Increased exposure to noise pollution is judged to have a Minor adverse (not significant) impact on human health.</p> <p>Potential adverse impacts on journeys made by active travel modes is judged to be a Minor adverse (not significant) effect on health and wellbeing.</p> <p>Disruption to community connectivity and potential changes to landscape and visual amenity is judged to have Minor adverse (not significant) impacts on health and wellbeing.</p>	<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. Furthermore, the health and wellbeing assessment inherently incorporates the findings and conclusions of relevant environmental disciplines, including landscape and visual, traffic and transport, air quality, noise and vibration, socio-economics, recreation, and tourism, on receptors. No significant effect.</p>

Receptor	Project Phase/sources of minor and above effects	Residual Significance of Effects	Intra-Project Cumulative Effect?
Human Health	Decommissioning	<p>Access to open spaces and leisure activities is judged to have a 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> <p>Increased exposure to noise pollution is judged to have a Minor adverse (not significant) impact on human health.</p> <p>Potential adverse impacts on journeys made by active travel modes is judged to be 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) 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) impacts 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</p>	<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. Furthermore, the health and wellbeing assessment inherently incorporates the findings and conclusions of relevant environmental disciplines, including landscape and visual, traffic and transport, air quality, noise and vibration, socio-economics, recreation, and tourism, on receptors. No significant effect.</p>

Receptor	Project Phase/sources of minor and above effects	Residual Significance of Effects	Intra-Project Cumulative Effect?
		has been judged to have a minor adverse (not significant) effect upon human health.	

12.2 Summary

- 12.2.1 The assessment of intra-cumulative effects resulting from the 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, significant adverse effects were identified for the following receptors:
- In respect to residential receptors, for Friston scenario 2, the intra-project cumulative effect is judged to be significant during construction, operation and maintenance, and decommissioning as visual amenity effects were assessed as significant within the Landscape and Visual chapter and there would be additional noise effects, albeit that these are expected to be minor, and these may impact the same receptors. No mitigation has been confirmed at this stage.
 - For transport and transport users, there is potential for a significant intra-project cumulative effect during construction, operational and maintenance and decommissioning as several visual amenity effects were assessed as significant for people using cycle paths and, roads and rail and there will be a number of temporary and permanent PRow diversions and closures. Whilst noise and vibration and impacts including severance, pedestrian delay, fear and intimidation are minor the combination of all these impacts could have a significant effect upon transport users. No mitigation has been confirmed at this stage.
 - In respect to users of PRow, there is potential for a significant intra-project cumulative effect to occur construction and decommissioning on PRow users of Footpaths 260/017/0, 491/005/0, 491/006/0 and Bridleway 491/010/0 as changes to user experience and local travel patterns were assessed as moderate adverse within the Socio-Economics Recreation and Tourism chapter, visual amenity effects were assessed as either moderate or major adverse within the Landscape and Visual chapter and the PRow may also be subject to minor adverse traffic and transport effects. No mitigation has been confirmed at this stage.
 - Similarly, there is potential for a significant intra-project cumulative effect to occur in construction and decommissioning on PRow users of Bridleway 354/002/0 as visual amenity effects were assessed as minor adverse within the Landscape and Visual chapter, changes to user experience and local travel patterns were assessed as moderate adverse in Socio-Economics, Recreation and Tourism chapter and the PRow may also be subject to minor adverse traffic and transport effects. No mitigation has been confirmed at this stage.

12.3 References

Planning Inspectorate. (2024). *Planning Inspectorate Advice Note Seventeen: Cumulative effects assessment relevant to nationally significant infrastructure projects*. Retrieved from <https://infrastructure.planninginspectorate.gov.uk/legislation-and-advice/advice-notes/advice-note-17/>.

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