Chapter 3

ENVIRONMENTAL ISSUES AND METHODOLOGY

3 Environmental issues and methodology

Introduction

3.1 This chapter explains the identification of the environmental issues considered and outlines the overall approach taken to the EIA. Specific methodologies for each of the specialist studies are given in the relevant topic chapters.

The scope of the EIA

3.2 Scoping is the identification of the range of significant issues likely to arise as a result of the proposed development. Scoping also ensures that significant issues are addressed in detail, while those of lesser relevance are considered accordingly. This is an important exercise, undertaken at an early stage of the EIA process, which allows effort to be concentrated on significant issues and avoids unnecessarily complicated examination of minor ones.

3.3 Terence O'Rourke Ltd undertook a scoping exercise and produced an EIA scoping report in February 2017. This document provided a summary of the proposals, identified the potential main environmental effects to be addressed within the EIA and scoped out issues that did not require consideration.

3.4 The following factors influenced the breadth of the scoping exercise, and so the EIA:

- The scale and nature of the project
- The physical characteristics of the proposals
- Application site characteristics
- Neighbouring land uses
- Environmental designations

3.5 Copies of the EIA scoping report accompanied the EIA scoping opinion request made to South Cambridgeshire District Council (SCDC). A number of statutory bodies and non-statutory organisations were also consulted (table 3.1).

SCDC (planning, environmental health, contaminated land, ecology, landscape, conservation)
Cambridgeshire County Council (highways, archaeology, public rights of way, lead local flood authority)
Natural England
Environment Agency
Highways England
Historic England
Wildlife Trust for Bedfordshire, Cambridgeshire and Northamptonshire
Cambridge Past, Present and Future
Anglian Water
Cambridge Water Company
National Grid
UK Power Networks
Health and Safety Executive
Table 3.1: Scoping consultees

3.6 A copy of the EIA scoping report (including details of the scoping methodology), the responses from the consultees and the council's formal scoping opinion can be found in technical appendix A.

Key issues identified during scoping

3.7 Responses were received from a number of the organisations consulted and as a result some additional potential issues were identified. A summary of the key issues raised is provided in table 3.2 and these are set out in full in technical appendix A.

Table 3.2: Key issues identified during scoping

Topic	Key issues identified in scoping report	Additional issues raised during consultation
Air quality	• Generation of particulates and dust during construction • Road vehicle emissions post-construction	• Generation of odour post-construction
Community, social and economic effects	• Generation of employment during and post-construction • Contribution to the local and regional economies through job creation and increased expenditure on goods and services • Contribution to the national / multi-regional economy as the proposal aims to contribute to the growth of a priority national sector • Increased demand for and provision of local facilities • Effect on local amenity during and post-construction	• Cross refer to health impact assessment report and include consideration of health impacts
Cultural heritage	• Impact on archaeological remains on site during construction • Change to settings of listed buildings during and post-construction • Loss of site's historic landscape character • Impact on the setting of Hinxton's conservation area • Impact on the setting of registered parks and gardens	• Impact on the settings of the Brent Ditch and Chapel of the Hospital of St John the Baptist scheduled monuments
Ground conditions	• Potential for ground contamination during and post construction	• No additional issues raised
Land use and agriculture	• Loss of agricultural land on site • Introduction of new commercial land use • Introduction of new public open space land uses	• Impact on soils
Landscape and visual effects	• Change to landform / topography of the site as a result of reprofiling • Change to the land cover of the site • Change to the landscape character of the site • Change to sensitive views into the site, including from conservation areas and as a result of increased lighting	• Impacts on views from Pampisford Hall
Natural heritage	• Loss of existing habitats and creation of new habitats on site • Changes in the composition of on site vegetation communities • Effects on the use of the site by fauna due to habitat loss and fragmentation • Disturbance of protected species during and post-construction • Potential for indirect effects on species outside the application boundary • Hydrological impacts on the River Cam potentially affecting fauna	• Effects on Sawston Hall Meadows Site of Special Scientific Interest
Noise and vibration	• Generation of noise during site preparation and construction • Increased traffic noise post-construction	• No additional issues raised

Topic	Key issues identified in scoping report	Additional issues raised during consultation
	• Generation of plant and activity noise post construction • Generation of vibration during construction	
Traffic and transport	• Increased traffic during and post-construction • Changes to local road infrastructure • Increased use of public transport and potential for diversion of existing services	• No additional issues raised
Waste	• It was proposed that waste was not scoped into the EIA and instead was addressed in a separate waste statement submitted in support of the planning application	• SCDC requested both construction and post-construction waste generation and management be scoped into the EIA
Water environment	• Pollution of surface water during and post-construction • Increased surface water runoff post-construction and associated increase in flood risk • Pollution of groundwater during and post-construction • Reduced groundwater recharge post-construction • Increased demand for wastewater treatment and potable water supply post-construction	• No additional issues raised

Assessment methodology

Introduction

3.8 An environmental effect is an alteration, positive or negative, to some aspect of the environment that occurs as a result of the proposed development. It is essential that the EIA methodology is comprehensive and focused. It must predict and measure the degree of effect and identify mitigation requirements. The method used should be objective, consistent and adaptable, and as free from analytical bias as possible.

3.9 It is important that the assessment methodology distinguishes between the sensitivity of the receptors and the type and size of change that will affect them, either directly or indirectly. It is also important that the ES is clear and effective in communicating the results of the assessment to the determining planning authority, the general public and professionals involved with appraising the development proposals.

Guidance and best practice

3.10 The methodologies used for the assessment of specific issues are discussed in the relevant chapters of this ES. Where appropriate, use has been made of published guidance and information on best practice, and the Department for Communities and Local Government's (DCLG) web-based National Planning Practice Guidance: *Environmental Impact Assessment* (updated 2017). The guidance has been considered in conjunction with the EIA Regulations.

Difficulties in compiling information

3.11 The EIA Regulations require that the ES should include an indication of any difficulties (technical deficiencies or lack of know-how) encountered by the

applicant in compiling the required information. Where such difficulties have been experienced, they are discussed in the relevant ES topic chapters and / or technical appendices.

Determining the significance of effects

3.12 The evaluation of effect significance is fundamental to the EIA process. The degree of an effect determines the resources that should be deployed in avoiding or mitigating an adverse effect and identifies the actual value of a beneficial effect. As far as possible, standard words have been used to define degrees of effect (i.e. 'very substantial', 'substantial', 'moderate', 'slight' and 'negligible'), but not so rigorously as to stifle flexibility or particular individual requirements.

3.13 The degree of an effect is determined by the interaction of two factors: the magnitude, scale or severity of the impact or change, and the value, importance or sensitivity of the environmental resource being affected. This is then used to determine whether an effect is significant. If the degree of effect is moderate or above then the effect is considered to be significant in EIA terms. Slight or negligible effects are not considered to be significant for the purposes of the EIA.

3.14 Sensitivity and magnitude categories have been developed for the environmental topics, based on a combination of best practice guidance and expert judgement. These are provided in the specialist topic chapters. Any assumptions made during the assessment process have been reported in the text. Figure 3.1 shows the general matrix used to determine the degree of each identified effect, and thus whether it is significant. This matrix has been developed by Terence O'Rourke Ltd and is used in the assessment of the various environmental impacts to enable meaningful comparisons to be made. Any methodologies that differ from this approach are explained in the relevant topic chapters.

3.15 The assessment of the potential effects also takes account of timescale, permanence and whether the effects are adverse or beneficial, as appropriate (for example, 'a long term but reversible, substantial, significant adverse effect').

Identification of mitigation measures and residual effects

3.16 Where appropriate, the results of the assessment of significance have helped to guide the mitigation measures proposed. At the end of each of the environmental assessments, where relevant, there is a 'residual effects' table, which summarises the significant environmental effects remaining after mitigation. This includes a measure of the confidence placed in the prediction of each potential residual effect, such as 'absolute', 'reasonable' or 'limited'.

Cumulative effects

3.17 The potential for cumulative effects with other proposed, consented or committed developments in the vicinity of the site has been assessed for each environmental topic, where relevant. It was agreed with South Cambridgeshire District Council that the projects in table 3.3 would be included in the cumulative effects assessment. The locations of these cumulative projects are shown on

figure 3.2. Not all projects are relevant to all of the environmental topics; the projects that have been considered in each assessment are set out in the topic chapters.

Site / reference	Details
Electricity supply connection	Provision of an electricity supply connection from the main site to the existing sub-station at Fulbourn, which will be carried out by the statutory undertaker under licence
Off site wastewater rising main	Possible provision of a wastewater rising main from the main site to the existing wastewater pumping station at Duxford (only required if the option of connecting to the mains is chosen)
Wellcome Trust Genome Campus S/1099/14/RM Approved 30.07.14	• 3,294 m^2 Sanger Sequencing Building • 1,136 m^2 integrated energy centre • 70 basement car parking spaces • 161 surface car parking spaces (car park B)
Former Spicer Site S/2091/14/FL Approved 16.12.14	Change of use from B8 to B2 use, including minor extensions and alterations to existing – related to the Vision Centre: • 6,035 m^2 Vision Centre: 12 high tech laboratories, office accommodation, materials storage, packing and goods release facilities, together with staff changing and welfare facilities • Access and car park
8 Greenacres, Duxford S/0276/15/OL Appeal allowed 24.06.16	• Demolition of No. 8 Greenacres and associated garage • Vehicular and pedestrian access off Greenacres • Construction of up to 35 high quality dwellings, including 14 affordable homes • New structured landscaping and the creation of areas of public open space • Retention wherever possible of existing hedgerows • Provision of a sustainable drainage system • Links to existing public footpaths
Babraham Research Campus S/1676/14/OL Approved 02.12.14	10,000 m^2 floorspace research and development facility
Granta Park S/1110/15/OL Approved 23.12.16 S/2254/15/FL Approved 18.12.15 S/1315/15/FL Approved 04.02.16	Zone 2 – research and development buildings (34,220 m^2) and associated works Site 6 – erection of B1 (business) building, together with decked and surface car parking, cycle parking, sub-station, landscaping and associated infrastructure Land adjacent to phase 2 – two storey amenity building (use class D2) comprising indoor sports / fitness facilities and cafeteria, two external tennis courts, landscaping, parking and associated infrastructure
Chesterford Research Park No application in planning system	Master plan to provide c55,750 m^2 of built space (of which over 22,300 m^2 is already occupied), but Aviva is aiming to increase this to c92,900 m^2
Lion Works, Whittlesford S/0746/15/OL Yet to be determined	Redevelopment of site for residential use: • 60 dwellings in place of existing scrap yard • New vehicular access from Station Road
Sawston Trade Park S/2284/17/OL Yet to be determined	Redevelopment of site and adjacent land for: • Up to 19,883 m^2 of primarily B1 floorspace, including an ancillary hub building (B1 / A3 / D1 / D2 uses, which could include management offices, a café, a crèche and a gym) • New vehicular access from the A1301 • 703 car parking spaces (including 33 disability spaces) • Landscaping

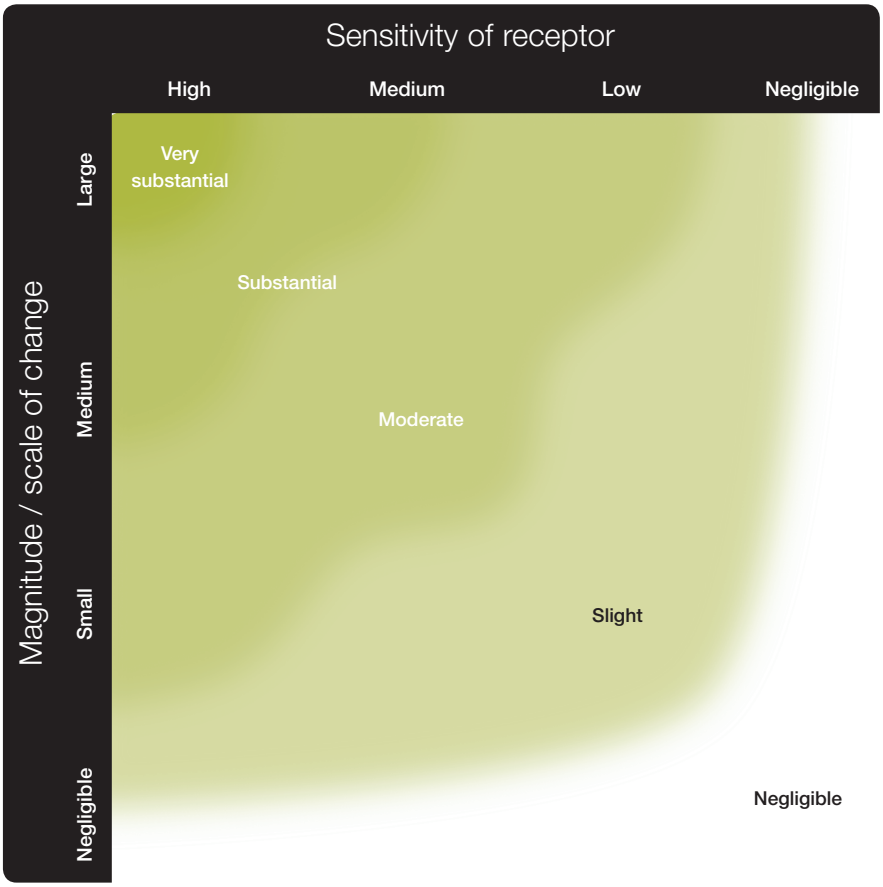
Table 3.3: Projects considered in the cumulative effects assessment

General format of the topic chapters

3.18 The majority of the remaining chapters in this ES address each of the environmental issues identified during the scoping process. Each chapter is structured in general as follows:

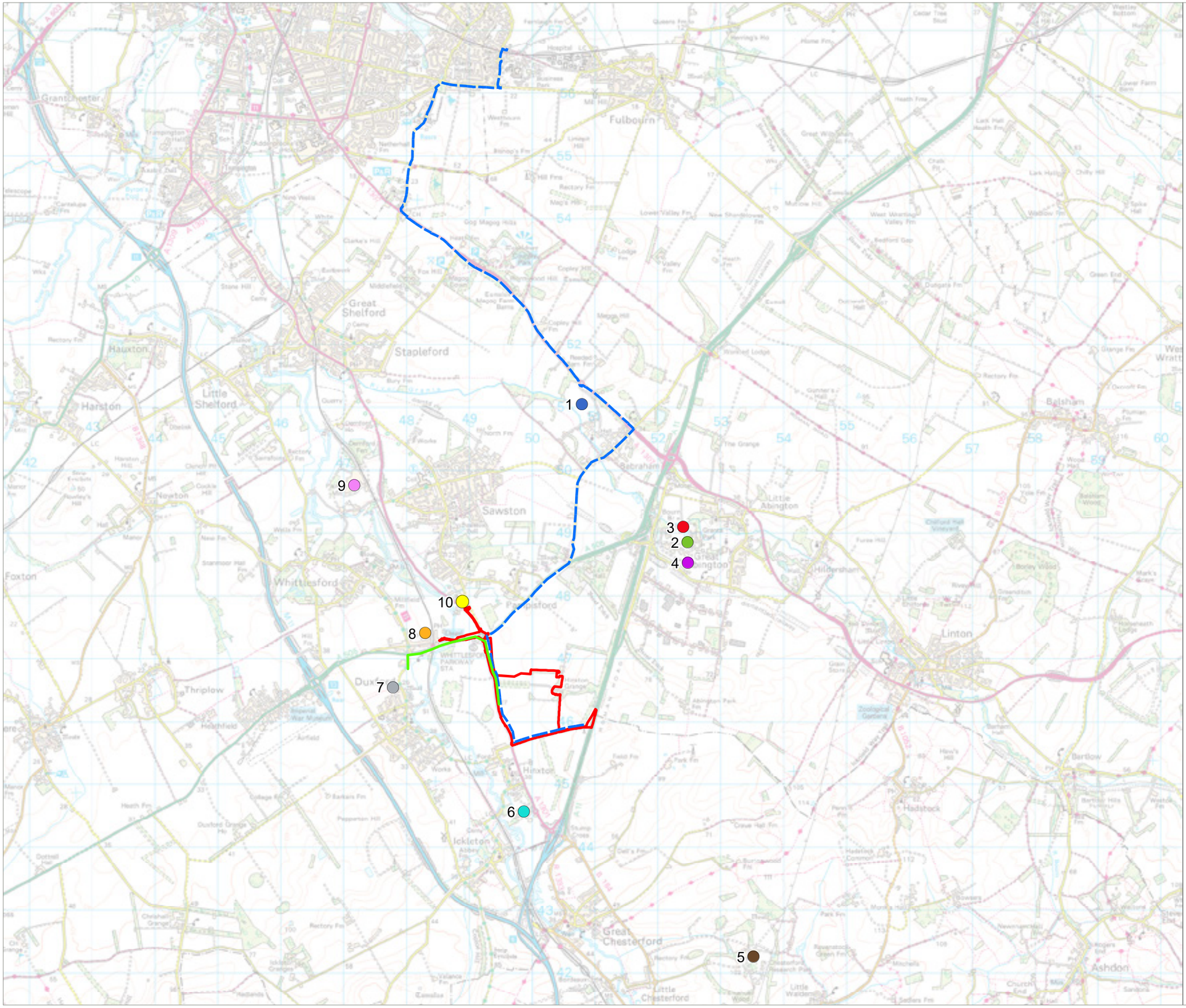
- Introduction
- Legislation and policy
- Methodology
- Baseline (including future baseline)
- Effects during construction
- Effects post-construction
- Mitigation
- Residual effects
- Cumulative effects

Determination of significance matrix



Significance

If the degree of effect is moderate or above, then the effect is considered to be significant.



1.Babraham research campus (App Ref: S/1676/14/OL)

2.Granta Park (App Ref: S/1110/15/OL)

3.Site 6 Granta Park (App Ref: S/2254/15)

4.Granta Park (App Ref: S/1315/15/FL)

5.Chesterford Research Park

6.Wellcome Trust Genome Campus (App Ref: S/1099/14/RM)

7.8 Greenacres Duxford (App Ref: S/0276/15/OL)

8.Lion Works, Whittlesford (App Ref: S/0746/15)

9.Former Spicer Site (App Ref: S/2091/14/FL)

10.Sawston Trade Park (App ref: S/2284/17/OL)

Potential off-site foul sewer/rising main route

Underground cable route to Fulbourn (16.42 km)

Site boundary

0 1,300 m

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Figure 3.2 Developments considered in the cumulative assessment