

# **Chapter 12 Effects Interactions**

**INTRODUCTION**

- 12.1 This chapter of the ES summarises the likelihood for intra-project cumulative effects or ‘effect interactions’. Note that inter-project cumulative effects that could arise due to the Proposed Development coming forward in conjunction with other schemes in the surrounding area (referred to as ‘cumulative schemes’) have been discussed within each technical chapter of this ES (Volume 1) and in ES Volume 2, as appropriate, and have not been re-iterated within this ES chapter to avoid repetition.
- 12.2 There is no established EIA methodology for assessing and quantifying the intra- and inter-project cumulative effects on sensitive receptors. However, the European Commission<sup>1</sup> (EC) has produced guidelines to assist EIA practitioners in developing an approach which is appropriate to a project. These guidelines have been used and an approach has been developed which uses the defined residual effects of the Proposed Development to determine the potential for intra- and inter-project cumulative effects (refer to **ES Volume 1, Chapter 2: EIA Methodology**) for further information on inter- and intra-project cumulative effects, and how these have been assessed within this ES).
- 12.3 Residual effects that are beneficial or adverse in nature and that are minor, moderate or major in scale have been considered within this intra-project cumulative effects assessment. Residual effects that are negligible in scale and neutral in nature have been omitted, as these effects are, by definition, unnoticeable and insignificant.
- 12.4 Table 12.1 and 12.2 present the assessment of the intra-project cumulative effects respectively arising from the demolition and construction works and on completion and occupation of the Proposed Development.

**DEMOLITION AND CONSTRUCTION**

- 12.5 Table 12.1 presents the intra-project cumulative effects assessment for the demolition and construction stage of the Proposed Development. The results presented in the table are discussed in more detail below.

**Table 12.1 Intra-Project Cumulative Effects - Demolition and Construction**

Sensitive Receptor Group	Residual Effects	Potential for Effect Interactions and so Intra-Project Cumulative Effects?
Local Economy	<b>Socio Economics</b> – Employment opportunities / jobs – <b>Minor Beneficial</b> <b>Socio Economics</b> – additional local spending – <b>Minor Beneficial</b>	<b>No</b> (All effects are related to Socio Economics)
Existing Residential Occupancies & New Residential Occupancies	<b>Noise and Vibration</b> - Demolition and Construction Noise – <b>Moderate Adverse</b> (for some receptors) <b>Noise and Vibration</b> - Demolition and Construction Noise – <b>Minor Adverse</b> (for some receptors) <b>Noise and Vibration</b> - Demolition and Construction Noise - Negligible to <b>Minor Adverse</b> (for some receptors) <b>Air Quality</b> - Dust from Demolition and Construction Works - <b>Negligible to Minor Adverse</b>	<b>Yes</b> In relation to: Demolition and Construction Noise & Air Quality (Dust) On existing local residents and new residents occupying the Proposed Development
Social Infrastructure	<b>Socio Economics</b> – A&E attendance – <b>Minor Adverse</b>	<b>No</b>
Heritage Assets	Townscape, Built Heritage and Visual – Heritage Setting (Listed Buildings and Conservation Areas) – Negligible to <b>Minor Adverse</b>	<b>No</b>
Townscape	Townscape, Built Heritage and Visual – Townscape Receptors – Negligible to <b>Minor Adverse</b>	<b>No</b>
Views	Townscape, Built Heritage and Visual – Visual Impact to Local Residents – <b>Minor Adverse</b>	<b>No</b>
	Townscape, Built Heritage and Visual – Visual Impact to Pedestrians (Commuters and Outdoor Recreational Users) - Negligible to <b>Minor Adverse</b>	<b>No</b>

- 12.6 Table 12.1 identifies that there is potential for effect interactions and so intra-project cumulative effects to take place during the demolition and construction phase of the Proposed Development, for the following resources / receptors / receptor groups:

- Existing Residential Occupancies and New Residential Occupancies should partial occupation of the Proposed Development occur before the full construction works are complete.

**Explanation of the Potential for and Significance of Intra-Project Cumulative Effects – Demolition and Construction**

- 12.7 As shown in Table 12.1 there is the potential for interactions between noise and vibration and air quality on existing local residents in the nearby surround area and new residents should partial occupation of the Proposed Development occur before the full construction works are complete.
- 12.8 There may potentially be moderate adverse effects relating to noise for some receptors along Southampton Way and Parkhouse Street and some of the new residents of the Proposed Development who move in before demolition and construction is complete. Negligible to minor adverse noise effects are anticipated at some receptors along Wells Way and Cottage Green. In addition, some residential receptors on Southampton Way, Cottage Green and Wells Way could experience negligible to minor adverse effects relating to air quality from dust during demolition and construction works.
- 12.9 The effects to some receptors on Southampton Way and Parkhouse Street and to any new residential occupancies on site are moderate adverse for noise (and so is a significant effect), and negligible to minor adverse for air quality (which is not a significant effect). It is not unreasonable to conclude that the intra-project effect to these receptors is therefore adverse in nature and significant.
- 12.10 The effects to some receptors on Wells Way and Cottage Green are adverse in nature and minor in scale and so are not considered to be significant effects. It is not unreasonable to conclude that the intra-project effect to these receptors is therefore adverse in nature but not significant.

**COMPLETED DEVELOPMENT**

- 12.11 Table 12.2 presents the intra-project cumulative effects assessment once the Proposed Development is completed and in use. The results presented in the table are discussed in more detail below.

- 12.12 Table 12.2 shows that there is potential for effect interactions for effect interactions and so intra-project cumulative effects to take place once the Proposed Development is complete and occupied, for the following resources / receptors / receptor groups:

- Existing Residential Occupancies.

**Explanation of the Potential for and Significance of Intra-Project Cumulative Effects – Completed Development**

- 12.13 As shown in Table 12.2 there is the potential for interactions between air quality and daylight and sunlight on existing local residents in the nearby surrounding area once the Proposed Development is complete and operational.
- 12.14 There may potentially be minor (not significant), moderate (significant) or major (significant) adverse effects relating to daylight and sunlight to some existing residential properties on Southampton Way, Parkhouse Street, Wells Way and Cottage Green.
- 12.15 In addition, some residential receptors on Wells Way would experience minor adverse (not significant) air quality effects, and residential receptors on Southampton Way / Parkhouse Street would experience minor beneficial (not significant) air quality effects associated with emissions from road traffic and energy plant.
- 12.16 When considering the significance of the combined cumulative effects, given the air quality effects are not significant (both in relation to the adverse and beneficial effects identified), these effects are unlikely to alter the significance of the daylight / sunlight effects.
- 12.17 On this basis, the combined cumulative effects of daylight / sunlight and air quality effects to some residential receptors along Wells Way is considered to remain as per the significance identified in relation to the daylight / sunlight effects to these receptors i.e. instances of minor (not significant), moderate (significant) or major (significant) adverse effects.

<sup>1</sup> European Community (1999); Guidelines for the Assessment of Indirect and Cumulative Impacts as well as Impact Interactions.

**Table 12.2 Intra-Project Cumulative Effects – Completed Development**

Sensitive Receptor Group	Residual Effects	Potential for Effect Interactions and so Intra-Project Cumulative Effects?
Local Economy	<b>Socio Economics</b> – job creation / employment opportunities – <b>Minor Beneficial</b> <b>Socio Economics</b> - The additional residents of the Proposed Development would result in additional expenditure in the local area per annum - <b>Moderate Beneficial</b>	<b>No</b> (All effects are related to Socio Economics)
Existing Residential Occupancies & New Residential Occupancies	<b>Socio Economics</b> – New housing provision – <b>Moderate Beneficial</b> <b>Socio Economics</b> – Affordable housing provision - <b>Minor Beneficial</b> . <b>Air Quality</b> - Road Traffic and Energy Plant Emissions – <b>Negligible to Minor Adverse/Minor Beneficial</b> <b>Daylight and Sunlight</b> - (Effect on daylight and sunlight levels within the surrounding residential properties) – <b>some instances of Minor, Moderate and Major Adverse</b>	<b>Yes</b> in relation to Air Quality and Daylight and sunlight On existing local residents  Beneficial socio economic effects do not interact with adverse air quality and daylight and sunlight effects.
Social Infrastructure	<b>Socio Economics</b> - primary health care demand – <b>Minor Adverse</b> <b>Socio Economics</b> - A&E demand – <b>Minor Adverse</b> <b>Socio Economics</b> - early years education demand – <b>Minor Adverse</b>	<b>No</b> (No aspects/effects to interact with)
Leisure / Amenity	<b>Socio Economics</b> – on site children’s play space provision – <b>Minor Adverse</b>	<b>No</b> (No aspects/effects to interact with)
New Residential Occupancies & Existing Residential Occupancies & Visitors / Pedestrians	<b>Air Quality</b> - Road Traffic and Energy Plant Emissions – <b>Negligible to Minor Adverse</b> <b>Wind Microclimate</b> – Wind conditions at building entrances – <b>Minor Beneficial</b> <b>Wind Microclimate</b> – Wind conditions at thoroughfares – <b>Moderate Beneficial</b>	<b>No</b> Beneficial wind effects do not interact with adverse air quality effects
Heritage Assets	Townscape, Built Heritage and Visual – Heritage Setting (Listed Buildings and Conservation Areas) – Negligible, Negligible or <b>Minor Beneficial</b>	<b>No</b>
Townscape	Townscape, Built Heritage and Visual – Townscape Receptors – Negligible, <b>Minor Beneficial</b> or <b>Moderate Beneficial</b>	<b>No</b>
Views	Townscape, Built Heritage and Visual – Visual Impact to Local Residents – Negligible, <b>Minor Beneficial, Minor to Moderate Beneficial and Moderate Beneficial</b>	<b>No</b>
	Townscape, Built Heritage and Visual – Visual Impact to Pedestrians (Commuters and Outdoor Recreational Users) - Negligible, Negligible to <b>Minor Beneficial, Minor Beneficial or Moderate Beneficial</b>	<b>No</b>
	Townscape, Built Heritage and Visual – Visual Impact to Industrial Estate Workers – Negligible to <b>Minor Beneficial</b>	<b>No</b>

**Conclusion**

- 12.18** It is concluded that the Proposed Development could lead to significant intra-project effect interactions / combined cumulative effects relating to air quality and noise for residential properties along Southampton Way and Parkhouse Street and to any new residential occupancies introduced on site whilst construction works are ongoing.
- 12.19** On completion and full occupation of the Proposed Development, it is concluded that there could be significant intra-project effect interactions / combined cumulative effects relating to daylight and sunlight and air quality to residential receptors along Wells Way.