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Oxfordshire Cotswolds Garden Village

EIA Scoping Report

On behalf of **Grosvenor Developments Ltd**



Project Ref: 39289 | Rev: DRAFT | Date: March 2019

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This report has been prepared by Peter Brett Associates LLP ('PBA') on behalf of its client to whom this report is addressed ('Client') in connection with the project described in this report and takes into account the Client's particular instructions and requirements. This report was prepared in accordance with the professional services appointment under which PBA was appointed by its Client. This report is not intended for and should not be relied on by any third party (i.e. parties other than the Client). PBA accepts no duty or responsibility (including in negligence) to any party other than the Client and disclaims all liability of any nature whatsoever to any such party in respect of this report.

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1 Introduction

1.1 Project Background

- 1.1.1 This Environmental Impact Assessment (EIA) Scoping Report has been prepared by Peter Brett Associates, now part of Stantec (PBA) on behalf of Grosvenor Developments Ltd in relation to the proposed development of Oxfordshire Cotswolds Garden Village (OCGV), Oxfordshire. The Garden Village will provide approximately 2,200 new homes, as well as associated employment space, community amenities, social infrastructure and green infrastructure. Further information about the development proposals can be found in **Chapter 4**.
- 1.1.2 The site has been named as one of the 14 Government supported Garden Villages across England and is designated in the new West Oxfordshire District Council (WODC) Local Plan (adopted 2018) as a Strategic Location for Growth. The site is primarily comprised of agricultural land, and is approximately 193.8 hectares, located to the north of the village of Eynsham in west Oxfordshire.

1.2 Purpose of this Report

- 1.2.1 This EIA Scoping Report has been prepared to document the proposed scope and approach to the EIA. The EIA will consider the likely significant effects resulting from the development proposed by the planning application, as well as the cumulative effects with other existing and approved developments in the local area. This approach is intended to provide comprehensive and robust environmental information on the effect of the proposed development.
- 1.2.2 Understanding the likely significant effects that the proposed development may have on the environment is an integral part of the design process that is currently underway. The purpose of this report is to document the scoping exercise that has been undertaken in order to identify the nature and extent of the likely significant environmental effects of the proposed development.
- 1.2.3 The environmental topics that are proposed to be included in the EIA scope and those that are not are presented in **Chapters 8-18** and **Chapter 19** respectively. Accordingly, this report details how the environmental issues, which have been included in the EIA scope, are proposed to be examined and progressed as part of the EIA of the proposed development. The aim of the EIA is to ensure that the development has due regard for the environment, minimises adverse environmental effects, and takes advantage of opportunities for environmental enhancement. The report also identifies those topics that it is proposed to scope out of the EIA as significant effects are not likely, along with the rationale for so-doing.
- 1.2.4 This report provides information to key consultees regarding the proposals pursuant to the Town and Country Planning (Environmental Impact Assessment) Regulations 2017 (as amended 2018) (as amended 2018) (referred to herein as 'EIA Regulations') and sets out the intended scope of the EIA and content of the ES. On the basis of this report, and in accordance with Regulation 15 of the EIA Regulations, the applicant therefore requests WODC's Scoping Opinion.

1.3 Report Structure

- 1.3.1 This report continues with the following:
- Chapter 2 Planning Policy Context;
 - Chapter 3 Site Description;
 - Chapter 4 Proposed Development;

- Chapter 5 EIA Process;
- Chapter 6 Proposed Scope of the EIA;
- Chapter 7 Future Developments and Assessment of Cumulative Effects;
- Chapter 8 Socioeconomics;
- Chapter 9 Transport;
- Chapter 10 Noise & Vibration;
- Chapter 11 Air Quality;
- Chapter 12 Biodiversity;
- Chapter 13 Landscape and Visual;
- Chapter 14 Lighting;
- Chapter 15 Agricultural Land;
- Chapter 16 Cultural Heritage;
- Chapter 17 Ground Conditions;
- Chapter 18 Flood Risk and Drainage;
- Chapter 19 Topics Included in the EIA Scope;
- Chapter 20 Summary and Next Steps; and
- Appendices.

2 Planning Policy Context

2.1 Introduction

- 2.1.1 This section highlights key national and local policy relevant to the proposed development and the EIA. The policy context associated with future proposed developments in close proximity to the proposed development is discussed and explained in **Chapter 7**.

2.2 National Planning Policy

National Planning Policy Framework (2019)

- 2.2.1 Paragraph 72 of the National Planning Policy Framework (NPPF) states that:
- 2.2.2 *“The supply of large numbers of new homes can often be best achieved through planning for larger scale development, such as new settlements or significant extensions to existing villages and towns, provided they are well located and designed, and supported by the necessary infrastructure and facilities. Working with the support of their communities, and with other authorities if appropriate, strategic policy-making authorities should identify suitable locations for such development where this can help to meet identified needs in a sustainable way. In doing so, they should:*
- a) set clear expectations for the quality of the development and how this can be maintained (such as by following Garden City principles) and ensure that a variety of homes to meet the needs of different groups in the community will be provided”.*

2.3 Local Planning Policy

West Oxfordshire Local Plan (September 2018)

- 2.3.1 WODC formally adopted the West Oxfordshire Local Plan 2031 on 27th September 2018. The Local Plan identifies the Oxfordshire Cotswolds Garden Village as a ‘Strategic Location for Growth’ (SLG) under Policy EW1.

Policy EW1: Oxfordshire Cotswolds Garden Village Strategic Location for Growth (2,200 homes)

“Land to the north of the A40, near Eynsham to accommodate a free-standing exemplar Garden Village, the comprehensive development of which will be led by an Area Action Plan (AAP) including:

- a) a working assumption of about 2,200 homes with a balanced and appropriate mix of house types and tenures to meet identified needs including affordable housing.*
- b) development taken forward in accordance with key Garden Village principles.*
- c) about 40 hectares of business land (B-class) in the form of a ‘campus-style’ science park.*
- d) provision of a new park and ride site (1,000 spaces) with associated bus priority lane along the A40.*
- e) the provision of up to two primary schools on site (2FE including nursery) on 2.22ha sites together with financial contributions towards secondary school capacity as appropriate.*
- f) The provision of essential supporting transport infrastructure the detail of which will be identified through the AAP process, including mitigating the impact of traffic associated with*

the development; appropriate consideration of the proposed park and ride, wider A40 improvements and access arrangements for the West Eynsham Strategic Development Area (SDA); the provision of appropriate financial contributions towards LTP4 transport schemes such as the A40 Strategy; provision of appropriate public transport (services and infrastructure) serving the site; and provision of a comprehensive network for pedestrians and cyclists with good connectivity provided to adjoining areas, including a particular emphasis on improving linkages to Hanborough Station, to the proposed Park and Ride and to Eynsham and on enhancing Hanborough Station as a transport interchange.

- g) development to be phased in accordance with the timing of provision of essential supporting infrastructure and facilities.*
- h) the provision of appropriate landscaping measures to mitigate the potential impact of development and associated infrastructure.*
- i) biodiversity enhancements including arrangements for future maintenance.*
- j) masterplanning that takes adequate account of open space and green infrastructure networks and needs, and maximises opportunities to create and strengthen green infrastructure in accordance with the Council's Green Infrastructure Plan (to be prepared).*
- k) appropriate measures to mitigate traffic noise.*
- l) the investigation, recording and safeguarding of the known and potential archaeological significance of the Area prior to any development taking place. The results of the investigation and recording should inform the final layout of the development and be deposited in a public archive.*
- m) appropriate measures to mitigate flood risk including the use of sustainable drainage methods to ensure that post-development surface water run-off rates are attenuated to achieve a reduction in greenfield run-off rates. The sustainable drainage systems should be designed to provide a biodiversity enhancement.*
- n) connection to the mains sewerage network which includes infrastructure upgrades where required including any necessary phasing arrangements.*
- o) demonstrate the use of renewable energy, sustainable design and construction methods, with a high level of energy efficiency in new buildings.*
- p) the developer will be required to set aside 5% of the developable plots for those wishing to undertake custom/self-build.*
- q) appropriate measures to safeguard and take account of the operational requirements of the existing aggregate recycling facility within the site and also to safeguard sand and gravel deposits where appropriate having regard to the policies of the Minerals and Waste Local Plan".*

Oxfordshire Cotswolds Garden Village Area Action Plan - Issues Paper (June 2018)

- 2.3.2 WODC has now commenced the preparation of an Area Action Plan (AAP) for OCGV which must be formally consulted upon and examined in a similar manner to the Local Plan.
- 2.3.3 AAPs have Development Plan status, and decisions will be made in accordance with them, along with those set out in the Local Plan. The OCGV AAP will support the principle of development at OCGV as set out within the Local Plan and will build upon this by including detailed policies and strategies which will ultimately inform the delivery of OCGV.

- 2.3.4 WODC has set out timescales for the development of the AAP and key dates include Examination in Public in Autumn 2019 with proposed adoption in Spring 2020.
- 2.3.5 WODC will be responsible for preparing the OCGV AAP, however Grosvenor Developments Ltd will submit representations at the appropriate times and ensure that the proposed development is consistent with the emerging and adopted AAP

Eynsham Neighbourhood Plan (Reg 14 Version)

- 2.3.6 The Regulation 14 consultation version (3.09) of the Eynsham Neighbourhood Plan (ENP) was published for consultation between 30th September and 16th November 2018. The final version (3.12) of the document has now been submitted to WODC for the next stage of the process. There are two key references to the OCGV within the draft ENP, set out below:

Primary objective ENV8

- 2.3.7 *“ENV1-7 shall be shared by the new settlement, which shall be built according to Garden Village principles as a new, separate, community. Settlements should be largely independent but with any shared facilities for their mutual benefit and without causing harm to either”.*

ENP16 New Settlements

“A new settlement shall include adequate provision of employment, educational, cultural and social facilities and be in accordance with the provisions of the Eynsham Neighbourhood Plan. Development shall be in accordance with a masterplan approved by WODC and in consultation with the Parish Council. Requirements for supporting infrastructure and services shall be established through the masterplan and, where necessary, through legally binding agreements, and shall include the following:

- a) Appropriate connectivity, in terms of movement, and visual separation from Eynsham including the provision of safe road crossing places for students and other residents accessing services which are shared between Eynsham and the proposed Garden Village.*
- b) Careful assessment of the positive and negative impacts on residents of Eynsham Village particularly in relation to any shared facilities such as secondary education and healthcare.*
- c) Vehicular access designed to minimise delays to through traffic and existing road users.*
- d) The timely provision of adequate facilities, including a neighbourhood centre, to meet the social, educational, health, religious and cultural needs of the new community.*
- e) The provision of appropriately designed and located employment opportunities as part of or adjacent to the development.*
- f) Priority should be given to housing specifically adapted for the elderly or disabled close to the services at the centre of the new community.*
- g) A free-standing new settlement shall conform to the principles of a ‘Garden Village’ (as set out by DCLG) in terms of its built form, interconnected green spaces, infrastructure, layout and impact on the wider countryside.*

As these are strategic sites, ENP17 B to D are applicable in terms of heritage and landscape”.

Oxfordshire Minerals and Waste Local Plan (September 2017)

- 2.3.8 Oxfordshire County Council (OCC) adopted their Minerals and Waste Plan (OMWLP) Part 1 - Core Strategy in September 2017. This plan contains policies relevant to the site and the surrounding area.

- 2.3.9 From August-October 2018, OCC launched the 'Issues and Options' consultation for Part 2 of the Oxfordshire Minerals and Waste Local Plan, focusing on site allocations. Work is ongoing on Part 2, and the Minerals and Waste Development Scheme (January 2018) highlights key recent and upcoming stages including consultation on the draft Site Allocations document (Preferred Options, Regulation 18) which took place between January – February 2019. The Proposed Submission Document (Regulation 19) is scheduled for publishing for consultation between September and November 2019 and the site allocations plan is expected to be adopted in November 2020.
- 2.3.10 The 'Issues and Options' document outlined above included a site nomination within the OCGV site; named Site No.008 'New Wintles Farm, Eynsham', associated with the existing New Wintles Farm (NWF) aggregate recycling facility. The site was nominated for Inert (Construction, Demolition, Excavation – CDE) Waste Recycling including Recycled Aggregates.
- 2.3.11 There is also a nominated mineral site bordering the OCGV site. The 'Lower Road, Church Hanborough' site (reference SG-08) borders the site to the north and to the east (on the opposite side of Lower Road) and the 'Land between Eynsham & Cassington' site (reference SG-20) borders the site to the south-east (on the opposite side of Lower Road).
- 2.3.12 The eastern portion of the site lies in a mineral safeguarding area as highlighted on **Figure 9.1** of the Phase 1 Ground Conditions Assessment (see **Appendix E**).

3 Site Description

3.1 Site Location and Context

- 3.1.1 The Proposed Development site ('The site') comprises approximately 193.8 ha which is centred approximately at grid reference SP 42957 10368. The site is bordered by the A40 to the south, (a main route connecting London to Goodwick (Wales)), by Lower Road to the east, by farm tracks and field boundaries to the west and a stream (the Hanborough Stream) to the north. An indicative site location plan is included in [Appendix A](#).
- 3.1.2 The village of Eynsham is located immediately south of the A40. To the south of the site, and immediately south of the A40 is a predominantly residential area. Eynsham village centre is located in the south of the village and provides a range of services including small shops, a medical centre, a village hall, post office, a secondary school (Bartholomew School), a primary school (Eynsham Community Primary School), places of worship and pubs. There are also a number of Grade II Listed Buildings within Eynsham.
- 3.1.3 There are a number of villages in the area surrounding Eynsham, including Cassington to the north east, Church Hanborough and Freeland to the north, North Leigh to the north west, Witney to the west, and South Leigh to the south west.
- 3.1.4 Two non-statutory Local Wildlife Sites (LWS) lie adjacent to the north of the site, South Freeland Meadows LWS and City Farm LWS. There are a further four LWS within 2km of the site boundary. There are 11 Sites of Special Scientific Interest (SSSIs) located within a 5km radius. The Blenheim Park SSSI and the Long Hanborough gravel pit lies approximately 4.5km north of the site. Approximately 3km south east of the site lies the Wytham Ditches and Flushes SSSI, the Cassington Meadows SSSI and beyond these, approximately 5km south lies the Wytham Woods SSSI. Additionally, one Special Area of Conservation (SAC), the Oxford Meadows SAC, a European protected site, lies approximately 2.5km to the east of the site.

3.2 Site Description

- 3.2.1 The majority of the site is in agricultural use for arable and livestock grazing with a number of different farms located across the site, including Evenlode Farm, Acre Hill Farm, City Farm and New Wintles Farm. As shown on the indicative site location plan in [Appendix A](#), the site boundary excludes a number of smaller areas and land uses including some of the farm buildings that lie within the larger site area. These are discussed in [Section 3.3](#) below. The site is bounded by the A40 to the south and Lower Road and Cuckoo Lane run north to south through the site. A small part of the site to the east of Lower Road and to the north of the A40 is located within the Oxford Green Belt.
- 3.2.2 Existing development present within the site includes the New Wintles Farm buildings, including a farmhouse with associated garden and outbuildings, a milking shed, and cattle shed, and an associated area of farm yard. Two Evenlode Farm buildings to the rear (east) of the farm, and one building to the south lie within the site boundary. These appear to be storage sheds/barns. Other existing buildings include some farm buildings to the west of City Farm & Cottages, including two large sheds, and one smaller shed.
- 3.2.3 The general topography of the site is characterised by gently sloped land in all directions from the summit of a hill (Acre Hill). Acre Hill has an elevation of approximately 85m above Ordnance Datum (m AOD) and is located in the centre-south of the site.
- 3.2.4 There are two restored landfills located on-site. These are located to the west and north of the David Einig Contracting Ltd NWF aggregate recycling facility. City Farm Landfill is located wholly within the site boundary and the NWF Landfill is partly located within the site. The southern part of the NWF landfill site is within the site boundary and the northern part lies on land within NWF

aggregate recycling facility. The City Farm Landfill occupies land within the site boundary to the south west of the City Farm complex. The landfills are former sand and gravel quarries that were worked during the 1970s and were subsequently infilled with waste materials, under inert waste management licenses. A summary of the licenses for each landfill site is included below:

- **NWF Landfill:** this was licenced to McKenna Environmental Ltd in November 1992 under Waste Management Licence No. 86149 (latterly environment permit EPR/VP3199EC) and was of category “Landfills Taking Other Wastes (Construction, Demolition, Dredgings)” and also received “Industrial Waste”.
- **City Farm Landfill:** This site was licenced to McKenna Environmental Ltd in September 1996 under licence No. 86161 (latterly environment permit EPR/VP3699EY) and was of category “Landfills Taking Other Wastes (Construction, Demolition, Dredgings)”.

3.2.5 The environmental permits for both landfill sites were surrendered in 2018.

3.2.6 There are four Public Rights of Way (PRoW) that run through the site. PRoW 206/11/10, 206/11/20 and 206/11/30 run from Evenlode Farm to the east part of Lower Road. PRoW 206/13/10 runs in a north east direction from the A40 to Cuckoo Lane. PRoW 206/12/10 runs from 206/11/10 to the north of Hanborough Stream, and PRoW 206/10/10 runs from PRoW 206/11/30 in a northerly direction towards Hanborough stream.

3.2.7 The site lies predominantly within Flood Zone 1, which indicates a ‘Low Probability’ of flooding (less than 1 in 1,000 annual probability of river or sea flooding). Hanborough Stream is a tributary of the River Evenlode and runs across the northern site boundary. The stream is surrounded by a corridor of Flood Zone 3 which indicates a ‘High Probability’ of flooding (land at 1 in 100 annual probability or greater of river flooding). The far south-eastern corner of the site and land south of NWF, where Mill Lane intersects Lower Road, lie within Flood Zone 2 ‘medium probability’ (between a 1 in 100 and 1 in 1,000 annual probability of river flooding), associated with the Eynsham Mead Ditch.

3.2.8 There are no known ecological or landscape designations on site. The Phase 1 habitat survey undertaken in November 2018 identified on-site habitats of potential principal importance including semi-improved grassland, arable field margins, ponds and broadleaved woodland. Hedgerows on the site qualify as a UK Biodiversity Action Plan (BAP) habitat and are a priority habitat under the Natural Environmental and Rural Communities Act. A number of hedges could also potentially qualify as important under the Hedgerow Regulations 1997.

3.3 Areas Excluded from the Site

3.3.1 This section highlights key land uses which are located adjacent to the site, or land that lies within the larger site area but which is outside the site boundary.

3.3.2 Uses of these parcels would remain and include a number of residential properties in the City Farm complex (including some Listed Buildings) in the northern part of the site and the NWF aggregate recycling facility to the south of City Farm. These areas will be considered as part of the EIA where appropriate both in terms of how uses within these areas could affect OCGV and how OCGV could affect these areas.

Land Uses off Cuckoo Lane

3.3.3 Cuckoo Lane has a number of accesses off it, which provide access to farms and associated residential properties, and a vehicle recovery depot which is located outside the site boundary.

3.3.4 Two farms, the Evenlode Farm and Acre Hill Farm, are located off Cuckoo Lane and predominantly outside the site. Each of these farms comprises a farmhouse and associated barns and farm outbuildings within concrete-surfaced yards.

- 3.3.5 A Scottish and Southern Energy (SSE) substation, consisting of a single-storey brick building and several transformers, is also present on Cuckoo Lane and is outside the site. The ground cover at the substation is gravel.
- 3.3.6 The depot of a vehicle recovery company is present on Cuckoo Lane and is enclosed to the west by the site. This depot comprises three sheds and accompanying concrete-surfaced yards.
- 3.3.7 Cuckoo Wood Farm is located directly to the north of the site and is accessed off Cuckoo Lane. Part of Cuckoo Wood Farm is an established Travelling Showperson's site.

Millennium Wood

- 3.3.8 An area of new woodland planted by the Woodland Trust in 2000, approximately 5.3 hectares in area, is present to the east of Evenlode Farm, north-east of the junction of Cuckoo Lane and the A40.

Eynsham Express Service Station

- 3.3.9 An area of land to the north of the A40, immediately beyond the southern site boundary, contains the Eynsham Express Service Station, a used car dealership and a vehicle servicing and repair garage.

City Farm and Cottages

- 3.3.10 City Farm, a series of converted former farm buildings which now form private residences and their accompanying gardens, is located in the north-eastern area of this parcel but also does not form part of the site.
- 3.3.11 There are several residential properties at the City Farm complex in the northern part of the site. This includes four Grade II listed buildings that lie within the City Farm complex. These include City Farmhouse, City Farm Outbuilding, City Farm Outbuilding and Attached Wall and City Farm, Barn and Attached Outbuildings.

New Wintles Farm

- 3.3.12 There is an existing aggregate recycling facility to the south of City Farm, in addition to part of the New Wintles Farm landfill which lies within the same field. The landfill licensing context is summarised in **Section 3.2** above. In the south-eastern part of this parcel David Einig Contracting Ltd operates an aggregate recycling facility. Operations include washing, treating, and crushing construction aggregates using equipment including mobile screens.
- 3.3.13 This facility is surrounded by an approximately 10m high perimeter bund of imported materials. The remainder of this area, also a former landfill (a continuation of those within the site and as noted in **Section 3.2** above) is mounded above the surrounding ground level by approximately 2m – 3m and contains numerous borehole installations.
- 3.3.14 This facility is accessed via a tarmacked road from Lower Road.

4 Proposed Development

4.1 Overview

- 4.1.1 The proposals entail development of the site to provide a new garden village. The composition of the development will be guided by the OCGV development principles which are outlined in Policy EW1 of the adopted West Oxfordshire Local Plan, the outcomes of comprehensive community engagement, the emerging policies of the OCGV which is currently being prepared, and the TCPA Garden City principles. As such, an emphasis will also be placed on creating a high-quality new settlement within a strong landscaped setting in addition to a strong emphasis on sustainability.
- 4.1.2 For the purposes of the EIA scoping the proposed development is anticipated to deliver the following, however it should be noted that the range and quantum of uses will be refined through an illustrative masterplan and EIA processes:
- Approximately 2,200 residential units with a balanced and appropriate mix of house types and tenures to meet identified needs including affordable housing (C3);
 - A care home and associated facilities (C2);
 - A mix of services to meet the needs of local communities, to include retail (Use class A1), professional and financial services (A2), restaurants/ bars (A3 and A4) and indoor and outdoor leisure facilities (D2);
 - Primary/secondary school(s) and health centre (D1);
 - Up to 40 ha (gross) of land for employment uses (B1 B2 and B8) and/or a rehabilitation/medical campus (C2/D1)];
 - Hotel (C1);
 - Supporting transport and utilities infrastructure; and
 - Green infrastructure including site attenuation, sports provision, public open space, allotments and structural landscape planting complementing the existing site vegetation.
- 4.1.3 It is anticipated that the planning application will be submitted in outline, with all matters reserved except for access. The application will be supported by Parameter Plans for approval that will establish parameters for the proposed development and include topics such as access, building heights, land use and green infrastructure. These Parameter Plans will be refined through the EIA process.
- 4.1.4 At this stage, the requirement for demolition of existing buildings on the site is still to be clarified. For the purposes of scoping the EIA it has therefore been assumed that demolition will be required, although this will be clarified through the design process.
- 4.1.5 The proposals include associated access and infrastructure work which will be designed to integrate with existing vehicular, pedestrian and cycle links, as well as the forthcoming Eynsham P&R scheme being promoted by OCC. This will include consideration of how to provide safe access from the site to and from Eynsham, via different modes of transport including by foot or bike, as well as by car.
- 4.1.6 As noted in **Chapter 3**, part of the eastern portion of the site is comprised of sand and gravel resources which are safeguarded through the OCC Minerals and Waste Local Plan. As part of

the on-going masterplanning process the implications and opportunities posed by the aggregate resources are currently being reviewed.

- 4.1.7 The garden village is also being designed to sensitively respond to the NWF aggregate recycling facility. This is intended to support the on-going operation of the facility whilst ensuring suitable environmental conditions for surrounding land uses.
- 4.1.8 The proposed development will be refined through the EIA process and in response to consultations with statutory and non-statutory consultees and the local community.

5 EIA Process

5.1 EIA Regulations

- 5.1.1 The process of EIA is governed by the Town and Country Planning (Environmental Impact Assessment) Regulations 2017 (as amended 2018) ("the EIA Regulations"). The EIA Regulations implement EC Directive 2014/52/EU and the implications were enacted in the UK on 16th May 2017 to form the 2017 EIA Regulations. Amendments were made to these Regulations which came into force on the 1st of October 2018.
- 5.1.2 The EIA Regulations set out the requirements for undertaking an EIA, and Regulation 18 and Schedule 4 detail the required information for inclusion in an Environmental Statement (ES). For ease of reference Regulation 18 and Schedule 4 are presented in **Appendix B**.

5.2 Screening

- 5.2.1 Due to the scale and nature of the proposed development, Grosvenor Developments Ltd has voluntarily agreed to undertake an EIA and therefore no formal screening exercise has taken place for the proposed development.

5.3 Scoping

- 5.3.1 The purpose of scoping is to identify the key policy, economic and social, and environmental issues relating to the proposed development early in the EIA process; it is also to ensure that those issues identified are subject to the appropriate level of assessment, thereby providing a focus for the EIA. Scoping gives relevant stakeholders an opportunity to express their views on the proposed development and to comment on the scope of the EIA.
- 5.3.2 We have sought to take an evidence-led approach to scoping with front-loading of the baseline data collection to provide an informed scoping process and to allow the EIA to focus on those aspects of the development likely to lead to significant environmental effects. Where surveys have already been undertaken, or are being progressed, this is detailed in **Chapters 8-18** below along with how the findings of these surveys have informed the scope and approach of the EIA.

5.4 Consultation

- 5.4.1 The proposed development is being progressed through an iterative process of design, assessment and review. It is therefore the intention that the proposals submitted for planning permission will incorporate measures to mitigate potential adverse environmental effects, and to enhance environmental benefits, wherever possible through its design.
- 5.4.2 Consultation with relevant statutory and non-statutory bodies has informed some elements of this scoping stage and will continue to inform the iterative design and EIA process. This includes monthly pre-application meetings with WODC, where specific elements in relation to the EIA are discussed and agreed on an ongoing basis, along with meetings with Eynsham Parish Council. Two study tour visits have been undertaken to various developments in the Cambridgeshire area and the Hertfordshire area (including Welwyn and Letchworth Garden Cities) with key local stakeholders including WODC representatives. The study tours focused on a range of themes to inform the collaborative design process, including layout and form, design and character, village centres and public open space. An interactive Design Event will be held in May with the local community and stakeholders, finalised to start informing structural elements of the illustrative masterplan accompanying the Outline Planning Application.
- 5.4.3 Specific consultation relating to those topics proposed to be scoped in to the EIA, which has been undertaken to date, is set out within discipline specific details in **Chapters 8-18**.

- 5.4.4 Consultation with statutory and non-statutory consultees, along with the local community, will continue to inform both the EIA and the design of the proposed development.

5.5 Assessment

- 5.5.1 In general terms, the main stages in the EIA are as follows:

- Data Review – draw together and review available data;
- Scoping – identify significant issues, determine scope of EIA;
- Baseline Surveys – undertake baseline surveys and monitoring;
- Assessment and iteration – assess likely significant effects of development, evaluate alternatives, provide feedback to design team on adverse effects, incorporate any necessary mitigation, assess effects of mitigated development; and
- Preparation of the ES.

- 5.5.2 The proposed scope of the EIA and approach to the assessment of likely significant effects is set out in **Chapter 6**.

5.6 Mitigation

- 5.6.1 One of the most important functions of the EIA process is to identify ways to mitigate adverse environmental effects and identify opportunities that the proposed development may have for environmental improvements. The EIA Regulations require an ES to contain: “A *description of the measures envisaged to avoid, prevent, reduce or, if possible, offset any identified significant adverse effects on the environment*”.

- 5.6.2 A hierarchy of methods for mitigating significant adverse effects will be followed; these are, in order of preference:

- Enhancement - opportunities that the proposed development may provide to enhance the local and wider environment (e.g. ecological enhancement of local hedgerows or provision of jobs);
- Avoidance – designing a proposed development in such a way that avoids effects on the environment (e.g. avoiding siting residents at levels that could be affected by flood risk or imposing a maximum height restriction on new development);
- Reduction – design the development or employ construction methodologies such that significant effects identified are reduced (e.g. employment of sustainable drainage measures to mitigate effects of development in flood prone areas); and
- Compensation – providing off-site enhancement to compensate for where onsite mitigation has not been possible (e.g. financial contributions towards local infrastructure).

- 5.6.3 Environmental effects remaining after mitigation measures have been incorporated are termed residual effects and these will be fully described in the ES.

Embedded Mitigation

- 5.6.4 There is a distinction between mitigation that is incorporated or ‘embedded’ into the design of the development (embedded mitigation) and mitigation that is subsequently identified to prevent, reduce or offset any remaining significant adverse effects (further mitigation).

Embedded mitigation may include, for example, reducing the maximum height of buildings to mitigate visual effects, or incorporation of drainage attenuation.

- 5.6.5 Embedded mitigation evolves through the iterative design process and early consideration of the likely significant impacts is essential to incorporating suitable embedded mitigation measures. Design principles of the development have been established and the ES will document the embedded mitigation measures that have been employed within the design in response to the identification of potentially significant effects. The ES, within each of the topic chapters as appropriate, will also document the further mitigation that is required to complement the embedded mitigation.

Further Mitigation

- 5.6.6 Further mitigation measures are defined as those which require additional activity to be achieved, are identified through carrying out assessments and do not form part of the scheme design in their own right. For example, this will include specific measures which would be included in a Construction Environmental Management Plan (CEMP) which is anticipated to be submitted at the Reserved Matters stage. Where significant adverse effects have been identified through assessments, appropriate mitigation measures will be identified to reduce residual environmental impacts to an acceptable level.

5.7 Monitoring

- 5.7.1 The EIA Regulations introduce new requirements in relation to monitoring. The Regulations require “*the monitoring of any significant adverse effects on the environment of proposed development*”. It is important to note that the Regulations only require the monitoring of effects that are both significant and adverse. The ES will therefore ensure that it is clear to the reader which, if any, effects are both adverse and significant and may therefore require monitoring.

- 5.7.2 It is important to note that Regulation 26 (3) of the EIA Regulations states that planning authorities should:

(b) take steps to ensure that the type of parameters to be monitored and the duration of the monitoring are proportionate to the nature, location and size of the proposed development and the significance of its effects on the environment; and

(c) consider, in order to avoid duplication of monitoring, whether any existing monitoring arrangements carried out in accordance with an obligation under the law of any part of the United Kingdom, other than under the Directive, are more appropriate than imposing a monitoring measure.

- 5.7.3 Schedule 4 of the EIA Regulations identifies that an ES should identify “*any proposed monitoring arrangements*”. The ES will therefore provide a schedule of proposed monitoring to clearly identify the monitoring that is proposed in relation to any significant adverse effects that have been identified. Any such monitoring will be proportionate, as noted above.

5.8 Environmental Statement

- 5.8.1 The EIA process will be documented in an ES which will describe the proposed development and set out the policy context; give full detail of the EIA methodology and any technical methodologies and data used in support of the assessment; present the assessment of likely significant environmental effects; detail any mitigation and enhancement measures that have been employed; and provide a schedule of proposed monitoring arrangements. The ES will present the residual effects, and an assessment of the cumulative effects and impact interactions as described in **Chapter 6** below.

- 5.8.2 Under requirement 9 of Schedule 4 of the 2017 EIA Regulations (as amended 2018) a Non-Technical Summary of the ES shall also be provided.

5.9 Consideration of Alternatives

- 5.9.1 The 2017 EIA Regulations (as amended 2018) require an ES to include “A *description of the reasonable alternatives (for example in terms of development design, technology, location, size and scale) studied by the developer, which are relevant to the proposed project and its specific characteristics, and an indication of the main reasons for selecting the chosen option, including a comparison of the environmental effects.*”
- 5.9.2 This legal requirement is expressed in very general and high-level terms, requiring only the inclusion of a “*description*” of “*reasonable*” alternatives and an “*indication*” of “*main*” reasons. Although a full description of alternatives and a full assessment of their likely environmental effects are not required, sufficient detail should be provided to allow for a meaningful comparison between the alternatives and the proposed development.
- 5.9.3 It is a matter for the developer to decide which alternatives it intends to consider. The EIA Regulations do not expressly require that an applicant considers alternatives, although it is widely encouraged at the policy level, both European and domestic, and is a feature of EIA best practice.
- 5.9.4 The ES will fulfil the requirements of the EIA Regulations through identifying the reasonable alternatives considered by the developer and explain the main reasons for the choices made. A comparison of environmental effects will also be provided. It is anticipated that such reasons for choosing between reasonable alternatives may include planning policy, viability, design quality, market requirements, site constraints and opportunities and environmental effects.

5.10 EIA Team

- 5.10.1 Regulation 18 of the EIA Regulations requires that, to ensure the completeness and quality of environmental statements, “*the developer must ensure that the environmental statement is prepared by competent experts*”.
- 5.10.2 In accordance with EIA Regulation 18 the ES will be “*accompanied by a statement from the developer outlining the relevant expertise or qualifications of such experts.*” At this scoping stage, **Table 5:1** identifies the organisations that will contribute to the EIA and provides an outline of their relevant expertise.

Table 5:1: EIA Team and Relevant Experience

EIA Topic	Organisation	Relevant Expertise
EIA Coordination	PBA	PBA is a founder member of the Institute of Environmental Management and Assessment's (IEMA) EIA Quality Mark scheme for quality in EIA. PBA has a dedicated EIA team that specialises in leading the EIA process for development projects, including land development, regeneration, energy and infrastructure projects. PBA typically leads 10-20 EIA projects each year. Each of PBA's EIA team have suitable academic and professional qualifications, with professional qualifications including Principal EIA Practitioner, Practitioner and Associate membership of IEMA, member of Royal Town Planning Institute and Chartered Environmentalist.
Socio-Economics	AECOM	AECOM is a leading provider of environmental services to a wide range of clients and

EIA Topic	Organisation	Relevant Expertise
		<p>development sectors in the UK. AECOM has a large and highly experienced team of Environmental Impact Assessment (EIA) practitioners (approximately 160 staff), who have managed hundreds of EIAs and prepared Environmental Statements and other technical reports to accompany applications under various consenting regimes. AECOM also provides specialist EIA review services and EIA training to a range of organisations, including government agencies. The EIA team is supported by more than 400 technical environmental specialists, covering a wide range of technical disciplines.</p> <p>AECOM is a registrant to the Institute of Environmental Management and Assessment (IEMA) EIA Quality Mark and undertakes all EIA work in line with the EIA Quality Mark Commitments. The AECOM Economic Development and Regeneration team has a wealth of experience in undertaking economic impact assessments and evidence-base studies for commercial and mixed-use developments, including major urban extensions, and we are well-equipped to provide expertise relating to economic impacts, socio-economic impacts and regeneration benefits having undertaken similar studies on upwards of 50 schemes in the South East and Greater London in the last 10 years. Recent project experience of a similar scale includes Northern Arc, a 3,500 home scheme to the north of Burgess Hill, completed on behalf of Homes England.</p>
Transport and Access	PBA	<p>PBA has a dedicated transport team that specialises in undertaking transport planning, modelling and appraisal for development schemes, including land development, regeneration and infrastructure projects. PBA's transport team includes experienced staff, who have relevant academic and professional qualifications, including those who hold Transport Planning Professional (TPP) and those who are Chartered Members of the Institute of Highways and Transportation (CMIHT). In addition, PBA holds corporate membership of the Transport Planning Society (TPS) and the Chartered Institute of Highways and Transport (CIHT).</p>
Noise and Vibration	PBA	<p>The chapter will be prepared by PBA, sponsor members of the Institute of Acoustics (IOA). PBA has a dedicated acoustics team that specialises in undertaking noise and vibration assessments for development projects, including land development, regeneration, energy and infrastructure projects. PBA typically undertakes in excess of 150 noise and vibration assessments each year. All of PBA's acoustics team have suitable academic and professional qualification, including being registered with the IOA.</p>
Air Quality	PBA	<p>The chapter will be prepared by PBA. PBA has a dedicated air quality team that specialises in undertaking air quality assessments for development projects, including land development,</p>

EIA Topic	Organisation	Relevant Expertise
		regeneration, energy and infrastructure projects. PBA typically undertakes in excess of a hundred air quality assessments each year. All of PBA's air quality team have suitable academic and professional qualification, including being registered with the Institution of Environmental Sciences (IES) and Institute of Air Quality Management (IAQM).
Biodiversity	Terence O'Rourke	The chapter will be prepared by Terence O'Rourke (TOR). TOR is a member of the IEMA Quality Mark scheme for excellence in EIA and has extensive experience of undertaking ecological assessments for EIA. The project ecologist is a full member of the Chartered Institute of Ecologists and Environmental Managers (CIEEM) and has over 16 years of experience in ecological surveys and assessment across the UK and extensive experience in preparing ES chapters.
Landscape and Visual	Terence O'Rourke	The chapter will be prepared by Terence O'Rourke Ltd (TOR). TOR has a dedicated landscape team that specialises in undertaking landscape and visual assessments for development projects, including residential developments, leisure, industrial buildings, energy facilities and infrastructure projects. All of TOR's landscape team have suitable academic and professional qualification, including being registered with the Landscape Institute.
Agricultural Land	Reading Agricultural Consultants	Reading Agricultural Consultants Ltd (RAC) has more than 50 years' experience of providing advice on agricultural, environmental and countryside issues, particularly in assessing the impacts of housing, minerals, infrastructure and other large scale developments on agricultural land, soil resources and farm holdings. The RAC team includes Practitioner members of IEMA, fellows and members of the British Institute of Agricultural Consultants, members of the Institute of Soil Science and Chartered Environmentalists.
Cultural Heritage	Terence O'Rourke	The chapter will be prepared by Terence O'Rourke Ltd (TOR) who have a dedicated heritage team specializing in archaeological, built heritage and historic landscape assessment. They are responsible for producing the desk-based heritage assessment; co-ordinating, managing and consulting on the extent and application of site investigations presented as technical appendices. The heritage team have suitable academic and professional qualifications in their fields of expertise and have appeared as expert witnesses on heritage matters.
Ground Conditions	PBA	PBA has a dedicated geotechnical and geoenvironmental team that includes 35 experienced geologists, geotechnical engineers and environmental scientists with over 350 years combined experience. The team specialises in the characterisation and assessment of ground conditions and has extensive experience of assessing risks related to land contamination, and

EIA Topic	Organisation	Relevant Expertise
		geological and geomorphological hazards. The team carries out over 50 ground condition assessments each year including a number for large regeneration projects that require an Environmental Statement. All of PBA's geotechnical/geoenvironmental team have suitable academic and professional qualification, including being registered with the Geological Society (CGeol, FGS), Institute of Civil Engineers (FICE, MICE) and Institution of Environmental Sciences (IES).
Flood Risk and Drainage	PBA	PBA has a designated Water Management team with many years of experience in, amongst other areas, the assessment of flood risk, hydrology and hydraulic modelling, flood management, the Water Framework Directive, surface water drainage and river engineering. PBA's Water Management team includes experienced staff who have relevant academic and professional qualifications, who are competent experts in the context of the EIA Regulations and for our contributions to the Environmental Statement. The authors and reviewers of the document are all experienced engineers and members of chartered institutions such as the Chartered Institution of Water and Environmental Management (CIWEM) and/or the Institution of Civil Engineers (ICE).
Cumulative Effects and Impact Interactions	PBA	PBA is a founder member of the Institute of Environmental Management and Assessment's (IEMA) EIA Quality Mark scheme for quality in EIA. PBA has a dedicated EIA team that specialises in leading the EIA process for development projects, including land development, regeneration, energy and infrastructure projects. PBA typically leads 10-20 EIA projects each year. Each of PBA's EIA team have suitable academic and professional qualifications, with professional qualifications including Principal EIA Practitioner, Practitioner and Associate membership of IEMA, member of Royal Town Planning Institute and Chartered Environmentalist.

6 Proposed Scope of the EIA

6.1 Technical Scope

- 6.1.1 The technical scope describes the environmental topics that should be addressed by an EIA, in line with the requirements of Regulation 18 and Schedule 4 of the EIA Regulations. Schedule 4 sets out that the ES must include a description of the aspects of the environment, which are likely to be significantly affected by the proposed development.
- 6.1.2 This requirement and the broad categories set out in Schedule 4, along with others which are considered to have the potential to lead to significant environmental effects, have been interpreted and applied in the context of the OCGV application. **Table 6.1** therefore sets out those topics that are proposed to be scoped into and out of the EIA.
- 6.1.3 Section references are provided to demonstrate where these categories have been included within the EIA Scope. **Chapters 8-18** of this report provides a detailed analysis of the resultant proposed technical scope of the EIA, while **Chapter 19** identifies those topics which it is proposed to scope out of the EIA as it has been shown that significant environmental effects are unlikely to occur.

Table 6.1: Technical Scope

EIA Regulations Topic	Scoped in / Scoped out?	Explanation within this Scoping Report
Population	✓	Chapter 8 Socio-economics
Human Health	✓	Chapter 8 Socio-economics Chapter 9 Transport Chapter 10 Noise & Vibration Chapter 11 Air Quality
Biodiversity (for example Flora and Fauna)	✓	Chapter 12 Biodiversity
Land (for example land take)	✓	Chapter 15 Agricultural Land Chapter 17 Ground Conditions
Soil (for example organic matter, erosion, compaction, sealing)	✓	Chapter 15 Agricultural Land
Water (for example hydro morphological changes, quantity and quality)	✓	Chapter 18 Flood Risk and Drainage
Air	✓	Chapter 11 Air Quality
Climate (for example greenhouse gas emissions, impacts relevant to adaptation)	X	Section 20.7 Climate Change

Material assets	✓	Chapter 17 Ground Conditions Chapter 16 Cultural Heritage Chapter 20 Topics Not Included in the EIA Scope Section 18.3 Waste
Cultural heritage, including architectural and archaeological aspects	✓	Chapter 16 Cultural Heritage
Landscape	✓	Chapter 13 Landscape and Visual
The inter-relationship between the above factors	✓	Chapter 19 Summary and Impact Interactions
The Risk of Major Accidents and/or Disasters	X	Chapter 20 Topics Not Included in the EIA Scope, Section 18.6 The Risk of Accidents and/or Disasters

- 6.1.4 The following section sets out the principles for the temporal and spatial scope, and the approach to the assessment of effects, that will be applied to the EIA of the topics identified in **Chapter 8-18**.

6.2 Temporal Scope

Environmental Baseline

- 6.2.1 As a general principle, environmental effects will be assessed by comparing the predicted state of the environment without the proposed development and with the state of the environment with the proposed development for a particular year. This will include an outline of the likely evolution of the site environment without implementation of the development as far as changes from the baseline scenario can be predicted. This baseline evolution may include future trends such as air quality and traffic growth.
- 6.2.2 **Chapter 7** sets out that there are several other developments that may come forward prior to or during the implementation of the OCGV. **Chapter 7** also identifies how these developments will be addressed in defining future baseline conditions and/or included in the assessment of likely significant cumulative effects.
- 6.2.3 As noted above, the NWF aggregate recycling facility is surrounded by the site. OCGV is being designed not to prejudice the on-going operation of the NWF aggregate recycling facility. To support this, a suite of baseline surveys (such as noise and dust) is being undertaken to understand the implications of the facility for OCGV. This will be documented in a Technical Note to accompany the ES defining baseline conditions at and surrounding NWF aggregate recycling facility and the implications for OCGV.
- 6.2.4 Similarly, consideration will be given to the potential future implications of the nominated minerals sites to the east of the site. The design of the OCGV will be progressed in the context of these nominations, and the ES will identify suitable mitigation measures for the OCGV and/or minerals sites to show how the OCGV and minerals sites can all be delivered.

Duration of Effects

- 6.2.5 Environmental effects will be classified as either permanent or temporary, as appropriate. Permanent changes are those which are irreversible (e.g. permanent landtake) or will last for the foreseeable future (e.g. emissions from generated road traffic).
- 6.2.6 The duration of temporary environmental effects will be defined as short, medium or long term based on the likely durations of the construction and operational phases of the development. These definitions will be considered within the assessment of the likely significant effects and will be set out in the ES.
- 6.2.7 Where environmental effects will be infrequent or intermittent (such as effects related to activities that will not be continuous during construction) this will be noted in the ES; and the frequency of these activities will be considered in the assessment.

Phases of the Scheme

Construction

- 6.2.8 Certain environmental effects will only occur during construction of the proposed development and will cease once construction activities have ceased. These will typically be the temporary effects of the scheme and will be described as “short-term” or “medium-term”, as appropriate, using the definitions determined to be appropriate and set out in the ES. Examples include but are not limited to:
- Creation of dust;
 - Risk of pollution during construction; and
 - Noise from construction activities.

Operation

- 6.2.9 Environmental effects that occur during the operation of the project will typically be permanent or “long-term”. Examples of permanent effects which might occur during the operation of the scheme include but are not limited to:
- Changes to key viewpoints;
 - Changes to the setting of heritage assets; and
 - Changes to air quality from generated road traffic.

6.3 Spatial Scope

- 6.3.1 The spatial extent of each of the technical assessments will vary from one to another in accordance with the relevant policy and guidance for the assessment of that topic. Typically, the study area will comprise the site and those areas that are surrounded by the site but excluded from it. For some topics it will extend further from the site boundary where there is the potential for effects to be significant over a wider area (e.g. as a result of traffic generated by the development).
- 6.3.2 The study area for each technical assessment will be identified and described as appropriate in each of the topic chapters of the ES.

6.4 Assessment of Effects

Types of Effects

6.4.1 In assessing the significance of effects identified during the EIA, account will be taken as appropriate as to whether effects are:

- Direct Effects – effects that are caused by activities which are an integral part of the proposed development (e.g. land take);
- Indirect Effects – effects arising indirectly from the construction or use of a development (e.g. supply chain effects in construction stage, resident's local expenditure in operational phase);
- Secondary Effects – are 'knock-on'/once-removed effects arising in consequence of indirect effects (e.g. the decision of firms to locate in a particular area following nearby transport infrastructure upgrades);
- Cumulative Effects – effects that result from different sources or would be considered in different assessments but which affect a common receptor and common receptors and mean that the affected receptor(s) could experience a greater, synergistic, effect;
- Transboundary Effects – effects caused by a proposed development that are experienced across a boundary;
- Temporary Effects – Environmental effects that occur during the construction of a project will typically be temporary.
- Permanent Effects – Permanent effects are those which are irreversible (e.g. permanent land take), will last for the foreseeable future (e.g. noise from generated road traffic) or are effects considered to last greater than ten years;
- Beneficial Effects – Effects that have a positive influence on the environment; and
- Adverse Effects – Effects that have an adverse influence on the environment.

6.4.2 For clarity within the assessment, 'impact' will be used in relation to the outcome of the project (e.g. the removal of habitat or the generation of emissions to air), while the 'effect' will be the consequent implication in environmental terms (continuing the above example, e.g. the loss of a potential bird breeding site or the reduction in local air quality).

Residual Effects

6.4.3 The incorporation of mitigation measures, primarily as part of the scheme design and construction phase, will be reported where appropriate and likely significant residual effects that remain will be described and assessed according to the significance criteria set out in **Table 6:1** below.

6.4.4 As noted above, the EIA Regulations require that the ES describes likely significant effects of the proposed development. However, there is no applicable definition of significance and interpretations differ. In accordance with the European Commission's Guidance on Scoping (2001), the EIA will study those effects that will influence decision-making or those where there is uncertainty about their magnitude. This approach is consistent with best practice for EIA in the UK.

6.4.5 The significance of an effect is typically the product of two factors, the value of the environmental resource affected and the magnitude of the impact, while consideration may also need to be

given to the likelihood of an effect occurring. A significant effect may arise, for example, as a result of a slight impact on a resource of national value or a severe impact on a resource of local value. In addition, the accumulation of many non-significant effects on similar local resources geographically spread throughout the scheme may give rise to an overall significant effect. An example of this might be the loss of ecological habitat of low value at many locations.

6.4.6 This approach to assessing and assigning significance to an environmental effect will rely upon such factors as legislative requirements, guidelines, standards and codes of practice, consideration of the EIA Regulations, the advice and views of statutory consultees and other interested parties and expert judgement. The following questions are relevant in evaluating the significance of likely environmental effects:

- Which risk groups are affected and in what way?
- Is the effect reversible or irreversible?
- Does the effect occur over the short, medium or long term?
- Is the effect permanent or temporary?
- Does the effect increase or decrease with time?
- Is the effect of local, regional, national or international importance?
- Is it a positive, neutral or adverse effect?
- Are health standards or environmental objectives threatened?
- Are mitigating measures available and is it reasonable to require these?

6.4.7 Specific significance criteria will be prepared for each specialist topic as appropriate, based on the above and the generic criteria set out in **Table 6:1** below.

Table 6.1: Significance Criteria

	Significance Level	Criteria
Significant	Substantial	These effects are assigned this level of significance as they represent key factors in the decision-making process. These effects are generally, but not exclusively, associated with sites and features of national or regional importance. A change at a district scale site or feature may also enter this category.
	Major	These effects are likely to be important considerations at a local or district scale but, if adverse, are potential concerns to the project and may become key factors in the decision-making process.
	Moderate	These effects, if adverse, while important at a local scale, are not likely to be key decision-making issues. Nevertheless, the cumulative effect of such issues may lead to an increase in the overall effects on a particular area or on a particular resource.
Not significant	Minor	These effects may be raised as local issues but are unlikely to be of importance in the decision-making process. Nevertheless, they are of relevance in enhancing the subsequent design of the project and consideration of mitigation or compensation measures.
	Negligible	Either no effect or effect which is beneath the level of perception, within normal bounds of variation or within the margin of forecasting error. Such effects should not be considered by the decision-maker.

- 6.4.8 Effects that are described as ‘substantial’, ‘major’ or ‘moderate’ are determined to be significant; and effects that are described as ‘minor’ or ‘negligible’ are determined to be not significant in the context of the EIA Regulations.

Impact Interactions

- 6.4.9 The EIA Regulations require the consideration of the potential impact of inter-relationships of impacts from the development, and cumulative effects of “existing and/or approved development” with the development. Cumulative effects are discussed in **Chapter 7** below.
- 6.4.10 The EIA Regulations require consideration of the potential impact of inter-relationships of impacts from the development.
- 6.4.11 The EIA will consider as appropriate the potential for impact interactions leading to an aggregated environmental effect on a receptor being greater than each of the individual effects that have been identified (e.g. local people being affected by noise, dust and increased traffic levels during the construction of the development, where those impacts are greater combined than individually).
- 6.4.12 Potential impact interactions will be assessed within a specific chapter of the ES.

Uncertainty and Difficulties Undertaking the Assessment

- 6.4.13 The prediction of future effects inevitably involves a degree of uncertainty. Where necessary, the ES will describe the principal factors giving rise to uncertainty in the prediction of environmental effects and the degree of the uncertainty.

- 6.4.14 Confidence in predictions will be engendered by employing accepted assessment methodologies, e.g. Guidance for Ecological Impact Assessment by the Institute of Ecology and Environmental Management. Uncertainty inherent within the prediction will be described.
- 6.4.15 Uncertainty also applies to the success or otherwise of measures to mitigate negative environmental effects. Where the success of a mitigation measure is uncertain, the extent of the uncertainty will be identified in the ES.
- 6.4.16 The ES will identify, in accordance with Schedule 4 of the EIA Regulations, any difficulties that have been encountered in undertaking the assessment.

7 Future Developments and Assessment of Cumulative Effects

7.1 Introduction

- 7.1.1 As set out in the adopted West Oxfordshire Local Plan 2031 (2018), OCGV is located close to other major developments that are likely to come forward in parallel with the delivery of OCGV. The 2017 EIA Regulations requires the assessment of the likely significant effects from *“the cumulation of effects with other existing and/or approved projects”*.
- 7.1.2 This chapter outlines the approach to be adopted within the EIA for this assessment, and noting that the position regarding approved developments is likely to evolve during the EIA process.
- 7.1.3 Of particular note are the A40 Science Transit 2 - Proposed Eynsham Park & Ride and bus lane scheme and the West Eynsham development. While these developments are not yet approved, they will be considered through the EIA process due to connections in planning policy, and their scale and proximity to OCGV. As part of this process, the respective design teams are collaborating to support the design of schemes that will respect and integrate with each other. There are also nominated minerals sites in the draft Oxfordshire Minerals and Waste Local Plan to the east of the Site and residual areas of the OCGV Strategic Location for Growth that may require consideration in the EIA. An outline of these developments is provided below.

7.2 A40 Science Transit 2- Proposed Eynsham Park & Ride and bus lane scheme¹

- 7.2.1 The A40 Science Transit 2 project seeks to increase public transport capacity and reduce Oxford-bound car trips by delivering a series of improvements to the A40 between Eynsham and Oxford. The project includes the provision of the proposed Eynsham Park & Ride (P&R) to the north of the A40 at Eynsham; provision of an eastbound bus lane on the A40; the realignment of the existing cycle path; a series of associated junction improvements; and bus stops and pedestrian and cyclist paths to and through the Park and Ride.
- 7.2.2 A request for an EIA Scoping Opinion for the Eynsham Park and Ride was submitted on the 5th February 2019 by AECOM on behalf of OCC (planning application reference: R3.0007/19). The P&R will consist of a new 19ha P&R site comprising approximately 1,000 car parking spaces. New above ground buildings in the P&R site will include bus shelters and a new toilet block. The proposed P&R site will be accessed via a new roundabout junction located on the A40. The bus lane element of the proposed development will be approximately 6.5km in length. This will predominately be an eastbound bus lane, although some sections of westbound bus lane are also proposed on the approach to major junctions at the approach to the Eynsham roundabout and Cassington signalised junction. The bus lane will be on average 4m wide. Due to the generous width of the existing carriageway, these works will be contained within the existing highways boundary, with the exception of widening works required at Cassington New Bridge.
- 7.2.3 The proposed park and ride and bus lanes provide opportunities to improve the reliability and variety of destinations in Oxford served by public transport. The scheme is part of the A40 Corridor Strategy which seeks:
- *“To support jobs and housing growth and economic vitality;*
 - *To reduce transport emissions and meet our obligations to Government;*
 - *To protect, and where possible enhance Oxfordshire’s environment and improve quality of*

¹ <https://consultations.oxfordshire.gov.uk/consult/ti/ImprovingtheA40corridor>

life; and

- *To improve public health, air quality, safety and individual wellbeing.”*

7.3 Residual Areas of OCGV Strategic Location for Growth- Policy EW1

7.3.1 There are two areas of the WODC Local Plan OCGV SLG which are outside the control of Grosvenor Developments Ltd and have therefore been included from the Site as described within this report. These are identified on the Map of Committed Developments in **Appendix C** as 6 and 7 respectively and are summarised below:

- Land to the south of Cuckoo Wood Farm – this area adjoins OCGV and is directly to the south of Cuckoo Wood Farm. This area comprises a field in the eastern part, and a residential dwelling and land surrounding it in the western part. The field is bordered by hedgerows and trees.
- Land to the west of the site – this area of unregistered land comprises a large field bordering the A40 and running in a north east to south west direction adjacent to OCGV. The field is bordered by hedgerows.

7.3.2 Given that these areas are located within the SLG, there is potential for these areas to come forward separately. This will be monitored through the AAP process and through any representations made.

7.3.3 If appropriate, these areas will therefore be considered through the EIA and the assessment of cumulative effects.

7.3.4 The design of the OCGV will be progressed not to prejudice development coming forward in these areas in future and will support the delivery of the development to meet the requirements of Policy EW1.

7.4 West Eynsham

7.4.1 Land to the West of Eynsham is allocated in the Adopted West Oxfordshire Local Plan 2031 (2018) for a new urban extension of around 1,000 homes together with supporting services and facilities including a new primary school and western spine road. The proposed development would be located to the south of the A40 and bordering the west of the existing village of Eynsham.

7.4.2 As highlighted in the West Eynsham Supplementary Planning Document (SPD) Issues Paper² (July 2018) there are a number of clear inter-relationships between West Eynsham and OCGV which will need to be taken into account as both sites are taken forward.

7.5 Lower Road, Church Hanborough, and Land between Eynsham and Casington Draft Nominated Minerals Sites

7.5.1 As noted in **Section 2.3**, the Issues and Options document of the Oxfordshire Minerals and Waste Local Plan includes nominated mineral sites bordering the OCGV site. The 'Lower Road, Church Hanborough' site (reference SG-08) borders the site to the north and to the east (on the opposite side of Lower Road) and the 'Land between Eynsham & Casington' site (reference SG-20) borders the site to the south-east (on the opposite side of Lower Road).

7.5.2 Whilst these sites are not yet allocated (indeed, the Oxfordshire Minerals and Waste Local Plan is not due for adoption until 2020) and do not benefit from planning permission, there is the potential for them to come forward within the plan period (to 2031). As the sites are not

² <https://www.westoxon.gov.uk/media/1873316/West-Eynsham-SPD-issues-paper-19-July-2018.pdf>

approved development, as defined by the 2017 EIA Regulations, they do not strictly need to be considered in the assessment of likely significant cumulative effects. It may however be helpful for the EIA to illustrate how the OCGV does not prejudice the delivery of the minerals sites (and vice versa).

- 7.5.3 The status of these sites will therefore be reviewed within the EIA process to determine the extent to which they should be considered within the OCGV.

7.6 Other Committed Developments and Approach to Assessment of Cumulative Effects

- 7.6.1 A review of other committed developments (including both approved schemes and applications yet to be determined) within the locality of the proposed development has been undertaken drawing on information on submitted schemes provided by WODC. This is based on identifying those developments likely to lead to significant cumulative effects with the OCGV and has therefore focused on major development within 1 km of the site and developments subject to EIA within 5 km. A schedule documenting this review is provided within **Appendix C** and identifies which developments it is proposed to scope in to the assessment of cumulative effects and which developments it is proposed to scope out.
- 7.6.2 Agreement is sought from WODC on the committed developments which should be assessed in the cumulative assessments in the ES on the basis of the schedule provided in **Appendix C**. It should also be noted that the Schedule provided in **Appendix C** will be periodically reviewed during the course of the EIA to support the assessment of cumulative effects being undertaken on the basis of up-to-date information.
- 7.6.3 It should be noted that a separate list of committed developments may be agreed with OCC for the purposes of the Transport Assessment (TA). It is anticipated that this will require the consideration of strategic developments within a wider study area (such as the pending outline planning application for Oxford North) due to the potential for such developments to affect traffic flows on the local highway network. For consistency in the assessment of transport related effects, the assessment of air quality and noise effects associated with road traffic will be consistent with the assessment presented in the TA.
- 7.6.4 We are also aware that OCC is planning to submit a Housing Infrastructure Fund bid in relation to improvements on the A40. The requirement to consider any improvements to the A40 will be kept under review during the EIA process depending on the success of the funding bid, proposed improvements and programme.
- 7.6.5 At this stage, it is anticipated that the assessment of likely significant cumulative effects of the proposed development and other local committed developments will be included within each of the topic chapters of the ES as appropriate. This approach will be reviewed through the EIA, including whether it is preferable to include committed developments in future baseline conditions.

8 Socio-Economics

8.1 Introduction

- 8.1.1 The NPPF defines sustainable development as having not just an environmental role, but an economic and social role. Development therefore needs to consider the impacts on the community and local economy. The Socio-Economic chapter will therefore assess the impact of the Proposed Development on the baseline socio-economic conditions.

8.2 Baseline

- 8.2.1 The population of West Oxfordshire is approximately 109,300 (ONS, 2018a) of which 6,100 people are estimated to be living in the Eynsham and Cassington ward (ONS, 2018b). West Oxfordshire has a lower share of working age residents (60%) compared to the South East (62%) and England and Wales (63%). Currently, 21% of the population in West Oxfordshire are aged 65 and over (ONS, 2018a).
- 8.2.2 West Oxfordshire's population was estimated at 109,300 in 2018 with the total population expected to increase to 114,500 in 2038, increasing by 4.7% (ONS, 2018c). Over the next 20 years up to 2038, the over 65s population group is projected to be the main driver of population growth. Between 2018 and 2038, the 65 and over population is forecasted to grow by 10,800.
- 8.2.3 West Oxfordshire has a highly-skilled population, with 44.1% (28,600) of working age residents having attained degree level qualifications or above (NVQ Level 4+) compared to 41.4% in the South East and 38.3% in England and Wales (ONS, 2018d). This corresponds to a higher share of residents being employed in high skill occupations: 54% (31,600) of the workforce is employed Groups 1-3 of the Standard Occupational Classification compared to 46.3% in England and Wales (0). Manufacturing and accommodation and food services are the two largest employment sectors, with 5,100 and 4,500 employees respectively (ONS, 2017a).
- 8.2.4 West Oxfordshire has high levels of economic activity, with 86.7% of the working age population economically active compared to 81.4% in the South East and 78.5% across England and Wales (ONS, 2018d). The jobs density in West Oxfordshire is 0.93, which means for every working age resident there is 0.93 jobs; this is higher than both the South East (0.87) and Great Britain (0.86) (ONS, 2017a). Almost 20,000 residents commute outside of West Oxfordshire for work daily. Oxford is the main destination for workers (7,500 commute to Oxford from West Oxfordshire).
- 8.2.5 Output per worker in West Oxfordshire is equivalent to £59,300 (0 2016). GVA per head in West Oxfordshire is exceeding the national comparator, equivalent to £26,800 compared to £25,700 nationally. Average weekly workplace and resident earnings in West Oxfordshire are lagging behind England and Wales by 16.3% and 2.9% respectively (ONS, 2018e).
- 8.2.6 Deprivation in West Oxfordshire is significantly low. West Oxfordshire was ranked as the 315th most deprived local authority (out of 326) as defined by the 2015 Index of Multiple Deprivation (0 2015). Analysis of Claimant Count shows that welfare claimants constitute only 1% of working age residents in West Oxfordshire – this is considerably lower than the 2.2% across England and Wales (ONS, 2018f).
- 8.2.7 West Oxfordshire falls within the NHS Oxfordshire Clinical Commissioning Group which has 77 member GP practices with 416.1 full-time equivalent (FTE) GPs which serves a total of 715,790 patients (0 2017). There are play areas and open spaces towards the south of the Site and in the Village of Eynsham including Millennium Wood and the open space and play area adjacent to Old Witney Road, and Witney Road and Eynsham Skatepark which is adjacent to Oxford Road.

8.3 Consultation

- 8.3.1 No consultation has yet been undertaken to support the socio-economics chapter.

8.4 Potential Effects

Insignificant Effects

- 8.4.1 No insignificant effects identified at this stage.

Potential Significant Effects

- 8.4.2 Potential significant effects during construction and operation should be identified. The assessment will also identify what the sensitive receptors are for each effect and during which phase effects are likely to occur, e.g. construction, operation or both.
- 8.4.3 The Proposed Development is expected to generate a range of socio-economic effects, some of which would be temporary, whilst others would be long-term and permanent. For the purposes of the ES, due consideration will be given to the Proposed Development in terms of the following:
- Temporary direct, indirect and induced employment during the construction phase;
 - Creation of long-term direct, indirect and induced operational employment opportunities from the proposed commercial uses on-site;
 - Provision of housing, including affordable housing;
 - Additional local spending by new residents;
 - Impacts on the provision/utilisation of education and health infrastructure; and
 - The provision of public and private amenity space, open space and child play space.

8.5 Methodology

Establishing the Baseline

- 8.5.1 A desktop baseline assessment will be undertaken as part of the socio-economics assessment and will use a range of sources to provide a description of the socio-economic conditions within the local area. This will be carried out using established statistical sources including (but not limited to):
- 2011 Census data (0);
 - Business Register and Employment Survey (BRES) (2017) (ONS, 2017a);
 - Office of National Statistics' Labour Market Statistics (2017) (ONS, 2017b); and
 - Mid-Year Population Estimates (2017) (ONS, 2018a)

Summary of relevant policy context

- 8.5.2 The socio-economic assessment will review the relevant policy at the local (West Oxfordshire) and national level to identify the key issues of relevance to the Proposed Development. This will

include the NPPF, PPG and draft PPG, the West Oxfordshire Local Plan and the Eynsham Neighbourhood Plan.

Standards and Guidance

- 8.5.3 The assessment will be carried out using a number of recognised data sources, and wherever possible the impacts of the socio-economic assessment will be appraised against relevant national standards such as those provided by HM Treasury and the then Homes and Communities Agency. Where relevant standards do not exist, professional experience and expert judgement will be applied and justified.

Impact Assessment Methodology

- 8.5.4 An assessment of effects will be undertaken to assess the impact of the Proposed Development on the baseline socio-economic conditions. The methodology for assessing socio-economic impacts will follow standard EIA guidance and will entail:

- Consideration of local policy, plans and development constraints;
- Review of baseline conditions at the Site;
- Assessment of the likely scale, permanence and significance of effects associated with:
 - Direct, indirect and induced employment during the construction phase of the Proposed Development;
 - Direct, indirect, and induced net employment once the Proposed Development is operational; and
 - Delivery of new homes and the impact of this on public services and social infrastructure such as: primary healthcare, education and play space provision.
- An assessment of the potential cumulative effects with other committed developments within the surrounding area.

Assessment Criteria

- 8.5.5 For the assessment of socio-economics effects, policy thresholds and expert judgment will be used to assess the scale and nature of the effects of the Proposed Development against baseline conditions. For socio-economics there is no accepted definition of what constitutes a significant (or not significant) effect. It is however recognised that 'significance' reflects the relationship between the scale of effect and the sensitivity (or value) of the affected resource or receptor.

- 8.5.6 As such the socio-economic effects will be assessed on the basis of:

- Consideration of sensitivity to effects: specific values in terms of sensitivity are not attributed to socio-economic resources/receptors due to their diverse nature and scale, however the assessment takes account of the qualitative (rather than quantitative) 'sensitivity' of each receptor and, in particular, their ability to respond to change based on recent rates of change and turnover (if appropriate);
- Scale of effect: this entails consideration of the size of the effect on people or business in the context of the area in which effects will be experienced; and
- Scope for adjustment or mitigation: the socio-economic assessment is concerned in part with economies. These adjust themselves continually to changes in supply and demand,

and the scope for the changes brought about by the proposed development to be accommodated by market adjustment will therefore be a criterion in assessing significance.

- 8.5.7 The assessment will be objective and will quantify effects as far as possible. However, some effects can only be evaluated on a qualitative basis.
- 8.5.8 Where an effect is assessed as being beneficial or adverse, the scale of the effect will be assigned using the below criteria:
- Minor: a small number of receptors are beneficially or adversely affected. The effect will make a small measurable positive or negative difference on receptors at the relevant area(s) of effect;
 - Moderate: a moderate number of receptors are beneficially or adversely affected. The effect will make a measurable positive or negative difference on receptors at the relevant area(s) of effect; and
 - Major / Substantial: all or a large number of receptors are beneficially or adversely affected. The effect will make a measurable positive or negative difference on receptors at the relevant area(s) of effect.
- 8.5.9 Those effects which are found to be moderate or major / substantial are considered to be 'significant' and those which are minor are 'not significant'.
- 8.5.10 The duration of an effect will also be considered, with more weight given to permanent changes than to temporary ones. Temporary effects are typically those considered to be those associated with the construction works. Permanent effects are generally those associated with the completed development.

Scope for Mitigation

- 8.5.11 Mitigation measures will be identified if and where relevant to address likely significant effects, and thus an assessment of the residual effects of the Proposed Development will be undertaken as part of the socio-economics assessment.

8.6 References

ONS, (2018a); Mid-Year Population Estimates (2017).

ONS, (2018b)' Mid-2017 Population Estimates for 2017 Wards in England and Wales by Single Year of Age and Sex, Persons - Experimental Statistics.

ONS, (2018c); Sub-National Population Projections (2016).

ONS, (2018d); Annual Population Survey (January 2017 to December 2017).

ONS, (2017a); ONS Jobs Density, ONS

ONS, (2016); Gross Value Added (Income Approach) (2015).

ONS, (2018e); Annual Survey of Hours and Earnings (2018).

DCLG, (2015); English Indices of Deprivation (2015).

ONS, (2018f); Claimant Count (October 2018).

NHS Business Services Authority, (2017); Practice List Size and GP Count (April 2017).

ONS, (2011); 2011 Census, ONS

ONS, (2017b): Labour Market Statistics, ONS

9 Transport

9.1 Introduction

- 9.1.1 The purpose of the transport chapter of the ES is to describe (and, where possible, quantify) the likely impact that the proposed development will have on the surrounding transport networks. This chapter of the ES will be based on a Transport Assessment (TA) and will follow a scope to be agreed with OCC. It is anticipated that this will include a full multi-modal impact assessment, which will consider the impact of the proposed development on all relevant transport infrastructure surrounding the site.

9.2 Baseline

- 9.2.1 This section will present the baseline conditions for the transport infrastructure and networks in the area, which are set out below:

- Existing site conditions;
- Highway network in the vicinity of the site on the A40, Lower Road, and Cuckoo Lane, with overall extents defined through scoping with OCC.
 - traffic counts on appropriate links,
 - personal injury collision data in the most recently available three year period, to be supplied by OCC;
- Pedestrian and cycle networks, including Public Rights of Way, in the vicinity of the site and their connectivity with Eynsham to the south and Hanborough Station to the north;
- Existing bus routes in the vicinity of the site and rail services from Hanborough station.
- Census data including method of travel to work and car/van ownership.

9.3 Consultation

- 9.3.1 Separate scoping for Transport will be undertaken with OCC, as Highway Authority, alongside the scoping for the parallel Transport Assessment activities.

9.4 Potential Effects

Insignificant Effects

- 9.4.1 It is unlikely that hazardous Loads will be created as part of the development and therefore are not intended to form part of the assessment.

Potential Significant Effects

- 9.4.2 The following effects will be considered in the transport chapter

- i. Severance
- ii. Driver Delay
- iii. Pedestrian Delay

iv. Pedestrian Amenity

v. Accidents and Safety

- 9.4.3 Effects will be considered for both construction and operational periods, taking into account changes to the highway network, including OCC's proposed Park & Ride scheme Eastbound bus lane scheme, which also incorporates pedestrian and cycle route improvements.

Construction Period

- 9.4.4 Construction of proposed development will generate traffic associated with movement of materials in addition to car trips generated by the workforce. There is also likely to temporary disruption while proposed access and improvement works are implemented.
- 9.4.5 It is proposed that this is assessed qualitatively given its temporary nature, particularly in relation to the operational phase which would, based on PBA's experience, typically generate considerably more traffic.

Operational Period

- 9.4.6 The operational period assessment will incorporate changes to road, bus, pedestrian and cycle networks which form part of the proposed development.
- 9.4.7 The majority of impacts are likely to affect the immediate local area including the A40. The impact assessment will also consider the cumulative transport-related impacts from approved development schemes, to be agreed with OCC. This is likely to include the West Eynsham development and Park & Ride scheme as a minimum.

Interrelationships Between Chapters

- 9.4.8 The EIA will consider the effects on Public Rights of Way through the Severance and Pedestrian Amenity sections within the Transport chapter. The impact of noise and vibration will be covered in the Noise and Vibration chapter. Visual effects will be considered in the Landscape and Visual chapter. Dust and Dirt from construction traffic will be considered in the Air Quality chapter.
- 9.4.9 The baseline data and outcomes of transport work is likely to provide inputs into other chapters of the EIA, in particular traffic flow information for Noise and Vibration and Air Quality chapters.

9.5 Methodology

- 9.5.1 In addition to the 2017 EIA Regulations, the methodology will be guided by the following documents, which provide more detail to EIA specific to transport:
- 'Guidelines for the Environmental Assessment of Road Traffic' (IEMA, 1993);
 - Design Manual for Roads and Bridges Volume 11: Environmental Assessment (2007 to 2011); and
 - Transport Analysis Guidance, unit A3: Environmental Impact Appraisal (2015).
- 9.5.2 The IEMA Guidelines recommend two rules to be considered when assessing the impact of development traffic on a highway link:
- Rule 1: Include highway links where traffic flows will increase by more than 30% (or the number of heavy goods vehicles will increase by more than 30%); and

- Rule 2: Include any other specifically sensitive areas where total traffic flows will increase by 10% or more.

9.5.3 At this stage, it is understood that there are relatively high flows of traffic on the A40, which is likely to form the main corridor to/from the development. It is therefore not anticipated that many links will experience uplifts of more than 10%. However, the local highway network will be assessed in order to confirm this initial understanding and to define the study area.

9.5.4 The Transport Assessment will set out the methodology for trip generation and distribution of the vehicle trips.

Assessment Scenarios

9.5.5 The assessment will consider the following four scenarios as a minimum:

1. Baseline [year to be defined through discussion with OCC] Do Nothing;
2. Future year [year to be defined through discussion with OCC] Do Minimum, including:
 - a. OCC A40 bus lane and ped/cycle scheme
 - b. Proposed Eynsham Park & Ride
 - c. Proposed West Eynsham development (including its access)
3. Future year [year to be defined through discussion with OCC] Do Something, including:
 - a. OCC A40 bus lane and ped/cycle scheme
 - b. Proposed Eynsham Park & Ride
 - c. Proposed West Eynsham development (including its access)
 - d. Proposed OCGV development (including its accesses)

Methodology

9.5.6 The IEMA Guidelines explains that 'groups' or 'locations' which may be sensitive to changes in traffic conditions. The identified sensitive receptors will be rated in terms of their sensitivity on a scale of 'high', 'medium' and 'low' as outlined below in Table 9:1 based on the IEMA Guidelines.

Table 9:1: Receptor Sensitivity

High Sensitivity	Medium Sensitivity	Low Sensitivity
<ul style="list-style-type: none"> • schools, colleges and other educational institutions (nurseries have been assumed to be included in this category) • retirement / care homes for the elderly or infirm • roads used by pedestrians with no footways • road safety black-spots 	<ul style="list-style-type: none"> • hospitals, surgeries and clinics • parks and recreation areas • shopping areas • roads used by pedestrians with narrow footways 	<ul style="list-style-type: none"> • open space • tourist / visitor attractions • historical buildings • churches • other roads with active frontages and dwellings

- 9.5.7 Highway links with the High sensitivity will be considered against the 'Rule 2' threshold described above. Other links have been will be considered against the 'Rule 1' threshold.

Significance of Effects

- 9.5.8 The significance of transport effects will generally be determined based on the magnitude of impact, receptor sensitivity and professional judgement. This is shown in **Table 8:2** below.

Table 9:2: Significance Matrix

		Sensitivity of Receptor		
		High	Medium	Low
Magnitude of Impact	Large	Substantial	Major	Moderate
	Moderate	Major	Moderate	Minor
	Small	Moderate	Minor	Minor
	Negligible	Negligible	Negligible	Negligible

- 9.5.9 Sensitivity to changes in transport conditions will be focussed on vulnerable user groups who are less able to tolerate, adapt to, or recover from changes. Criteria for identifying these vulnerable groups will form part of the EIA process, with groups allocated to categories of sensitivity between High and Negligible to the effects i to vi set out in paragraph 9.4.2.

Cumulative Assessment

- 9.5.10 The list of cumulative infrastructure and developments to be included within the assessment will be assessed and agreed with OCC, considering the following as a minimum within the Future Year Do Minimum scenario.

- OCC proposed Park & Ride scheme
- OCC proposed eastbound bus lane scheme
- West Eynsham development

9.6 References

'Guidelines for the Environmental Assessment of Road Traffic' (IEMA, 1995)

Design Manual for Roads and Bridges Volume 11: Environmental Assessment (2009)

Transport Analysis Guidance Unit A3: Environmental Impact Appraisal (DfT, 2015)

10 Noise and Vibration

10.1 Introduction

- 10.1.1 The noise and vibration chapter will assess the likely impacts associated with the proposed development. It will consider the potential effects of noise and vibration impacts associated with the construction and operation of the proposed development as well as assessing the suitability of the site for residential development.
- 10.1.2 The impact of the development may arise from the construction phase as well as road traffic noise associated with additional traffic from the development. In order to determine the suitability of the site for residential development, the assessment will consider the impacts of existing noise sources surrounding the site, in particular local road traffic. The assessment will also consider the noise resulting from the New Wintles Farm aggregate recycling facility.

10.2 Baseline

- 10.2.1 The site location is rural in nature and predominantly used for agriculture.
- 10.2.2 The main sources of noise associated with the site location are the vehicular movements on the surrounding roads, particularly the A40 to the south. Operational noise from NWF aggregate recycling facility and aircraft also influences the noise environment on the site.

10.3 Consultation

- 10.3.1 Consultation has been undertaken with the environmental health department at WODC. A summary of the key points discussed and agreed, which includes feedback from the environmental health officer, is provided below:
- An environmental sound survey will be undertaken over the period of one week in order to establish the incident noise levels around the proposed residential development;
 - Internal ambient noise levels and external amenity noise level limits should be assessed and set as according to British Standard 8233: 2014 – *Guidance on sound insulation and noise reduction for buildings* (BS 8233); and
 - Operational noise from NWF aggregate recycling facility will be assessed and a noise rating level will be provided for the noise impact of operations on proposed residential developments. The planning condition for the waste material recycling development should be used to inform the assessment.

10.4 Potential Effects

Insignificant Effects

- 10.4.1 As no sources of vibration are located in the vicinity of the site, such as a railway, operational groundborne vibration impacts have been scoped out. A review of the conditional planning permission relating to New Wintles Farm waste material recycling site has not highlighted a vibration issue relating to the development and concentrates on noise impacts only. Therefore, vibration impacts associated with New Wintles Farm recycling facility have not been considered further.

Potential Significant Effects

Construction Noise

- 10.4.2 It is likely that the main construction activities which may affect existing or phased residential dwellings could include site levelling/clearance, ground excavation concreting and building construction.

Operational Impacts

- 10.4.3 Operational impacts and effects may affect existing noise sensitive receptors and proposed dwellings when construction has been completed. Potential impacts have been identified below:

Internal and External Noise Levels for Residential Units

- 10.4.4 The main source of noise to impact the site is likely to be due to vehicular movements on the A40. Vehicular movements on Cuckoo Lane to the west, Lower Road to the east together with aircraft noise are also likely to contribute to the noise environment.

Increase in Road Traffic Noise

- 10.4.5 Increases in vehicular movements on the local road network as a result of the proposed development may result in an increase in noise levels at noise sensitive receptors located close to affected routes.

Operational Noise – New Wintles Farm

- 10.4.6 Operational noise associated with New Wintles Farm aggregate recycling facility could impact on proposed dwellings in close vicinity to the facility.

Commercial Uses

- 10.4.7 Commercial uses could impact on the proposed and existing residential uses. However, as details on the proposed uses are not available at this stage full detailed assessments are not possible. At this stage based on the results of the environmental sound surveys plant noise emission limits will be proposed for atmospheric building services plant.

Mineral Extraction Sites

- 10.4.8 A preliminary review of potential impacts associated with the proposed mineral extraction sites located east of the development will be undertaken based on currently available information.

10.5 Methodology

Local Planning Policy

- 10.5.1 In accordance with the National Planning Policy Framework (NPPF), Noise Policy Statement for England (NPSE) and Planning Practice guidance (PPG) for noise, lowest observable (LOAEL) and significant observable adverse effect levels (SOAEL) will be proposed for each operational noise source and the noise and vibration construction source under assessment in this ES Chapter.
- 10.5.2 In respect of the EIA Regulations, the beneficial and adverse effect levels of noise and vibration effects have been related to the significance levels. Based on the descriptions of the adverse

effect levels in the PPG for noise, recommended actions for each significance level have been suggested. The noise and vibration significance criteria are presented in **Table 10.1** below.

Table.10.1: Noise and Vibration Significance Criteria

Significance Level	Noise and Vibration Adverse Effect Level	Impact and Action (to be applied to potential effects)
Substantial		Noise causes extensive and regular changes in behaviour and could lead to psychological stress or physiological effects. This level is unacceptable and should be prevented.
Major	SOAEL	Noise causes a material change in behaviour and/or attitude. This level should be avoided.
Moderate		Noise can be heard and causes small changes in behaviour or attitude. Noise should be mitigated and reduced to a minimum.
Minor	LOAEL	Noise can be heard but does not cause a change in behaviour or attitude. No specific mitigation measures are required.
Not Significant/Neutral	NOEL	Noise has no effect. No specific measures required

- 10.5.3 A beneficial effect may be considered to occur where noise levels fall below the NOEL, where specified (e.g. for the operational road traffic noise assessment, where there is no change or a decrease in noise levels).

Sound Survey

- 10.5.4 An environmental sound survey will be undertaken in order to establish the baseline noise environment around the site. The results of the survey will be used to verify a computer-generated noise model of the proposed development in order to review the incident road traffic noise levels at the facades of the proposed developments. The data will also be used to provide noise limits for building services plant associated with non-residential uses and define background sound levels.
- 10.5.5 Unattended environmental sound measurements will be undertaken at locations within the site boundary for the period of one week. The proposed measurement positions will be selected in order to establish the noise levels emanating from the existing dominant noise sources at the site which are Cuckoo Lane to the west, Lower Road to the east and the A40 to the south of the proposed site location. This methodology has been agreed with the EHO.

Acoustic Model

- 10.5.6 An acoustic model of the site and surrounding area will be prepared using industry standard software SoundPLAN version 8.1. The acoustic model will be used to evaluate the noise climate across the site. The sound survey measurements will be used to verify the acoustic model.

Construction Noise

- 10.5.7 Guidance for assessment of noise impact from construction noise will be taken from British Standard 5228: 2009+A1:2004 Code of Practice for Noise and Vibration Control on Construction (BS 5228) and Open Sites.
- 10.5.8 Details of the types of construction methods and plant likely to be used during the construction phases have yet to be formulated. At this stage in the scheme's design it is not possible to state where plant will operate and for how long during the working day.
- 10.5.9 However, it is likely that the main construction phases would include site levelling/clearance, ground excavation, concreting and building construction. The building construction phase, and the servicing and fitting out of new buildings, is normally not a significant source of noise or vibration for local receptors and therefore will not be considered in the assessment.
- 10.5.10 To minimise associated impacts on local residents, guidance contained within BS 5228 Parts 1 and 2 (2009) will be used. This guidance details information on noise reduction measures and promotes the 'best practicable means' (BPM) approach to the construction process.
- 10.5.11 Based on guidance provided in BS 5228 the LOAEL and the SOAEL will be identified as per **Table 10.2** below for the assessment.

Table 10.1: Construction Noise Level Thresholds of Potential Significant Effect at Residential Uses (External Façade Levels)

Time Period	LOAEL $L_{Aeq, T}$ (dB)	SOAEL $L_{Aeq, T}$ (dB)
Daytime: 07:00 – 19:00 Weekdays 07:00 – 13:00 Saturday	70	75

Suitability of Site for Residential Development

- 10.5.12 Guidance to set out the desirable guideline values in habitable rooms, such as living rooms and bedrooms will be taken from British Standard 8233: 2014 – *Guidance on sound insulation and noise reduction for buildings* (BS 8233).
- 10.5.13 The assessment of the proposed residential use will be undertaken based on the acoustic modelling and baseline surveys undertaken. A review of both internal and external noise levels will be assessed against guidance levels provided in BS 8233.
- 10.5.14 BS 8233 sets out desirable guideline values in habitable rooms, such as living rooms and bedrooms. This standard will be used to assess noise at the residential units based on the noise survey and modelling. The main source of noise to impact the site is likely to be due to vehicular movements from the A40 carriageway. Vehicular movements on Cuckoo Lane to the west, Lower Road to the east are also likely to contribute to the noise environment, in addition to passing aircraft.
- 10.5.15 BS 8233 also provides advice in relation to design criteria for external noise. It states that:

"For traditional external areas that are used for amenity space, such as gardens and patios, it is desirable that the external noise level does not exceed 50 dB $L_{Aeq, T}$, with an upper guideline value of 55 dB $L_{Aeq, T}$ which would be acceptable in noisier environments. However, it is also recognized that these guideline values are not achievable in all circumstances where development might be desirable."

In higher noise areas, such as city centres or urban areas adjoining the strategic transport network, a compromise between elevated noise levels and other factors, such as the convenience of living in these locations or making efficient use of land resources to ensure development needs can be met, might be warranted. In such a situation, development should be designed to achieve the lowest practicable levels in these external amenity spaces, but should not be prohibited.

In high-noise areas, consideration should be given to protecting these areas by screening or building design to achieve the lowest practicable levels. Achieving levels of 55 dB $L_{Aeq,T}$ or less might not be possible at the outer edge of these areas, but should be achievable in some areas of the space."

10.5.16 The above guidance will be utilised when assessing external noise levels.

Operational Impact on Existing Dwellings

10.5.17 Changes in road traffic flows associated with the development have the potential to adversely affect noise sensitive receptors adjacent to those roads. The assessment of road traffic noise will implement the noise prediction procedures as detailed in the DfT and Welsh Office's *The Calculation of Road Traffic Noise* (CRTN).

10.5.18 Noise levels will be predicted for both 'with' and 'without' development scenarios, to allow the determination of the changes in road traffic noise at existing receptors as a result of the proposed scheme. The significance of these changes will be based on guidance criteria proposed in DMRB.

Existing Waste Material Recycling Site

10.5.19 A review of the conditional planning permission documents for the NWF aggregate recycling facility indicates that mitigation measures have been incorporated into the design of the recycling site with noise bunds surrounding the boundaries of the site. Furthermore, planning conditions limit the operating hours of the site including the use of HGVs and will reduce the noise impact on surrounding uses.

10.5.20 As part of the planning application for any new development, an assessment of the existing operations will be undertaken in general accordance with British Standard 4142: 2014 – *Methods for rating and assessing industrial and commercial sound* (BS 4142). The results of the assessment will be used to inform the design of proposed development and identify mitigation measures.

10.5.21 A planning condition has been set for the waste material recycling centre. The condition states that noise from operations on the site shall not exceed 50 dB(A) $L_{Aeq,1hr}$ at the façade of the nearest existing dwellings which include New Wintles Farm, City Farm and Eynsham Mill. The noise assessment will consider the criteria set in this planning condition when reviewing noise impacts on the new proposed dwellings.

11 Air Quality

11.1 Introduction

- 11.1.1 There are two air quality issues that could potentially arise from the proposed development: the impact of the development on local air quality and the suitability of the site for residential development. The impact of the development may arise from the construction phase as well as road traffic emissions associated with additional traffic from the development. The suitability of the site for residential development arises from the impacts of existing emission sources on the site, in particular local road traffic emissions and dust emissions from the aggregates recycling facility.
- 11.1.2 The assessment will describe the existing air quality within the study area, consider the suitability of the site for residential development, and assess the impact of the construction and operation of the development on air quality in the surrounding area. This assessment will also consider the dust emissions resulting from the New Wintles Farm aggregate recycling site.

11.2 Baseline

- 11.2.1 WODC and Oxford City Council (OCiC) monitor local air quality as required by legislation and review this against the objectives set out by the Air Quality Regulations. WODC has declared two Air Quality Management Areas (AQMAs) for exceedances of the annual mean nitrogen dioxide (NO₂) objective. WODC Witney AQMA lies approximately 5.5 km west of the site. OCiC has declared an AQMA due to exceedances of the annual mean nitrogen dioxide objective, and another seven locations within the city were highlighted as hotspots, the nearest of which to the site is Wolvercote Roundabout, approximately 5 km east of the site.
- 11.2.2 Existing local air quality will be defined within the study area drawing upon monitoring carried out by WODC and OCiC with the information provided within the Council's Air Quality Review and Assessment reports.
- 11.2.3 In order to support the air quality assessment, a 12-month NO₂ monitoring programme is being carried out at a number of locations close to sensitive human and ecological receptors, in order to gain a better understanding of the baseline air quality concentrations around the proposed development.
- 11.2.4 To safeguard the operations of the New Wintles Farm aggregated recycling site and determine the extent of the adverse dust emission impacts, a dust monitoring programme will be undertaken during summer months when dust generating activities coincide with dry and windy conditions.

11.3 Consultation

- 11.3.1 Consultation has been undertaken with the EHOs at WODC and OCiC in order to agree the locations for the monitoring programme.
- 11.3.2 Further consultation will be carried out with both Local Authorities concerning detailed aspects of the proposed assessment methodology.

11.4 Potential Effects

- 11.4.1 The principal air pollutants of concern with respect to the development will be:

- nitrogen dioxide (NO₂);

- fine airborne particles (PM₁₀ and PM_{2.5}); and
- dust.

- 11.4.2 The main local sources of these pollutants are likely to be road vehicles (nitrogen dioxide, PM₁₀ and PM_{2.5}); and dust emissions from construction activities and New Wintles Farm (dust and PM₁₀).
- 11.4.3 For habitats, the main pollutants of concern from road traffic emissions are oxides of nitrogen, with the consequential nitrogen and acid deposition.

Insignificant Effects

- 11.4.4 Detailed information regarding construction traffic movements is not available at this time. However, a CEMP, outlining measures to control and minimise the risk of adverse effects from construction activities will be required for the proposed development. The CEMP will be submitted to WODC for their approval, likely via a suitably worded planning condition. The CEMP will consider Heavy Goods Vehicles (HGV) and other construction traffic movements, including details of routing and times of day of movements. HGV access will be prevented or minimised, where possible, on traffic sensitive roads, residential streets, congested roads or unsuitable junctions.
- 11.4.5 Vehicle movements associated with access, demolition and construction will vary through the construction programme, with short periods of peak HGV movements associated with demolition and the delivery of materials during the construction phase. However, when the HGV movements are averaged over a full year period (Annual Average Daily Traffic - AADT), these will be significantly lower than peak movements. Together with the implementation of the CEMP, the construction vehicle movements impacts on human health receptors in the area are considered to be not significant. Moreover, vehicle movements associated with construction are typically significantly lower than the number of vehicle movements associated with operation of the proposed development, which will be taken into account in the assessment. Effects associated with construction traffic movements are therefore scoped out of the assessment.

Potential Significant Effects

- 11.4.6 There are two air quality issues that could potentially arise from the proposed development: the impact of the development on local air quality and the suitability of the site for residential development. The impact of the development may arise from the construction phase as well as road traffic emissions associated with additional traffic from the development. The suitability of the site for residential development arises from the impacts of existing emission sources on the site, in particular local road traffic emissions and dust emissions from the aggregates recycling facility.

11.5 Methodology

- 11.5.1 Air quality will be assessed at a range of worst-case receptors. For construction activities these will be existing properties (as well as those in early phases of the development) and sensitive ecological sites closest to the proposed development. For traffic-related impacts these will be the existing and proposed residential properties and sensitive ecological sites that are closest to roads, in particular those close to junctions, where traffic emissions are greatest.
- 11.5.2 Existing local air quality, the likely future air quality in the absence of the new development, and the likely future air quality if the development goes ahead, will all be defined. The assessment of construction impacts will focus on the anticipated duration of works. The assessment of operational impacts will focus on the earliest year that the development is likely to be operational to provide a conservative assessment and a number of indicative phases to ensure the potential effects on interim stages are assessed.

- 11.5.3 The potential impacts of dust during construction will be assessed with reference to the Institute of Air Quality Management's Guidance on the Assessment of Dust from Demolition and Construction (Holman *et al.*, 2014), which is accepted as industry standard guidance on this subject. There are no statutory objectives for dust; it is therefore common practice to provide a qualitative assessment based on the size of the site, regional meteorological conditions and experience of the distances over which impacts may occur.
- 11.5.4 The assessment of operational road traffic impacts will be undertaken using the ADMS Roads detailed dispersion model. The model will be used to predict concentrations within the site to assess the suitability of the site for residential development, and also at off-site receptors to assess the impacts of additional traffic associated with the development. Model outputs will be verified against local air quality monitoring data. This modelling will make use of mapped background concentration data provided by Defra and of traffic flow projections. Air quality will be assessed in relation to the national air quality objectives, established by the Government to protect human health. Air quality impacts arising from road traffic will be assessed with reference to guidance issued by the IAQM and Environment Protection UK (EPUK) in their document: Land-use Planning & Development Control: Planning for Air Quality (Moorcroft and Barrowcliffe *et al.* 2017).
- 11.5.5 For ecological receptors, the recommended criteria for an assessment to be undertaken is a change in traffic of more than 1,000 vehicles per day or 250 heavy duty vehicles on a road within 200 m of a designated habitat (conservation of habitats and species regulations 2017), in accordance with Natural England internal guidance (Natural England, 2018).
- 11.5.6 There are a number of sensitive ecological receptors in the vicinity of the site (see **Section 12.2** of the Biodiversity Chapter). If the increase in traffic on the roads adjacent to these sites exceeds 1,000 AADT a detailed assessment of the impacts will be carried out.
- 11.5.7 The existing New Wintles Farm aggregate recycling facility has the potential to cause dust nuisance due to construction aggregate crushing and storage activities occurring on the proposed development. The potential for dust emissions impacts will be assessed based on monitoring data and with reference to guidance issued by the IAQM on the Assessment of Mineral Dust Impacts for Planning (IAQM, 2016).

11.6 References

Department of the Environment, Food and Rural Affairs (Defra) in partnership with the Scottish Executive, The National Assembly for Wales and the Department of the Environment for Northern Ireland (2016). 'Local Air Quality Management Technical Guidance, LAQM.TG(16)'. HMSO, London.

Holman et al. (2014). 'Assessment of dust from demolition and construction', IAQM, London.

IAQM (2016). Guidance on the Assessment of Mineral Dust Impacts for Planning. Institute of Air Quality Management, London.

Moorcroft and Barrowcliffe et al. (2017). 'Land-use Planning & Development Control: Planning for Air Quality'. V1.2. The Institute for Air Quality Management, London.

Natural England (2018). Natural England's approach to advising competent authorities on the assessment of road traffic emissions under the Habitats Regulations. Version: June 2018.

12 Biodiversity

12.1 Introduction

- 12.1.1 The potential biodiversity effects that could arise from the Proposed Development include habitat loss and fragmentation, disturbance of animals during and post-construction, loss or modification to breeding and foraging habitats and effects on designated and non-designated nature conservation sites. New habitats will be created as part of the proposals and existing habitats will be enhanced.

12.2 Baseline

- 12.2.1 Following a desk-top study (see below) various ecological surveys commenced in 2018, these comprised an extended Phase 1 habitat survey, badger activity survey, surveys of ponds for breeding great crested newts, dormouse presence/absence surveys and bat activity surveys. Further ecological surveys will be undertaken in 2019 (see paragraph 12.5.1).
- 12.2.2 The desk-top records search of the protected species records returned records of grass snake, great crested newt, 43 species of birds (including 22 on the Birds of Conservation Concern - BoCC³ Red list), badger, otter, water vole, polecat and seven species of bat with the areas of search (2km of site boundary for all species except bats which had a search area of 5km).
- 12.2.3 The records search also recorded 11 Sites of Special Scientific Interest (SSSIs) and one Special Area of Conservation (SAC) within 5km of the Site (the closest of which is 2km from the Site). Of particular interest is Oxford Meadow SAC, a European protected site, which is approximately 2.5km to the east of the Site. There are two non-statutory Local Wildlife Sites (LWSs) adjacent to the north of the Site (South Freeland Meadows and City Farm), and a further four within 2km of site boundary.

Habitats

- 12.2.4 The Phase 1 habitat survey (November 2018) identified on-site habitats of potential principal importance including semi-improved grassland, arable field margins, ponds and broadleaved woodland. Hedgerows on the site qualify as a UK Biodiversity Action Plan (BAP) habitat and are a priority habitat under the NERC Act⁴. A number of hedges could also potentially qualify as important under the Hedgerow Regulations 1997. Habitats identified of being of potential botanical interest will be subject to more detailed surveys in 2019, and these include the arable fields and areas of semi-improved grassland.

Species

- 12.2.5 The Site is considered to provide moderate quality foraging habitat for bats (including mature hedgerows, stream corridor and arable and pasture fields). Bat activity and static monitoring surveys recorded nine species of bats using the Site, including barbastelles (Annex II species). The Site is considered to be of county importance for bats. There are trees and buildings across the Site which have the potential to support roosting bats.
- 12.2.6 The mature hedgerows and small woodland areas, with connectivity to the wider area, provide potential habitat for dormice. However, full dormice surveys were conducted between May and September 2018 and no dormice were recorded on the Site. This species is therefore considered to be absent.

³ Birds of Conservation Concern

⁴ Natural Environment and Rural Communities Act 2006

- 12.2.7 A main badger sett, along with two confirmed outlier setts have been recorded within the site. A medium sized breeding population of great crested newts was recorded using water bodies in the south western corner of the Site in 2018. On-site waterbodies provide suitable habitat for otters and water voles. Reptiles may be using the areas of semi-improved grassland and hedgerows within the Site.
- 12.2.8 During the breeding bird survey, 59 species were recorded on the site, 11 of which are listed as red species and 13 are UK BAP priority species. 24 species were confirmed as breeding on site (with a further five as probable breeding), including skylark and yellowhammer.

12.3 Consultation

- 12.3.1 The Thames Valley Environmental Records Centre (TVERC) was contacted to provide protected species records within 2km of the site boundary and details on non-designated sites.
- 12.3.2 A site visit was undertaken on 19th July 2017 with officers from WODC, Natural England, Berkshire, Buckinghamshire and Oxfordshire Wildlife Trust and TVERC. The scope of the breeding pond survey for great crested newts was agreed with the WODC Biodiversity Officer in February 2018.

12.4 Potential Effects

Insignificant Effects

- 12.4.1 The following effects are considered to be insignificant and will be scoped out of the assessment:
- 12.4.2 *Loss of non-priority habitats:* Construction of the proposed development will lead to the loss of on-site habitats, but the loss of those that are classed as non-priority habitats is unlikely to result in a significant effect.
- 12.4.3 *Ecosystem integrity:* The nature of the habitats in the vicinity of the site suggests overall ecosystem integrity will not be affected either during or post construction.
- 12.4.4 *Construction work:* activities associated with the construction phase commonly generate dust, contamination, noise and increased levels of artificial lighting, which have the potential to disturb protected species using the site and the immediate surrounding area. The CEMP will include measures to protect habitats (including the adjacent LWSs) and species present in the area during construction. It will include details of dust prevention, noise minimisation, lighting, silt and sediment and overland flow management, storage and control of materials/chemicals and details on construction methodology such as methods of construction and timings of work. Such measures will avoid any possible significant effects and therefore no significant effects are envisaged during construction.

Potential Significant Effects

- 12.4.5 The following effects have the potential to be significant and will be assessed:
- 12.4.6 *Loss of priority habitats:* The construction of the Proposed Development may result in the loss of priority habitats such as arable field margins, hedgerows and waterbodies on site during the construction of the Proposed Development.
- 12.4.7 *Effects species post-construction:* The Proposed Development may result in effects on protected, notable and priority species resulting from habitat loss, habitat fragmentation and post-construction disturbance (e.g. increased recreation pressure, development lighting, increased predation from cats).

- 12.4.8 *Effects on designated ecological sites:* Given the proximity of the two LWS, there is the potential for post-construction activities to affect these sites. The Oxford Core Strategy Habitat Regulations Assessment 2011 identifies that the following aspects of a proposed development could impact the SAC: air pollution, water quality, balanced hydrological regime and increased recreational pressure.
- 12.4.9 *Habitat creation / enhancement:* Given the size of the Site, it is likely that the Proposed Development will incorporate significant areas of open space, which is likely to present options for the creation of new habitats or the enhancement of existing habitats for the benefit of species present on Site and in the surrounding area.

12.5 Methodology

- 12.5.1 Based on the findings of the initial ecological assessment, some additional surveys will be undertaken, including:
- A detailed botanical survey (to be undertaken during the optimum survey period);
 - Specialist surveyors will assess the fields to determine the significance of the arable weed communities;
 - An initial Phase 1 bat survey of buildings and mature trees across the site to look for evidence of bats and to assess the roost potential of these features. If bats are found to be present or feature suitable to support roosting bats are recorded then Phase 2 emergence/re-entry surveys will be undertaken;
 - An otter and water vole survey will be undertaken along the stream to determine the presence or absence of these species; and
 - A targeted reptile survey will be undertaken in order to determine the presence or absence of reptiles within the Site.
- 12.5.2 The EIA assessment will be undertaken in accordance with the Chartered Institute of Ecology and Environmental Management (2018) *Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine*. The method will be adapted to include consideration of the significance of effects by combining the importance (value) of the identified receptors with the predicted magnitude of change, using a matrix.
- 12.5.3 Effects are defined as either significant or not significant, with effects that are moderate or above are considered to be significant and are assessed both before and after mitigation. Where there is uncertainty over the degree of effect, for example when there is considerable uncertainty about the full extent of the local resource (habitat area or population size), this is stated and as a precaution the higher degree of effect is applied.
- 12.5.4 Given the proximity of the SAC, in addition to assessment through the EIA, the Proposed Development may require a screening assessment under The Conservation of Habitats and Species Regulations 2017. Sufficient information will be provided as a supporting technical report to enable an Appropriate Assessment to be undertaken should the screening assessment conclude that an Appropriate Assessment is required.
- 12.5.5 Baseline ecological information will be used to inform the design of the scheme. The most sensitive areas of the site will be avoided where possible and opportunities for habitat creation and enhancement will be highlighted throughout the design process. The principles set out in Building with Nature will be followed.

12.6 References

BTO (2015) *Birds of Conservation Concern 4*

Chartered Institute of Ecology and Environmental Management (2018) *Guideline for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine*

Natural Environment and Rural Communities Act 2006

Oxford City Council (2011) *Oxford Core Strategy Habitat Regulations Assessment*

The Conservation of Habitats and Species Regulations 2017

The Hedgerow Regulations 1997

13 Landscape and Visual

13.1 Introduction

- 13.1.1 Effects on the landscape can arise from a development giving rise to direct changes to physical elements of the receiving landscape, which may affect its features, character and quality; or from indirect effects on the character and quality of the surrounding landscape. Visual effects can result if the development changes the character and quality of people's views. Landscape and visual effects are linked, but have different attributes, so are considered as two elements.
- 13.1.2 A 2.5km study area from the site boundary was chosen, as the visibility beyond this distance will become limited and the proposed development is unlikely to have any significant adverse effects on landscape character or visual amenity.

13.2 Baseline

- 13.2.1 There are no landscape designations within the site, however Eynsham Hall registered park and garden lies to the west of the site within approximately 1.5km. The site contains four PRowS. These are:
- Bridleway number 206/11/10, 206/11/20 and 206/11/30 in Eynsham parish, from Evenlode Farm east to Lower Road;
 - Bridleway number 206/13/10 in Eynsham parish, from the A40 north east to Cuckoo Lane;
 - Footpath number 206/12/10 from the bridleway (206/11/10) north to the stream; and
 - Footpath number 206/10/10 from the bridleway (206/11/30) north to the stream
- 13.2.2 There are conservation areas at Eynsham to the south, Church Hanborough to the north and Cassington to the east. Two scheduled monuments lie within Eynsham historic centre and a crop marked settlement and cemetery complex lies near Foxley Farm approximately 1km from the site which are defined as three separate scheduled monuments.
- 13.2.3 The site lies within the national character area 108 Upper Thames Clay Vales. Within the *West Oxfordshire Landscape Character Assessment May 1998* there are 13 landscape character areas and the site lies within the Eynsham Vale. OCC's online document, *Oxfordshire Wildlife and Landscape Study (OWLS)* was prepared in 2004 and provides a county-wide landscape and biodiversity study identifying 24 separate landscape types within the county. The eastern part of the site lies within the Lowland Village Farmlands and the western part in the Rolling Clayland landscape type.
- 13.2.4 The main sensitive visual receptors in the area are the existing residential properties at City Farm, Acre Hill Farm and Evenlode Farm immediately adjacent to the site boundary and users of the local footpaths and bridleways through the site. There may also be possible views from the properties on the northern edge of Eynsham and from the local farmsteads within a 2.5km study area. There will be views from some of the surrounding public rights of way and from local roads including Cuckoo Lane and Lower Road.
- ### 13.3 Consultation
- 13.3.1 The landscape methodology and viewpoints were submitted to WODC on the 22nd January and 13th February respectively for agreement and a meeting is presently being arranged with WODC to review and agree these. These are appended to this document in **Appendix D**.

13.4 Potential Effects

Insignificant Effects

- 13.4.1 It is expected that there will be insignificant effects on visual amenity and landscape character beyond 2.5km. There are expected to be no significant effects on the landform/topography as no significant re-profiling of the land is anticipated during construction.

Potential Significant Effects

- 13.4.2 The initial identification of potential significant effects is set out in **Table 13.1**.

Table 13.1: Initial landscape and visual effects scoping

Component	Potential construction effect?	Potential post-construction effect?	Comments
Land cover	Yes	Yes	Change of land cover from agricultural use to buildings and public open space
Landscape / townscape character	Yes	Yes	Character will change from agricultural to urban
Protected landscapes / townscapes	Yes	Yes	No protected landscapes covering the site, however, there is a registered park and garden, conservation areas in the vicinity, scheduled monuments and a number of listed buildings in the surrounding settlements
Sensitive views	Yes	Yes	Changes to views from residential properties, public rights of way and the wider countryside, including at night

- 13.4.3 The proposed development will change the land cover on site from agricultural land to buildings and public open space. Similarly, the landscape character of the site will change from agricultural to urban. The scale of the changes means that these effects are likely to be significant.
- 13.4.4 The proposed development will also lead to changes to views from sensitive visual receptors into the site, including residential properties, public rights of way, and nearby conservation areas, and including potential changes to night time views as a result of increased lighting (see Chapter 13 for the Lighting Assessment which will support the landscape and visual assessment). Given the scale of the proposed development and the proximity of the sensitive receptors to the site, it is considered that these changes are likely to lead to significant effects.

13.5 Methodology

- 13.5.1 The full methodology is set out as a separate document, within the “Methodology for the Landscape and Visual Impact Assessment”, which is included in **Appendix D**. This was issued to WODC on the 22nd January 2019.
- 13.5.2 Natural England and Defra’s (2014) *Landscape and seascape character assessments and the Guidelines for Landscape and Visual Impact Assessment 3rd Edition* (2013) produced by the Landscape Institute and the Institute of Environmental Management and Assessment will be used to guide the assessment of the site and surrounding area. Reference will also be made to the landscape character assessment for West Oxfordshire district and the *Oxfordshire Wildlife & Landscape Study*.

- 13.5.3 The landscape and visual assessment will include determination of the landscape character of the site and surrounding area, the site's topography, the quality of the landscape and the existing land cover on site. This will be undertaken through a desk study and site visits. A detailed study of the visual setting of the site and the potential visual receptors that may be affected by the development proposals will be undertaken. This will include mapping of the zone of theoretical visibility (ZTV), which will inform the extent of the study area. In defining the ZTV, the screening effects of existing buildings and woodland will be considered.
- 13.5.4 Representative viewpoints will be established and confirmed with WODC's landscape department. Photographs will be taken at each viewpoint and used to create a panorama of the view. The precise locations (Ordnance Survey grid reference), date, time of day and weather conditions will be described for each viewpoint taken.
- 13.5.5 Mitigation measures will be identified as the EIA progresses and will be incorporated into the parameter plans through an iterative design process to minimise the predicted impacts.
- 13.5.6 The significance of the effects on landscape and visual receptors will be determined by combining the sensitivity of identified receptors with the predicted magnitude of change, using a matrix.

13.6 References

Landscape Institute and Institute of Environmental Management and Assessment, 2013, Guidelines for Landscape and Visual Assessment (3rd edition)

National Character Area Profiles 108 Upper Thames Clay Vales from Natural England website www.naturalengland.org.uk

West Oxfordshire Landscape Assessment 1998, West Oxfordshire District Council & Atlantic Consultants

Oxfordshire Wildlife & Landscape Study website
<http://owls.oxfordshire.gov.uk/wps/wcm/connect/occ/OWLS/Home/>

14 Lighting

14.1 Introduction

- 14.1.1 Whilst not proposed to be a topic chapter within the ES, the lighting assessment will form an appendix to the LVIA and identify the likely significant effects from obtrusive light due to external artificial lighting associated with the construction and operation of the Proposed Development.

14.2 Baseline

- 14.2.1 A desk-based review of the Site has been undertaken and shows that it is not subject to any landscape or ecological designations. However, as explained in **Chapter 12** there are 11 SSSIs and one SAC located within 5km radius of the site. There are also two non-statutory Local Wildlife Sites (LWS) to the north of the site boundary, the City Farm LWS and the South Freeland Meadows LWS and a further four within 2km of the site boundary.
- 14.2.2 There are four Grade II listed buildings that lie within the site at city farm. These include City Farmhouse, City Farm Outbuilding, City Farm Outbuilding and Attached Wall and City Farm, Barn and Attached Outbuildings. These heritage assets have been confirmed with the Heritage Consultant as being sensitive receptors.
- 14.2.3 There is minimal external lighting present within the Site due to a small number of residential dwellings that may contain amenity and security lighting. The potential sources of lighting that are listed below will be confirmed during a site visit which will be undertaken. The surrounding land uses include residential properties and businesses at the City Farm complex that lie in the north east corner of the site and may contain poorly directed amenity and security lighting.
- 14.2.4 NWF aggregate recycling facility lies to the south of City Farm (both of which are within the site but are excluded from the site boundary). However, there is a bund surrounding the NWF aggregate recycling facility so it is unlikely that the area will lead to obtrusive light to surrounding sensitive receptors.
- 14.2.5 To the west and north of New Wintles Farm there are two inert landfill sites that infill former quarry workings. These do not have any associated lighting.
- 14.2.6 To the south of the Site there is a large area of community woodland known as Eynsham Woods and a commercial area which includes a petrol filling station and shop. The commercial area and petrol filling station has amenity and security flood lighting which could lead to glare and light spill on to the site.
- 14.2.7 Cuckoo Lane and Lower Road, both of which run through the site are unlit. The A40 that runs along parts of the southern site boundary is mainly unlit apart from roundabouts and junctions.
- 14.2.8 The Site is considered to be of low district brightness and is not subject to any designations and so would be classified as Environmental Zone E2 – Rural (Institute of Lighting Professionals, 2011).

Table 14.1: Environmental Zone Classifications, ILP 2011

Environmental Zone	Surrounding	Lighting Environment	Examples
E0	Protected	Dark	UNESCO Starlight Reserves, IDA Dark Sky Parks
E1	Natural	Intrinsically dark	National Parks, Areas of Outstanding Natural Beauty etc.
E2	Rural	Low district brightness	Village or relatively dark outer suburban locations
E3	Suburban	Medium district brightness	Small town centres or suburban locations
E4	Urban	High district brightness	Town/city centres with high levels of night- time activity

14.2.9 The existing and proposed receptors to obtrusive light on and surrounding the Site include:

- Residents of nearby properties within the Site and close to the site boundary (s) who could be affected by light intrusion, glare and sky glow, (as defined by a 500m buffer around the site boundary, including the highways improvement works as part of this buffer) including;
 - North Eynsham
 - City Farm
 - New Wintles Farm
 - Cuckoo Wood Farm
 - Acre Hill Farm
 - Bowles Farm
 - Evenlode Farm
 - Acre Hill House
 - Barnard Gate and Barnard Gate Farm
 - Eynsham Mill
 - New Barn Farm
- Residents of distant properties, as defined by a 2km buffer, including:
 - South Eynsham
 - Cassington
 - Long Hanborough

- Church Hanborough
- Freeland
- Users of the local highway network in close proximity to the Site who may be affected by glare, including users of the A40, Lower Road and Cuckoo Lane;
- Residents of properties of the proposed adjacent site, e.g. West Eynsham, that could be future off-site receptors;
- Light sensitive nocturnal protected species (e.g. bats) using existing habitat within the Site; and
- Nearby heritage assets in close proximity to the Site such as listed buildings at City Farm.

14.2.10 The distant receptors will be reviewed when LVIA viewpoints and the Zone of Theoretical Visibility are confirmed.

14.3 Consultation

14.3.1 No consultation with statutory and non-statutory stakeholders has been taken undertaken to date. Further consultation will be undertaken with the EHO at WODC to confirm the Environmental Zone of the site once the site visit has been undertaken.

14.4 Potential Effects

Insignificant Effects

Construction

- 14.4.1 The construction and operational lighting requirements for the Proposed Development will follow relevant British Standards, industry guidance and local authority requirements to meet the minimum required to safely and securely light the Proposed Development.
- 14.4.2 Construction lighting tends to lead to more obtrusive lighting than operational lighting because of its temporary nature, and the type of lighting equipment used. For ease of deployment and use, construction lighting tends to be mobile, and focus on providing the widest coverage of light from the fewest possible units in order to minimise time spent maintaining and installing the equipment. However, these effects can be minimised and controlled through appropriate design measures. While construction is predominantly a day time activity, lighting is more likely to be required during the daytime in winter when the hours of daylight are shorter.

Operation

- 14.4.3 During operation of the Proposed Development, sensitive receptors within close proximity of the Site could be subject to potential adverse effects resulting from light spill and glare of poorly designed or controlled luminaires. There is also a potential for adverse effects from sky glow to sensitive receptors located further from the Site. These effects can be mitigated through appropriate lighting design and control measures, including appropriate landscaping design, screening and sensitive orientation of lighting.
- 14.4.4 Potential effects on sensitive receptors during operation of the completed scheme can be avoided through appropriate lighting design. Measures to mitigate potential effects such as sky glow, glare, light intrusion (into windows of residential properties) include the type of luminaire, the use of shields, hoods, planting and beneficial landscaping, as well as the design and positioning of lights (e.g. power, orientation, and height of the luminaire). It is anticipated that operational effects from light would be minimised through targeting the limitations for exterior

lighting established in the Institution of Lighting Professionals Guidance Note 01 Guidance Notes for the Reduction of Obtrusive Light (2011).

Potential Significant Effects

14.4.5 No significant effects are anticipated after the inclusion of mitigation.

14.5 Methodology

14.5.1 The Lighting Assessment methodology will be aligned with the ILP Professional Lighting Guide 04: Guidance on Undertaking Environmental Lighting Impact Assessments.

14.5.2 Due to the outline nature of the proposal the lighting assessment will be qualitative at this stage. No lighting design information will be submitted to support the outline planning application; however, a detailed lighting design will be submitted as part of future reserved matters applications.

Baseline Survey

14.5.3 The preliminary qualitative assessment of the external baseline lighting conditions will be verified by a field survey of the Site and its immediate surroundings completed as part of the baseline lighting survey. The survey would include night-time photography from the pre-determined viewpoints identified in Table 13.2. These viewpoints will be agreed through further dialogue with the EHO at WODC. These viewpoints have been selected from the LVIA viewpoints outlined in **Appendix D**. These viewpoints are currently being agreed with WODC.

14.5.4 This survey will be undertaken to ascertain the existing lighting environment on the Site and the surrounding areas in accordance with the Institute of Lighting Professionals (ILP) Guidance on Undertaking Environmental Lighting Impact Assessments (2013) and with reference to Environmental Zones within the ILP Guidance Notes for the Reduction of Obtrusive Light (2011).

Table 14.2 Lighting Survey Viewpoints

Viewpoint Number	Sensitive Receptors	Scoped In/Out	Justification
VP1	Road users, Residential	IN	Viewpoint is adjacent to the southern boundary of the site and provides close views looking north experienced by users of the A40 and from residential receptors of north Eynsham.
VP2	Residential	IN	Provides distant views looking south east over the site from residential receptors in Freeland, a village to the north west of the site.
VP3	Residential	IN	Provides distant views looking south over the site from residential receptors in Church Hanborough, a village to the north of site
VP4	Residential, heritage	IN	Provides views from the east of the City Farm complex which contains the four Grade II listed buildings and residents of City Farm, looking south over the site
VP5	n/a	OUT	Provides distant views from the north east of the site near Purwell farm, looking south west over the site. However, it is unlikely that residents of Purwell farm will be impacted by light from the proposed development due to screening.

Viewpoint Number	Sensitive Receptors	Scoped In/Out	Justification
VP6	n/a	OUT	Viewpoint is located on a PRoW south west of Eynsham looking north west towards the site. Twelve Acre farm is located to the west of this viewpoint however given the distance from the site and intervening screening (general landscape, trees and hedgerows).
VP7	Ecological	IN	Provides views from the South Freeland Meadows Local Wildlife Site looking south over the site.
VP8	Residential	IN	Provides views from within the site looking north. Church Hanborough, City Farm and Purwell Farm are visible from this location. VP8 provides representative views from Acre Farm.
VP9	Residential	IN	Provides views from of the site looking south east for the residential receptors at Bowles Farm and Barnard Gate.
VP10	Residential	OUT	Provides views of the site on the west boundary looking east over the site. VP10 does not cover any sensitive receptors and Barnard Gate will be covered by VP9.
VP11	Road users	IN	Provides views of the south boundary from road users along the A40.
VP12	Road users, residential	IN	Provides views from road users of the A40 and residential receptors from North Eynsham looking north over the site.
VP13	Road users	OUT	Provides views from road users of the A40 looking north west over the site. Similar views from road users of the A40 are represented by VP1, VP11 and VP12.
VP14	Road users, residential	IN	Provides views from road users of Cuckoo Lane looking south over the site.
VP15	Road users, residential	IN	Provides views from road users of Lower Road and residents of New Wintles Farm looking west over the site.
VP16	Residential	IN	VP16 provides representative views from residential receptors at Green Farm and views in a general south westerly direction that are similar to those experienced by residents of South Leigh and green farm.
Extra VP1	Residential	IN	EXPV1 would provide views from New Wintles Farm, a residential receptor within the site boundary that will have views of the site.
Extra VP2	Residential	IN	EXPV2 would provide views from Evenlode Farm, a residential receptor adjacent to the site boundary that will have views of the site.
Extra VP3	Residential	IN	EXPV3 would provide views from New Barn Farm, a residential receptor north of the site boundary but that will have views of the site.

14.6 References

The Institution of Lighting Professionals (2011) Guidance for the Reduction of Obtrusive Light. Available from: <https://www.theilp.org.uk/documents/obtrusive-light/> [Accessed February 2019].

The Institution of Lighting Professionals (2013) ILP Professional Lighting Guide 04: Guidance on Undertaking Environmental Lighting Impact Assessments. Available from: <https://www.theilp.org.uk/resources/ilp-general-reports/plg04/> [Accessed February 2019].

15 Agricultural Land

15.1 Introduction

- 15.1.1 This assessment will consider the effects of the proposed development on agricultural resources. The assessment will encompass a study of soil resources, agricultural land quality and farm holdings.

15.2 Baseline

- 15.2.1 The site is predominantly in agricultural use. Agricultural land in England and Wales is graded between 1 to 5, depending on the extent to which physical or chemical characteristics impose long-term limitations on the agricultural use. Grade 1 land is excellent quality agricultural land with no, or very minor limitations to its agricultural use. Grade 5 is very poor quality land, with severe limitations due to adverse soil, relief, climate or a combination of these factors. Grade 3 land is divided into Subgrade 3a (good quality land) and Subgrade 3b (moderate quality land). The best and most versatile (BMV) land is defined as Grades 1, 2 and 3a.
- 15.2.2 The Provisional Agricultural Land Classification (ALC) shows the site as Grade 3 land. However, as explained in Natural England's Technical Advice Note 049, these maps cannot be used to classify individual sites that are proposed for development because of limitations of scale and changes to the classification system since they were drawn up. A detailed survey will be required to establish the ALC of the site, and to establish the presence of BMV land.
- 15.2.3 The detailed ALC survey will involve an interpretation of published geological, topographical, soil and agro-climatic information in the light of the ALC guidelines, followed by a site survey examining soil profiles using hand-held augers and spades. Samples will be taken for laboratory analysis. The soil characteristics will then be described and analysed in terms of the ALC guidelines to inform the grade of agricultural land.
- 15.2.4 Farm Impact Assessments will be carried out with landowners and occupiers affected by the proposed development. This information will include descriptions of the existing size, location and use of the affected farm holding(s) and the scale and nature of the agricultural businesses. This will enable an assessment to be made of potential impacts on farm viability and local farm businesses affected by the proposed development.

15.3 Consultation

- 15.3.1 Consultation will be undertaken with Natural England in respect of the proposed survey methodology for ALC and the findings of the detailed ALC survey. Consultation will also be required with landowners and occupiers on the site within the context of the Farm Impact Assessments.

15.4 Potential Effects

Insignificant Effects

- 15.4.1 Until the baseline surveys have been completed, it is not possible to determine whether the effects on agricultural land, soils and farm holdings are insignificant.

Potential Significant Effects

- 15.4.2 The potentially significant effects identified are:
- the loss of BMV land with potential for food production;

- the loss of soil or reduction in quality of agricultural soils so that they can no longer perform their principal social, economic or environmental service; and
- the loss of land to farm holdings affecting future farm viability or loss of and damage to farm infrastructure requiring suitable replacements.

15.4.3 These effects would occur during the construction phase of the proposed development. There are not anticipated to be any potentially significant effects on agricultural receptors during the operational phase of the proposed development.

15.5 Methodology

15.5.1 The study area for the assessment of effects on agricultural resources is restricted to the boundary of the site as no likely significant effects are anticipated beyond the site boundary.

15.5.2 The assessment of potentially significant effects on soils and agricultural land receptors will consider the sensitivity of the receptor and the magnitude of change to determine significance.

15.5.3 The sensitivity of agricultural land will be related to its ALC grade, with Grade 1 land being the most sensitive and Grade 5 land being the least sensitive. The magnitude of change will be related to the area of agricultural land of each grade taken out of production by the development.

15.5.4 The sensitivity of the soil resource will be related to its susceptibility to damage from disturbance, storage and movement, which will be determined primarily by the textural characteristics of soils. Fine textured soils (clays) are most sensitive and coarse textured soils (sands) the least sensitive. The magnitude of change will consider the degree to which the soils on site are able to continue to fulfil their various ecosystem functions.

The sensitivity of farm holdings will be related to the type and circumstances of farm operations. The magnitude of change will consider the area of land required from each farm holding, together with the impacts on farm infrastructure.

15.6 References

MAFF (1988). Agricultural Land Classification of England and Wales. Revised guidelines and criteria for grading the quality of agricultural land

Natural England (2012). Technical Information Note 049 - Agricultural Land Classification: protecting the best and most versatile agricultural land, Second Edition

16 Cultural Heritage

16.1 Introduction

- 16.1.1 New development can affect cultural heritage assets such as buried archaeology, built heritage features and structures and the historic landscape, either directly through physical change or loss, or indirectly through changes to the features and qualities of surrounding land that forms part of their setting. A development that requires archaeological investigation can be beneficial by improving understanding of an area's history or providing a better understanding of the local archaeological record.

16.2 Baseline

- 16.2.1 There are no designated heritage assets within the site, however, the building group at City Farm (in separate ownership and surrounded by the site on all sides) includes four buildings that are listed grade II. The new planned farm was constructed c.1800 at the time of the formal enclosure of the open fields to the north of Eynsham, and consists of the farmhouse within an enclosed garden, and a double courtyard to the north formed by a central barn, with lower ranges either side. The buildings were converted to residential use in the mid-1990s.
- 16.2.2 The designated assets in the study area are principally concentrated in the historic village centre of Eynsham at c.1km from the site. The village core is designated a conservation area and large numbers of buildings are individually listed. The former location of the Benedictine Eynsham Abbey, and the related precinct, is a scheduled monument. In the north of the study area, the village of Church Hanborough is also a designated conservation area and includes several listed buildings, including the church with its landmark spire.
- 16.2.3 Based upon the archaeological evidence recorded in the Oxfordshire Historic Environment Record (HER), and the results of surveys completed for the desk-based heritage assessment or currently underway, it is considered that the non-designated archaeological resource of the site is of medium value. Three locations of particular potential for prehistoric and later material have been identified. Additionally, the north western portion of the site area may contain the remains of the deserted medieval village of Tilgarsley, which fell out of use in the late 14th century. Survey work to date has not confirmed the presence of the former village in this location.
- 16.2.4 Oxfordshire historic landscape characterisation identifies much of the central and eastern part of the site as planned 19th century enclosure fields, with some later subdivisions. In the west of the site, either side of Cuckoo Lane and the high point at Acre Hill, are areas of earlier field patterns, surviving from the pre-enclosure landscape. The ancient routes of the Salt Way and a Saxon estate boundary, are both preserved in the public rights of way across the site (numbers 206/31, 206/12 and 2016/11).

16.3 Consultation

- 16.3.1 A geophysical survey of the site is underway and is being undertaken in line with a scope and methodology approved in consultation with OCC Archaeologist. A desk-based heritage assessment of the site and a 1km radius study area has been produced and will be submitted to the OCC Archaeologist and WODC conservation officer shortly. In combination with the results of the geophysical survey, further consultation with officers of both councils will determine the next stage of investigation of the site's archaeology.

16.4 Potential Effects

Insignificant Effects

- 16.4.1 It is expected that there will be insignificant or no significant effects on the designated heritage assets in the village centre of Eynsham, because of the character of the compact and enclosed historic centre its physical and visual separation from the site area by the extensive modern housing to the north and the A40.

Potential Significant Effects

- 16.4.2 The initial identification of potential significant effects is set out in **Table 16.1**.

Table 16.1: Initial cultural heritage effects scoping

Component	Potential construction effect?	Potential post-construction effect?	Comments
Buried archaeological remains	Yes	No	Potential for destruction of any below-ground archaeological remains in the previously undisturbed areas of the site, which has the potential to be significant
Listed buildings at City Farm	Yes	Yes	Potential for significant effects as a result of the changes to setting
Designated assets	Yes	Yes	Potential for significant effects as a result of the changes to setting
Non-designated assets	Yes	Yes	Potential for significant effects as a result of the changes to setting
Historic landscape character	Yes	Yes	Potential significant effects of the loss of the remaining historic agricultural landscape features, alignments and character

- 16.4.3 The proposed development will result in the loss of the historic and current agricultural landholding of City Farm, and of its character as a farmstead within open fields, and replacement by elements of built development. Given the scale of the proposed development there would also be potential for visual and other effects to the non-designated assets of the site and setting of other designated heritage assets in the surrounding area.
- 16.4.4 There are known and suspected archaeological sites in favoured locations across the site. This is thought to be aligned with the varying geological conditions with significant prehistoric settlement and burial sites present on the river terrace gravels on the eastern half of the site. A large proportion of these sites were recorded prior to their removal during large scale gravel quarrying in the mid-20th century but give an indication of the potential resource that may be revealed in the necessary surveys that will inform the impact assessment.

16.5 Methodology

- 16.5.1 An assessment of designated and undesignated heritage assets will be undertaken in accordance with paragraphs 184 to 202 of the NPPF and Historic England Good Practice Advice notes (2015, 2017). A desk-based assessment of the site and a 1km radius study area has been undertaken, as well as a geophysical survey, which will be used to determine the need for site investigations, such as the location and extent of trial trenching, in consultation with the OCC archaeologist.

- 16.5.2 The assessment will be supported by an analysis of viewpoint photographs to and from key historic locations, including selected listed buildings, which we will seek to agree with WODC's conservation officer. The assessment will cross reference with the landscape and visual assessment as appropriate.
- 16.5.3 The significance of effects will be determined by combining the importance of identified receptors with the predicted magnitude of change, using a matrix.

16.6 References

Historic England, 2015, Good Practice Advice notes GPA1 Local plan making; GPA2 Managing significance in decision-taking in the historic environment

Historic England, 2017, GPA3 The setting of heritage assets

Ministry of Housing, Communities and Local Government, 2018, National Planning Policy Framework

Ministry of Housing, Communities and Local Government, 2018, Planning Practice Guidance (online)

Terence O'Rourke Ltd, 2019, Oxfordshire Cotswolds garden Village, Eynsham; Desk-based Heritage Assessment

17 Ground Conditions

17.1 Introduction

- 17.1.1 The ground conditions chapter of the ES will assess the potential effects from the development relating to ground conditions with respect to geological and geomorphology conservation, unstable ground, mineral resources and land contamination.

17.2 Baseline

Geology and Geomorphology

- 17.2.1 The land within the Site slopes gently in all directions from the top of a hill (Acre Hill) at an elevation of approximately 85m above Ordnance Datum (m AOD) located in the centre-south of the Site. Most of the Site is underlain by undifferentiated deposits of the Oxford Clay Formation and West Walton Formation. Across the northern and north-eastern site boundaries, the Oxford Clay is absent, and the underlying Kellaways Sand Member and Kellaways Clay Member are exposed. The Kellaways Beds are underlain sequentially by the Cornbrash and Forest Marble Formations. These geological strata are termed “Solid Geology”.
- 17.2.2 In general, Superficial Deposits are absent over most of the Site and solid geology is mapped at the surface. The Superficial Deposits consist of Alluvium and River Terrace Deposits. A thin ribbon of Alluvium is shown across the northern boundary of the Site associated with the alignment of the watercourses in this location. A more extensive area of Alluvium is present to the east of the site boundary associated with the River Evenlode floodplain, and part of this Alluvium protrudes into the eastern fringe of the Site. Alluvium is also present in the south-western corner of the Site associated with the alignment of Chil Brook which is located south of the A40 in this area.
- 17.2.3 River Terrace Deposits are present on the eastern flank of the River Evenlode valley which includes the central and eastern portions of the Site. The distribution of these deposits varies according to ground elevation and age of deposition. The youngest deposits, First Terrace, occur below the current River Evenlode with the Fourth Terrace at the top of the hill.
- A small lobe of the Fourth Terrace (Hanborough Gravel Member), the oldest Terrace Deposit present, is shown on the higher ground around Acre Hill.
 - The Third Terrace (Wolvercote Sand and Gravel Member) is not mapped on-site, although very minor remnants are recorded in areas to the north of the site boundary.
 - The largest tract of River Terrace Deposits on the Site extends as a north/south “finger” through the eastern area of the Site and continues beyond the northern and southern site boundaries and comprises the Second Terrace (the upper and lower facets of the Summertown-Radley Sand and Gravel Member). Part of these deposits have been historically extracted at the Site as discussed in “Land Use” below.
 - A separate deposit of First Terrace (Northmoor Sand and Gravel Member) is present on the eastern site boundary and is likely to extend beneath the Alluvium across the Evenlode floodplain to the east of the site boundary and extend down to the River Thames to the south-east forming an extensive deposit beyond the site boundary.
- 17.2.4 There are no designated geological or geomorphological sites or features of conservation value in the area affected by the proposed development.

Mineral Resources

- 17.2.5 The eastern section of the Site lies in a Mineral Safeguarding Area and Mineral Consultation Area as shown on Oxfordshire's Minerals and Waste Local Plan (OMWLP) Policy Map. The Mineral Safeguarding Area has been broadly defined according to the mapped extent of sharp sand and gravel deposits in the River Evenlode Valley (First and Second Terrace Deposits) and continues towards the river beyond the eastern site boundary, north of the site boundary to Church Hanborough and south-east of the site boundary, to the east of Eynsham, to the River Thames.
- 17.2.6 There are no nominated mineral sites, i.e. sites that have been put forward for development by a mineral operator or landowner, within the site boundary. The 'Lower Road, Church Hanborough' site (reference SG-08) borders the Site to the north and to the east (on the opposite side of Lower Road) and the 'Land between Eynsham & Cassington' site (reference SG-20) borders the Site to the south-east (on the opposite side of Lower Road). These nominated sites will be assessed under OCC's Site Assessment Methodology to select those sites preferred for mineral development and will be included in Part 2 of the OMWLP, Site Allocations (Sites Plan), which is currently in consultation and is not timetabled for adoption until November 2020.

Land Use

- 17.2.7 Historically the Site has been predominantly undeveloped agricultural land with some isolated farms and cottages. A former motorbike racing track is present in the south-western corner of the Site. During the 1970s, localised mineral extraction (sand and gravel) was carried out in part of the eastern area of the Site. These quarries were subsequently infilled with waste materials to form two nearby landfills, named City Farm landfill and New Wintles Farm landfill, and restored to agricultural use. New Wintles Farm landfill is split into two parts. The "western field" is located within the site boundary; the "northern field" is located outside the site boundary and abuts the neighbouring aggregate recycling facility. The environmental permits for these landfill sites were surrendered in 2018.

Land Contamination

- 17.2.8 A review of historical maps, historical borehole records, landfill surrender information and ground investigations available from WODC's online planning portal, British Geological Survey's online 'Geoindex' and supplied on request by the Environment Agency has been carried out to inform a preliminary assessment of any potential hazards and constraints with regard to land contamination.

Soils

- 17.2.9 Over most of the Site, the presence of significant soil contamination is unlikely due to the predominant agricultural land-use. Point sources of potential soil contamination may be present at farm sites, the location of dilapidated former farm buildings, at the former motorbike track and in very localised areas of fly-tipping. The main potential source of soil contamination is at the former landfill sites, although based on the very limited information available, concentrations of potential contaminants in the landfill mass are generally below assessment criteria for a residential land-use.

Controlled Waters

- 17.2.10 The Site is largely underlain by Oxford Clay Formation, a non-aquifer. As such, significant contamination of controlled waters is not anticipated over most of the Site. At the landfill sites, historical monitoring of groundwater and surface water quality has not indicated particularly elevated concentrations of potential contaminants.

Ground Gases

- 17.2.11 At the landfill sites, monitoring of landfill gases has indicated elevated concentrations of methane and carbon dioxide. Soil gases may also be expected associated with the biodegradation of organic matter within the near-surface Alluvium in localised areas of the Site.

17.3 Consultation

- 17.3.1 Consultation will be undertaken with relevant statutory consultees (Environment Agency and OCC) and pollution control officers within WODC.

17.4 Potential Effects

Insignificant Effects

Geology and Geomorphology

- 17.4.1 The proposed development will have no material change on the geology and geomorphology in the vicinity of the Site, and assessment of the effects of the scheme on the geology and geomorphology will be excluded from the Environmental Statement.

Unstable Ground

- 17.4.2 The geology of the area is dominated by the Oxford Clay Formation/West Walton Formation which has a limited number of geotechnical factors needing consideration. The main issues (e.g. clay shrinkage and heave and potentially aggressive ground conditions for buried concrete) are commonly occurring in the south of the UK. Any potential adverse effects associated with these ground conditions, and localised areas of potentially loose or compressible ground associated with areas underlain by Alluvium, Made Ground and landfill, may be readily addressed during the design and construction of the proposed development. On this basis, assessment of the effects of the scheme on ground stability will be excluded from the proposed Environmental Statement.

Potential Significant Effects

Mineral Resources

- 17.4.3 Given that the materials on the Site are within a designated Mineral Safeguarding Area, and the Site neighbours nominated mineral sites, assessment of the effects of the scheme on mineral resources will be included in the Environmental Statement.

Land Contamination

- 17.4.4 Over most of the Site, there are no major sources of contamination or hazardous ground gases, and therefore the presence of significant concentrations of potential contaminants and hazardous ground gases are unlikely. The presence of localised areas of contamination associated with, for example, the storage and use of fuel oils or fertilisers cannot, at this time, be discounted.
- 17.4.5 The main exception to the above are the areas of restored landfill which represent a potential source of contamination, primarily relating to hazardous gases. In these areas, contamination may present a significant risk to sensitive receptors including site workers, site occupiers/neighbours, controlled waters, ecology and wildlife, and the built environment.
- 17.4.6 On this basis, an assessment of the indirect effects of the development on human health, the environment and the proposed development relating to land contamination and hazardous ground gases will be included in the Environmental Statement.

17.4.7 Potential indirect effects with respect to land contamination to be addressed by this chapter of the ES include:

- Effects on human health of on-site workers, users and general public from land contamination and potentially hazardous ground gases;
- Effects on controlled waters (surface water and local groundwater) resources from land contamination;
- Effects on proposed landscaped areas, the on-site ecosystem and the ecosystem of the surrounding area from land contamination; and
- Effects on proposed development construction including foundations and infrastructure from land contamination.

17.5 Methodology

17.5.1 The ES will consider the potential environmental effects from the development relating to the geology and ground conditions. Consideration will be given to the potential indirect effects on human health, the environment and the proposed development with respect to ground contamination and the potential direct effects on any potentially viable mineral resources.

17.5.2 The assessment will be based on a desk-based Phase 1 Ground Condition Assessment that will be included as an appendix to the Environmental Statement.

17.5.3 The Phase 1 Ground Condition Assessment for the Site will include a site reconnaissance, review of historical maps and records and identification of potential contaminant sources, pathways and receptors that may be present on the site, together with a qualitative assessment of the risks and hazards associated with existing or potential future contamination and hazardous gases in the ground. The assessment will be carried out using current UK best practice and guidance as given in British Standard 10175, Contaminated Land Report 11 and National House Building Council Standards.

17.5.4 It is proposed that an intrusive ground investigation is carried out at the Site in accordance with BS10175. The purpose of the ground investigation is to confirm the ground conditions and to target potential sources of contamination identified in the Phase 1. The ground investigation will include laboratory testing of soils and waters and gas and groundwater monitoring. The findings of the ground investigation will refine the Conceptual Site Model, determine the need for further investigation or remedial works and inform the implementation of mitigation measures in the design of the proposed development.

17.5.5 The Phase 1 Ground Condition Assessment includes a desk based assessment of mineral resources (sand and gravel) as part of the site is covered by a mineral safeguarding designation. This assessment concludes that the remaining mineral reserve within the site is relatively small, disconnected, of variable thickness and of a low quality and does not represent a significant mineral resource and development should not be constrained by the mineral safeguarding designation. Mineral matters are currently being discussed with the Mineral Planning Authority (OCC).

17.6 References

BGS (1982) Geological Survey of Great Britain (England and Wales) Solid and Drift Edition 1:50,000 series Sheet 236 Witney. British Geological Survey, Keyworth, Nottingham.

BSI (2011) BS 10175: 2011 (+A2 2017) Investigation of potentially contaminated sites – Code of practice. British Standards Institution.

EA (2004) CLR 11 Model procedures for the management of contaminated land. Department of the Environment Contaminated Land Report.

NHBC (2019) Technical Standards 2019, National House Building Council.

OCC (2017) Oxfordshire Minerals and Waste Local Plan. Part 1 – Core Strategy. Adopted Plan. September 2017. Oxfordshire County Council

OCC (2018) Oxfordshire Minerals and Waste Local Plan. Part 2 – Site Allocations. Issues and Options Consultation. August 2018. Oxfordshire County Council

18 Flood Risk and Drainage

18.1 Introduction

- 18.1.1 This section of the report identifies flood risk and drainage constraints within the site, and likely effects that the development may have to the site and surrounding area. A Flood Risk Assessment (FRA) and Surface Water Drainage Strategy will be produced by PBA to inform the ES chapter and will be appended to the ES.

18.2 Baseline

Watercourses and Flood Defences

- 18.2.1 There are a number of watercourses in the vicinity of the site. The **River Evenlode**, an Environment Agency (EA) Main River, lies approximately 0.5km to the east of the site and flows south eastward where it outfalls into the **River Thames** near Cassington, approximately 2.5km to the south east of the site.
- 18.2.2 There are a number of tributaries located within both the north and east of the site, including the **Eynsham Mead Ditch** (an EA Main River), which discharges into the River Evenlode to the east of the site.
- 18.2.3 **Hanborough Stream** flows east along the northern boundary of the site and it joins River Evenlode to the east of the site. Ponds have been identified within the north west of the site and east of Cuckoo Lane, close to the Hanborough Stream.
- 18.2.4 The **Chil Brook**, an EA Main River, is located to the south of the A40 at a minimum of approximately 80m from the site's south western-most corner.
- 18.2.5 There are no formal flood defences in the area, however the A40 to the south of the site lies on a raised bank and acts as an informal flood defence.

Geology and Hydrogeology

- 18.2.6 The British Geological Survey (BGS) online viewer shows the following:
- The east of the site largely lies on superficial deposits of the 'Summertown-Radley Sand and Gravel Member, Lower Facet – Sand and Gravel'
 - The west of the site is largely without superficial geology, however a small pocket of 'Hanborough Gravel Member – Sand and Gravel' is present to the south east of Acre Hill Farm (east of Cuckoo Lane)
 - The majority of the site is underlain by bedrock of the 'Oxford Clay Formation and West Walton Formation (undifferentiated) – Mudstone'.
 - A small strip of land towards the eastern edge of the site and just south of the Hanborough Stream flowing along the northern boundary of the site is underlain by bedrock of the 'Kellaways Sand Member – Sandstone and Siltstone, Interbedded'.
 - A small strip of land along the eastern edge of the site boundary and land immediately adjacent to Hanborough Stream along the northern boundary of the site is underlain by bedrock of the 'Kellaways Clay Member – Mudstone'.

18.2.7 The Cranfield University 'Soilscapes' online viewer suggests that the western side of the site is underlain by 'Slowly permeable seasonally wet slightly acid but base-rich loamy and clayey soils', with a central band of 'Freely draining lime-rich loamy soils', and 'Loamy soils with naturally high groundwater' to the east.

18.2.8 The site does not lie within an EA Groundwater Source Protection Zone. The eastern side of the site overlies a Secondary A Superficial Drift aquifer, with an EA groundwater vulnerability rating of 'Minor Aquifer High'.

Flood Risk

18.2.9 The EA 'Flood Map for Planning' shows fluvial flood risk in the area as follows:

- The site lies predominantly within Flood Zone 1 'Low Probability' (less than 1 in 1,000 (0.1%) annual probability of river flooding or sea flooding).
- Hanborough Stream, a tributary of the River Evenlode is surrounded by a corridor of Flood Zone 3 'High Probability' within the site boundary (land at 1 in 100 annual probability or greater of river flooding).
- The far south-eastern corner of the site and land south of New Wintles Farm, where Mill Lane intersects Lower Road, lies within Flood Zone 2 'Medium Probability' (between a 1 in 100 and 1 in 1,000 annual probability of river flooding), associated with the Eynsham Mead Ditch.

18.2.10 Correspondence with the EA has confirmed the River Evenlode and Chill Brook have been subject to detailed modelling and the resulting flood extents from these models do not affect the site.

18.2.11 The Flood Zone extents within the site relate to smaller drainage channels within or bordering the site including Hanborough Stream, and these extents have been generated based on coarse national-scale JFLOW flood modelling. We currently understand that no detailed hydraulic modelling is available for these watercourses, but this will be confirmed with WODC in relation to the preparation of the AAP.

18.2.12 The EA provide maps showing the risk of flooding in the event of a breach from reservoirs, based only on large reservoirs (over 25,000 cubic metres of water), confirm that the site is not shown to be at risk of flooding from such sources.

18.2.13 The EA 'updated Flood Map for Surface Water' ('uFMfSW') shows where areas could be potentially susceptible to surface water flooding in an extreme rainfall event and indicates the following:

- The site predominantly lies in an area at 'Very Low' risk of flooding from surface water (i.e. less than 1 in 1,000 (0.1%) annual probability of surface water flooding).
- Several isolated areas of the site are classified as 'High Risk' (which corresponds to the 1 in 30 (3.3%) annual probability rainfall event) – primarily around existing drainage ditches on the western side of the site.
- The map highlights other overland flow routes conveying surface water either east toward the River Evenlode – including the Eynsham Mead Ditch in the south-east corner - or south (land west of Cuckoo Lane) towards the Chil Brook.

18.2.14 It should be noted that the surface water maps are generated using a generic methodology on a national scale, whereby rainfall is routed over a ground surface model. The analysis does not take account of any specific local information on below-ground drainage infrastructure and

infiltration, although an adjustment is included in urban areas to account for the impact of sewerage and a standard infiltration allowance based on soil type. Consequently, the mapping provides a guide to potentially vulnerable areas based on the general topography of an area.

- 18.2.15 The only areas of the site shown to have flooded previously on the EA's 'Historic Flood Map' is in the south-east corner of the site and where Mill Lane intersects Lower Road, on the Eynsham Mead Ditch. However, there is anecdotal evidence from one of the tenants farming the area that flooding has occurred elsewhere within the site in recent years following periods of heavy rainfall – it is noted that this correlates most closely with the EA surface water flood maps and results in flooding along the un-named watercourse along the northern boundary of the site.

Existing Drainage Regime

- 18.2.16 The existing site consists almost entirely of 'greenfield' agricultural land with a small amount of impermeable cover from farm buildings and associated hard standing.
- 18.2.17 The ground and soil conditions mentioned previously would suggest that the current viability of infiltration drainage varies substantially across the site. Runoff from rainfall that does not infiltrate will discharge to one of the multiple field drainage channels across the site.
- 18.2.18 The UKSuDS greenfield runoff rate estimation tool suggests that runoff rates are approximately 4.3 l/s/ha for the Qbar (1 in 2 annual probability) event, 9.8 l/s/ha for the 1 in 30 annual probability event and 13.6 l/s/ha for the 1 in 100 annual probability event.

18.3 Consultation

- 18.3.1 The EA has already been consulted in order to confirm the availability of flood modelling data. Further consultation will be made with the EA, with WODC as the Local Planning Authority and with OCoC as the Lead Local Flood Authority (LLFA), to confirm the assessment methodology.

18.4 Potential Effects

Insignificant Effects

- 18.4.1 The following are potential insignificant effects from the proposed development, that may be of low severity or apply to receptors with a relative low sensitivity and as such will be scoped out of the assessment:
- Potential for minor pollution of the secondary aquifer beneath the site from infiltration drainage; and
 - Potential for minor impacts to river flow regimes from construction of bridges and other structures within or across watercourses.

Potential Significant Effects

- 18.4.2 The following are potential significant effects from the proposed development, if mitigation measures are not implemented:
- The proposed development will give rise to an increase in the impermeable area within the site, thereby increasing surface water run-off rates to the receiving watercourses. Without mitigation, this has the potential to increase flood risk to receptors downstream of the proposed development.

- Potential for impacted flow routes and decreases in floodplain storage volume should works be proposed within the fluvial floodplain, which may increase flood risk to the site and surrounding areas
- Potential pollution of watercourses in the vicinity of the site from the surface water drainage system, some of which are EA Main Rivers.
- Potential for substantial changes to the flow regime of the EA main river watercourses as a result of an increase in impermeable area within the site
- Should works be proposed in areas of flood risk, this would introduce new receptors to this risk.

18.5 Methodology

18.5.1 In order to fully assess flood risk to the site, a site-specific FRA is to be produced. The scope of this FRA will include:

- Review of relevant planning policy and available Strategic Flood Risk Assessments;
- Collection and review of contemporary and historical flood risk information;
- Identification of sources and probability of flood risk both pre- and post-development;
- Calculations for surface water run-off, both pre- and post-development;
- Recommendations for flood mitigation/management measures, including management of surface water; and
- Identification of any off-site effects and residual risks.

18.5.2 The assessment will be carried out in accordance with all current and relevant legislation and guidance.

18.5.3 If development is proposed within or close to the Flood Zones 2 or 3, then detailed hydraulic modelling will be undertaken should it not be available in order to determine the flood extents and levels with a greater degree of accuracy.

18.5.4 The ES will consider the potential effects of the Proposed Development on ground and surface water, including surface water drainage as a result of the change in land use. Background information will be requested from the relevant organisations, including the EA, Thames Water and British Geological Society in respect of water supplies and quality, water abstractions, surface water drainage rates and geological conditions.

18.5.5 The ES will also consider opportunities within the Proposed Development for managing flood risk through the implementation of drainage systems, and the application of Sustainable Drainage Systems (SuDS) where such techniques may be applicable.

18.5.6 Surveys will include sewer infrastructure capacity assessments where applicable, in addition to infiltration testing to assess the potential for soakaway drainage.

18.5.7 Sensitive receptors such as water bodies receiving surface water discharge from the site will be assessed.

18.5.8 The parameter plans will be used to assess the scale of the development in terms of surface water flows.

18.5.9 The scheme will also consider the potential increase in flood risk due to climate change over the lifetime of the development.

19 Topics Not Included in the EIA Scope

19.1 Introduction

- 19.1.1 The ES should be focused, documenting only the assessment of likely significant environmental effects, both adverse and beneficial. Therefore, those effects which are not likely to be significant should not be included in the ES, i.e. they should be scoped out of the EIA, as clearly set out in the PPG (Paragraph: 035 Reference ID: 4-035-20140306). The following section sets out those topics that have been determined not to be significant and therefore are not included in the EIA, as well as those that will be addressed independently in separate assessments. The rationale for scoping these topics out of the EIA is also provided.

19.2 Sustainability

- 19.2.1 Sustainability will be incorporated into the design process for the proposed development in accordance with local and national planning policy, and the applicant's sustainability aspirations. A separate sustainability strategy will be submitted with the outline planning application.
- 19.2.2 It is considered that sustainability, as an environmental topic, does not require specific assessment within the ES and is not proposed to form part of the scope of the EIA. Topics with relevance to creation of a sustainable development, such as socio-economic effects, sustainable transport and biodiversity impacts, will be addressed as appropriate through technical assessments of other environmental topics, and reflected in the sustainability strategy.

19.3 Materials and Waste

- 19.3.1 The proposed development will require materials and generate waste during both construction and operation.
- 19.3.2 Given the nature of the proposed development, materials required for the construction of the proposed development are unlikely to be particularly scarce or environmentally sensitive, nor is the proposed development likely to result in materials becoming scarce. Consideration will be given throughout the design process to the specification of suitable materials, including their sustainability and environmental implications, to support an environmentally sensitive and high-quality development. As a result, the proposed development is not likely to have any significant effects in relation to materials.
- 19.3.3 Waste generation during the construction phase is likely to result from the construction of the new buildings. Waste management will be considered carefully throughout the design and construction of the proposed development to ensure compliance with legislation and to minimise costs associated with waste disposal. The volume of waste likely to be generated by the development is relatively limited and will not significantly affect the capacity of local waste infrastructure.
- 19.3.4 Given the topography of the site there is unlikely to be the requirement for the generation of significant cut material or the importation of significant fill material. The development will be designed to keep such cut or fill requirements to a minimum.
- 19.3.5 During the operation of the development, waste (including recyclables) generated by dwellings will be managed by the local waste authority (WODC), while waste from commercial uses will be managed by commercial operators. None of the proposed users are anticipated to be major generators of waste and the wastes generated by the proposed development, as a draft allocation in the emerging Local Plan, should not significantly affect the capacity of local waste infrastructure.

19.4 Human Health

- 19.4.1 Risks to human health may result principally from effects related to socio-economics, air quality, noise and contamination. Further to this, health and wellbeing may be affected where developments by the provision, or not, of adequate services, amenities and a sense of community that supports healthy lives.
- 19.4.2 Likely significant effects related to socio-economics, air quality and noise will be addressed within the relevant ES chapters which will consider effects on local receptors and new residents of the development. Where significant effects are anticipated, appropriate mitigation measures will be proposed to reduce effects to an acceptable level and meet the relevant national and local guidance and policy. As outlined in **Section 17.5**, an assessment of indirect effects of the development on human health relating to land contamination and hazardous ground gases will be included in the ES.
- 19.4.3 There are overhead power lines within the Site and these produce electric and magnetic fields. These fields are highest close to the line and fall with distance. Magnetic fields vary as the load on the line changes whereas electric fields stay roughly constant. Fields are higher for higher-voltage lines, and smaller for lower-voltage lines. Lines below and including 33kV do not produce fields of above 0.4uT.
- 19.4.4 The Government's Stakeholder Advisory Group (SAGE) on extremely low frequency (ELF) and electromagnetic fields (EMFs) recommend a precautionary approach to ELF and EMFs suggesting that a distance of 60m from the centreline of the pylon overhead line to any residential dwelling for 275kV and 400kV and 30m for 66kV and 132kV, should be accommodated within any layout to reduce the level of ELF EMFs to below the threshold of 0.4uT. However, this is only guidance and therefore is not mandatory.
- 19.4.5 The land use distribution plan will be developed taking into account the offset guidance above. By implementing this guidance, the potential effects of EMF would not be significant.
- 19.4.6 The proposal will be guided by the principles and needs identified for the area as outlined in the Local Plan policy for the allocation site as well as Garden Village principles. This will allow an appropriate quantum of development, green infrastructure and amenities to be provided to support the needs of the existing and proposed communities and help meet local policy objectives. This provides opportunities for OXGV to support the health of new community and existing local communities.
- 19.4.7 As a result of the above, along with the mix of uses proposed and the high-quality proposals committed to by the applicant, it is considered appropriate for human health effects to be considered within socio-economics, air quality and noise chapters of the ES, rather than an overarching health impact assessment.
- 19.4.8 Consideration will be given, including through discussions with WODC, OCC and health care providers, to the provision of a standalone Health Impact Assessment, including wellness, with the planning application. This could draw together the various threads related to health to outline how the proposed development is being designed to support healthy outcomes for the new community at OCGV and existing local communities.

19.5 Risks of Accidents and Disasters

- 19.5.1 Schedule 4 to the EIA Regulations requires an ES to include *"a description of the expected significant adverse effects of the development on the environment deriving from the vulnerability of the development to risks of major accidents and/or disasters which are relevant to the project concerned"*. Although only the resulting expected significant adverse environmental effects (together with any required prevention, preparedness, mitigation and response measures) need to be addressed within an ES, it is first necessary to identify a project's vulnerability (i.e.

identification of relevant risks). The second stage is then to determine whether this would result in likely significant environmental effects.

- 19.5.2 The terms risk, vulnerabilities, major accidents and disasters are all undefined within the 2017 EIA Regulations. To remain proportionate, consideration of this topic should focus on the risks of major accidents and/or disasters which have the potential to result in serious damage, which for this EIA is considered to be the loss of life or permanent injury and/or permanent or long-lasting damage to an environmental receptor which cannot be restored through minor clean up and restoration efforts.
- 19.5.3 Taking account of the location and characteristics of the proposed development, and the likelihood of significant environmental effects outlined in this scoping report, the only major risks identified relate to:
- Potential accidents during the construction phase resulting in disturbance, injuries and/or fatalities to construction workers or members of the public;
 - A major flood event that could flood areas of built development or essential infrastructure;
 - Proximity to London Oxford Airport and RAF Brize Norton;
 - Road traffic accidents; and
 - Pollution incidents to ground and watercourses during the construction phase, resulting in potential pollution migration and adverse effects on specific receptors including soils, habitats, and species.
- 19.5.4 As detailed within this Scoping Report, mitigation will be included within the proposed development to address these risks and manage potential environmental effects. Health and safety is a key consideration in the construction sector and will be managed in accordance with legal requirements and best practice.
- 19.5.5 London City Airport is located approximately 5km to the north east and RAF Brize Norton approximately 15km to the south west of the Site. While flights associated with these airports can fly over the Site the potential for an accident is very low.
- 19.5.6 As set out in Chapter 18, the proposed development will be sensitively designed to respond to local flood risk and will include SuDS to mitigate the effects of the proposed development on the local drainage regime. As such the proposed development will be unlikely to experience significant effects in relation to flood risk.
- 19.5.7 The impacts of the proposed development on road traffic accidents will be assessed within the TA and ES Transport and Access chapter as outlined in Section 7.6. This will include an analysis of personal injury collision from the local area which will be used to identify potential significant adverse effects and mitigation measures necessary to these effects to an acceptable level.
- 19.5.8 It is proposed that a CEMP will be submitted prior to the commencement of construction and will outline methods to avoid, minimise and mitigate construction effects on the environment. This document will be updated as the project progresses to enable the plan to be effective and account for any changes that occur during construction works.
- 19.5.9 Potential major risks related to the proposal are therefore considered to be addressed and the proposed development is not considered to be vulnerable to major accidents and/or disasters with the potential to lead to significant adverse environmental effects. As a result, it is proposed that the risks from major accidents and/or disasters is scoped out of the EIA.

19.6 Utilities

- 19.6.1 A detailed assessment of utilities will not be provided in the ES as utilities is not an environmental topic. However, the EIA will be mindful of any utility works (upgrades, diversions, abandonments, etc.) required as part of the development as well as the impacts of existing utilities and services on the site and the likely significant environmental effects of such works will be assessed and documented under the relevant topics in the ES as appropriate.

19.7 Climate Change

- 19.7.1 Regulation 4(2)(a) of the 2017 EIA Regulations requires significant effects on climate to be considered, as appropriate, within the EIA process. In addition, Schedule 4 to the 2017 EIA Regulations requires likely significant effects resulting from “*the impact of the project on climate...and the vulnerability of the project to climate change*” to be addressed within an ES.
- 19.7.2 With regards to the impact of the proposed development on climate change, it is acknowledged that the construction of the proposed development would utilise energy intensive materials (e.g. concrete and metals) as well as fossil fuels for construction plant/vehicles. In addition, once occupied the proposed development would import electricity and gas from the national grid for commercial consumption. However, the scale of the development is limited in the context of the residential sector and the local administrative area and (drawing upon the Institute of Environmental Management and Assessment’s Environmental Impact Assessment Guide to: Assessing Greenhouse Gas Emissions and Evaluating their Significance) such activities, during construction and operation, will not have a significant effect on the climate.
- 19.7.3 With regards to the vulnerability of the proposed development to climate change, potential climate related flood risks will be considered within the FRA. In accordance with planning policy, suitable mitigation will be incorporated into the proposed development to ensure that the proposed development is not at a significant risk of flooding, even allowing for the impact of climate change.
- 19.7.4 As a result, the proposed development is not considered to have significant effects on the climate or to be significantly affected by climate change. It is therefore proposed to scope climate change out of the EIA.

20 Summary and Next Steps

20.1 Summary

- 20.1.1 This document has been prepared to provide an overview of the likely significant environmental effects that have been considered in scoping the EIA for the proposed OCGV development, in West Oxfordshire.
- 20.1.2 This Scoping Report has provided information regarding the proposed development, set out the intended EIA scope and methodologies for the assessment of likely significant environmental effects, and outlined the content of the ES.
- 20.1.3 The aim is to ensure that proposed development have due regard for the environment, mitigate adverse environmental effects where possible, and take advantage of opportunities for environmental enhancement.

20.2 The Environmental Statement

- 20.2.1 The outcome of the EIA process is the production of an ES to accompany the planning application. An ES will be prepared in compliance with the 2017 EIA Regulations, and that achieves the following:
- Describes the proposed development;
 - Outlines the reasonable alternatives considered;
 - Describes the baseline environment;
 - Describes the likely significant effects and the methods used to identify significant effects;
 - Describes the measures to mitigate adverse effects;
 - Describes any monitoring arrangements; and
 - Includes a non-technical summary.

20.3 Next Steps

- 20.3.1 The next steps in the EIA process are as follows:
- Request a Scoping Opinion from WODC (March 2019);
 - Receipt of formal Scoping Opinion (April 2019); and
 - Submission of ES with the planning application (early 2020).

- 20.3.2 Comments on this report should be provided to:

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