Chapter 3

EIA METHODOLOGY

3 EIA Methodology

Preface

This chapter has been updated to provide a summary of additional consultation that has occurred since submission of the 2021 ES and how this has been responded to through the assessment presented in this ES. Following consultation with the highways authorities, it provides greater detail on off-site sustainable travel initiatives and how this has informed the approach to the operational phase assessment in the relevant technical ES chapters.

It also provides a clear summary of how a neighbouring planning application for commercial logistics development, submitted to CDC after submission of the 2021 ES, has been fully and collaboratively assessed in this ES.

3.1 Introduction

3.1.1 This chapter sets out the scope and methodology adopted in the EIA process. It explains how the scope of the EIA was defined, the baseline assumptions, methods used to assess the environmental effects and the general criteria used to evaluate their significance. The methodology applied to each of the technical impact assessments is set out in each technical chapter.

3.1.2 This chapter is accompanied by the following appendices:

- Appendix 3.1: Location of Specified Information in the ES;
- Appendix 3.2: EIA Scoping Report (June 2021);
- Appendix 3.3: CDC EIA Scoping Opinion (July 2021) and scoping consultation responses;
- Appendix 3.4: a) Enabling Works EIA Screening Request and b) CDC Screening Opinion (August 2021); and
- Appendix 3.5: List of Cumulative Schemes.

3.2 Regulatory Requirements and Good Practice

3.2.1 This ES is prepared to comply with the Town and Country Planning (Environmental Impact Assessment) Regulations 2017[1] (as amended)[2,3] (the 'EIA Regulations'). The information required for inclusion in an ES is defined by Regulation 18(3) - (5) and Schedule 4 of the EIA Regulations. Appendix 3.1 sets out these information requirements together with their location within the ES.

3.2.2 Good practice guidance documents have also been considered when undertaking this EIA, including:

- Planning Practice Guidance ('PPG') – Environmental Impact Assessment[4];

- Guidelines for Environmental Impact Assessment: Institute of Environmental Management and Assessment ('IEMA')[5];
- Special Report: The State of Environmental Impact Assessment Practice in the UK (IEMA)[6];
- EIA – Shaping and Delivering Quality Development (IEMA)[7];
- Delivering Proportionate EIA (IEMA)[8];
- Design Manual for Roads and Bridges (DMRB), Volume 11[9]; and
- Topic specific guidance referred to in each technical chapter of this ES where appropriate.

3.2.3 Each technical assessment (Chapters 7 – 15) followed respective national and local planning policy and guidance as appropriate to their discipline.

3.2.4 The following key policy documents have also been consulted during the EIA process:

- The National Planning Policy Framework (NPPF) (2023)[10];
- The Cherwell Local Plan 2016 - 2031[11];
- Saved polices from Cherwell Local Plan (1996)[12]; and
- Cherwell Local Plan Review 2040 (Regulation 18) Consultation Draft[13].

3.3 Design and EIA Interface

3.3.1 The EIA was undertaken in parallel with the design process. In particular, transport, ecology, noise and vibration, landscape and visual, climate change and flood risk specialists worked closely with the project design team through an iterative process to reduce, or eliminate where possible, adverse environmental effects through the scheme design. Further information on how environmental issues have influenced the design is provided in Chapter 4: Alternatives. Opportunities for enhancement, such as incorporating biodiversity enhancements and landscape screening into the design, were also identified through the EIA process.

3.4 Scope of the EIA

3.4.1 As set out in Chapter 1: Introduction, a separate planning application is submitted for the Enabling Works on the Western Site. A screening appraisal concluded that the Enabling Works were unlikely to give rise to significant environmental effects. However, CDC's Screening Opinion (August 2021, see Appendix 3.3) considered that the Enabling Works should be considered as part of a larger development and that the application comprises EIA development. As such, the potential environmental impacts of all three applications are assessed within this ES as part of the 'EIA Development' to allow a holistic approach to mitigation of effects.

3.4.2 The EIA Regulations require the ES to consider only the *'likely significant environmental effects'* of a development. UK Government's online PPG highlights the expectation that the ES should remain *'proportionate'* and focus on the *'main'* or *'significant'* environmental effects only.

3.4.3 The purpose of the EIA scoping process is to identify the likely significant environmental consequences of the EIA Development and the level of detail of the information to be provided in the ES. An applicant who intends to submit an EIA application may ask the local planning authority to state their opinion as to the scope and level of detail of the information to be provided in the ES, in accordance with Regulation 15 of the EIA Regulations.

3.4.4 A request for a scoping opinion was submitted by the Applicant to CDC on 24th June 2021. An EIA Scoping Report (the 'Scoping Report') accompanied the request and identified the proposed topics and approach to the assessments during the EIA process (see Appendix 3.2). The Scoping Report also provided justification for 'scoping out' certain topics from the EIA, because the Development would have either no influence on these environmental aspects or it is unlikely to result in significant effects.

3.4.5 An EIA scoping opinion (the 'Scoping Opinion') was issued by CDC on 29th July 2021. The Scoping Opinion, together with scoping responses from bodies consulted by CDC on Scoping Report, are included at Appendix 3.3.

3.4.6 The Scoping Opinion broadly agreed with the proposed scope of the EIA as set out by the EIA Scoping Report, although also requested that Built Heritage and Water, Flood Risk and Drainage chapters be included within the ES. These topics are included at Chapter 11: Cultural Heritage and Chapter 15: Water, Flood Risk and Drainage. Each topic chapter sets out how the relevant matters raised in the Scoping Opinion has been addressed by the assessment under 'Assessment Methodology - Consultation'.

3.4.7 In accordance with the Scoping Opinion, the topics assessed in this ES are listed in Table 3.1.

Table 3.1: ES Technical Chapters

Socio-economics (Chapter 7)	Ecology and Biodiversity (Chapter 12)
Transport and Access (Chapter 8)	Landscape and Visual Impacts (Chapter 13)
Air Quality (Chapter 9)	Climate Change and Greenhouse Gases (Chapter 14)
Noise and Vibration (Chapter 10)	Water, Flood Risk and Drainage (Chapter 15)
Cultural Heritage (Chapter 11)	

3.4.8 A review of the Scoping Opinion and associated consultation comments has been carried out to ensure that, as required by Regulation 18(4)(a) of the EIA Regulations, the ES is "based on" the Scoping Opinion while maintaining a proportionate approach.

3.4.9 Topic specific cumulative inter-project effects and, where relevant, in-combination effects (intra-project effects) are assessed in each topical chapter. Combined effects on receptor groups from multiple topics (intra-project effects) are considered within Chapter 16: Effect Interactions.

3.5 Consultation

3.5.1 As stated above, a number of consultees were consulted by CDC following the Scoping Opinion request. These responses are included at Appendix 3.3. As part of CDC's responsibility under Regulation 15(4) of the EIA Regulations 2017, consultation was undertaken with the following consultees:

- CDC and Oxfordshire County Council (OCC) Highways;
- CDC Environmental Protection; and
- Thames Water.

3.5.2 Further consultation was undertaken by the project team during the EIA and design process with statutory consultees and other key stakeholders. Engagement was sought with CDC, OCC, and other key stakeholders on the Development. A summary of the key issues raised during consultation which is relevant to the EIA process and how these are addressed in the EIA is provided in the 'Assessment Methodology - Consultation' section of each technical chapter.

3.5.3 In summary, technical consultation has been undertaken with the following:

- OCC Highways and National Highways – regarding proposed scope of transport assessment (Chapter 8: Transport and Access);
- CDC Environmental Health Officer – regarding confirmation of agreement on noise baseline survey (Chapter 10: Noise and Vibration);
- OCC Archaeology – regarding proposed methodology of archaeological survey through submission of draft archaeological desk-based assessment (DBA) and Written Schemes of Information (WSIs) (Chapter 11: Cultural Heritage);
- CDC Ecology – regarding scope of ecology surveys and Biodiversity Net Gain (BNG) strategy (Chapter 12: Biodiversity); and
- CDC Landscape Officer – regarding agreement on Viewpoints and the Zone of Theoretical Visibility (ZTV) (Chapter 13: Landscape and Visual Impacts).

3.5.4 Following submission of the 2021 ES with the planning applications, West Northamptonshire Council provided a review of Chapter 8: Transport and Access. LUC also provided a review of Chapter 13: Landscape and Visual Impacts on behalf of CDC. No potential Regulation 25 request for 'further information' were identified through this process. Quod coordinated a response to both reviews, with further comments on acceptance of responses provided by LUC in May 2022. The comments raised in these reviews have been taken into account in updating this ES.

3.5.5 Ongoing post-submission consultation with OCC, CDC and National Highways has also informed the redesign of the off-site junction works at Baynards Green and this is detailed more in Chapter 8: Transport and Access and Appendix 8.1: Transport Assessment.

3.6 Defining the Baseline

Study Area

3.6.1 The study area, also known as the spatial Zone of Influence (ZoI), for each topic is based on the geographical scope of the potential impacts relevant to the topic or the information required to assess the likely significant effects, as well as topic specific guidance and consultation with stakeholders. This is defined in each technical ES chapter as appropriate as the ZoI varies from topic to topic and between construction and operational phases in some cases. A summary of the ZoIs applied to the topics in this EIA is provided in Table 3.2 and illustrated in Figures 3.1 and 3.2.

Table 3.2: ZoI of Potential Effects During the (i) Construction and (ii) Operation of the completed Development

Topic	ZoI during Construction	ZoI during Operation of completed Development
Socio-economics	The Site, local area, district (CDC) and regional level (south east England).	The Site, local area, district (CDC) and regional level (south east England).
Transport and Access	N/A	The following are assessed: ▪ the B4100; ▪ J10 M40; ▪ the A43 and the B4100/A4095 junction; ▪ the A4095 on the northern fringe of Bicester. The study area for appraisal of the Public Right of Way (PRoW) network is a 3km radius from the Site boundary.
Air Quality	Dust - within 350m the Site boundary, or 50m of the route(s) used by construction vehicles on the public highway.	The study area for the assessment has been determined using professional judgement, by identifying the sensitive receptors adjacent to roads along which the Development will lead to a potentially significant change in traffic flows. Study area includes: ▪ the A43 north and south of Baynards Green roundabout; ▪ the B4100 east and west of the Baynards Green roundabout.
Noise and Vibration	To assess the effects of construction noise and vibration,	For operational road traffic on new, altered or existing roads, the study

Topic	ZoI during Construction	ZoI during Operation of completed Development
	the spatial extents of the study area were: ▪ 300m: noise from construction activities, such as material movements, earthworks, ground improvement and piling, crushing and breaking; ▪ 100m: ground-borne vibration effects from high energy construction activities, including piling works; and ▪ 1dB change: noise effects from construction vehicle movements to and from the construction site likely to result in a change of 1 decibel (dB) LAeq,T or greater.	area was defined based on the combined extent of: ▪ The area within 50m of other road links with the potential to experience a short-term Basic Noise Level (BNL) change of more than 1 dB(A) as a result of the Development; ▪ Identified receptors with the potential to experience a short-term Basic Noise Level (BNL) change of more than 1 dB(A) as a result of the Development; and ▪ Where the noise level at identified receptors is forecast to exceed the relevant Lowest Adverse Effect Level (LOAEL).
Cultural Heritage	1km from Site boundary	
Ecology and Biodiversity	Site itself and immediate surrounding area. Consideration of international statutorily protected sites at up to 10km from the Site and national statutorily and non-statutorily protected sites up to 2km.	
Landscape and Visual Impacts	2km radius from the centre of the Site.	
Climate Change and Greenhouse Gases	Climate change is a global environmental effect and as such the study area for the assessment is not limited by any specific geographical scope. The assessment considers the release of greenhouse gases from activities associated with the Development which the Applicant has some ability to control or influence.	
Hydrology, Flood Risk and Drainage	The Site	The Site and Padbury Brook catchment

Figure 3.1: Construction Phase ZoI

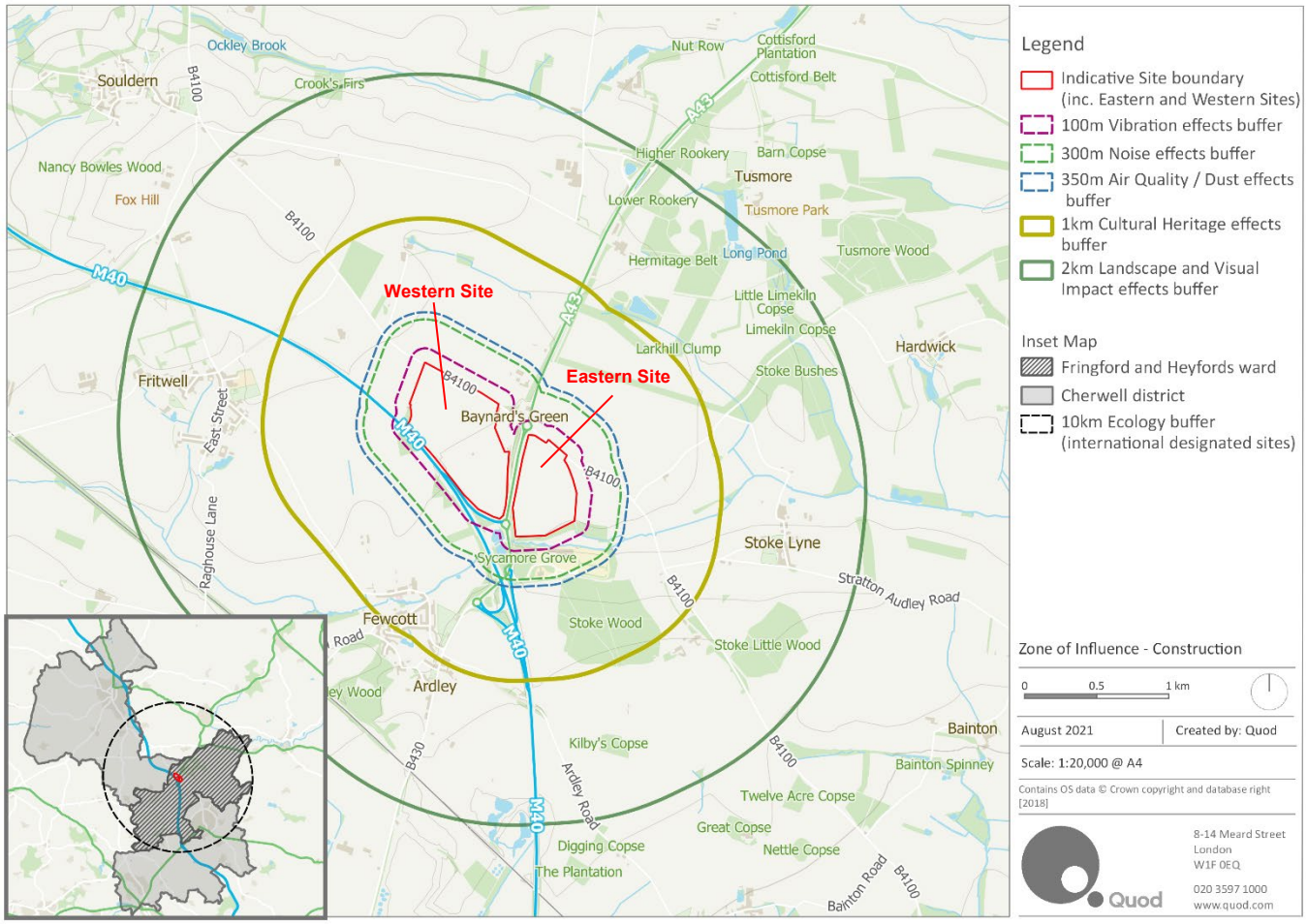
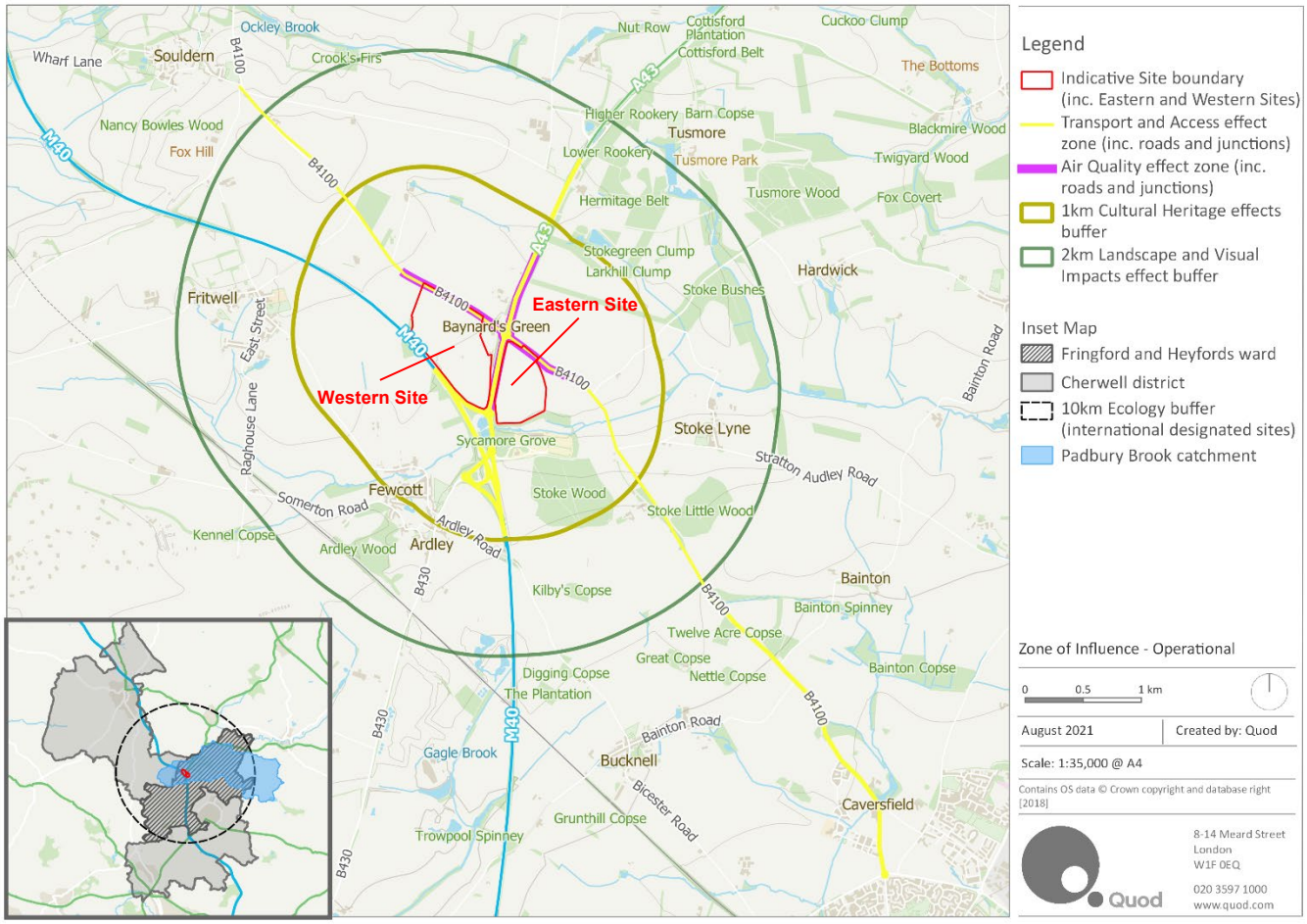


Figure 3.2: Operational Phase/ completed Development ZoI



Baseline Conditions and Future Baseline

Existing Baseline

3.6.2 The baseline environmental conditions need to be established to enable an accurate assessment of the potential changes that may occur and to assess the resultant environmental effects of the Development. Understanding baseline conditions also assists in the identification of the most appropriate mitigation to be employed to minimise significant effects.

3.6.3 Baseline information was gathered to define the existing environmental characteristics and receptors for each environmental topic. The baseline assessment year for the EIA is taken as 2023/ 2024, unless otherwise stated. The baseline conditions and existing environmental characteristics and conditions of the Site were informed by:

- Desk-based studies;
- Site visits and surveys;
- Computer modelling;
- Review of local planning policies; and
- Consultation with the statutory consultees, through the EIA scoping exercise and other consultation.

3.6.4 Baseline information is presented for both the Western Site and Eastern Site. Where appropriate, information is clearly identified for each application site.

3.6.5 A planning application for Enabling Works on the Western Site is being submitted by the Applicant and these works will be completed in advance of the construction of the commercial units associated with the Eastern and Western Developments. As such, the baseline for assessment purposes is taken as the existing Site before the commencement of the Enabling Works for all topics. For example, the biodiversity assessment considers the Site at the point of pre-commencement prior to the removal of vegetation as part of the Enabling Works. This is to ensure that the loss of species-supporting habitat is appropriately mitigated and considered in Biodiversity Net Gain terms.

Future Baseline

3.6.6 The EIA Regulations require an ES to include a description of the future baseline, i.e. the baseline conditions without implementation of the Development as far as natural changes from the baseline scenario can be assessed with reasonable effort on the basis of the availability of environmental information and scientific knowledge. Future baseline conditions are therefore also considered under the 'Baseline Conditions' section as appropriate within each technical chapter. Consideration is also given to the committed development schemes (as set out in Appendix 3.5) within each technical chapter and how the future baseline would change if they are brought forward ahead of the Development. However, the cumulative effects of the Development with other approved and planned schemes are assessed under the 'Cumulative Assessment' section of each topic chapter.

Sensitive Receptors

3.6.7 As part of the EIA process, the environmental effects of a given development or scheme are typically assessed in relation to sensitive receptors, including human beings (e.g. future site users), built resources (e.g. buildings) and natural resources (e.g. controlled waters). The criteria used for identifying potentially sensitive receptors include:

- Proximity to the Site;
- Presence or absence of impact pathways;
- Extent and duration of potential exposure to environmental impacts; and,
- Vulnerability and ability to respond to change.

3.6.8 Key sensitive receptors to the Development are the residential dwellings adjacent to the Western Site boundary, nearby built heritage assets and ecology on and in the vicinity of the Site. Statutory ecological designated sites in close proximity to the strategic road network to the south of the Site are also considered. Further details on sensitive receptors are provided in the baseline assessment section of each technical chapter of the ES (i.e. Chapters 7 to 15). The chapters consider both existing and future sensitive receptors, on-site and off-site. A summary of the receptors and their sensitivity is provided at the end of each baseline section for the topic chapters.

3.7 Basis of the Impact Assessments

3.7.1 The Applicant is seeking outline planning permission for two applications, both with all matters reserved apart from access, and full planning permission of enabling works on the

Western Site. All the applications are capable of being delivered independently of each other. The ES therefore assesses the environmental effects of the following in turn:

- Western Development (including Enabling Works);
- Eastern Development; and
- Western Development (including Enabling Works) and Eastern Development together; and
- Western Development and Eastern Development and cumulative schemes (note that two cumulative scenarios are assessed, as described in Section 3.8 below).

3.7.2 The following documents, provided for both the Western Development and Eastern Development applications form the basis of the assessments included within the ES for the outline applications:

- Parameter Plans – The Parameter Plans provide the upper building limits and establish a 3-dimensional (3D) building envelope within which the detailed design of buildings can come forward through the submission of outline applications with all matters reserved except access. Further details are provided in Chapter 5: Description of Development.
- Development Specification – this document describes the principal components of the Development including the maximum amount of development and the uses proposed. It also sets out embedded mitigation, environmental design standards and rules that control the detailed design of future development, including principles of internal access and parking, cladding and landscaping.

3.7.3 A suite of detailed drawings define the Site accesses and Enabling Works.

3.7.4 The EIA has principally assessed the Development by reference to the Parameter Plans and the Development Specification. Due to the level of design flexibility provided by the Parameter Plans (particularly in respect of defining maximum building envelopes and Gross External/Internal Areas (GEA/GIA) by land use), the technical assessments in this ES provide an assessment of the maximum extent of the Development which would represent a 'worst-case' assessment. The basis of the worst-case approach is clearly defined in each topic assessment.

3.7.5 A description of the Development and each application is provided in Chapter 5: Description of the Development.

3.7.6 The following technical disciplines of the EIA use parameters which define the height and massing of the buildings to assess impacts:

- Landscape and Visual Impacts;
- Cultural Heritage; and
- Noise and Vibration.

3.7.7 The Development Specification describes the type and amount of development by land use and square metres, respectively. The technical disciplines of the EIA that are dependent on the amount and uses proposed within the Development (i.e. the proposed floor areas) and development uses (i.e. Class Use) for the purposes of the assessment are principally:

- Socio-Economics: particularly in relation to employment creation, and additional local spending; and
- Transport and Access: In relation to trip generation and model split (indirectly - Noise and Vibration, Air Quality and Climate Change and Greenhouse Gases in relation to the assessment of road traffic noise, air quality and climatic impacts).

3.7.8 The amount and design of the parking provision will be a matter for detailed design and subsequent reserved matters submissions.

3.8 Assessment of Effects

Construction

3.8.1 Enabling Works are expected to commence in early 2025, with construction of the Western Development to commence after these works and the Eastern Development to follow. Full completion across the Site is expected by the end of 2026. This would represent an indicative build out period of approximately 24 months. Further details are provided in Chapter 6: Construction. A different start date would not materially alter the ES findings related to the assessment of likely significant effects or mitigation.

3.8.2 Construction of the Development would be phased, with some likely overlap in construction phases. While there is potentially a scenario where the Site is part-occupied while construction works are ongoing, the peak construction year is assumed to be 2026 for the purposes of assessment.

3.8.3 Each technical assessment in the ES assumes a notional ‘likely-worst case’ scenario with respect to the envisaged construction methods, location (proximity to sensitive receptors) and timing as outlined in Chapter 6: Construction. These assumptions may vary between the topic specific assessments, therefore each individual assessment accounts for a 'hypothetical' construction site that is representative of the ‘worst-case' scenario for any given set of receptors, relevant to that particular technical assessment. Both permanent and temporary construction effects are identified.

3.8.4 The key activities during the construction phase which informed the technical assessments of the ES are described within each chapter as relevant. General commentary on the construction programme and method is provided in Chapter 6: Construction.

3.8.5 This ES is accompanied by Framework CEMPs for the Eastern and Western Sites respectively (Appendices 6.1 and 6.2), which are prepared for the Development by Quod with input from technical specialists. These would be applied to each application and set out a series of measures and standards of work that would be applied by contractors throughout the construction period. These requirements would provide effective planning, management and control measures during construction to control effects that may affect the natural and human environment, local communities, amenity and safety of residents, road users and traffic flow, businesses and the public.

3.8.6 Implementation of the principles within the Framework CEMPs would be secured by planning conditions attached to each application. It is assumed that a detailed site-specific CEMP will be prepared and submitted to CDC for approval for both the Eastern and Western Developments in-line with the Framework CEMPs once contractors are appointed.

3.8.7 In-line with the IEMA best practice, the CEMP can be defined as 'tertiary' mitigation which is defined as that which *"will be required regardless of any EIA assessment, as it is imposed, for example, as a result of legislative requirements and/or standard sectoral practices. For example, considerate contractors' practices that manage activities which have potential nuisance effects"*.

3.8.8 As such, the Framework CEMPs forms part of the project description and is taken as being inherent mitigation in the assessment of environmental effects.

Completed Development

3.8.9 The assessment of potential effects of each completed and occupied development incorporates analysis of the permanent effects that could arise as a result of their operational use.

3.8.10 The Development across both Sites is assumed to be completed in 2026 and therefore this is taken as the principal year of assessment. This year may be subject to change, however this would not materially alter the ES findings related to the assessment of likely significant effects or mitigation.

3.8.11 Along with the applicant for neighbouring planning application[i] ('Tritax Scheme') (CDC Planning Ref: 22/01340/OUT), the Applicant is committed to the promotion of sustainable travel. The highway improvements committed in the two planning applications include:

- Baynards Green roundabout junction upgrade incorporating dedicated crossing facilities to cater for trips to/from local services and bus stops;
- New bus stops on the B4100 in-between the Eastern Site and Tritax Scheme site accesses;
- A new bus stop in the Western Development; and
- 25% of total parking to provide active Electric Vehicle (EV) charging spaces.
- Pedestrian/cyclist infrastructure on the B4100 between the sites and the local services and new bus stops.

3.8.12 No other measures are considered necessary to mitigate potential significant effects of the two proposed developments, as set out in the cumulative assessment within the technical ES chapters. However, the following further sustainable travel initiatives are being explored in conjunction with the Local Highway Authority, subject to further discussion:

- The creation of a new cycle route to/from Bicester along the B4100.
- Upgrading bus waiting areas within Bicester to incorporate cycle parking facilities at bus stops that serve the existing bus route that operates between Bicester and Brackley.
- Financial contributions towards:
  - upgrading an existing bus route between Bicester and Brackley;
  - a further upgrade to the above bus service; and

[i] Tritax Symmetry Ltd.

- enhancing access to the Public Rights of Way network.

3.8.13 As there is no agreement to these potential options at this stage they are not assessed in the EIA. Both the Applicant and applicant of the Tritax Scheme will seek to agree a suitable combination of the measures above that could be brought forward. These will be considered in the context of the committed transport infrastructure improvements and other factors, such as the OCC Freight Strategy. Currently, the preferred approach of Applicant and applicant of the Tritax Scheme is one focused on enhancing public transport connections.

Cumulative Effects

3.8.14 The EIA Regulations require that, in assessing the effects of a particular development proposal, consideration should also be given to any cumulative effects. Potential cumulative effects are categorised into two types:

- **Intra-project effects**: The combined effects of individual effects resultant from the Development upon a set of defined sensitive receptors, for example, noise, dust and visual effects; and
- **Inter-project effects**: The combined effects arising from another development site(s), which individually might be insignificant, but when considered together, could create a significant cumulative effect.

3.8.15 Details on the methodology and approach of the cumulative effects assessment for intra-project effects and inter-project effects of the Development are provided below.

Intra-Project Effects Assessment Methodology

3.8.16 Intra-project effects from multiple topics are assessed within Chapter 16: Effect Interactions. The effect interactions assessment focussed on receptors groups that have the potential to be affected by multiple effects from more than one specialist topic in the EIA, as a result of the Development.

3.8.17 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 may combine to become significant effects. As a result, a receptor group based approach was adopted. The methodology used for the assessment of effect interactions as well as the results of the assessment are set out in Chapter 16: Effect Interactions.

Inter-Project Effects Assessment Methodology

Identifying Cumulative Schemes

3.8.18 There is currently no guidance on how to define an appropriate study area for considering cumulative effects. Therefore, a set of screening criteria has been developed to identify which reasonably foreseeable developments in the vicinity of the Site should be subject to assessment. This screening criteria was informed by the government's PPG[4] 'When should cumulative effects be assessed?' and the PINS Advice Note 17[14]. Schemes to be considered have been identified based on the following criteria:

- Expected to be built-out at the same time as the Development and with a defined planning and construction programme;

- Spatially linked to the Development (within 1km of the Development);
- Considered an EIA development and for which an ES was submitted with the planning application;
- Those which have received planning consent from the planning authority (granted or resolution to grant); and/or,
- Introduce sensitive receptors within close proximity to the Site boundary.

3.8.19 The development schemes which meet the above criteria have been reviewed and updated for this ES, with their locations illustrated in Figure 3.3. Appendix 3.5 provides further detail of each cumulative scheme and its status.

3.8.20 The Scoping Opinion requested additional consideration of the Strategic Rail Freight Interchange (SRFI) within the cumulative assessment. At the time of writing, no planning application has been submitted for this proposed development; as such this has been discounted from the cumulative assessment due to lack of information to assess.

3.8.21 Following submission of the 2021 ES, an outline application for the Tritax Scheme was submitted for proposed development of a commercial logistics scheme, adjacent to the Eastern Site (Cumulative Scheme No.4). This was validated by CDC in May 2022 and is under consultation, pending approval. Given the proximity to the Site and potential for cumulative effects, notably in relation to transport, this has been included in the cumulative assessment. The Applicant has collaborated with the applicant of the Tritax Scheme to ensure the assessment of cumulative effects is undertaken consistently.

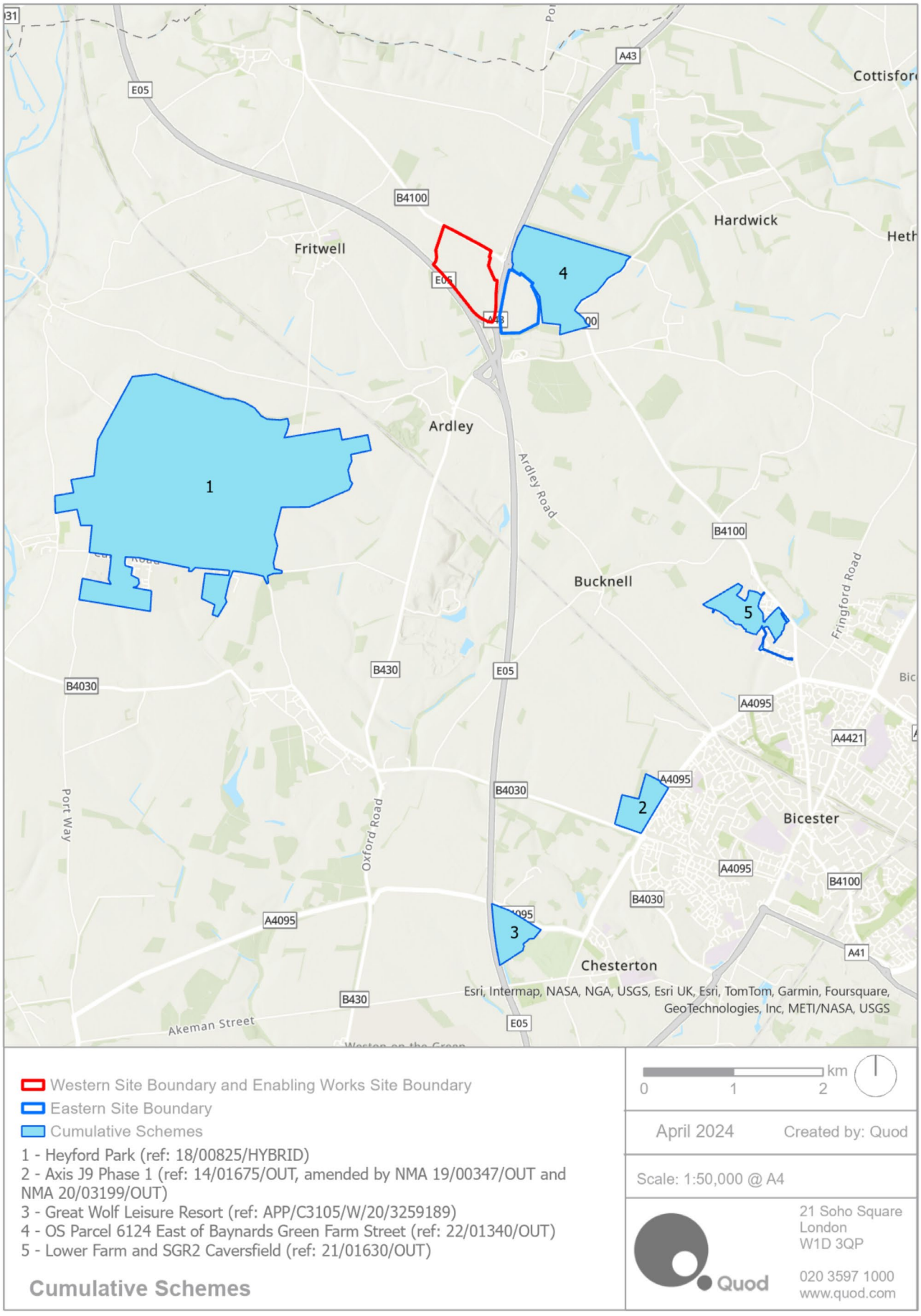
Cumulative Scheme Assessment Methodology

3.8.22 Each technical chapter assesses and presents the potential for inter-project effects arising from the cumulative schemes.

3.8.23 Given the proximity and potential for significant cumulative transport effects of the Development with the adjacent Tritax Scheme, notably on the Baynards Green roundabout where upgrade works have been designed to accommodate both developments in liaison with OCC, the potential cumulative effects of the Tritax Scheme with the Development are provided in a discrete cumulative scenario. The potential cumulative effects of these two schemes are then considered alongside other identified cumulative schemes. Therefore, two Cumulative Scenarios are assessed within each technical chapter, as follows:

- Development + Tritax Scheme; and
- Development + Tritax Scheme + other cumulative schemes (as per Appendix 3.5).

Figure 3.3: Cumulative Schemes



3.9 Identifying and Determining the Significance of Environmental Effects

Identifying Impacts and Effects

3.9.1 The Development has the potential to create a range of 'impacts' and 'effects' with regard to the physical, biological and human environment. The definitions of impact and effect used in this assessment are drawn from the DMRB Guidance as follows:

- **Impact** - a change that is caused by an action. For example, road traffic from the Development would result in increased levels of noise (impact). Impacts can be classified as direct, indirect, secondary, cumulative and inter-related. They can be either positive (beneficial) or negative (adverse); and
- **Effect** - is used to express the consequence of an impact. For example, increased levels of road traffic noise (impact) has the potential to disturb local noise sensitive receptors (effect).

3.9.2 For consistency, the findings of the various studies undertaken as part of the EIA adopt the following terminology to express the nature of the effect:

- Adverse: Detrimental or negative effect to an environmental resource or receptor;
- Negligible: No significant effect to an environmental resource or receptor; and
- Beneficial: Advantageous or positive effect to an environmental resource or receptor.

3.9.3 Following their identification, beneficial or adverse impacts are classified on the basis of their nature and duration as follows:

- Temporary: Effects that persist for a limited period only (due, for example, to particular activities taking place for a short period of time);
- Permanent: Effects that result from an irreversible change to the baseline environment (e.g. land-take) or which will persist for the foreseeable future (e.g. noise from regular or continuous operations or activities);
- Direct: Effects that arise from the effect of the project itself (e.g. removal of vegetation);
- Indirect: Effects that arise which are not a direct result of the project but are closely linked (e.g. changes to surface water quality due to change in land use and urbanisation);
- Secondary: Effects that arise as a consequence of an initial effect of the scheme (e.g. induced employment elsewhere);
- Cumulative: Effects that can arise from a combination of different effects at a specific location or the interaction of different effects over different periods of time.

3.9.4 In the context of the Development, short (up to 24 months duration) to medium (up to 48 months duration) term effects are generally determined to be those associated with construction activities, and the long-term effects are those associated with the completed and occupied Development. Therefore, all construction effects are considered temporary and all operational effects considered permanent, unless otherwise stated.

3.9.5 Local effects are those effects affecting receptors within and in close proximity to the Site, whilst district and regional effects are those affecting receptors in the CDC and OCC administrative areas respectively.

Defining Magnitude of Impact and Sensitivity of Receptor

Magnitude of Impact

3.9.6 For impacts assessed in this ES, a magnitude of impact is assigned, taking into account the spatial extent, duration, frequency and reversibility of the impact, where relevant. Scales of magnitudes of impact are defined in each chapter of this ES where this is possible, otherwise professional judgement is applied to the following scale:

- No change;
- Negligible;
- Low;
- Medium; and
- High.

Sensitivity of Receptor

3.9.7 Sensitive receptors are defined as the physical or biological resources or user groups that would be affected by the potential impacts of the Development. The identification of sensitive receptors is informed by baseline studies carried out as part of the EIA. The sensitivity of a receptor is defined by each topic and based as appropriate for each topic on the relative importance of the receptor taking into account:

- Legislative/designated status;
- The number of individual receptors;
- The characteristics/rarity; and
- Ability to absorb change.

3.9.8 A summary of sensitive receptors is provided within each baseline assessment sections of the ES topic chapters. Sensitivity is defined within each topic according to the following scale:

- Negligible;
- Low;
- Medium; and
- High.

Evaluation of Significance of Effect

3.9.9 The assessment of environmental effects is undertaken in accordance with relevant industry standards and legislation where such material is available. In cases where it is not possible to quantify effects, qualitative assessments have been carried out and based on the available knowledge of the Site and potential effect, alongside professional judgement. Where uncertainty exists, this is detailed in the ‘Assumptions and Limitations’ section under ‘Assessment Methodology’ in the respective technical chapters.

3.9.10 Each technical chapter provides the specific criteria, including sources and justifications, for quantifying the level of effect significance. Where possible, this is based upon quantitative and accepted criteria, together with the use of value judgements and expert interpretations to establish to what extent an effect is significant.

3.9.11 There is no statutory definition of what constitutes a significant effect and guidance is of a generic nature. However, it is widely recognised that 'significance' reflects the relationship between the magnitude of an impact and the sensitivity (or value) of the affected resource or receptor. Statutory designations and any potential breaches of environmental law take precedence in determining significance because the protection afforded to a particular receptor or resource is already established as a matter of law, rather than requiring a project or site-specific evaluation.

3.9.12 Specific criteria for the assessment of each potential effect were developed giving due regard to the following:

- Extent and magnitude of the effect;
- Effect duration (whether short, medium or long term);
- Nature of effect (whether direct or indirect, reversible or irreversible);
- Performance against environmental quality standards;
- Whether the effect occurs in isolation or cumulatively;
- Sensitivity of the receptor; and
- Compatibility with environmental policies.

3.9.13 Where adverse or beneficial effects are identified, these were generally assessed against the scale set out in Table 3.4.

Table 3.4: Description of the Level of Significance of Environmental Effects

Level of Significance	Description
Major	Large effects (by extent, duration or magnitude) and/or a highly pronounced change in environmental conditions. Effects, both adverse and beneficial, which are likely to be important considerations at a regional level because they contribute to achieving regional or council wide objectives, or, could result in exceedance of statutory objectives and/or breaches of legislation.
Moderate	Intermediate effects (by extent, duration or magnitude) and/or pronounced change in environmental conditions. Effect that is likely to be an important consideration at a local level.
Minor	Noticeable but small effect or change in environmental conditions. These effects may be raised as local issues but are unlikely to be of importance in the decision-making process. Typically, 'Minor' effects are considered 'Not Significant' in EIA terms unless otherwise stated within the technical chapter.
Negligible	No discernible change or neutral effect on environmental conditions. An effect that is likely to have a negligible influence, irrespective of other effects. Negligible effects are considered 'Not Significant' in EIA terms.

3.9.14 The matrix presented in Table 3.5 is generally applied throughout this ES to determine the scale or magnitude of effects. Where different assessment criteria were used, this is clearly stated within the relevant chapter.

Table 3.5: Significance of Effects Matrix

Sensitivity / Value of Receptor	Magnitude of Impact			
	High	Medium	Low	Negligible
High	Major	Major / Moderate	Moderate / Minor	Negligible
Medium	Major / Moderate	Moderate	Minor	Negligible
Low	Moderate / Minor	Minor	Minor / Negligible	Negligible
Negligible	Minor / Negligible	Negligible	Negligible	Negligible

3.9.15 Professional judgement is applied to define the significance where a potential effect falls in the major/moderate and moderate/minor categories.

3.9.16 Unless otherwise stated in the technical chapters, effects classified as moderate or major in scale are considered 'significant'. Effects classified as minor or negligible are considered 'not significant'.

Mitigation, Monitoring and Residual Effects

3.9.17 The development of mitigation measures is an integral part of EIA. Mitigation measures are set out in each of the technical assessment chapters where significant effects are identified, with the aim of avoiding, reducing, or offsetting for potential adverse effects and maximising potential beneficial effects. In each technical chapter, the specialists undertaking the EIA identified appropriate mitigation measures based on their assessment of potential significant impacts.

3.9.18 The following mitigation measures are considered where relevant:

- Inherent (primary) mitigation measures - are those which are 'designed in' or embedded to the scheme and certain to be delivered, i.e. what is proposed by the application forms and drawings.
- Standard (secondary) mitigation measures - e.g. construction mitigation with a high degree of certainty over delivery, i.e. measures to be included in the CEMP.
- Actionable (tertiary) mitigation measures - those that require a controlling mechanism or legal undertaking to be implemented, but are under the control of the Applicant, CDC or statutory bodies, e.g. planning conditions, Section 106 and Section 278 agreements, but for the purposes of the assessment have been considered as inherent to scheme design, so are taken into account as part of the assessment.

3.9.19 Residual effects are those that remain following the consideration of mitigation within the assessment. When applying the matrix set out in Table 3.4, these are defined as either 'significant' (i.e. major or moderate residual effect) or 'not significant' (i.e. minor residual effect or negligible). 'Not significant' effects would not be considered material to the planning decision and 'significant' effects would be considered material to the planning decision process.

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