

## 12 Effect Interactions

### 12.1 Introduction

- 12.1.1 This chapter assesses the interaction of individual effects (e.g. noise, dust and visual effects) of the Development upon identified receptors / resources from multiple technical topics in the EIA (known as ‘intra-project’ effects). This chapter forms part of the cumulative assessment provided within this ES.
- 12.1.2 Details on the assessment approach for inter-project effects of the Development with other cumulative schemes are provided in Chapter 3: EIA Methodology. The inter-project cumulative assessments are provided in each technical chapter of this ES (Chapters 7 – 11, and Volume II). To avoid repetition, information on the potential inter-project effects of the Development proposals with other cumulative schemes is not presented within this ES chapter.

### 12.2 Methodology

- 12.2.1 There is no consistent guidance or standardised approach to the assessment of effect interactions. However, it is recognised that the Development has the potential to give rise to a variety of impacts upon a number of different receptors, some of which have the potential to combine to become significant effects.
- 12.2.2 Table 12.1 summarises the receptor-based effect interactions assessment process used for both construction and operation of the Development.

**Table 12.1: Effect Interactions Assessment Process**

Step	Description
Step 1: Identify and categorise receptors	Identify all topic sensitive receptors and their geographical locations based on the study areas and study areas of the respective technical assessments. These will then be categorised by type.
Step 2: Identify impacts	Identify all topic impacts associated with sensitive receptor(s)/ receptor types.
Step 3: Screen receptors and associated impacts	Undertake a screening exercise upon the identified receptors and impacts. Screened items out from further assessment if they are: <ul style="list-style-type: none"> <li>• Receptors where no topic impacts overlap;</li> <li>• Receptors with no temporal overlap with topic impacts; or</li> <li>• Receptors where topic impacts are identified as ‘negligible’</li> </ul>
Step 4: Assess effect interactions	Qualitative assessment based on professional judgement of the effect interactions.

- 12.2.3 Assessments of socio-economics, transport, noise, biodiversity, climate change and greenhouse gases and landscape and visual effects have been carried out in this EIA.

- 12.2.4 The assessment of socio-economics, transport, noise and landscape and visual effects all concern ground level human receptors, namely drivers, pedestrians and cyclists on the surrounding road network, the occupants of properties on the surrounding road network, and users of Public Rights of Way (PRoW). These receptors have the potential to experience effect interactions between transport, air quality, noise, and landscape and visual effects. As such, there would be a spatial overlap of effect interactions.
- 12.2.5 As the climate change and greenhouse gases assessment is inherently an in-combination assessment in nature, as well as the receptors being a global receptor, it is not relevant to other technical topics. Therefore, climate change and greenhouse gases are not considered further within the effect interaction assessment.
- 12.2.6 The biodiversity chapter reports only minor beneficial effects for GCN during construction (negligible for all other construction and completed development effects). Therefore, no effect interactions would occur between biodiversity and other topics, and biodiversity is not considered further in this effect interactions assessment.

### **Assumptions and Limitations**

- 12.2.7 It has been assumed that a Construction Environmental Management Plan (CEMP), Construction Traffic Management Plan (CTMP) and Landscape and Ecology Management Plan (LEMP) would be secured by planning condition and implemented throughout construction of the Development (further details are provided in Chapter 6: Construction, and Chapter 8: Biodiversity).

## **12.3 Assessment of Effects**

### **Construction Effects**

- 12.3.1 For the construction phase, only effects that are of 'minor' significance or greater identified within the ES have been considered. The transport and socio-economic chapters reported only negligible residual effects during construction. Therefore, these topics are not considered further.
- 12.3.2 The overall residual effects for both landscape character and visual amenity would be major adverse. The noise assessment predicts moderate adverse residual effects for construction noise.
- 12.3.3 Table 12.2 (column 4) provides an assessment of the effect interactions likely to be experienced by each receptor group during construction.

Table 12.2: Potential Effect Interactions – Construction

Receptor (1)	Chapter (2)	Residual Effect (as reported in Topic Chapter) (3)	Assessment of Effect Interaction (4)
Drivers, pedestrians and cyclists on the surrounding road network; and occupants of properties on the surrounding road network.	Chapter 9: Noise	Moderate adverse effects of construction noise.	<p><b>Minor Adverse</b> - It is considered that users and residents of Howes Lane, and users of local PRowS within 350m of the Site would be subject to major adverse effects from construction activities/site hoarding.</p> <p>In addition, residential properties in close proximity to the Site, i.e. those along Howes Lane, may experience moderate adverse noise effects, although the significance of effect would vary throughout the construction period dependent on the type of works being undertaken and the location of the works across the Site. Noise effects would be temporary. Moderate adverse effects would be localised. Overall the potential effect interaction is considered to be no greater than minor adverse.</p>
	Volume II: Landscape and Visual Assessment	Major adverse for both landscape character and visual amenity.	

12.3.4 No other effect interactions have been identified during the construction phase.

### Completed Development Effects

- 12.3.5 For the operational phase, only effects that are of 'minor' significance or greater identified within the ES have been considered. The noise chapter reported only negligible residual effects during the completed Development. Therefore, this topic is not considered further.
- 12.3.6 Table 12.3 (column 4) provides an assess of the effect interactions likely to be experienced by each receptor group for the completed Development.
- 12.3.7 Volume II of this ES reports a range of landscape effects from minor to moderate/major adverse (for LCA4 - agricultural land within the Site), however as this would only affect receptors within the Site, this is not considered in Table 12.3.

Table 12.3: Potential Effect Interactions – Completed Development

Receptor (1)	Chapter (2)	Residual Effect (as reported in Topic Chapter) (3)	Assessment of Effect Interaction (4)
Drivers, pedestrians and cyclists on the surrounding road network; and occupants of properties on the surrounding road network.	Chapter 7: Socio-Economics	Moderate beneficial (local scale) effects for employment accommodated within the completed Development; and minor beneficial (local scale) effects for additional local spending effects.	<b>Neutral</b> – It is considered that users and residents of Howes Lane, and users of local PRoWs within 350m of the Site would be subject to moderate/major adverse effects from the Development. However, it is considered that these receptors will experience this effect gradually throughout the construction phase and therefore the effect would not be new. Human receptors in the local would also experience beneficial effects for pedestrian/cycle delay and amenity, and the Development would provide new beneficial opportunities for employment and increased local spending at local businesses. Overall the potential effect interaction is considered to neutral.
	Chapter 8: Transport	Minor beneficial effects for pedestrian/cycle delay and amenity.	
	ES Volume II: Landscape and Visual Assessment	Volume II of this ES reports negligible (Views 1-7) to moderate/major adverse (Views 8 and 9) visual effects for the completed Development.	

12.3.8 No other effect interactions have been identified during the completed Development phase.