13 Effect Interactions

13.1 Introduction

13.1.1 This chapter provides an assessment of the likely cumulative effects of the Proposed Development as required by the EIA Regulations.

13.1.2 There are two types of cumulative effects:

- Type 1, intra-project effects which are the combined effects of individual topic effects on a particular sensitive receptor; and
- Type 2, inter-project effects which are the combined effects of several committed schemes (in conjunction with the Proposed) which may, on an individual basis be insignificant but, cumulatively, have a significant effect.

13.1.3 Type 2 Cumulative Effects: Inter-project effects have been considered for committed and other relevant schemes located within a 5 km radius from the boundary of the Site; the full list is provided in **ES Volume 2, Chapter 3: EIA Methodology, Table 3.7** of this ES. These effects have been assessed in each technical chapter of this ES and are summarised in **Table 13.3**. As mentioned in **ES Volume 2, Chapter 3: EIA Methodology,** while the Land at Chichele has been refused at appeal, it remains included as a cumulative scheme as it may have potential for an alternative scheme or design.

13.2 Intra-Project Effects

13.2.1 There is potential during both the construction and operation of the Proposed Development for a combination of environmental effects to arise at the same time, affecting the same receptor or location.

13.2.2 There is no established EIA methodology for assessing effect interactions on a particular receptor, although the European Commission (EC)[1] has produced guidelines to assist EIA practitioners in developing an approach which is appropriate to a project. This approach has been modified and applied to determine the potential for effect interactions.

13.2.3 **Table 13.1** and **Table 13.2** identify the potential residual effects on relevant groups of sensitive receptors, as a result of the Proposed Development, as previously identified through the individual topic assessments. Both tables define anticipated effects across both construction and operation and identify anticipated effect

[1] European Community (1999); Guidelines for the Assessment of Indirect and Cumulative Impacts as well as Impact Interactions.

interactions (cumulative effects) during each of these phases. The identification of effect interactions is based on the combined professional judgement of the topic specialists and EIA coordination team. Residual effects that are beneficial or adverse in nature and that are minor, moderate or major in scale have been considered.

13.2.4 Having identified a potential for an effect interaction, that effect interaction is evaluated qualitatively. Considerations may include the exact location and duration where residual effects are anticipated and the sub-division of receptors into smaller categories (for example, residents of a particular street, or specific species or habitats). For each likely effect interaction, it is noted whether the interaction is sufficient for the significance of the interactive effect to be greater than the individual residual effects in isolation and, where this is the case, an effect interaction significance is given. Even where the effect interaction is no more significant than the residual effects in isolation, the nature of the effect is further explained and summarised in this chapter and in the **Non-Technical Summary (ES Volume 1)** so that the nature of the interactive effect can be fully understood.

Potential for Intra-Project Effects during Construction

Table 13.1: Summary of Intra Project Effects – Construction Phase

Receptor	Residual Effect	Potential for Intra-Project Effects
Residential	Noise and Vibration: Effect of construction noise on existing residential receptors R1, R2, R3, R4 and R5 (minor adverse). Traffic and Transport Effect on construction non-motorised user amenity (minor adverse).	Potential for interactive effects for local residents from noise and vibration effects and traffic and transport effects.
Commercial	Socio-Economics: Effect on construction employment (minor beneficial). Effect of additional spending on the local economy (minor beneficial).	No potential for interactive effects.
Community	Noise and Vibration: Effect of construction noise on existing non-residential receptors R6 and R7 (minor adverse). Traffic and Transport Effect on construction non-motorised user amenity (minor adverse).	Potential for interactive effects for local community from noise and vibration effects and traffic and transport effects.

Receptor	Residual Effect	Potential for Intra-Project Effects
Heritage	None.	No potential for interactive effects.
Global Climate System	None.	No potential for interactive effects.
Landscape and Views	<u>Landscape and Visual:</u> Effect on landscape pattern and character of the Site (major adverse). Effect on trees and vegetation (minor neutral). Effect on Landscape Character Area GV4 (minor adverse). Effect on PR01 – users of Bridleway 97 (major adverse). Effect on POS1- visitors to Oxted Burial Ground (moderate adverse). Effect on POS2 – visitors to Saint Mary's Church (minor adverse). Effect on RD01 – users of Barrow Green Road and Chalkpit Lane (minor adverse). Effect on RD02 – users of Wheeler Avenue (minor adverse). Effect on RE01 – residents of properties on Wheeler Avenue (moderate adverse). Effect on RE02 – residents of properties north and west of the Site (minor adverse).	No potential for interactive effects.
Ecological	<u>Ecology</u> Effect of pollution control measures on The Bogs pSNCI (minor beneficial) Effect of pollution control measures on the Ancient Woodland (minor beneficial)	No potential for interactive effects.

Construction Phase Interactive Effects on Local Community and Residents

13.2.5 The local community and residents will experience minor adverse effects due to construction noise, minor adverse effects due to traffic impacts and a range of major to minor neutral effects due to visual impacts. There would be minor adverse effects from construction noise, however there will be views of construction sites from surrounding receptors at the assessment locations, so these local residents will also experience visual effects from construction. Additionally, there will be an increased amount of HGV traffic on Barrow Green Road, as well as minor disruption due to the site access and existing Public Right of Way as a result of construction activity.

13.2.6 Throughout construction, worst case noise, traffic and visual effects would occur at different points. For example, noise effects would be worst during foundation and enabling works and to a lesser extent main building works while visual effects are at a greatest magnitude during site clearance and transport disruption effects would be greatest towards the north of the Site and would lessen as construction activity moves down towards the south.

13.2.7 Therefore, the main result of the interaction of these effects is to extend the overall duration of construction effects on amenity, however impacts will be appropriately mitigated through the use of a CEMP which will contain noise mitigation measures and appropriate traffic management measures. Overall, no additional significant effects would be anticipated.

Potential for Intra-Project Effects during Operation

Table 13.2: Summary of Intra Project Effects – Operational Phase

Receptor	Residual Effect	Potential for Intra-Project Effects
Residential	Socio-Economics: Effect on the provision housing (moderate-minor beneficial). Effect on operational employment (minor beneficial effect). Noise and Vibration: Effect of operational traffic noise on residential receptors R1, R2, R3 and R5 (minor adverse). *Long-term (negligible).*	No potential for interactive effects.
Commercial	Socio-Economics: Effect of additional spending on the local economy (moderate-minor beneficial).	No potential for interactive effects.
Community	Socio-Economics: Effect on the demand for healthcare services (minor adverse). Effect on the demand for open spaces (minor beneficial). Effect on the demand for play spaces (minor beneficial). Traffic and Transport Effect on operational severance (minor adverse). Effect on operational non-motorised user amenity (minor adverse).	Potential from interactive effects for local community from socio-economic effects and traffic and transport effects.

Receptor	Residual Effect	Potential for Intra-Project Effects
Heritage	<u>Built Heritage:</u> Effect on Church of St Mary (moderate-minor adverse).	No potential for interactive effects
Global Climate System	None.	No potential for interactive effects
Landscape and Views	<u>Landscape and Visual:</u> Effect on landscape pattern and character of the Site (major adverse). Effect on trees and vegetation (minor neutral). Effect on Landscape Character Area GV4 (minor adverse). Effect on PR01 – users of Bridleway 97 (major adverse). Effect on POS1- visitors to Oxted Burial Ground *Year 1* (moderate adverse). Effect on POS1- visitors to Oxted Burial Ground *Year 15* (minor adverse). Effect on POS2 – visitors to Saint Mary's Church *Year 1* (minor adverse). Effect on POS2 – visitors to Saint Mary's Church *Year 15* (*negligible*). Effect on RD01 – users of Barrow Green Road and Chalkpit Lane (minor adverse). Effect on RD02 – users of Wheeler Avenue (minor adverse). Effect on RE01 – residents of properties on Wheeler Avenue (moderate adverse). Effect on RE02 – residents of properties north and west of the Site (minor adverse).	No potential for interactive effects.
Ecological	<u>Ecology</u> Effect of SuDS on The Bogs pSNCI (minor beneficial)	No potential for interactive effects.

Operational Phase Effects on Local Community

13.2.8 The majority of the local community will experience predominantly beneficial effects during operation as a result of the introduced provision of open and play spaces. These effects will likely outweigh the non-significant changes to transport in the local area.

13.2.9 Some adverse effects on transport are experienced. However, the increased demand for healthcare services is not likely to be substantial enough to have an interactive effect with adverse effects on transport.

13.3 Inter-Project Effects

13.3.1 Cumulative effects resulting from the in-combination impacts from other committed schemes alongside the Proposed Development have been considered by each discipline in their respective chapters (**Chapter 6 to 12**). Where there are additional effects beyond the effect of the Proposed Development in isolation, these are summarised in **Table 13.3**. The list of committed schemes assessed is included in **Chapter 3: EIA Methodology, Table 3.7**.

Table 13.3: Summary of Inter-Project Effects

EIA Topic	Description
Socio-Economics	Effect on construction employment (moderate-minor beneficial). Effect on the provision housing (major-moderate beneficial). Effect on the demand for healthcare services (minor adverse). Effect of additional spending on the local economy (moderate-minor beneficial).
Air Quality	None.
Noise and Vibration	None.
Traffic and Transport	None.
Ecology	None.
Built Heritage	None.
Landscape and Visual Impact Assessment	None.

Summary of Inter-Project Effects

13.3.2 The cumulative effect of the Proposed Development and committed developments set out in **Chapter 3: EIA Methodology** has been assessed.

13.3.3 For some topics, committed developments may have been excluded from the cumulative assessment on the basis of distance (outside the area of influence) or because the committed development is substantially complete and considered part of the future baseline.

13.3.4 In summary, the cumulative effects of the Proposed Development and other committed developments differ from the conclusions of the main assessment in the following ways:

- A moderate-major beneficial (significant) effect on construction employment.

- A major-moderate beneficial (significant) effect on housing provision.
- A moderate-minor beneficial (significant) effect on the local economy from additional expenditure supported by residents.
- A minor adverse (not significant) effect on the demand for healthcare services from potential combined CIL contributions.