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Norwich to Tilbury

Volume 6: Environmental Statement

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Contents

17. Intra-Project Cumulative Effects

17.1 Introduction

17.1.1 This appendix has been produced to support Chapter 17: Cumulative Effects (document reference 6.17) of the Environmental Statement (ES) (Volume 6 of the Development Consent Order (DCO) application) for Norwich to Tilbury (the 'Project'). This appendix outlines Stages 1, 2 and 3 of the intra-project cumulative effects assessment on receptors during construction and operation (and maintenance) of the Project.

17.1.2 This appendix should be read in conjunction with Chapter 17: Cumulative Effects (document reference 6.17).

17.2 Step 1: Identification of Common Receptors including Representative Groups and/or Individual Receptors

17.2.1 Step 1 of the intra-project cumulative effects assessment was to identify common receptor groups which are receptors that have potential to be affected by more than one environmental topic. Common receptors identified for inclusion in this assessment comprise:

- People (including local residents and nearby communities)
- Community land and assets (including community facilities e.g., schools, places of worship and community centres as well as recreational land e.g., National Landscapes, local nature reserves and playing fields)
- Development land and businesses
- Agricultural land holdings
- Pedestrians, cyclists and horse riders
- Biodiversity receptors
- Heritage assets
- Landscape and visual receptors
- Surface water receptors
- Groundwater receptors.

17.2.2 Table A17.1.1 presents the screening matrix for the intra-project assessment. This matrix details which topic chapters (ES Chapters 6 – 16) (document reference 6.6 – 6.17) assess residual effects for each of the common receptors listed above (presented by a Y). Where intra-project cumulative effects are intrinsic / part of the methodology within the environmental topic chapters this is also recorded in Table A17.1.1 and not considered further in the assessment.

Table A17.1.1 Step 1: Intra-Project Cumulative Effects Screening Matrix

Receptor group	Potential for effects on receptor group from other environmental topic chapters (Chapters 6 to 16) (document reference 6.6 – 6.17)											Intra-project effects that are intrinsic in the ES Chapters and therefore are not taken forward to Step 3
	6. Agriculture and Soils	7. Air Quality	8. Ecology and Biodiversity	9. Contaminated Land, Geology and Hydrogeology	10. Health and Wellbeing	11. Historic Environment	12. Hydrology, Land Drainage and Flood Risk	13. Landscape and Visual	14. Noise and Vibration	15. Socio-economics, Recreation and Tourism	16. Traffic and Transport	
People (including local residents and nearby communities)	Y	Y	N	N	Y	N	N	Y	Y	Y	Y	Intra-project cumulative effects are intrinsic in the assessment presented in Chapter 10: Health and Wellbeing (document reference 6.10). The chapter includes an assessment of residual effects on people (including local residents and nearby communities) as a result of: • Food security due to changes in land use during construction • Reduced air quality from construction • Mental health and wellbeing effects during construction and operation (and maintenance) • Increased noise during construction and operation (and maintenance) • Visual amenity effects during construction • Access to jobs and training during construction • Access to social infrastructure (e.g., healthcare) during construction • Disruption to Public Rights of Way (PRoW) and open spaces during construction • Community safety risks from construction traffic. The intra-project cumulative effects on people (including local residents and nearby communities) are therefore not taken forwards to Step 3 or considered further in the assessment.
Community and land assets	N	Y	N	N	N	N	Y	Y	Y	Y	Y	N/A
Development land and businesses	N	Y	N	N	N	N	Y	Y	Y	Y	Y	N/A
Agricultural land holdings	Y	N	N	N	N	N	Y	N	N	Y	N	Intra-project effects are intrinsic in the assessment presented in Chapter 6: Agriculture and Soils (document reference 6.6). The chapter includes an intra-project cumulative assessment of residual effects on the following aspects: • Temporary and permanent land loss during construction and operation (and maintenance) • Fragmentation of land and access restrictions during construction and operation (and maintenance)

Receptor group	Potential for effects on receptor group from other environmental topic chapters (Chapters 6 to 16) (document reference 6.6 – 6.17)											Intra-project effects that are intrinsic in the ES Chapters and therefore are not taken forward to Step 3
	6. Agriculture and Soils	7. Air Quality	8. Ecology and Biodiversity	9. Contaminated Land, Geology and Hydrogeology	10. Health and Wellbeing	11. Historic Environment	12. Hydrology, Land Drainage and Flood Risk	13. Landscape and Visual	14. Noise and Vibration	15. Socio-economics, Recreation and Tourism	16. Traffic and Transport	
												• Disturbance during construction and throughout operation (and maintenance) • Disruptions to water supplies and drainage during construction • Impacts to soil including compaction and stripping during construction. The intra-project cumulative effects above are therefore not taken forwards to Step 3 or considered further in the assessment.
Pedestrians, cyclists and horse riders	N	Y	N	N	N	N	N	Y	Y	Y	Y	N/A
Biodiversity receptors	Y	Y	Y	Y	N	N	Y	Y	Y	N	N	Intra-project effects are intrinsic in the assessment presented in Chapter 8: Ecology and Biodiversity (document reference 6.8). The chapter includes an intra-project cumulative assessment of residual effects on the following aspects: • Temporary loss of arable land to facilitate construction • Deterioration of surface waters through silted or polluted runoff from soil stripping and stockpiling during construction • Pollution associated with trenchless crossings during construction • Disturbance of bed sediments due to open cut crossings during construction • Excavations and foundation work may contaminate groundwater that terrestrial ecosystems rely upon during construction • Air quality changes resulting in habitat loss or modification during construction • General disturbance (changes in noise levels, vibration, light and movement) may disturb or displace fauna during construction • Habitat loss due to permanent and temporary infrastructure siting, vegetation clearance or accidental encroachment during construction and operation (and maintenance). The intra-project cumulative effects above are therefore not taken forwards to Step 3 or considered further in the assessment.

Receptor group	Potential for effects on receptor group from other environmental topic chapters (Chapters 6 to 16) (document reference 6.6 – 6.17)											Intra-project effects that are intrinsic in the ES Chapters and therefore are not taken forward to Step 3
	6. Agriculture and Soils	7. Air Quality	8. Ecology and Biodiversity	9. Contaminated Land, Geology and Hydrogeology	10. Health and Wellbeing	11. Historic Environment	12. Hydrology, Land Drainage and Flood Risk	13. Landscape and Visual	14. Noise and Vibration	15. Socio-economics, Recreation and Tourism	16. Traffic and Transport	
Heritage assets	N	Y	Y	N	N	Y	Y	Y	Y	Y	Y	Intra-project effects are intrinsic in the assessment presented in Chapter 11: Historic Environment (document reference 6.11). The chapter includes an intra-project cumulative assessment of residual effects on the following aspects: • Disturbance and mobilisation of contamination due to construction activities • Permanent changes to groundwater flows • Setting and indirect effects during construction and operation (and maintenance). The intra-project cumulative effects above are therefore not taken forwards to Step 3 or considered further in the assessment.
Landscape and visual receptors	Y	N	N	N	N	Y	N	Y	Y	Y	Y	Intra-project effects are intrinsic in the assessment presented in Chapter 13: Landscape and Visual (document reference 6.13). The chapter includes an intra-project cumulative assessment of residual effects on the following aspects: • Removal of woodland, trees, scrub and hedgerows during construction • Soil stripping, earthworks and excavation during construction • General construction activities including traffic, signage, fencing and lighting • Temporary and permanent infrastructure. The intra-project cumulative effects above are therefore not taken forwards to Step 3 or considered further in the assessment.
Surface water receptors	Y	N	N	Y	N	N	Y	N	N	N	Y	Intra-project effects are intrinsic in the assessment presented in Chapter 12: Hydrology, Land Drainage and Flood Risk (document reference 6.12). The chapter includes an intra-project cumulative assessment of residual effects on the following aspects: • Disruption of flow regimes due to channel/bed modifications from construction activities • Pollution from construction activities including traffic • Reduction in surface water quality from soil stripping and stockpiling runoff • Third party infrastructure works.

Receptor group	Potential for effects on receptor group from other environmental topic chapters (Chapters 6 to 16) (document reference 6.6 – 6.17)											Intra-project effects that are intrinsic in the ES Chapters and therefore are not taken forward to Step 3
	6. Agriculture and Soils	7. Air Quality	8. Ecology and Biodiversity	9. Contaminated Land, Geology and Hydrogeology	10. Health and Wellbeing	11. Historic Environment	12. Hydrology, Land Drainage and Flood Risk	13. Landscape and Visual	14. Noise and Vibration	15. Socio-economics, Recreation and Tourism	16. Traffic and Transport	
												The intra-project cumulative effects above are therefore not taken forwards to Step 3 or considered further in the assessment.
Groundwater receptors	N	N	N	Y	N	N	N	N	N	N	N	Intra-project effects are intrinsic in the assessment presented in Chapter 9: Contaminated Land, Geology and Hydrogeology (document reference 6.9). The chapter includes an intra-project cumulative assessment of residual effects on the following aspects: • Disturbance and mobilisation of existing contamination due to construction activities • Introduction of new contamination at trenchless crossings during construction • Change in the flow and level of groundwater due to dewatering during construction • Creation of new groundwater flow pathways due to ground disturbance during construction. The intra-project cumulative effects above are therefore not taken forwards to Step 3 or considered further in the assessment.

17.3 Step 2 and 3: Intra Project Cumulative Effects

17.3.1 Residual effects for all common receptors (apart from those identified in Table A17.1.1 as already being assessed within the ES (Volume 6 of the DCO application)) are presented in Table A17.1.2.

17.3.2 Table A17.1.2 also presents the assessment of intra-project cumulative effects. The following common receptors have the potential to give rise to intra-project cumulative effects, and have therefore been included in the assessment:

- Community and land assets (construction phase only)
- Development land and businesses (construction phase only)
- Pedestrians, cyclists and horse riders (construction phase only).

17.3.3 Professional judgement has been used to assess the significance of the intra-effects.

17.3.4 No effects on common receptors during the operation (and maintenance) phase of the Project have been identified which could give rise to intra-project cumulative effects and are therefore not considered further.

Table A17.1.2 Intra-Project Residual Cumulative Construction Effects

Project Section	Receptor	Topic Chapter	Summary of Topic Chapter Residual Effects	Potential for Intra-Project Cumulative Effects
Community and land assets				
G	Woodland Schools - Hutton Manor and Little Acorn	Chapter 15: Socio-economics, Recreation and Tourism (document reference 6.15)	The residual construction effects on Hutton Manor and Little Acorn Woodland Schools would be temporary, short-term and **minor adverse**. There would be temporary acquisition of land from the majority of sports pitches and sports ground of the nursery and primary school. Construction access within the school would be managed, with periodic disruption to the sports ground.	Acquisition of land from the sports pitches and sports ground would be temporary and short term during construction due to temporary construction access for third-party work (i.e. UK Power Network (UKPN) dismantling work - within a six-month period). These receptors are located within Flood Zone 1, defined as an area with a probability of less than 0.1% of annual flooding from rivers or the sea. Increases in flood risk at this location are therefore highly unlikely to occur within the timeframe of the land acquisition. It is not considered that the effects when considered in combination would increase the significance of effect above that has already been assessed in each topic chapter. The intra-project cumulative effects on the Woodland Schools - Hutton Manor and Little Acorn is therefore considered to be **not significant**.
		Chapter 12: Hydrology, Land Drainage and Flood Risk (document reference 6.12)	Woodland Schools - Hutton Manor and Little Acorn are receptors classified as more vulnerable to flood risk under National Planning Policy Framework (NPPF) Annex 3 and have therefore been assigned high/very high sensitivity within Hydrology, Land Drainage and Flood Risk (document reference 6.12). These receptors are located within Flood Zone 1, defined as an area with a probability of less than 0.1% of annual flooding from rivers or the sea. Increases in flood risk at this location are therefore highly unlikely to occur within the timeframe for construction. However, owing to their high receptor sensitivities under NPPF, flood risk and land drainage effects are anticipated to be temporary, short-term and **minor adverse.**	
Development land and businesses				
B	Doves Barn	Chapter 15: Socio-economics, Recreation and Tourism (document reference 6.15)	The residual construction effects on Doves Barn would be temporary, short-term and **minor adverse**. There would be temporary acquisition along the western edge of the visitor accommodation, however, access to the business would be maintained.	Doves Barn is located within Flood Zone 1, defined as an area with a probability of less than 0.1% of annual flooding from rivers or the sea. Increases in flood risk at this location are therefore highly unlikely to occur within the timeframe of construction of the Project. It is not considered that the effects when considered in combination would increase the significance of effect above that has already been assessed in each topic chapter. The intra-project cumulative effects on Doves Barn is therefore considered to be **not significant.**
		Chapter 12: Hydrology, Land Drainage and Flood Risk (document reference 6.12)	Doves Barn is a receptor type that is classified as more vulnerable to flood risk under NPPF Annex 3 and has therefore been assigned high/very high sensitivity within Chapter 12: Hydrology, Land Drainage and Flood Risk (document reference 6.12). This receptor is located within Flood Zone 1, defined as an area with a probability of less than 0.1% of annual flooding from rivers or the sea. Increases in flood risk at this location are therefore highly unlikely to occur within the timeframe for construction. However, owing to the high receptor sensitivity under NPPF, flood risk and land drainage effects are anticipated to be temporary, short-term and **minor adverse.**	
B	Red Brick Retreat	Chapter 12: Hydrology, Land Drainage and Flood Risk (document reference 6.12)	Red Brick Retreat is a receptor type that is classified as more vulnerable to flood risk under NPPF Annex 3 and has therefore been assigned high/very high sensitivity within Chapter 12: Hydrology, Land Drainage and Flood Risk (document reference 6.12). This receptor is located within Flood Zone 1, defined as an area with a probability of less than 0.1% of annual flooding from rivers or the sea. Increases in flood risk at this location are therefore highly unlikely to occur within the timeframe for construction. However, owing to the	Red Brick Retreat is located within Flood Zone 1, defined as an area with a probability of less than 0.1% of annual flooding from rivers or the sea. Increases in flood risk at this location are therefore highly unlikely to occur within the timeframe of construction of the Project. Therefore, flood risk and land drainage effects

Project Section	Receptor	Topic Chapter	Summary of Topic Chapter Residual Effects	Potential for Intra-Project Cumulative Effects
			high receptor sensitivity under NPPF, flood risk and land drainage effects are anticipated to be temporary, short-term and minor adverse.	are not anticipated to lead to a magnification of any potential construction effects assessed in Chapter 15: Socio-economics, Recreation and Tourism (document reference 6.15). The intra-project cumulative effects on Red Brick Retreat is therefore considered to be **not significant**.
		Chapter 15: Socio-economics, Recreation and Tourism (document reference 6.15)	The residual construction effects on Red Brick Retreat would be temporary, short-term and minor adverse. No land acquisition is anticipated and access would be maintained during construction. There would be potential air quality and noise effects due to proximity to the Order Limits. However, a moderate adverse visual effect is the main driver of effect.	
C	Finjaro Guest House	Chapter 12: Hydrology, Land Drainage and Flood Risk (document reference 6.12)	Finjaro Guest House is a receptor type that is classified as more vulnerable to flood risk under NPPF Annex 3 and has therefore been assigned high/very high sensitivity within Chapter 12: Hydrology, Land Drainage and Flood Risk (document reference 6.12). This receptor is located within Flood Zone 1, defined as an area with a probability of less than 0.1% of annual flooding from rivers or the sea. Increases in flood risk at this location are therefore highly unlikely to occur within the timeframe for construction. However, owing to the high receptor sensitivity under NPPF, flood risk and land drainage effects are anticipated to be temporary, short-term and **minor adverse.**	Finjaro Guest House is located within Flood Zone 1, defined as an area with a probability of less than 0.1% of annual flooding from rivers or the sea. Increases in flood risk at this location are therefore highly unlikely to occur within the timeframe of construction of the Project. Therefore, flood risk and land drainage effects are not anticipated to lead to a magnification of any potential construction effects in addition to those, visual, noise and air quality effects already assessed in Chapter 15: Socio-economics, Recreation and Tourism (document reference 6.15). The intra-project cumulative effects on Finjaro Guest House is therefore considered to be **not significant**.
		Chapter 15: Socio-economics, Recreation and Tourism (document reference 6.15)	The residual construction effects on Finjaro Guest House would be temporary, short-term and **minor adverse**. No land acquisition is anticipated and access would be maintained during construction. There would be potential visual, air quality and noise effects due to proximity to the Order Limits. However, a major adverse visual effect is the main driver of the minor adverse effect in the socio-economics, recreation and tourism chapter.	
C	Vauxhall Christian Trust	Chapter 15: Socio-economics, Recreation and Tourism (document reference 6.15)	The residual construction effects on the Vauxhall Christian Trust would be temporary, short-term and **minor adverse**. No land acquisition is anticipated and access would be maintained during construction. There would be potential air quality and noise effects due to proximity to the Order Limits. However, a major adverse visual effect is the main driver of effect.	Vauxhall Christian Trust is located within Flood Zone 1, defined as an area with a probability of less than 0.1% of annual flooding from rivers or the sea. Increases in flood risk at this location are therefore highly unlikely to occur within the timeframe of construction of the Project. Therefore, flood risk and land drainage effects are not anticipated to lead to a magnification of any potential construction effects assessed in Chapter 15: Socio-economics, Recreation and Tourism (document reference 6.15). The intra-project cumulative effects on Vauxhall Christian Trust is therefore considered to be **not significant**.
		Chapter 12: Hydrology, Land Drainage and Flood Risk (document reference 6.12)	Vauxhall Christian Trust is a receptor type that is classified as more vulnerable to flood risk under NPPF Annex 3 and has therefore been assigned high/very high sensitivity within Chapter 12: Hydrology, Land Drainage and Flood Risk (document reference 6.12). This receptor is located within Flood Zone 1, defined as an area with a probability of less than 0.1% of annual flooding from rivers or the sea. Increases in flood risk at this location are therefore highly unlikely to occur within the timeframe for construction. However, owing to the high receptor sensitivity under NPPF, flood risk and land drainage effects are anticipated to be temporary, short-term and **minor adverse.**	

Project Section	Receptor	Topic Chapter	Summary of Topic Chapter Residual Effects	Potential for Intra-Project Cumulative Effects
C	Langham Hall Estate	Chapter 15: Socio-economics, Recreation and Tourism (document reference 6.15)	The residual construction effects on Langham Hall Estate would be temporary, short-term and **minor adverse**. There would be temporary acquisition of the majority of the Estate's northern fields. Access to the southern section of the business would be maintained. There would be potential air quality and noise effects, as well as a major adverse visual effect due to proximity to the Order Limits.	Langham Hall Estate is located within Flood Zone 1, defined as an area with a probability of less than 0.1% of annual flooding from rivers or the sea. Increases in flood risk at this location are therefore highly unlikely to occur within the timeframe of construction of the Project. Therefore, flood risk and land drainage effects are not anticipated to lead to a magnification of any potential construction effects assessed in Chapter 15: Socio-economics, Recreation and Tourism (document reference 6.15). The intra-project cumulative effects on Langham Hall Estate is therefore considered to be **not significant**.
		Chapter 12: Hydrology, Land Drainage and Flood Risk (document reference 6.12)	Langham Hall Estate is a receptor type that is classified as more vulnerable to flood risk under NPPF Annex 3 and has therefore been assigned high/very high sensitivity within Chapter 12: Hydrology, Land Drainage and Flood Risk (document reference 6.12). This receptor is located within Flood Zone 1, defined as an area with a probability of less than 0.1% of annual flooding from rivers or the sea. Increases in flood risk at this location are therefore highly unlikely to occur within the timeframe for construction. However, owing to the high receptor sensitivity under NPPF, flood risk and land drainage effects are anticipated to be temporary, short-term and **minor adverse.**	
C	Ardleigh Caravan and Camping Park	Chapter 15: Socio-economics, Recreation and Tourism (document reference 6.15)	The residual construction effects on Ardleigh Caravan and Camping Park would be temporary, short-term and **moderate adverse**. There would be temporary acquisition of the south-eastern corner of the business. There would be potential air quality and noise effects, as well as a moderate to major adverse visual effect due to proximity to the Order Limits.	Ardleigh Caravan and Camping Park is located within Flood Zone 1, defined as an area with a probability of less than 0.1% of annual flooding from rivers or the sea. Increases in flood risk at this location are therefore highly unlikely to occur within the timeframe of construction of the Project. The intra-project cumulative effects on Ardleigh Caravan and Camping Park are anticipated to be **significant**. The significance of the intra-project cumulative effects is largely driven by the visual effects due to proximity of the receptor to the Order Limits, however the intra-project significant effects are no greater than reported in Chapter 15: Socio-economics, Recreation and Tourism (document reference 6.15).
		Chapter 12: Hydrology, Land Drainage and Flood Risk (document reference 6.12)	Ardleigh Caravan and Camping Park is a receptor type that is classified as more vulnerable to flood risk under NPPF Annex 3 and has therefore been assigned high/very high sensitivity within Chapter 12: Hydrology, Land Drainage and Flood Risk (document reference 6.12). This receptor is located within Flood Zone 1, defined as an area with a probability of less than 0.1% of annual flooding from rivers or the sea. Increases in flood risk at this location are therefore highly unlikely to occur within the timeframe for construction. However, owing to the high receptor sensitivity under NPPF, flood risk and land drainage effects are anticipated to be temporary, short-term and **minor adverse.**	
Pedestrians, cyclists and horse riders				
A	Footpaths, bridleways, cycle routes and minor roads used by pedestrians, cyclists and horse riders within Project Section A	Chapter 14: Noise and Vibration (document reference 6.14)	The residual construction noise effects on pedestrians, cyclists and horse riders are anticipated to be temporary, short-term and range from **negligible to minor adverse**. This includes construction noise during the daytime, nighttime and weekends. Minor adverse noise effects to pedestrians, cyclists and horse riders are anticipated to be limited to 30 metres (m) from construction activities.	A number of PRoWs, cycle routes and minor roads would be affected during construction, in terms of access/severance of routes, delay in journey time, amenity (including noise and visual effects), fear and intimidation. Pedestrians, cyclists and horse riders may experience magnification of effects as a result of the interaction on recreational experience of the receptors and visual amenity, with access and delay effects. The magnitude and duration of potential effect varies according to location along the Project route. Construction
		Chapter 16: Traffic and Transport (document reference 6.16)	The residual delay effects on users of the following PRoW are anticipated to be temporary, short-term and **minor adverse**: • Ashwellthorpe Footpath (FP)5 • Forncett FP25 and FP26 • Roydon South Norfolk FP14.	

Project Section	Receptor	Topic Chapter	Summary of Topic Chapter Residual Effects	Potential for Intra-Project Cumulative Effects
			The residual severance effects on the following receptors are anticipated to be temporary, short-term and **minor adverse:** • Link Primary Access Route (PAR)8 - A1066 Victoria Road / A1066 Park Road / A1066 High Road • Link PAR 9 - A1066 High Road / A1066 Low Road / A1066 Diss Road / A1066 The Street / A1066 Thetford Road / A1066 Hurth Way / A1066 Mundford Road. The residual amenity effects on the following receptors are anticipated to be temporary, short-term and **moderate adverse:** • Link PAR4 - B1113 • Link PAR8 - A1066 Victoria Road / A1066 Park Road / A1066 High Road • Link PAR 9 - A1066 High Road / A1066 Low Road / A1066 Diss Road /A1066 The Street / A1066 Thetford Road / A1066 Hurth Way / A1066 Mundford Road. The residual amenity effects on the following receptors are anticipated to be temporary, short-term and **minor adverse:** • Link PAR1 - A140 Ipswich Road • Link PAR2 - Mangreen Lane • Link PAR3 - Stansfield Road / Wymondham Road • Link PAR6 - Fundenhall Road • Link PAR7 - B1134 Station Road / B1134 Long Row. The residual fear and intimidation effects on the following receptor are anticipated to be temporary, short-term and **minor adverse**: • Link PAR8 - A1066 Victoria Road / A1066 Park Road / A1066 High Road.	noise effects are anticipated to be of minor significance within 30 m of construction activities; in addition to this, visual effects are anticipated to decrease with distance from the Order Limits and would be less significant in areas where intervening landforms and built form or existing vegetation provide screening. However, owing to the significance of visual effects within 500 m of the Order Limits, and as further mitigation is unlikely to be practicable, it is anticipated that the residual cumulative effect of visual and noise amenity effects with access and delay effects would lead to a **significant** intra-project cumulative effect on pedestrians, cyclists and horse riders. However, the significant effects are no greater than reported in Chapter 13: Landscape and Visual (document reference 6.13).
		Chapter 13: Landscape and Visual (document reference 6.13)	The construction phase of the Project is predicted to result in a range of effects on visual receptors within Section A, including significant and not significant effects. Significant effects during construction are related to the introduction of construction activity and equipment into close to medium distance views of residents, recreational receptors and road users. Significant effects would extend up to approximately 1.5 kilometres (km) in some instances, for example where there are open, elevated and/or wide views towards construction activity. In some Visual Receptor Area (VRA)s significant effects would be more contained, for example where views of construction activity would be filtered and screened by vegetation or topography. Effects would be short-term, partially reversible and adverse. Effects are anticipated on pedestrians, cyclists and horse riders who may use roads, PRoW, long distance footpaths or cycle routes within several VRAs within Project Section A. These include: • VRA A1 Swardeston • VRA A2 Stoke Holy Cross • VRA A3 Mulbarton and Wreningham • VRA A4 Newton Flotman • VRA A5 Tacolneston • VRA A6 Forncett St Peter • VRA A7 Goose Green	

Project Section	Receptor	Topic Chapter	Summary of Topic Chapter Residual Effects	Potential for Intra-Project Cumulative Effects
			• VRA A8 Tibenham • VRA A9 Shelfanger • VRA A10 Burston • VRA A11 Fen Street • VRA A12 Roydon and Diss. The residual visual effects on all VRA within Project Section A within 0.5 km of the Order Limits are anticipated to be **major adverse, between 0.5 km and 1.5 km moderate adverse and beyond 1.5 km minor adverse**. Road users on A roads are less sensitive to visual effects, and therefore no significant effects are anticipated on users of A roads. All construction visual effects are anticipated to be temporary and short-term.	
		Chapter 15: Socio-economics, Recreation and Tourism (document reference 6.15)	Forncett FP 25 (PRoW) would be temporarily closed, resulting in diversions and increases in journey length. Effects are anticipated to be temporary, short-term and **minor adverse.**	
B	Footpaths, bridleways, cycle routes and minor roads used by pedestrians, cyclists and horse riders within Project Section B	Chapter 14: Noise and Vibration (document reference 6.14)	The residual construction noise effects on pedestrians, cyclists and horse riders are anticipated to be temporary, short-term and **range from negligible to minor adverse**. This includes construction noise during the daytime, nighttime and weekends. Minor adverse noise effects to pedestrians, cyclists and horse riders are anticipated to be limited to 30 m from construction activities.	A number of PRoWs, cycle routes and minor roads would be affected during construction, in terms of access/severance of routes, delay in journey time, amenity (including noise and visual effects), fear and intimidation. Pedestrians, cyclists and horse riders may experience magnification of effects as a result of the interaction on recreational experience of the receptors and visual amenity, with access and delay effects. The magnitude and duration of potential effects varies according to location along the Project route. Construction noise effects are anticipated to be of minor significance within 30 m of construction activities; in addition to this, visual effects are anticipated to decrease with distance from the Order Limits and would be less significant in areas where intervening landforms and built form or existing vegetation provide screening. Owing to the significance of visual effects within 500 m of the Order Limits, and as further mitigation is unlikely to be practicable, it is anticipated that the residual cumulative effect of visual and noise amenity effects with access and delay effects would lead to a **significant** intra-project cumulative effect on pedestrians, cyclists and horse riders. However, the significant effects are no greater
		Chapter 16: Traffic and Transport (document reference 6.16)	The residual delay effects on the following PRoW receptors are anticipated to be temporary, short-term and **minor adverse:** • Palgrave FP3 • Burgate FP27, FP36 and BR22 • Mellis FP2 • Mendlesham FP46 • Creeting SP FP14 • Badley Bridleway (BR)13 • Battisford FP16 • Somersham FP27 • Little Blakenham FP54. The residual delay effects on the following PRoW receptors are anticipated to be temporary, short-term and **major adverse:** • Barking FP6 and Battisford FP25 • Bramford BRR1 and Burstall BR9. The residual severance effects on the following receptor are anticipated to be temporary, short-term and minor adverse: • Link PAR 20 - B1113 Bramford Road / B1113 Loraine Way. The residual amenity effects on the following receptors are anticipated to be temporary, short-term and **moderate adverse:**	

Project Section	Receptor	Topic Chapter	Summary of Topic Chapter Residual Effects	Potential for Intra-Project Cumulative Effects
			• Link PAR 11 - Lion Road • Link PAR 13 - Wickham Road • Link PAR 16 - A1120 Church Road / A1120 Bell's Lane • Link PAR 20 - B1113 Bramford Road / B1113 Loraine Way. The residual amenity effects on the following receptors are anticipated to be temporary, short-term and **minor adverse:** • Link PAR 12 - B1113 Finningham Road / B1113 Walsham Road • Link PAR 14 - Eastland Lane • Link PAR 15 - Thornham Road • Link PAR 17 - A1120 south of A14 J50 • Link PAR 18 - Mill Lane • Link PAR 21 - Bullen Lane. The residual fear and intimidation effects on the following receptor are anticipated to be temporary, short-term and **minor adverse:** • Link PAR 16 - A1120 Church Road / A1120 Bell's Lane.	than reported in Chapter 13: Landscape and Visual (document reference 6.13).
		Chapter 13: Landscape and Visual (document reference 6.13)	The construction phase of the Project is predicted to result in a range of effects on visual receptors within Section B, including significant and not significant effects. Significant effects during construction are related to the introduction of construction activity and equipment into close to medium distance views of residents, recreational receptors and road users. Significant effects would extend up to approximately 1.5 km in some instances, for example where there are open, elevated and/or wide views towards construction activity. In some VRAs significant effects would be more contained, for example where views of construction activity would be filtered and screened by vegetation or topography. Effects would be short-term, partially reversible and adverse. Effects are anticipated on pedestrians, cyclists and horse riders who may use roads, PRoW, long distance footpaths or cycle routes within several VRAs within Project Section B. These include: • VRA B1 Wortham • VRA B2 Palgrave • VRA B3 Mellis • VRA B4 Finningham and Gislingham • VRA B5 Wickham Skeith and Medlesham • VRA B6 Stowupland • VRA B7 Forward Green and Creeting St Mary • VRA B8 Stowmarket • VRA B9 Needham Market • VRA B10 Great Bricett • VRA B11 Barking and Willisham • VRA B12 Elmsett • VRA B13 Somersham. The residual visual effects on VRA within Project Section B within 0.5 km of the Order Limits are anticipated to be **major adverse, between 0.5 km and 1.5 km moderate adverse and beyond 1.5 km minor adverse.** Road users	

Project Section	Receptor	Topic Chapter	Summary of Topic Chapter Residual Effects	Potential for Intra-Project Cumulative Effects
			on A roads are less sensitive to visual effects, and therefore no significant effects are anticipated on users of A roads. All construction visual effects are anticipated to be temporary and short-term.	
		Chapter 15: Socio-economics, Recreation and Tourism (document reference 6.15)	A number of PRoW and cycle routes would be temporarily closed, resulting in diversions and increases in journey length. Effects on the following PRoW are anticipated to be temporary, short-term and **moderate adverse:** • W-121/006/0 • W-129/025/0. Effects on the following PRoW and cycle routes are anticipated to be temporary, short-term and **minor adverse:** • W-172/036/0 • W-563/003/0 • W-370/054/0 • National Cycle Network Route 30 (NCN 30) • National Cycle Network Route 51 (NCN 51).	
C	Footpaths, bridleways, cycle routes and minor roads used by pedestrians, cyclists and horse riders within Project Section C	Chapter 14: Noise and Vibration (document reference 6.14)	The residual construction noise effects on pedestrians, cyclists and horse riders are anticipated to be temporary, short-term and **range from negligible to minor adverse**. This includes construction noise during the daytime, nighttime and weekends. Minor adverse noise effects to pedestrians, cyclists and horse riders are anticipated to be limited to 30 m from construction activities.	A number of PRoWs, bridleways, cycle routes and minor roads would be affected during construction, in terms of access/severance of routes, delay in journey time, amenity (including noise and visual effects), fear and intimidation. Pedestrians, cyclists and horse riders may experience magnification of effects as a result of the interaction on recreational experience of the receptors and visual amenity, with access and delay effects. The magnitude and duration of potential effects varies according to location along the Project route. Construction noise effects are anticipated to be of minor significance within 30 m of construction activities; in addition to this, visual effects are anticipated to decrease with distance from the Order Limits and would be less significant in areas where intervening landforms and built form or existing vegetation provide screening. Owing to the significance of visual effects within 500 m of the Order Limits, and as further mitigation is unlikely to be practicable, it is anticipated that the residual cumulative effect of visual and noise amenity effects with access and delay effects would lead to a **significant** intra-project cumulative effect on pedestrians, cyclists and horse riders. However, the significant effects are no greater
		Chapter 16: Traffic and Transport (document reference 6.16)	The residual delay effects on the following PRoW receptors are anticipated to be temporary, short-term and **minor adverse:** • Sproughton FP3 • Washbrook FP2 • Wenham Magna BR14 • Holton Saint Mary FP10 • Langham FP1 139_1 and FP21 139 • Ardleigh BR 2 158 • Boxted FP38 125. The residual severance effects on the following receptors are anticipated to be temporary, short-term and **minor adverse**: • Link PAR27 - Birchwood Road • Link PAR30 - Bentley Road • Link PAR33 - Old Ipswich Road • Link PAR34 - Turnpike Close. The residual amenity effects on the following receptors are anticipated to be temporary, short-term and **moderate adverse**: • Link PAR 24 - B1070 (A12 access) • Link PAR27 - Birchwood Road • Link PAR28 - Wick Road / Grove Hill	

Project Section	Receptor	Topic Chapter	Summary of Topic Chapter Residual Effects	Potential for Intra-Project Cumulative Effects
			• Link PAR33 - Old Ipswich Road • Link PAR34 - Turnpike Close. The residual amenity effects on the following receptors are anticipated to be temporary, short-term and minor adverse: • Link PAR 22 - A1214 London Road • Link PAR 23 - A1071 • Link PAR 25 - B1070 Hadleigh Road • Link PAR26 - Ipswich Road • Link PAR29 - Perry Lane • Link PAR30 - Bentley Road • Link PAR31 - Ardleigh Road / Little Bromley Road • Link PAR32 - Wick Lane. The residual fear and intimidation effects on the following receptor are anticipated to be temporary, short-term and **minor adverse**: • Link PAR27 - Birchwood Road. The residual parking and Roading provision effects on the following receptor are anticipated to be temporary, short-term and **minor adverse**: • Link PAR33 - Old Ipswich Road.	than reported in Chapter 13: Landscape and Visual (document reference 6.13).
		Chapter 13: Landscape and Visual (document reference 6.13)	The construction phase of the Project is predicted to result in a range of effects on visual receptors within Section C, including significant and not significant effects. Significant effects during construction are related to the introduction of construction activity and equipment into close to medium distance views of residents, recreational receptors and road users. Significant effects would extend up to approximately 1.5 km in some instances, for example where there are open, elevated and/or wide views towards construction activity. In some VRAs significant effects would be more contained, for example where views of construction activity would be filtered and screened by vegetation or topography. Effects would be short-term, partially reversible and adverse. Effects are anticipated on pedestrians, cyclists and horse riders who may use roads, PRoW, long distance footpaths or cycle routes within several VRAs within Project Section C. These include: • VRA C1 Burstall • VRA C2 Washbrook • VRA C3 Ipswich West, Bramford and Sproughton • VRA C4 Chattisham • VRA C5 Capel St Mary • VRA C6 Raydon • VRA C7 Holton St Mary and East Bergholt • VRA C8 Higham • VRA C9 Stratford St Mary and Dedham • VRA C10 Dedham Heath • VRA C11 Langham • VRA C12 Ardleigh	

Project Section	Receptor	Topic Chapter	Summary of Topic Chapter Residual Effects	Potential for Intra-Project Cumulative Effects
			• VRA C13 Little Bromley. The residual visual effects on VRA within Project Section C within 0.5 km of the Order Limits are anticipated to be **major adverse**, between 0.5 km and 1.5 km **moderate adverse** and beyond 1.5 km **minor adverse**. Note that for VRA C5 the residual effects between 0.5 km and 1.5 km would be **major adverse**. Road users on A roads are less sensitive to visual effects, and therefore no significant effects are anticipated on users of A roads. All construction visual effects are anticipated to be temporary and short-term.	
		Chapter 15: Socio-economics, Recreation and Tourism (document reference 6.15)	A number of PRoW and cycle routes would be temporarily closed, resulting in diversions and increases in journey length. Effects on the following PRoW and cycle routes are anticipated to be temporary, short-term and **minor adverse**: • W-486/003/0 • National Cycle Network Route 1 (NCN 1).	
D	Footpaths, bridleways, cycle routes and minor roads used by pedestrians, cyclists and horse riders within Project Section D	Chapter 14: Noise and Vibration (document reference 6.14)	The residual construction noise effects on pedestrians, cyclists and horse riders are anticipated to be temporary, short-term and **range from negligible to minor adverse**. This includes construction noise during the daytime, nighttime and weekends. **Minor adverse** noise effects to pedestrians, cyclists and horse riders are anticipated to be limited to 30 m from construction activities.	A number of PRoWs, bridleways, cycle routes and minor roads would be affected during construction, in terms of access/severance of routes, delay in journey time, amenity (including noise and visual effects), fear and intimidation. Pedestrians, cyclists and horse riders may experience magnification of effects as a result of the interaction on recreational experience of the receptors and visual amenity, with access and delay effects. The magnitude and duration of potential effects varies according to location along the Project route. Construction noise effects are anticipated to be of minor significance within 30 m of construction activities; in addition to this, visual effects are anticipated to decrease with distance from the Order Limits and would be less significant in areas where intervening landforms and built form or existing vegetation provide screening. Owing to the significance of visual effects within 500 m of the Order Limits, and as further mitigation is unlikely to be practicable, it is anticipated that the residual cumulative effect of visual and noise amenity effects with access and delay effects would lead to a **significant** intra-project cumulative effect on pedestrians, cyclists and horse riders. However, the significant effects are no greater than reported in Chapter 13: Landscape and Visual (document reference 6.13).
		Chapter 16: Traffic and Transport (document reference 6.16)	The residual delay effects on the following PRoW receptors are anticipated to be temporary, short-term and **minor adverse**: • Boxted FP38 125 • Great Tey FP36 137, FP32 137 & FP50 137 and BR46 137. The residual delay effects on the following PRoW receptors are anticipated to be temporary, short-term and **moderate adverse**: • Great Horkesley FP30 135 • Fordham FP36 134 • Great Tey FP38 137. The residual severance effects on the following receptor are anticipated to be temporary, short-term and **minor adverse**: • Link PAR36 - A134 Northern Approach Road / A134 Wildeve Avenue / A134 Nayland Road / A134 The Causeway. The residual amenity effects on the following receptors are anticipated to be temporary, short-term and **major adverse**: • Link PAR36 - A134 Northern Approach Road / A134 Wildeve Avenue / A134 Nayland Road / A134 The Causeway. The residual amenity effects on the following receptors are anticipated to be temporary, short-term and **moderate adverse**: • Link PAR35 - A1341 Via Urbis Romanae • Link PAR37 - A1124 Halsted Road. The residual amenity effects on the following receptors are anticipated to be temporary, short-term and **minor adverse**: • Link PAR38 - Mill Road	

Project Section	Receptor	Topic Chapter	Summary of Topic Chapter Residual Effects	Potential for Intra-Project Cumulative Effects
			• Link PAR39 - Great Tey Road. The residual fear and intimidation effects on the following receptor are anticipated to be temporary, short-term and **major adverse**: • Link PAR36 - A134 Northern Approach Road / A134 Wildeve Avenue / A134 Nayland Road / A134 The Causeway. The residual fear and intimidation effects on the following receptor are anticipated to be temporary, short-term and **minor adverse**: • Link PAR35 - A1341 Via Urbis Romanae.	
		Chapter 13: Landscape and Visual (document reference 6.13)	The construction phase of the Project is predicted to result in a range of effects on visual receptors within Section D, including significant and not significant effects. Significant effects during construction are related to the introduction of construction activity and equipment into close to medium distance views of residents, recreational receptors and road users. Significant effects would extend up to approximately 1.5 km in some instances, for example where there are open, elevated and/or wide views towards construction activity. In some VRAs significant effects would be more contained, for example where views of construction activity would be filtered and screened by vegetation or topography. Effects would be short-term, partially reversible and adverse. Effects are anticipated on pedestrians, cyclists and horse riders who may use roads, PRoW, long distance footpaths or cycle routes within several VRAs within Project Section D. These include: • VRA D1 Tye Green and Boxted • VRA D2 Little Horkesley and Wormingford • VRA D3 Great Horkesley and Horkesley Heath • VRA D4 North Colchester • VRA D5 Fordham • VRA D6 West Bergholt, Fordham Heath and Eight Ash Green • VRA D7 Fordstreet and Aldham • VRA D8 Great Tey • VRA D9 Marks Tey • VRA D10 Copford. The residual visual effects on VRA within Project Section D within 0.5 km of the Order Limits are anticipated to be **major adverse**, between 0.5 km and 1.5 km **moderate adverse** and beyond 1.5 km **minor adverse**. Note that for VRA D2 the residual effects beyond 1.5 km would be **moderate adverse**. Road users on A roads are less sensitive to visual effects, and therefore no significant effects are anticipated on users of A roads. All construction visual effects are anticipated to be temporary and short-term.	
		Chapter 15: Socio-economics, Recreation and Tourism (document reference 6.15)	A number of PRoW would be temporarily closed, resulting in diversions and increases in journey length. Effects on the following PRoW are anticipated to be temporary, short-term and **moderate adverse**: • Great Tey 38 • Great Tey 50 • Great Horkesley 30.	

Project Section	Receptor	Topic Chapter	Summary of Topic Chapter Residual Effects	Potential for Intra-Project Cumulative Effects
			Effects on the following PRoW and cycle routes are anticipated to be temporary, short-term and **minor adverse**: • Langham 16 • Fordham 24 • Fordham 22 • Great Tey 36 • National Cycle Network Route 13 (NCN 13).	
E	Footpaths, bridleways, cycle routes and minor roads used by pedestrians, cyclists and horse riders within Project Section E	Chapter 14: Noise and Vibration (document reference 6.14)	The residual construction noise effects on pedestrians, cyclists and horse riders are anticipated to be temporary, short-term and **range from negligible to minor adverse**. This includes construction noise during the daytime, nighttime and weekends. **Minor adverse** noise effects to pedestrians, cyclists and horse riders are anticipated to be limited to 30 m from construction activities.	A number of PRoWs, bridleways, cycle routes and minor roads would be affected during construction, in terms of access/severance of routes, delay in journey time, amenity (including noise and visual effects), fear and intimidation. Pedestrians, cyclists and horse riders may experience magnification of effects as a result of the interaction on recreational experience of the receptors and visual amenity, with access and delay effects. The magnitude and duration of potential effects varies according to location along the Project route. Construction noise effects are anticipated to be of minor significance within 30 m of construction activities; in addition to this, visual effects are anticipated to decrease with distance from the Order Limits and would be less significant in areas where intervening landforms and built form or existing vegetation provide screening. Owing to the significance of visual effects within 500 m of the Order Limits, and as further mitigation is unlikely to be practicable, it is anticipated that the residual cumulative effect of visual and noise amenity effects with access and delay effects would lead to a **significant** intra-project cumulative effect on pedestrians, cyclists and horse riders. However, the significant effects are no greater than reported in Chapter 13: Landscape and Visual (document reference 6.13).
		Chapter 16: Traffic and Transport (document reference 6.16)	The residual delay effects on the following PRoW receptors are anticipated to be temporary, short-term and **minor adverse**: • Kelvedon BR1 92, FP2 92 & FP5 92 • Silver End FP15 108 & FP14 108 • Cressing FP19 74 • Rivenhall FP11 105 • White Notley BR 15 120. The residual delay effects on the following PRoW receptors are anticipated to be temporary, short-term and **moderate adverse**: • Kelvedon FP4 92 • White Notley FP22 120. The residual severance effects on the following receptor are anticipated to be temporary, short-term and **major adverse**: • Link PAR43 - Spinks Lane / Highfields Road / Spa Road / Flora Road / Faulkbourne Road / Church Hill. The residual amenity effects on the following receptor are anticipated to be temporary, short-term and **moderate adverse**: • Link PAR41 - B1018 Braintree Road / B1018 Witham Road. The residual amenity effects on the following receptors are anticipated to be temporary, short-term and **minor adverse**: • Link PAR 40 - A120 Colchester Road • Link PAR42 - B1389 Hatfield Road • Link PAR44 - A131 Great Notley Bypass / A131 Great Leighs Bypass / A131 Braintree Road. The residual fear and intimidation effects on the following receptors are anticipated to be temporary, short-term and **minor adverse**: • Link PAR41 - B1018 Braintree Road / B1018 Witham Road • Link PAR43 - Spinks Lane / Highfields Road / Spa Road / Flora Road / Faulkbourne Road / Church Hill	

Project Section	Receptor	Topic Chapter	Summary of Topic Chapter Residual Effects	Potential for Intra-Project Cumulative Effects
			The residual parking and Roading provision effects on the following receptors are anticipated to be temporary, short-term and **moderate adverse**: • Link PAR43 – Spinks Lane • Link PAR43 – Highfields Road.	
		Chapter 13: Landscape and Visual (document reference 6.13)	The construction phase of the Project is predicted to result in a range of effects on visual receptors within Section E, including significant and not significant effects. Significant effects during construction are related to the introduction of construction activity and equipment into close to medium distance views of residents, recreational receptors and road users. Significant effects would extend up to approximately 1.5 km in some instances, for example where there are open, elevated and/or wide views towards construction activity. In some VRAs significant effects would be more contained, for example where views of construction activity would be filtered and screened by vegetation or topography. Effects would be short-term, partially reversible and adverse. Effects are anticipated on pedestrians, cyclists and horse riders who may use roads, PRoW, long distance footpaths or cycle routes within several VRAs within Project Section E. These include: • VRA E1 Coggeshall • VRA E2 Feering and Rivenhall • VRA E3 Kelvedon • VRA E4 Silver End • VRA E5 Iack Notley and White Notley • VRA V6 Terling and Witham. The residual visual effects on VRA within Section E within 0.5 km of the Order Limits are anticipated to be **major adverse**, between 0.5 km and 1.5 km **moderate adverse** and beyond 1.5 km **minor adverse**. Road users on A roads are less sensitive to visual effects, and therefore no significant effects are anticipated on users of A roads. All construction visual effects are anticipated to be temporary and short-term.	
		Chapter 15: Socio-economics, Recreation and Tourism (document reference 6.15)	Effects on the following cycle routes are anticipated to be temporary, short-term and **minor adverse** owing to temporary access disruption: • National Cycle Network Route 16 (NCN 16).	
F	Footpaths, bridleways, cycle routes and minor roads used by pedestrians, cyclists and horse riders within Project Section F	Chapter 14: Noise and Vibration (document reference 6.14)	The residual construction noise effects on pedestrians, cyclists and horse riders are anticipated to be temporary, short-term and **range from negligible to minor adverse**. This includes construction noise during the daytime, nighttime and weekends. **Minor adverse** noise effects to pedestrians, cyclists and horse riders are anticipated to be limited to 30 m from construction activities.	A number of PRoWs, cycle routes and minor roads would be affected during construction, in terms of access/severance of routes, delay in journey time, amenity (including noise and visual effects), fear and intimidation. Pedestrians, cyclists and horse riders may experience magnification of effects as a result of the interaction on recreational experience of the receptors and visual amenity, with access and delay effects. The magnitude and duration of potential effects varies according
		Chapter 16: Traffic and Transport	The residual delay effects on the following PRoW receptors are anticipated to be temporary, short-term and **minor adverse**: • Great and Little Leighs FP40 221 • Little Waltham FP8 225	

Project Section	Receptor	Topic Chapter	Summary of Topic Chapter Residual Effects	Potential for Intra-Project Cumulative Effects
		(document reference 6.16)	• Great Waltham FP 76 222 • Broomfield FP1 214, FP5 214 and FP 9 214 • Writtle FP66 238 and FP83 238. The residual delay effects on the following PRoW receptors are anticipated to be temporary, short-term and **moderate adverse**: • Little Waltham FP13 225 & FP21 225 • Great Waltham FP74 222 • Broomfield FP3 214. The residual severance effects on the following receptors are anticipated to be temporary, short-term and **minor adverse**: • Link PAR50 - A1016 Waterhouse Lane / A1016 Rainsford Lane • Link PAR51 - A1060 Rainsford Road / A1060 Roxwell Road. The residual amenity effects on the following receptor are anticipated to be temporary, short-term and **major adverse**: • Link PAR51 - A1060 Rainsford Road / A1060 Roxwell Road. The residual amenity effects on the following receptors are anticipated to be temporary, short-term and **moderate adverse**: • Link PAR46 - B1008 Braintree Road / B1008 Main Road • Link PAR48 - Chelmsford Road • Link PAR49 - A414 Three Mill Hill / A1114 London Road • Link PAR50 - A1016 Waterhouse Lane / A1016 Rainsford Lane. The residual amenity effects on the following receptors are anticipated to be temporary, short-term and **minor adverse**: • Link PAR44 - A131 Great Notley Bypass / A131 Great Leighs Bypass / A131 Braintree Road • Link PAR47 - Chatham Hall Lane • Link PAR52 - Vicarage Road • Link PAR53 - A414 Greenbury Way / A414 Ongar Road. The residual fear and intimidation effects on the following receptors are anticipated to be temporary, short-term and **minor adverse**: • Link PAR50 - A1016 Waterhouse Lane / A1016 Rainsford Lane • Link PAR51 - A1060 Rainsford Road / A1060 Roxwell Road • Link PAR53 - A414 Greenbury Way / A414 Ongar Road.	to location along the Project route. Construction noise effects are anticipated to be of minor significance within 30 m of construction activities; in addition to this, visual effects are anticipated to decrease with distance from the Order Limits and would be less significant in areas where intervening landforms and built form or existing vegetation provide screening. Owing to the significance of visual effects within 500 m of the Order Limits, and as further mitigation is unlikely to be practicable, it is anticipated that the residual cumulative effect of visual and noise amenity effects with access and delay effects would lead to a **significant** intra-project cumulative effect on pedestrians, cyclists and horse riders. However, the significant effects are no greater than reported in Chapter 13: Landscape and Visual (document reference 6.13).
		Chapter 13: Landscape and Visual (document reference 6.13)	The construction phase of the Project is predicted to result in a range of effects on visual receptors within Section F, including significant and not significant effects. Significant effects during construction are related to the introduction of construction activity and equipment into close to medium distance views of residents, recreational receptors and road users. Significant effects would extend up to approximately 1.5 km in some instances, for example where there are open, elevated and/or wide views towards construction activity. In some VRAs significant effects would be more contained, for example where views of construction activity would be filtered and screened by vegetation or topography. Effects would be short-term, partially reversible and adverse. Effects are anticipated on pedestrians,	

Project Section	Receptor	Topic Chapter	Summary of Topic Chapter Residual Effects	Potential for Intra-Project Cumulative Effects
			cyclists and horse riders who may use roads, PRoW, long distance footpaths or cycle routes within several VRAs within Project Section F. These include: • VRA F1 Great Leighs • VRA F2 Peverel's Farm • VRA F3 Great Waltham • VRA F4 Little Waltham • VRA F5 Chignall Smealy • VRA F6 Chelmsford North-West • VRA F7 Roxwell • VRA F8 Writtle and Chelmsford West • VRA F9 Edney Common • VRA F10 Hylands Park • VRA F11 Margaretting and Stock. The residual visual effects on VRA within Section F within 0.5 km of the Order Limits are anticipated to be **major adverse**, between 0.5 km and 1.5 km **moderate adverse** and beyond 1.5 km **minor adverse**. Road users on A roads are less sensitive to visual effects, and therefore no significant effects are anticipated on users of A roads. All construction visual effects are anticipated to be temporary and short-term.	
		Chapter 15: Socio-economics, Recreation and Tourism (document reference 6.15)	A number of PRoW would be temporarily closed, resulting in diversions and increases in journey length. Effects on the following PRoW and cycle routes are anticipated to be temporary, short-term and **minor adverse**: • Broomfield 31 • Margaretting 38 • National Cycle Network Route 1 (NCN 1) • National Cycle Network Route 50 (NCN 50) (Ulting to Takeley section). Effects on the following ProW are anticipated to be temporary, short-term and **major adverse**: • Margaretting 13.	
G	Footpaths, bridleways, cycle routes and minor roads used by pedestrians, cyclists and horse riders within Project Section G	Chapter 14: Noise and Vibration (document reference 6.14)	The residual construction noise effects on pedestrians, cyclists and horse riders are anticipated to be temporary, short-term and **range from negligible to minor adverse**. This includes construction noise during the daytime, nighttime and weekends. **Minor adverse** noise effects to pedestrians, cyclists and horse riders are anticipated to be limited to 30 m from construction activities.	A number of PRoWs, cycle routes and minor roads would be affected during construction, in terms of access/severance of routes, delay in journey time, amenity (including noise and visual effects), fear and intimidation. Pedestrians, cyclists and horse riders may experience magnification of effects as a result of the interaction on recreational experience of the receptors and visual amenity, with access and delay effects. The magnitude and duration of potential effects varies according to location along the Project route. Construction noise effects are anticipated to
		Chapter 16: Traffic and Transport (document reference 6.16)	The residual delay effects on the following PRoW receptors are anticipated to be temporary, short-term and **minor adverse**: • Thurrock FP10, FP42, FP67 and BR 63. The residual delay effects on the following PRoW receptors are anticipated to be temporary, short-term and **moderate adverse**: • Thurrock BR223.	

Project Section	Receptor	Topic Chapter	Summary of Topic Chapter Residual Effects	Potential for Intra-Project Cumulative Effects
			The residual severance effects on the following receptors are anticipated to be temporary, short-term and **minor adverse**: • Link PAR54 - B1002 Main Road • Link PAR 58 - A176 Noak Hill Road / A176 Laindon Road / A129 Southend Road • Link PAR 59 - A129 Sun Street / A129 London Road / A129 Rayleigh Road. The residual amenity effects on the following receptors are anticipated to be temporary, short-term and **moderate adverse**: • Link PAR56 - Ivy Barns Lane • Link PAR 59 - A129 Sun Street / A129 London Road / A129 Rayleigh Road • Link PAR 60 - Dunton Road / Brentwood Road • Link PAR 62 - Lower Dunton Road. The residual amenity effects on the following receptors are anticipated to be temporary, short-term and **minor adverse**: • Link PAR54 - B1002 Main Road • Link PAR55 - Wantz Road. The residual fear and intimidation effects on the following receptors are anticipated to be temporary, short-term and **minor adverse**: • Link PAR54 - B1002 Main Road • Link PAR 58 - A176 Noak Hill Road / A176 Laindon Road / A129 Southend Road • Link PAR 59 - A129 Sun Street / A129 London Road / A129 Rayleigh Road. The residual parking and Roading provision effects on the following receptor are anticipated to be temporary, short-term and **minor adverse**: • Link PAR54 - B1002 Main Road.	be of minor significance within 30 m of construction activities; in addition to this, visual effects are anticipated to decrease with distance from the Order Limits and would be less significant in areas where intervening landforms and built form or existing vegetation provide screening. Owing to the significance of visual effects within 500 m of the Order Limits, and as further mitigation is unlikely to be practicable, it is anticipated that the residual cumulative effect of visual and noise amenity effects with access and delay effects would lead to a **significant** intra-project cumulative effect on pedestrians, cyclists and horse riders. However, the significant effects are no greater than reported in Chapter 13: Landscape and Visual (document reference 6.13).
		Chapter 13: Landscape and Visual (document reference 6.13)	The construction phase of the Project is predicted to result in a range of effects on visual receptors within Section G, including significant and not significant effects. Significant effects during construction are related to the introduction of construction activity and equipment into close to medium distance views of residents, recreational receptors and road users. Significant effects would extend up to approximately 1.5 km in some instances, for example where there are open, elevated and/or wide views towards construction activity. In some VRAs significant effects would be more contained, for example where views of construction activity would be filtered and screened by vegetation or topography. Effects would be short-term, partially reversible and adverse. Effects are anticipated on pedestrians, cyclists and horse riders who may use roads, PRoW, long distance footpaths or cycle routes within several VRAs within Project Section G. These include: • VRA G1 Ingatestone and Fryerning • VRA G2 Billericay West • VRA G3 Brentwood East • VRA G4 Ingrave and Herongate	

Project Section	Receptor	Topic Chapter	Summary of Topic Chapter Residual Effects	Potential for Intra-Project Cumulative Effects
			• VRA G5 Little Burstead • VRA G6 Basildon. The residual visual effects on VRA within Project Section G within 0.5 km of the Order Limits are anticipated to be **major adverse**, between 0.5 km and 1.5 km **moderate adverse** and beyond 1.5 km **minor adverse**. Road users on A roads are less sensitive to visual effects, and therefore no significant effects are anticipated on users of A roads. All construction visual effects are anticipated to be temporary and short-term.	
		Chapter 15: Socio-economics, Recreation and Tourism (document reference 6.15)	Effects on the following PRoW are anticipated to be temporary, short-term and **moderate adverse**, owing to temporary closures, diversions and increased journey length: • West Horndon 69.	
H	Footpaths, bridleways, cycle routes and minor roads used by pedestrians, cyclists and horse riders within Project Section H	Chapter 14: Noise and Vibration (document reference 6.14)	The residual construction noise effects on pedestrians, cyclists and horse riders are anticipated to be temporary, short-term and range from negligible to **minor adverse**. This includes construction noise during the daytime, nighttime and weekends. **Minor adverse** noise effects to pedestrians, cyclists and horse riders are anticipated to be limited to 30 m from construction activities.	A number of PRoWs, bridleways, cycle routes and minor roads would be affected during construction, in terms of access/severance of routes, delay in journey time, amenity (including noise and visual effects), fear and intimidation. Pedestrians, cyclists and horse riders may experience magnification of effects as a result of the interaction on recreational experience of the receptors and visual amenity, with access and delay effects. The magnitude and duration of potential effects varies according to location along the Project route. Construction noise effects are anticipated to be of minor significance within 30 m of construction activities; in addition to this, visual effects are anticipated to decrease with distance from the Order Limits and would be less significant in areas where intervening landforms and built form or existing vegetation provide screening. Owing to the significance of visual effects within 500 m of the Order Limits, and as further mitigation is unlikely to be practicable, it is anticipated that the residual cumulative effect of visual and noise amenity effects with access and delay effects would lead to a **significant** intra-project cumulative effect on pedestrians, cyclists and horse riders. However, the significant effects are no greater than reported in Chapter 13: Landscape and Visual (document reference 6.13).
		Chapter 16: Traffic and Transport (document reference 6.16)	The residual severance effects on the following receptors are anticipated to be temporary, short-term and **minor adverse**: • Link PAR 63 - A128 Brentwood Road • Link PAR 64 - A1013 Stanford Road (east of Orsett Roundabout) • Link PAR 65 - Buckingham Hill Road • Link PAR 67 - A1013 Stanford Road (west of Orsett Roundabout) • Link PAR 68 - Heath Road. The residual amenity effects on the following receptor are anticipated to be temporary, short-term and **major adverse**: • Link PAR 65 - Buckingham Hill Road The residual amenity effects on the following receptors are anticipated to be temporary, short-term and **moderate adverse**: • Link PAR 64 - A1013 Stanford Road (east of Orsett Roundabout) • Link PAR 66 - Brentwood Road • Link PAR 67 - A1013 Stanford Road (west of Orsett Roundabout) • Link PAR 68 - Heath Road. The residual amenity effects on the following receptor are anticipated to be temporary, short-term and **minor adverse**: • Link PAR 63 - A128 Brentwood Road. The residual fear and intimidation effects on the following receptor are anticipated to be temporary, short-term and **major adverse**: • Link PAR 67 - A1013 Stanford Road (west of Orsett Roundabout). The residual fear and intimidation effects on the following receptors are anticipated to be temporary, short-term and **minor adverse**:	

Project Section	Receptor	Topic Chapter	Summary of Topic Chapter Residual Effects	Potential for Intra-Project Cumulative Effects
			• Link PAR 63 - A128 Brentwood Road • Link PAR 64 - A1013 Stanford Road (east of Orsett Roundabout) • Link PAR 65 - Buckingham Hill Road • Link PAR 68 - Heath Road.	
		Chapter 13: Landscape and Visual (document reference 6.13)	The construction phase of the Project is predicted to result in a range of effects on visual receptors within Section H, including significant and not significant effects. Significant effects during construction are related to the introduction of construction activity and equipment into close to medium distance views of residents, recreational receptors and road users. Significant effects would extend up to approximately 1.5 km in some instances, for example where there are open, elevated and/or wide views towards construction activity. In some VRAs significant effects would be more contained, for example where views of construction activity would be filtered and screened by vegetation or topography. Effects would be short-term, partially reversible and adverse. Effects are anticipated on pedestrians, cyclists and horse riders who may use roads, PRoW, long distance footpaths or cycle routes within several VRAs within Project Section H. These include: • VRA H1 Bulpham • VRA H2 Horndon on the Hill • VRA H3 Orsett • VRA H4 Stanford-le-Hope • VRA H5 Grays and Chadwell St Mary • VRA H6 Southfields • VRA H7 Linford • VRA H8 East Tilbury • VRA H9 Tilbury Marshes. The residual visual effects on VRA within Project Section H within 0.5 km of the Order Limits are anticipated to be **major adverse**, between 0.5 km and 1.5 km **moderate adverse** and beyond 1.5 km **minor adverse**. Note that for VRA H2 the residual effects between 0.5 km and 1.5 km would be major adverse. Road users on A roads are less sensitive to visual effects, and therefore no significant effects are anticipated on users of A roads. All construction visual effects are anticipated to be temporary and short-term.	

Abbreviations

Abbreviation	Full Reference
DCO	Development Consent Order
ES	Environmental Statement
FP	Footpath
km	kilometres
m	metres
NCN	National Cycle Network
NPPF	National Planning Policy Framework
PAR	Primary Access Routes
PRoW	Public Right of Way
UK	United Kingdom
UKPN	UK Power Network
VRA	Visual Receptor Area

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