

Chapter 13: Effect Interactions

INTRODUCTION

- 13.1 This chapter of the Environmental Statement (ES) summarises the likelihood for intra-project effects or ‘effect interactions’. Effect interactions occur because of interactions between multiple individual effects associated with just one project on a receptor i.e. the combination of individual effects, for example effects interactions in relation to noise, airborne dust and traffic on a receptor.
- 13.2 Note that inter-project effects i.e. those in combination with other developments or ‘cumulative schemes’ have been discussed separately throughout this ES (in **ES Volume 1, Chapters 6 to 12**) as appropriate, and have not been re-iterated within this ES chapter to avoid repetition.
- 13.3 There is no established Environmental Impact Assessment (EIA) methodology for assessing the nature and scale of effect interactions on a receptor. However, the European Commission¹ (EC) has produced guidelines to assist EIA practitioners in developing an approach which is appropriate to a project. These guidelines have been used to develop an approach which uses the defined residual effects of the Proposed Development (as presented throughout this ES (in **ES Volume 1, Chapters 6 to 12**) to determine the potential for effect interactions. These residual effects are reliant on mitigation measures (as identified throughout this ES and presented within **ES Volume 1, Chapter 15: Environmental Management, Mitigation and Monitoring Schedule**), which have been assumed to be undertaken/adopted.
- 13.4 The approach to defining effect interactions involves tabulating the residual effects of the Proposed Development against receptors or, where more appropriate, receptor groups to identify the potential for in-combination effects or effect interactions. For the purposes of this assessment, residual effects that have been identified in **ES Volume 1, Chapters 6 to 12** and in **ES Volume 2** that do not affect a common sensitive receptor have not been presented in this ES chapter, as no effect interactions are anticipated. Only residual effects that are likely to give rise to effect interactions have been considered and discussed as relevant.
- 13.5 Residual effects that are beneficial, neutral, or adverse in nature and that are minor, moderate, or major in scale have been considered. Based on the definitions of what negligible effects comprise for each of the technical assessments, these do not warrant further consideration therefore have not been pulled through into the assessment of effect interactions within this ES chapter.
- 13.6 The residual effects highlighted in **green** within the tables presented in this ES chapter reflect (minor, moderate or major) beneficial effects, those in **orange** reflect (minor, moderate or major) adverse effects and those in **blue** reflect neutral/balanced effects. This approach has been followed unless otherwise justified for a respective technical chapter.
- 13.7 The potential for in-combination effects is identified, and professional judgement is then used to determine if the potential in-combination effects could lead to an effect interaction. Where a resultant effect interaction is identified, this is further discussed qualitatively.
- 13.8 The scale of an effect interaction has not been assigned as part of this assessment; however, whether the effect interaction is considered a significant effect or not is identified². For example, when one or more residual significant effects (i.e. effects that are typically moderate or major in scale) from different EIA topics (i.e. air quality, noise and vibration, traffic and transport) coincide on a receptor, the effect interaction has been considered as being ‘significant’.
- 13.9 If none of the individual effects are significant, consideration has been given as to whether or not the combination of many not significant effects could result in a combined significant effect, based on professional opinion.
- 13.10 Where the nature of effects that interact are the same (i.e. they are all either adverse or beneficial), the nature of the effect interaction is reported upon. Where multiple effects of differing natures interact (i.e. there is a combination of both beneficial and adverse effects), the nature of any significant effect interaction identified has not been assigned.
- 13.11 This ES chapter has subsequently been divided into two parts:
 - Deconstruction and Construction – which addresses potential intra-project effects and effect interactions arising from the deconstruction and construction works; and

- Completed Development – which addresses potential intra-project effects and effect interactions arising from the completed and operational Proposed Development.

DECONSTRUCTION AND CONSTRUCTION

13.12 Table 13.1 presents the residual effects associated with the deconstruction and construction works of the Proposed Development and identifies the potential for effect interactions on particular receptors. Where the potential for an effect interaction is identified, this is discussed in more detail in the text below.

Table 13.1 Potential for Effect Interactions – Deconstruction and Construction

Receptor	Technical Topic Area and Residual Effect	Scale and Nature of Residual Effect	Significance of Individual Effect
Pedestrians (on Euston Road and Hampstead Road)	Traffic and Transport Pedestrian and Cyclist Delay	Minor Adverse	Not Significant
	Visual Changes to views as a result of the deconstruction and construction of the Proposed Development. (Viewpoint 11: Hampstead Road, junction with Drummond Street; Viewpoint 14: Euston Road, junction with Gower Street)	Moderate Adverse	Significant
	Visual Changes to views as a result of the deconstruction and construction of the Proposed Development. (Viewpoint 9: Hampstead Road, opposite junction with Varndell Street; Viewpoint 10: Hampstead Road, junction with North Gower Street; Viewpoint 13: junction with Duke’s Road)	Minor to Moderate Adverse	Not Significant

Pedestrians

- 13.13 Pedestrians using the area immediately surrounding the site have been assessed as having the potential to experience in-combination effects as a result of the deconstruction and construction of the Proposed Development. There is potential for temporary periods of increased delays for pedestrians as a result of general construction activity. Hoarding would be present on Hampstead Road and Euston Road, which will result in the narrowing of existing footways. This has the potential to create delays for pedestrian movements on Euston Road and Hampstead Road, resulting in a Minor Adverse (not significant) effect.
- 13.14 In addition to, and in combination with, the effects above relating to pedestrian delay, pedestrians along Euston Road and Hampstead Road will experience a temporary adverse change in the visual amenity, as a result of the deconstruction and construction of the Proposed Development. These effects are associated with the use of machinery and tower cranes and will be temporary in nature.
- 13.15 This effect interaction is considered **Significant** as at least one of the effects is significant in isolation, and it could result in an adverse pedestrian experience on Euston Road and Hampstead Road. However, these effects will be temporary and will be mitigated where possible, for example, through the implementation of a Construction Management Plan, which will aim to minimise disruption and ensure there are not adverse

¹ European Community (1999); Guidelines for the Assessment of Indirect and Cumulative Impacts as well as Impact Interactions.
² The methodology for determining a significant in-combination effect has been defined by the HS2 Phase 2a: West Midlands – Crewe Scoping and Methodology Report (July 2017) and the published HS2 Phase 2a Environmental Statement Volume 1 Introduction and Methodology and

Volume 2 Community Area Reports (July 2017). The methodology for assigning significance to in combination effects has been specifically included in this ES to assess if there are any combination effects that would result in a significant effect.

impacts on pedestrians (as detailed in **ES Volume 1, Chapter 15: Environmental Management, Mitigation and Monitoring Schedule**).

COMPLETED DEVELOPMENT

13.16 There is no potential for any effect interactions to occur once the Proposed Development is complete and operational. Whilst there are a number of effects identified to surrounding receptors, these receptors are not impacted by multiple effects in a way that could classify as an effect interaction.

SUMMARY

13.17 In summary, a **Significant Adverse** temporary effect interaction to pedestrians along Euston Road and Hampstead Road due to combined delay and visual amenity effects during the deconstruction and construction works has been identified.

13.18 No effect interactions have been identified from the Proposed Development, once complete and operational.