



Bicester Eco Development - Masterplan Site Application 1 (North of Railway)

Environmental Impact Assessment

Scoping Report

Hyder Consulting (UK) Limited

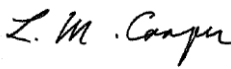


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1 INTRODUCTION

1.1 Background

This request is made on behalf of A2Dominion in relation to the proposed development of circa 159 ha of land to the north west of Bicester to provide for residential led development, comprising residential dwellings, commercial floorspace, leisure facilities, social and community facilities, a primary school, extra care housing, water treatment plant and energy centre, amenity space and service infrastructure.

The NW Bicester site is identified in the Local Plan submission (January 2014) as falling within an area to provide for circa 5000 new homes, and related social and community facilities. The allocation of the site in the emerging Local Plan follows the identification of land at north-west Bicester as a potential eco-town in the supplement to PPS1 (July 2009): 'Eco-Towns' a supplement to PPS1 Delivering Sustainable Development'. The PPS1 supplement includes requirements relating to sustainability, affordable housing, low and zero carbon technologies and public transport.

The emerging Local Plan identifies a broad area to the north west of Bicester within which the site falls. A Masterplan has been submitted to the Council in response to the requirements of the supplement to PPS1 in March 2014. It is understood that the Council is minded to adopt the Masterplan, following consultation and review (and amendment as appropriate) as non-statutory policy.

The Masterplan area comprises some 406 ha and sets out the strategy for the development of the site.

Planning permission was granted in 2012 for the development of some 21 ha of land within the Masterplan area as an 'exemplar phase'. This permission will be implemented shortly and provides for 393 new homes, land for a new primary school, together with social and community facilities, business and retail accommodation.

A2Dominion intend to bring forward further applications for planning permission as follows:

- Application 1 (North of Railway) - comprising some 159 ha of land, to provide for circa 2,600 residential dwellings, land for new primary schools, associated open space, recreation and play space, social and community facilities and employment land, access and infrastructure works;
- Application 2 (South of Railway) - comprising some 51 ha of land, to provide for circa 900 residential dwellings, land for a new secondary school, new primary schools, associated open space, recreation and play space, social and community facilities and employment land, access and infrastructure works;
- Application 3 (Infrastructure) – comprising some 20 ha of land for the provision of new highway and crossings below the existing railway

Scoping Reports and Environmental Statements (ES) would be prepared for the three applications.

This Scoping Report is being prepared in relation to Application 1 (North of Railway) site, to be referred to in this document as the Site.

1.2 Need for an Environmental Impact Assessment (EIA)

Environmental Impact Assessment (EIA) is a procedure for ensuring that the likely environmental effects of a new development are properly understood by the public and relevant competent authorities before a decision is made to grant planning consent. Under The Town and Country Planning (Environmental Impact Assessment) (England and Wales) Regulations 2011 as amended (hereafter, the EIA Regulations), the proposal is considered to be a “Schedule 2” development which will require a formal EIA due to its scale and proximity to sensitive areas. Each outline planning application will therefore be accompanied by an ES.

1.3 Purpose and Structure of this Document

While there is no statutory requirement to undertake or report on scoping of an EIA, it is considered that defining the scope of the EIA is one of the an important part of the planning process in that it sets the context for the detailed assessment that follows and ensures that it conforms to the requirements of the EIA Regulations. Consequently, the objectives of the scoping process undertaken for the development and reported in this document are to:

- Identify the topics and issues that are proposed to be the focus of the EIA
- Eliminate any topics and issues not requiring further consideration and which would therefore not be taken further in the EIA
- Define the scope of the study for each of the topics and issues to be considered
- Identify the methodologies being followed for conducting baseline studies
- Identify the methodologies being followed for predicting environmental effects and for evaluating the significance and severity of environmental effects
- Identify the methods to be adopted for incorporation of mitigation and other environmentally driven modifications into the design, as it develops
- Identify consultees to be included in the data collection and the EIA process

Following this Introduction, the report is structured as follows:

- Chapter 2 briefly describes the site and its context, including project nature and purpose
- Chapter 3 outlines the main environmental topics to be considered, the key issues and the further data collection required. For each topic, a definition of the study area, summary of existing site description, potential impacts, potential mitigation measures, proposed methodologies and consultations have been included
- Chapter 4 provides a summary of the Scoping Report and Next Steps

2 THE PROJECT

2.1 Site Description

The town of Bicester lies approximately 24km to the northeast of Oxford, and 28km to the southeast of Banbury. The M40 runs approximately 2km to the southwest, with Junction 9 providing access to the town via the A41.

Bicester is served by two railway stations; namely Bicester North and Bicester Town. Chiltern Railways operate services from Bicester North between Birmingham Snow Hill and London Marylebone. Branch line services to Oxford (via Islip) operate from Bicester Town. This lies to the south of the town and uses the old Varsity Line track between Oxford and Cambridge.

The Masterplan development area lies to the north west of Bicester, approximately 1.5km from the town centre, and the Masterplan site comprises an area of approximately 406 ha, which covers the whole area within the red boundary in Figure 2-1. The railway line runs in a north west to south east direction through the middle of the Masterplan site.

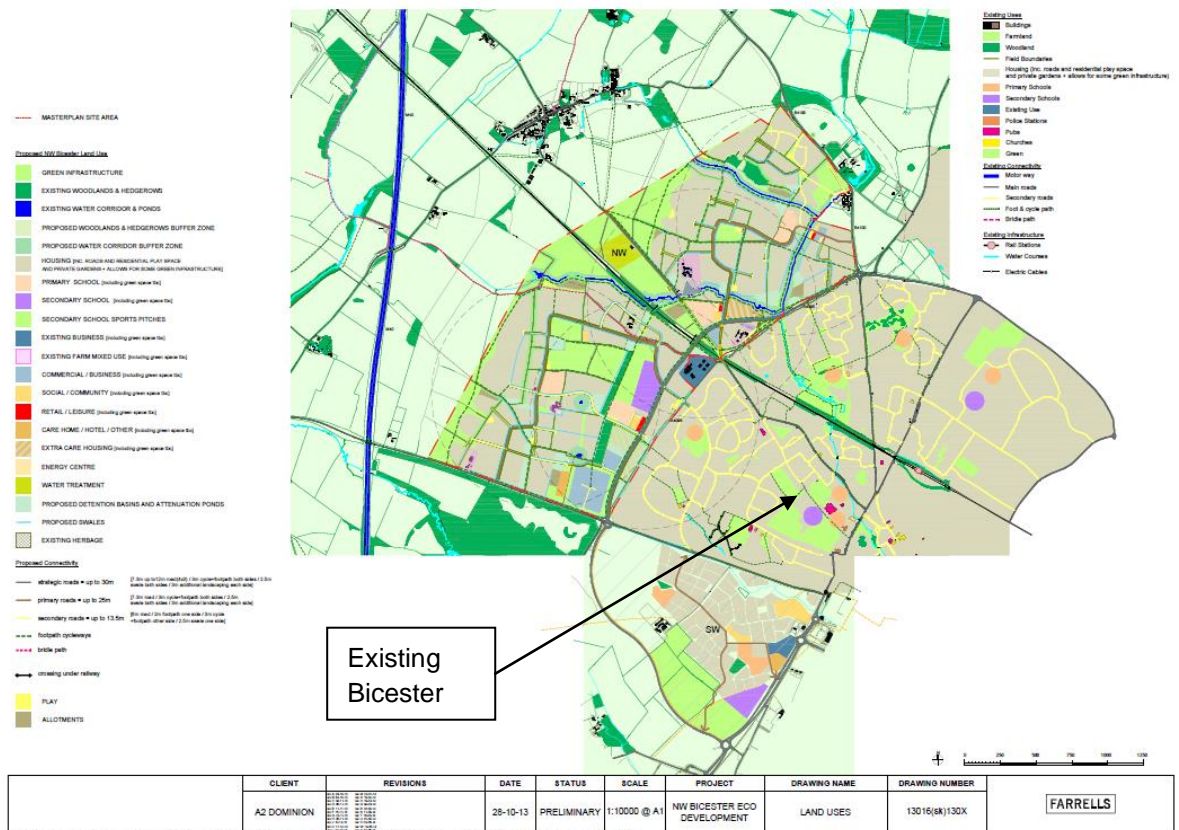


Figure 2-1 NW Bicester Masterplan Area

The Application 1 Site covers approximately 159 ha. The land currently comprises Grade 3 agricultural land and contains a number of farmhouses and other buildings, as well as a small area of employment land along the A4095. The villages of Bucknell and Caversfield are located to the north and east of the site respectively

Error! Reference source not found. illustrates the boundary for the Site. The Site lies north west of Bicester town, between the B4030 and the B4100. The Site's southern boundary runs alongside the A4095 (Lords Lane), the western boundary runs along the railway line and northern boundary runs briefly along the B4100 before connecting with the Exemplar Site boundary. The Exemplar Site, located on the north eastern edge of the Masterplan area is the first phase of the Masterplan Area development. Construction is to commence shortly and will provide for 393 residential units, energy centre, a primary and a nursery school.

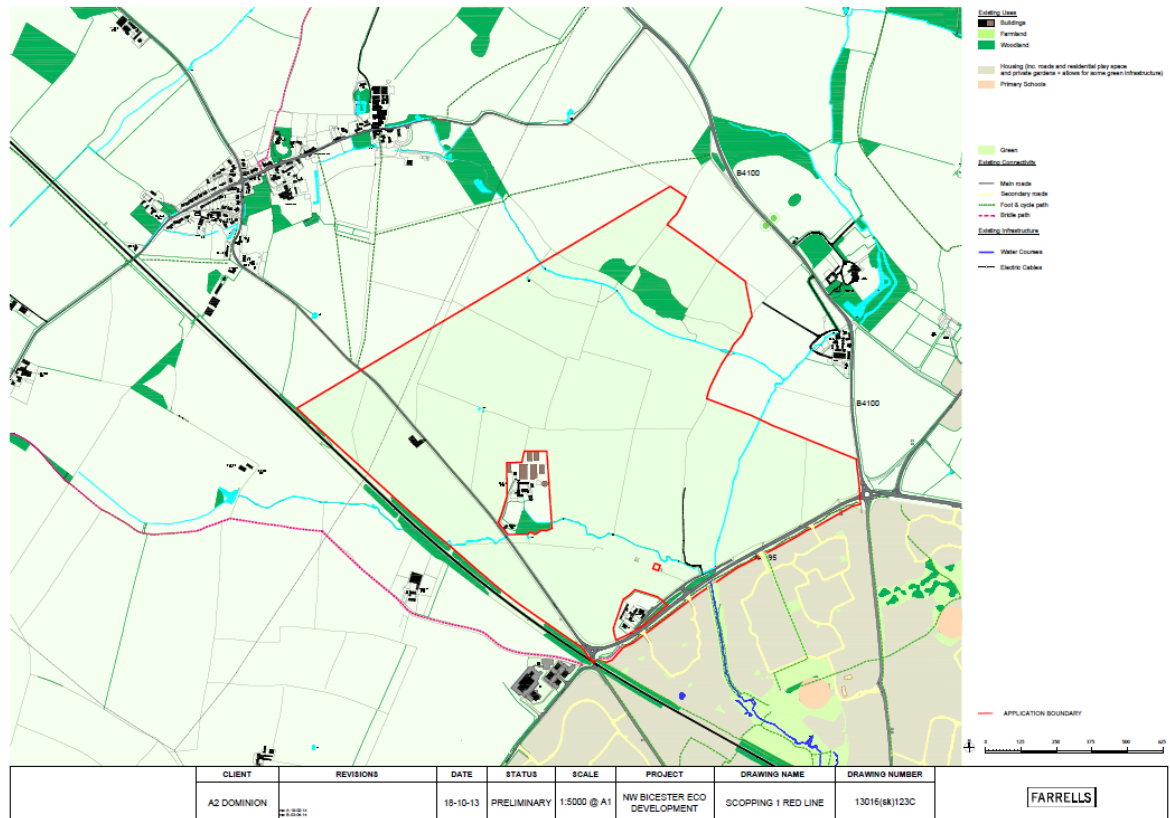


Figure 2-2 Application 1 (North of Railway) Site Plan

The location of Application 2 (South of Railway) and Application 3 (Infrastructure) are included in Appendix A of this Scoping Report for information.

2.2 Background to the Development

The emerging Cherwell Local Plan Submission draft (2014) identifies land at north-west of Bicester as a strategic site for the provision of an eco-development under Policy Bicester 1: North West Bicester Eco-Town.

This comprehensive policy seeks substantial home (at least 1,793 homes to be delivered within the plan period) and job (about 1,800 to be delivered within the plan period) creation set within the context of an eco development.

2.3 Application 1 (North of the Railway) Site Proposals

Application 1 comprises land within the NW Bicester eco-development area. The development proposals for the Site include provision for the following:

- Demolition of existing buildings and structures
- Circa 2,600 Residential dwellings (Class C3)
- Commercial floor space (Class A1, A2, A3, B1 and B2)
- Leisure facilities (Class D2)
- Social and community facilities (Class D1)
- A new Primary School (Class D1) and extension of exemplar primary school
- Extra Care Housing (Class C3)
- Green Infrastructure
- New Vehicular, cycle and pedestrian routes
- Water Treatment Plant and Energy Centre
- Bus only routes direct and fast links to the Bicester Town Centre and train stations
- Amenity space, including formal and informal play and recreation
- Service infrastructure

The Site planning application will be submitted in outline with all matters reserved. All such development shall accord with the Application Plans and Development Parameters Schedule.

2.4 Development Programme

The key planning and development milestones associated with the Masterplan site development proposals have been set out in Table 1 below:

Table 1: Development Programme

Development Programme	Planned Programme
Submission of Application 1 Outline Planning	July 2014
Planning Committee (Site)	Winter 2014
Submission of an Outline Planning Application 2 (South of Railway) and Full Planning for Application 3 (Infrastructure)	July 2014
Construction Start of Site (anticipated)	2018
Construction Period	Approximately 16 years

3 PROPOSED EIA SCOPE

3.1 EIA Approach

The EIA will be carried out in accordance with the legal requirements of the EIA Regulations, which implement EC Directive 85/337/EEC and its amendment 97/11/EC.

Several guideline documents have been used in defining the scope of the EIA and the assessment methodology to be used. The scoping exercise has also been based on experience of EIA for similar projects. In addition to observing the formal requirements of the EIA Directives and the EIA Regulations further formal guidance will inform the assessment. Examples include the National Planning Policy Framework, Practice Guidance on Environmental Impact Assessment (March 2014), Guidelines for Environmental Impact Assessment (IEMA, 2004), and Guidelines for Ecological Impact Assessment in the United Kingdom (IEEM, 2006).

In accordance with relevant guidelines, the EIA will incorporate the following elements:

The Baseline: Baseline environmental conditions, including those that are predicted to exist immediately prior to construction and operation of the development as well as those currently existing, will be identified through a number of means. They can be determined through the use of existing data or through undertaking additional surveys, studies and modelling. Each environmental discipline will identify resources and receptors that will need to be taken into account during the assessment process.

Assessment Scenarios: For all topics, assessments are made of the impacts with (Do-Something) and without (Do-Minimum) the proposed development. The Do-Minimum scenario represents a baseline against which the environmental effects of the development can be measured. This takes account of the likely future baseline conditions, allowing for planned future development that has not yet been implemented.

Spatial Scope: The area over which impacts could occur could be wider than the area of land directly taken by the proposals. It is inappropriate to define a single study area for the assessment, since the spatial scope varies depending on the topic under consideration. The study areas allow for the assessment of indirect as well as direct effects, including off-site works such as spoil disposal and routes for construction traffic.

Temporal Scope: In considering the environmental effects of the development, it is necessary to identify impacts that may occur during construction or operation. Construction extends from the commencement of site works to the date immediately prior to opening of the development. Operation extends from immediately after opening of the development for the remainder of its life. In addition, it is recognised that some environmental design measures would take time to become established and effective. The assessment therefore considers impacts in Year 1 (Opening Year) and in Year 20 (Design Year), where appropriate. It is also recognised that some effects would be of a permanent nature whereas others would be temporary.

Assessing Impacts: Impacts associated with the construction and operational stages of the proposed development will be identified during the course of the EIA process. These will be considered in terms of their nature, the physical extent of their influence and the magnitude of their effects. In considering the nature and significance of the impacts, the effects will be assessed on the basis of whether they will be:

- Direct or indirect
- Temporary, short, medium or long term
- Reversible or irreversible
- Beneficial or adverse

- Cumulative

Qualitative and quantitative techniques will be used to assess these impacts.

The EIA will also identify those elements of the development that have been introduced to mitigate potential adverse effects and will assess the significance of the impacts that remain after mitigation measures have been put in place (the “residual impacts”).

Determining Significance: Determining the severity of an effect and deciding whether or not it is significant is an important step in the formal EIA process and is necessary in order to satisfy statutory reporting requirements. In general, the severity of an impact reflects the importance or value of the affected resource or receptor, its sensitivity to change, and the magnitude of the predicted impact. The criteria for determining significance will vary from topic to topic but the general principle will be that higher magnitude impacts on important resources will be regarded as significant. Lower magnitude impacts on less important resources will not generally be regarded as significant.

Cumulative Impacts: Cumulative impacts result from the incremental impacts of the development when added to other past, present and reasonably foreseeable future actions. The impacts from a single development may not be significant on their own but when combined with other impacts and other developments, these effects could become significant.

Cumulative effects will be considered by describing and assessing the following:

- Interaction of impacts from the development with those from other plans or activities, including the various phases of the redevelopment of this site
- Interaction of different impacts of the development, which affect the same resource or receptor

Consultation: During the EIA process statutory and key non-statutory consultees will continue to be, engaged both as a part of the scoping process and during ES preparation. They will include: English Heritage, Natural England, the Environment Agency, and Cherwell District Council.

3.2 EIA Topics

With regard to the EIA guidelines, a number of EIA topics have been identified which are considered to warrant assessment. Our proposed approach to assessment for each of these topics is described in the Table 2 overleaf.

Table 2: EIA Topics and Scope

	Proposed Study Area	Existing Site Description	Further Data Collection Proposed	Potential Impacts	Mitigation and Opportunities for Enhancement	Proposed Assessment Methodology	Consultation
3.2.1 Air Quality	<p>In accordance with the Institute of Air Quality Management (IAQM) 'Guidance on the assessment of dust from demolition and construction' (2014), the construction dust study area would comprise an area within 350m of the boundary of the site and 50m of the route(s) used by construction vehicles on the public highway, up to 500m from the site entrance(s).</p> <p>The air quality study area for vehicle and energy centre emissions would be determined upon analysis of the traffic and energy centre data, respectively.</p>	<p>A review of the 2013 CDC Air Quality Updating and Screening Assessment and Progress Report has been undertaken. CDC has declared one Air Quality Management Area (AQMA) at Hennef Way. CDC has also identified an additional three other areas where an AQMA should be declared (at Horsefair/North Bar, Banbury; Kings End/Queens Avenue, Bicester; and Bicester Road, Kidlington) in the district. The proposed AQMA at Kings End/Queens Avenue, Bicester is the closest AQMA to the proposed site at a distance of 1.5km south-east of the development. All other pollutants have been found to be below the Air Quality Strategy (AQS) Objectives.</p> <p>CDC has one continuous automatic monitor but this is located in Banbury, a significant distance from Bicester. CDC operates a network of 38 diffusion tubes in the district, including nine in the Bicester area. This monitoring data suggests that exceedences of the annual average NO₂ objective has occurred at six of the nine sites where monitoring was undertaken in 2012. Tamarisk Gardens' monitoring location is closest to the proposed development; on the edge of Bicester with the diffusion tube located approximately 30 metres back from the A4095. This indicates that at background locations away from roads, the concentrations are significantly below the annual average objective for NO₂.</p> <p>In order to establish baseline conditions in the vicinity of the proposed development, a six month NO₂ diffusion tube survey has been undertaken in agreement with the Environmental Health Officer (EHO) at CDC. This has been undertaken to establish background concentrations in the area. Results from the monitoring indicated that the annual mean NO₂ concentration at all diffusion tube monitoring locations was below the annual mean AQS Objective of 40µg/m³.</p>	No further data collection has been proposed for this ES.	<p>The development has the potential to impact air quality in a number of ways, namely:</p> <ul style="list-style-type: none"> dust and vehicle emissions from the construction/demolition phase; and vehicle and energy centre emissions from the operational phase. <p>Construction/demolition phase impacts will primarily be related to dust emissions that can result in enhanced dust soiling and may, without adequate mitigation, temporarily affect amenity use and, potentially, commercial operations.</p> <p>Exhaust emissions from on-site plant and vehicles accessing the works may also affect local air quality.</p> <p>Operational impacts may be negative and/or positive and will arise from changes in exposure to traffic pollutants in response to new patterns of traffic flows on local road networks. In addition, emissions from the proposed energy centre may impact upon existing and future receptors.</p>	<p>The main operational phase impact on air quality will be from the increase in road vehicle exhaust emissions associated with traffic from the development. It will be important in terms of air quality and the overall sustainability of the site to implement sustainable travel measures, ensure the site is designed with travel minimisation in mind and ensure access to local transport facilities is facilitated. For example, there are proposals for a new rail link between Bicester and Oxford allowing direct links to London. It will be essential to minimise car travel to Bicester Town station by ensuring that fast and efficient public transport links are established between the Eco-Town and the station.</p> <p>Mitigation through design, such as siting sensitive receptors away from pollution sources, for example busy roads and the energy centre, should be taken account of in the Masterplan.</p> <p>Any necessary mitigation measures required for the energy centre will be identified as part of this assessment. Mitigation measures for potential construction phase impacts, such as dust and vehicle exhaust emissions, will be proposed in the ES following best practice guidance. A Construction Environmental Management Plan (CEMP) will identify mitigation measures to mitigate impacts.</p>	<p>Construction impacts would be assessed in accordance with the methodology outlined within the IAQM document 'Guidance on the Assessment of Dust from Demolition and Construction' (2014) and the Environmental Protection UK (EPUK) guidance 'Development Control: Planning for Air Quality' (2010).</p> <p>Operational impacts would be assessed in accordance with the EPUK Development Control: Planning for Air Quality (2010). The impacts of road vehicle emissions on existing and future receptors would be modelled using the dispersion model ADMS (Roads). Results would be compared with the relevant AQS Objectives.</p> <p>The impacts of the proposed energy centre emissions on existing and future receptors would be modelled using the using the United States Environmental Protection Agency (US EPA) dispersion model, AERMOD. Results would be compared with the relevant AQS Objectives.</p>	<p>The EPO at CDC has been consulted previously for the Exemplar ES and it will be necessary to continue to consult with the EHO throughout the Site EIA process.</p>

	Proposed Study Area	Existing Site Description	Further Data Collection Proposed	Potential Impacts	Mitigation and Opportunities for Enhancement	Proposed Assessment Methodology	Consultation
3.2.2 Noise	<p>To assess the operational impact due to road traffic noise associated with the Masterplan Site, the study area will consider the local road network where the Traffic Assessment indicates a change in traffic flows. The effects upon traffic flows on the road network within this study area will form the basis for the noise impact upon existing receptors from road traffic noise.</p> <p>The criteria set out in The Design Manual for Roads and Bridges (DMRB), Volume 11, Section 3, Part 7 will be considered. In order to establish if the Masterplan Site would be suitable for residential use the extent of the study area would cover all of the land within the boundary of the site. This is to ensure that noise levels across the site would comply with The National Planning Policy Framework (NPPF) and Planning Policy Guidance Note 24: Noise (PPG 24). The NPPF does not present fixed criteria against which to assess the suitability of the site for the proposed development, so the assessment will consider the criteria in PPG24 as well.</p> <p>The study area for construction noise will be defined by the nearest sensitive receptors to the boundary of the sites. It is usual to include all sensitive receptors within 100m of the boundary. The study area will however change as different phases of the development are constructed.</p> <p>It was requested by the EHO for Cherwell District Council that noise and vibration impacts from the Chiltern Railway Line on the</p>	<p>An aerial overview of the site indicates that road traffic noise would be the dominant noise source across the site. This would include road traffic on the local road network as well as the M40.</p> <p>Noise and vibration impacts are also likely from the Chiltern main railway line, although this would be confined to a corridor in proximity to the railway line.</p> <p>There are no dominant sources of industrial noise in close proximity to the site.</p>	<p>None</p> <p>A full noise survey was agreed with in consultation with the EPO for Cherwell District Council.</p> <p>The noise survey monitoring locations were selected to consider the full Development Site and consider any cumulative noise impacts from the respective developments.</p> <p>It was agreed with the EPO that the $L_{Aeq,T}$; L_{A90}; L_{A10}; L_{Amin} and L_{Amax} would be measured at all locations.</p> <p>It was agreed that long-term noise monitoring would be carried out at 6 locations. The long-term monitoring would be carried out over a period of 4 days, allowing for data to be collected on a typical weekday, a Friday and a weekend.</p> <p>It was agreed with the EHO that 2 of the long-term monitoring locations would be along the Chiltern main railway line. Vibration measurements were also requested at these 2 locations by the EHO to consider any vibration impacts from rail movements.</p> <p>Short-term monitoring during the daytime</p>	<p>Potential increase in local ambient noise levels due to increases in traffic flows on surrounding road network.</p> <p>Operational noise impacts may arise from plant and equipment related to the commercial component of the development on the adjacent Exemplar site.</p> <p>It will also be assumed that once the Bicester Eco Town is occupied, background noise levels will be similar to those measured in adjacent residential areas. These noise levels will be used to recommend design noise limits for plant to be installed on site.</p> <p>Potential for construction noise to cause a nuisance for sensitive receptors in the vicinity of the site. The type and extent of noise impact will be dependent upon the contractor's chosen methods of working. Examples of potential noise sources include traffic noise from haulage vehicles, excavators, piling and movement of materials.</p> <p>Vibration levels from any construction plant on site will be discussed in a qualitative nature. At this stage in the planning process it is unlikely that sufficient information would be available to allow vibration levels to be predicted at identified receptors.</p>	<ul style="list-style-type: none"> Across the site mitigation measures will be recommended to ensure that all residential dwellings will fall into noise exposure category A or B as defined in PPG 24. A number of measures can be introduced to control the source of, or limit exposure to, noise. Such measures will be proportionate and reasonable and may include one or more of the following: <ul style="list-style-type: none"> Lay-out: If there are any proposed residential dwellings which will be close to existing roads, then site layout should be considered with non-critical rooms (kitchens & bathrooms) designed to face the roads. The design or layout of the site could also be utilised in order for buildings to act as noise screening for the development For the operational aspect of the development any increases of over 3dB due to road traffic noise which would occur 15 years after opening will be mitigated against if possible. Different forms of mitigation could include the use of noise barriers or the implementation of low noise surfacing on affected road links Noise control measures consistent with good working practices would be implemented during the construction phase. The noise control measures would be developed within a Construction Environmental 	<p>The operational impacts will arise from increased road traffic and from fixed plant and similar installations to be constructed on site. Operational traffic will be assessed using the provisions in the Design Manual for Roads and Bridges (DMRB) Volume 11, Part 7, Section 3 – Noise and Vibration. Noise from operational plant will be assessed according to the provisions in BS 4142: 1997 'Method for rating of industrial noise affecting mixed residential and industrial areas' (BS4142).</p> <p>Noise from the railway line will be modelled in IMMI to indicate noise impacts on the Site immediately adjacent to the railway.</p> <p>The assessment of whether the proposed site would be suitable for residual use will be undertaken in accordance with the National Planning Policy Framework (NPPF), which has replaced PPG24 and the NPPG, which informs implementation of NPPF . BS8233: 2014 'Guidance on sound insulation and noise reduction for buildings' will be used to provide an indication acoustic performance that would be required from the façade of residential dwellings to ensure the indoor amenity of building occupants.</p> <p>Potential vibration impacts from rail movements on the Chiltern main railway will be assessed in accordance with BS 6472-1: 2008 'Guide to evaluation of human exposure to vibration in</p>	<p>Consultation with EHO for Cherwell District Council has been undertaken.</p>

	Proposed Study Area	Existing Site Description	Further Data Collection Proposed	Potential Impacts	Mitigation and Opportunities for Enhancement	Proposed Assessment Methodology	Consultation
	development site be considered.		and night-time was also agreed at 2 locations in response to discussions with the EHO. The EHO raised the issue of possible noise impacts from the M40 motorway to the north of the site. The EHO indicated that the relatively light traffic volumes on Bucknell Road did not warrant long-term noise monitoring, but it was decided to carry out short term monitoring during the daytime and night-time along Bucknell Road.		Management Plan (CEMP), which would be prepared prior to construction commencing	buildings Part 1 Vibration sources other than blasting.' Construction noise impacts will be assessed in accordance with BS 5228: 2009 +A1: 2014 (Code of practice for noise and vibration control on open and construction sites – Part1: Noise). BS 5228-2009 Part 2 - Vibration deals with vibration control on construction and open sites. BS5228 also provides guidance concerning methods of predicting and measuring noise and assessing its impact on those exposed to it. BS 5228: 2009 +A1: 2014, Annex E, sets out criteria for significance based upon noise change. The ABC method describes a threshold of significant effect at dwellings when the total noise level, rounded to the nearest decibel, exceeds a listed category value. If the total noise level (construction plus ambient pre-construction) exceeds the appropriate category value, then a significant effect is deemed to occur.	
3.2.3 Landscape and Visual Impact	The Study Area is defined by the Zone of Visual Influence (ZVI) of the development. Given the relatively flat topography, vegetation cover and adjacent urban area, the ZVI is not anticipated to extend greater than 1km beyond the site boundary.	The existing site is not covered by any landscape designations. Landscape Character is defined by the transition between Natural England National Character Areas 107 and 108, the 'Cotswolds' and 'Upper Thames Clay Vales', respectively, and more locally by the 'Wooded Estatelands' landscape character type identified in the Oxfordshire Wildlife and Landscape Study (2004). The site is largely made up of mixed farmland with landscape elements/features including copses, hedgerows and isolated properties/ farmsteads. Key visual receptors, within and adjacent to the site, include local Public Rights of Way, residential	Identification of landscape receptors (local landscape character/ characteristics); and visual receptors.	Potential loss of local landscape elements potentially resulting in impacts on landscape character. Potential disturbance to views resulting in impacts on visual amenity.	Given the wooded character of the landscape, green infrastructure/structural planting proposals have the potential to offer mitigation (replacement for any vegetation removal/respond to settings of visual receptors) and positively contribute to local landscape character – potentially resulting in enhancement.	The assessment will be undertaken in accordance with 'Guidelines for Landscape and Visual Impact Assessment: 3 rd Edition', produced by the Landscape Institute and Institute of Environmental Management and Assessment (2013).	Viewpoints have been agreed with the Landscape Officer and Case Officer at the Local Planning Authority. There may be a need to confirm consultation comments.

	Proposed Study Area	Existing Site Description	Further Data Collection Proposed	Potential Impacts	Mitigation and Opportunities for Enhancement	Proposed Assessment Methodology	Consultation
		properties at the northern edge of Bicester, and outlying small settlements/properties including Listed Buildings at Home Farm, the Church of St. Lawrence and Himley Farm. See 3.2.4 below.					
3.2.4 Archaeology & Cultural Heritage	The Study Area is defined by a 500m radius from the site boundary. For the Historic Landscape assessment a wider study area influenced by the Zone of Visual Influence will be used where appropriate.	<p>There are no Listed Buildings within the existing site boundary. However just outside the site boundary are the listed buildings of Home Farmhouse and St Lawrence's Church. These have been considered within the Cultural Heritage Assessment for the Exemplar Site.</p> <p>Aerial Photograph Analysis, Geophysical Survey and Archaeological Evaluation have already been carried out within the existing site.</p> <p>The aerial photograph analysis and geophysical survey identified a number of archaeological features across the site including a complex and extensive area of buried ditches, pits, probable tracks and enclosures. These features show as distinctive marks in crops at Hawkswell Farm.</p> <p>The archaeological evaluation tested the findings of the aerial photograph analysis and geophysics and confirmed their results and indicated that the area of activity around Hawkswell Farm was related to Roman settlement activity. A number of trenches across the site also contain evidence for Iron Age activity including possible enclosures. A potential burnt mound, of possible Bronze Age date, a rare feature in Oxfordshire, was also recorded during the evaluation.</p>	Update Historic Environment Records (HER) data and designated assets	Potential impacts to the setting of designated assets. Impacts to the archaeological remains recorded during the fieldwork. Impacts on the Historic Landscape.	<p>Archaeological excavation and recording of areas where fieldwork to date has identified archaeology. Screening and sympathetic design in vicinity of the listed buildings.</p> <p>Preservation of historic landscape features such as field boundaries and hedgerows within the design.</p>	The assessment will be undertaken in accordance with the Institute for Archaeologists Code of Conduct and Standards and Guidance for Desk-based Assessment (2012). The assessment will also be produced in accordance with the NPPF and in the absence of any methodology for impact assessment will use a modified version of the impact assessment methodology presented in Volume 11 of the Design Manual for Roads and Bridges (2007).	The Planning Archaeologist for Oxfordshire Richard Oram and the Conservation Officer at Cherwell District Council Claire Sutton have been consulted over the lifetime of this project. The Planning Archaeologist for Oxfordshire was also consulted during the archaeological field evaluation carried out at the site and made a number of monitoring visits. Consultations with these will continue going forward.
3.2.5 Human Health	The study area for the human health assessment is closely related to that used for other environmental topics as human health is a cross-cutting topic that influences and is influenced by a number of other environmental factors. To understand existing health status, a study area covering Cherwell DC will be used with a focus upon the wards in	<p>The assessment of effects on human health will utilise baseline data collated for other environmental topics including:</p> <ul style="list-style-type: none"> ▪ Details about the demographic profile and the provision of community and social infrastructure e.g. schools and community centres. ▪ Location of Public Rights of Way and cycle routes that traverse and lie within the vicinity of the site as well as details of the Bicester Walkability 	Further statistics about the health status of those communities that could be affected including incidence of mortality from key diseases such as cancer, coronary heart disease and respiratory disease, as well as health	The following impacts from the development could affect human health and will be considered during the assessment: <ul style="list-style-type: none"> ▪ Changes to noise and vibration ▪ Changes to air quality ▪ Generation of waste during construction and waste management techniques 	Connections to nearby footpaths, bridleways and cyclepaths should be provided as part of the development. The design should be informed by the Bicester Walkability and Cyclability audits as well as the Oxfordshire County Council Rights of Way Improvement Plan 2014-2024 (RoWIP). Although various stakeholders have been engaged in the	A standalone Health Impact Assessment (HIA) is not being undertaken for this Scheme, rather the assessment of effects on human health is being integrated into the ES to ensure that the interrelationships between health and other environmental topics are considered holistically. The methods proposed within	During the preparation of the assessment, consultation will be undertaken with the Oxfordshire Clinical Commissioning Groups, Oxfordshire County Council and Cherwell District Council to obtain baseline data. Consultation will occur with the Director of Public Health as part of the masterplanning exercise to determine the

	Proposed Study Area	Existing Site Description	Further Data Collection Proposed	Potential Impacts	Mitigation and Opportunities for Enhancement	Proposed Assessment Methodology	Consultation
	<p>which the Site is situated (Caversfield, Ambrosden and Chesteron, Bicester West and Bicester North), as well as those within the immediate vicinity. This is to ensure that existing health patterns for the communities surrounding the site are characterised. Reference will also be made, where necessary, to trends reported for Oxfordshire to provide appropriate contextual information and comparative statistics.</p> <p>The assessment will utilise the results of other topics. These topics may use different study areas to that defined above and this will be acknowledged in the ES. The study area, therefore, will vary depending upon the health determinants being considered as part of the assessment.</p>	<p>audits and cyclability audits.</p> <ul style="list-style-type: none"> ▪ Details of existing and potential areas of land contamination presented within the geology and soils assessment ▪ Existing air quality and noise issues presented as part of the air quality and noise and vibration assessments ▪ Existing green space infrastructure presented in both the socio-economic and landscape assessments <p>The health status of the population living in Cherwell district is generally good with life expectancy above the England average. Over the past ten years there have been health improvements with the rates of death from all causes combined and of early death from heart disease having improved.</p> <p>Despite there being good levels of health overall, there are health inequalities with significant differences in health outcomes for those living in the most affluent wards to those residents who live in the more deprived communities.</p> <p>The closest GP Practice to the Site will be the health facility proposed as part of the planning application for LSRL. A review will be undertaken to determine the accessibility to other health facilities in Bicester including time to travel by the main transport modes.</p>	<p>conditions linked to lifestyles, including incidence of obesity and type II diabetes where this is available. It may only be possible to obtain borough level data and comparative statistics for the county and the South East region.</p> <p>Accessibility indicators which demonstrate current accessibility to facilities including primary schools, secondary schools, GPs, hospitals, further education, and the means of access available, e.g. walking, cycling, public transport, will be collated.</p> <p>Further details will be obtained about the provision and capacity of local healthcare facilities.</p> <p>Data will be sourced from the South East Public Health Observatory and Cherwell DC as necessary.</p>	<p>employed at the site</p> <ul style="list-style-type: none"> ▪ Changes to the landscape and the built environment and the effects upon the ability to pursue healthy lifestyles ▪ Changes to the transport network including cycle routes and PRoW. ▪ Access to healthcare facilities and services. ▪ Access to community facilities including schools. ▪ Changes to community dynamics and feelings of community spirit and engagement. ▪ Creation of employment opportunities and access to employment centres. 	<p>design process, further opportunities should be sought to maximise engagement and collaboration with local residents such that they feel engaged in the process and can actively contribute to the urban space that will be created. This could help contribute to a greater sense of belonging and place. Consultation events should consider the types of open space that are needed and the types of public art that could be incorporated into them to help create a sense of place and ownership.</p> <p>Informal sport and recreation facilities have already been incorporated in the design with direct benefits on health in the long-term Issues including natural surveillance and perceptions of safety should also be integral to the detailed design of areas of open space. The design of the site should ensure that cyclists and pedestrians are given priority over vehicular traffic.</p> <p>The design of and facilities provided at the site in the Eco-town need to meet the requirements of all sectors of society.</p>	<p>the Merseyside Guidelines for HIA¹ will be used to guide the assessment of effects on human health although they will be adapted to reflect the integration of human health considerations into the ES. The assessment will use a broad definition of health which recognises that health is affected by more than simply the presence or absence of disease and is influenced by a range of health determinants. The assessment will consider the following determinants:</p> <ul style="list-style-type: none"> ▪ Employment and Economy ▪ Safety and Security ▪ Air quality ▪ Noise and Vibration ▪ Physical Environment (focussing on built form and urban design) ▪ Transport and Access (including consideration of issues relating to PRoW and cycle routes) ▪ Waste Management and Contamination ▪ Community and Social Infrastructure ▪ Community Spirit and Engagement ▪ Access and provision of healthcare and facilities and services <p>There is no widely accepted significance criteria used in the assessment of health effects. The assessment will report whether health impacts are positive or negative i.e. a potential health gain or loss, drawing upon professional</p>	<p>existing capacity of healthcare facilities and to determine the additional facilities that will be needed to support the Masterplan site.</p> <p>Consultation utilising focus groups and workshops specific to human health issues will not form a specific part of the EIA methodology. However, stakeholder events are to be held as part of the site design process and the information from these events will be used to inform the assessment where appropriate.</p>

¹ Alex Scott-Samuel, Birley, Martin and Ardern, Kate (May 2001) The Merseyside Guidelines for Health Impact Assessment

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						<p>judgement and evidence in health literature. The likelihood of the effects being realised will be documented.</p> <p>The cross-cutting nature of the human health assessment will require the use of results presented in other environmental topics to determine the potential effects of the Site on health outcomes.</p>	
3.2.6 Agriculture & Land Use	<p>The study area comprises the Masterplan site. However, the potential impacts will need to be put into a Regional and national context, in particular in relation to the loss of agricultural land.</p>	<p>The soils are mapped as belonging to the Aberford Series across the whole site. These are described as shallow, locally brashy well drained calcareous fine loamy soils over limestone. These soils are relatively freely draining, but are identified as having a high leaching potential and thus little ability to retain non-adsorbed pesticides, which may therefore leach out of the soils and into surface or groundwater. It is not considered that the soils present any significant constraints with the exception of the high leaching potential and thus the need to ensure the protection of any groundwater resources.</p> <p>The land is predominantly under arable production with some grazing. The ground appears to have a low topography. The land is shown as being Grade 3 (under the Agricultural Land Classification (ALC) scheme) on provisional mapping. ALC surveys are on-going and this detailed mapping is confirming that the site is likely to be predominantly Grade 3b, with small areas of both Grade 3a and Grade 4 land. Grade 3a land would fall within the 'Best and Most Versatile' category (BMV).</p> <p>There are a number of farm buildings within the main site area (but excluded from the development area). These comprise a dairy farm and a number of industrial units, both with their associated services.</p>	<p>Existing soil information has been collated through published soil maps and a Soils Site Report obtained from the National Soil Resources Institute. In addition, a specific ALC survey is on-going (approximately 50% of the site has been surveyed to date).</p> <p>The landowners have been interviewed (in April 2011) to gain an understanding of the farm businesses. These interviews will be repeated to ensure any changes to the businesses since 2011 are captured.</p>	<p>The total site area is approximately 154.82ha in area and therefore has the potential to affect a significant area of existing agricultural land. Current site information indicates that around 8% of the land will be Grade 3a (i.e. BMV), which would equate to approximately 14ha.</p> <p>Development of this area also leads to the potential risk of effects on soil and water quality, resulting from compaction, poor soil handling and silt-laden runoff.</p> <p>The impact on farm viability will depend predominantly on the phasing of the development and how the loss of land affects operations, potentially resulting in parts of a land holding becoming unviable for a period of time. There is also the potential for construction activities to result in disturbance to livestock, and for the development during the operation phase to bring the urban fringe closer to areas which have currently been further from potential vandalism effects.</p>	<p>The soil handling methodologies as set out in the Construction Code of Practice for the Sustainable Use of Soils on Construction Sites (Defra, 2009) should be followed. This should include the development of a Soil Resources Plan. This can have significant benefits in terms of reducing the environmental impacts of transporting and disposing of surplus materials. This should be tied in with the Site Waste Management Plan. The phasing of the development will take account of the farm businesses which would be affected. A considerate construction approach would be used to minimise potential impacts on the agricultural enterprises during the construction phase</p> <p>There may be opportunities for enhancements under the following headings:</p> <p>Use of Sustainable Drainage Systems (SuDS)</p> <p>Within the SuDS opportunities should be taken to maximise the use of soils won from site to both attenuate and treat flows during both the construction and operational phases.</p> <p>Local food production</p> <p>Opportunities to promote local</p>	<p>There are no legislative requirements governing the assessment of agricultural matters, and the framework of any assessment is derived from a combination of EU and national agricultural and land use policies and measures. The key elements of these can be summarised as:</p> <ol style="list-style-type: none"> 1. The conservation of the BMV resources of agricultural land; 2. Retention of a competitive and sustainable agricultural industry; 3. The diversification of individual farm businesses into supplementary non-agricultural activities; 4. The more positive engagement of individual farm businesses with the delivery of environmental benefits <p>Current best practice and professional judgement will be used to define significance criteria in relation to both agricultural land and farming businesses.</p>	<p>Consultation with Natural England and the landowner(s) will be undertaken.</p>

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					<p>food production, and to maximise the ability of the soils to support this, should be taken. Advice should be provided to home and allotment growers on how best to handle and care for the soil resource. This may go some way to mitigating for the overall loss of agricultural productivity across the site.</p> <p>Biodiversity</p> <p>Within the Soil Resources Plan specific soils should be identified for use in habitat creation areas. These soils have the potential (depending on nutrient status in particular) to support species-rich grassland and woodland communities and inclusion of such habitats would enhance the biodiversity of the site.</p>		
3.2.7 Ecology	<p>The study area for the field surveys comprises the Masterplan Site. Desk information relating to protected species and non-statutory designated sites has been obtained for land that is within and up to 5km from the Masterplan Site boundary. For statutory designated sites of international and national importance for nature conservation the search area has been increased to 10km from the Masterplan Site boundary.</p>	<p>The Site predominantly comprises arable land and fields supporting improved grassland. Most of the hedgerows are species-rich.</p> <p>There are three blocks of mature broad-leaved woodland in this area comprising native and no-native tree species with species-poor ground floras.</p> <p>The River Bure and one of its tributaries converge within the Site before entering Bure Park. These watercourses are winterbournes. Water quality within these watercourses is good. The active railway line on the site boundary is raised on a scrub and tree covered embankment. There is one small pond within the Masterplan site, to the north of Hawkwell Farm.</p> <p>The ecological surveys undertaken include: Phase 1 habitat and protected species walkover surveys; assessment of hedgerows; breeding and wintering bird surveys; terrestrial and aquatic invertebrate surveys, including white-clawed crayfish; reptile surveys; great crested newt surveys; otter and water vole surveys, dormice surveys; and bat</p>	<p>No further ecological data collection is anticipated.</p>	<p>The following impacts from the proposed development could affect ecology and will be considered during the assessment:</p> <ul style="list-style-type: none"> ▪ Loss of arable land and pasture, thus the loss of habitat that is used by nesting farmland birds and foraging barn owls. ▪ Loss of open watercourse and/or fragmentation of the stream corridor with potential impacts on foraging bats. ▪ Hedgerow loss and/or fragmentation of the hedgerow network with potential impacts on terrestrial invertebrates, breeding birds and foraging bats. ▪ Loss of mature trees. ▪ Loss of trees that may support roosting bats. ▪ Disturbance of bats using 	<p>Large areas of open space will be created with scope to offset any adverse effects on terrestrial invertebrates, reptiles, birds and bats.</p> <p>The larger areas of open space will be situated close to existing countryside to decrease the likelihood of disturbance to species in retained areas of farmland.</p> <p>Green networks will be provided to allow for the movement of species in particular Species of Principal Importance under the NERC Act (2006).</p> <p>The fragmentation of the hedgerow and stream networks and loss of trees will be kept to a minimum.</p> <p>Hedgerows, stream corridors and the pond will be retained within suitable buffer zones to maintain their value for wildlife. These features will be incorporated into green</p>	<p>The 'Guidelines for Ecological Impact Assessment in the United Kingdom' (IEM 2006) will be followed with respect to the assessment of impacts.</p>	<p>The consultees listed below have been consulted with respect to the scope of the Ecological Surveys and will continue to be consulted throughout the assessment process:</p> <ul style="list-style-type: none"> ▪ Cherwell DC Biodiversity/Countryside Officer and Eco town Project Manager ▪ Berkshire, Buckinghamshire and Oxfordshire Wildlife Trust Conservation Officer ▪ Natural England's Lead Environmental Planning Officer; ▪ Oxfordshire County Council's Ecologist and Natural Environment Manager ▪ Environment Agency's Biodiversity and Planning Officers ▪ the NW Bicester Eco Town

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		<p>surveys; and badger surveys. These surveys were undertaken at an appropriate time of year and following best practice guidance, using suitably qualified (and licensed, where necessary) ecologists.</p> <p>The surveys confirmed the presence of a 'main' badger sett located on the tributary of the River Bure, west of Home Farm, just outside the Site boundary. A further large sett (a subsidiary sett) was located in the area of broadleaved semi-natural woodland 200m to the north-west, with a further two small 'outlying' setts in between these two setts. Badgers are likely to forage within the site.</p> <p>Smooth newts were recorded in the pond at Hawkwell Farm. Great crested newts do not breed in this pond and any confirmed or potential breeding sites for great crested newts are sufficient distance from the Site boundary or separated from the site by significant barriers so that it is unlikely that the Site would be of value to great crested newts.</p> <p>Small numbers of common pipistrelle bats were confirmed to be roosting within a mature Ash tree on the edge of the woodland to the west of Home Farm. The hedgerows and riparian corridors provide suitable foraging and commuting habitat for bats.</p> <p>Brown hairstreak butterfly eggs were identified within the Site, and the hedgerows, scrub and woodland within the site is suitable for this species. There are records of white-letter hairstreak butterflies nearby, and this species is likely to be present in the hedgerows. Several Nationally Scarce invertebrates were identified within or in close proximity to the Site, including Shaded Pug Moth, a bark beetle, and Roesel's bush cricket (now generally considered to be a Nationally Local species rather than Nationally Notable). No rare or uncommon aquatic invertebrates have been recorded in the Site.</p> <p>Fish species recorded incidentally during the aquatic invertebrate surveys include</p>		<p>known roosts during construction.</p> <ul style="list-style-type: none"> ▪ Lighting has the potential to affect wildlife using retained habitats, in particular invertebrates, foraging bats and future potential use by species such as otters. ▪ Loss of habitat that is used by reptiles. ▪ Loss of habitat that is used by brown hare and potentially hedgehogs. ▪ Disturbance of breeding birds arising from noise and visual disturbance during construction. ▪ Incidental mortality of amphibians, reptiles and breeding birds during construction. ▪ Disturbance to badgers during construction and/or damage to setts. Loss of foraging habitat. ▪ Once built, there is the potential that the residents and their pets could have adverse effects on wildlife present within the retained habitats. ▪ Domestic pets associated with new residents may also lead to an increase in predation affecting ground-nesting birds using the adjacent farmland 	<p>corridors and green space that provide for the movement of wildlife across the site, including brown hairstreak and white-letter hairstreak butterfly species.</p> <p>The badger setts will all be retained within a suitable buffer to protect them from damage during construction and to avoid/reduce disturbance impacts.</p> <p>Scheme design will ensure the retention of known bat roosts within an appropriate buffer.</p> <p>Dark corridors will be provided to benefit nocturnal species such as bats.</p> <p>The layout of the footpaths and cycles paths has sought to minimise impacts on valuable habitats (the woodlands and stream corridors).</p> <p>The implementation of standard mitigation techniques will prevent adverse impacts on water quality on site and downstream.</p> <p>The Masterplan includes SUDS to protect habitats on site and downstream. It also provides the opportunity to create habitats of value to wildlife.</p> <p>Landscape planting provides the opportunity to create habitats of value to wildlife.</p> <p>Measures to protect and enhance the retained and newly created semi-natural habitats within the development would be secured through a Biodiversity Strategy.</p> <p>Habitats of value to nesting and foraging birds such as the hedgerows and woodlands would be retained within suitable buffers of semi-natural habitat, this together with the creation of large areas of open space on the edge of the</p>		<p>BioRegional Development Co-ordinator</p> <ul style="list-style-type: none"> ▪ Bicester Town Council ▪ Thames Valley Police

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		<p>bullhead; a species associated with good water quality.</p> <p>Small numbers of common lizards have been recorded in suitable habitats across the Site, grass snake have been recorded nearby.</p> <p>Twelve bird species of conservation concern were recorded as either breeding or probable breeding within the Masterplan site, including farmland specialists such as skylark, linnet and yellowhammer.</p> <p>Low/moderate numbers of bird species of conservation concern were recorded during wintering bird surveys within the Masterplan site. The distribution of wintering birds reflected the field and hedgerow management, with stubble fields and the less heavily trimmed hedgerows supporting higher numbers.</p> <p>In 2010 a pair of barn owls was confirmed to be breeding within a nest box north of the Site boundary. In 2012 this nest box was relocated to a tree on the edge of woodland to the west of Home Farm, within the Site boundary. Small numbers of brown hare were recorded within the Site. Hedgehog are likely to forage within the Site. No white-clawed crayfish, dormice, otters or water voles were recorded within the Site.</p> <p>There are three Sites of Special Scientific Interest (SSSIs) and one Local Nature Reserve (LNR) within 5km of the Masterplan site, and a further nine SSSIs within 10km.</p> <p>There are also two Conservation Target Areas (CTAs), sixteen Local Wildlife Sites (LWS) (two of which include proposed extensions), and four proposed LWSs, located within 5km.</p>			<p>Masterplan site that includes a Country Park and woodland cemetery, would reduce the scale of the impact on certain species.</p> <p>Funds would be provided to enhance local habitats for farmland birds through appropriate, proven management regimes to increase the carrying capacity of local habitats.</p> <p>Compensating for the loss of habitat for farmland birds. This offsite compensation would also provide habitat suitable for other farmland specialist species such as brown hare and harvest mice.</p> <p>Nest boxes would be provided in advance of site clearance to compensate for habitat loss and/or disturbance. New nest/roost sites would be provided for wildlife in the areas of open space (bats, birds, invertebrates and herpetofauna).</p> <p>New woodland would be created on the western edge of value to biodiversity.</p> <p>The hedgerow buffers would be enhance through habitat creation and managed to benefit fauna (invertebrates, birds and reptiles).</p>		
3.2.8 Socio-economics & Community	Consideration of socio-economic and community effects for the Site will be focused within two defined spatial areas, namely a Central	<p>The site is located north of Bicester town, between the B4030 and the B4100.</p> <p>Bicester is a rapidly expanding historic</p>	The following data collection is proposed as part of the assessment:	<p>During the construction stage the following impacts have been identified:</p> <ul style="list-style-type: none"> The potential to generate 	Potential mitigation measures may include a local employment and training strategy and a communications and consultation strategy to	The methodology for assessing temporary (construction) socio-economic effects will be based on the standard English Partnerships methodology,	During the preparation of the assessment, further consultation will be undertaken as appropriate with individuals relating to key socio-economic

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	<p>Impact Zone (CIZ) and a Wider Impact Zone (WIZ).</p> <p>The CIZ is defined by the four electoral wards that form Bicester settlement (Bicester North, West, East, South and Bicester Town), plus the electoral ward of Caversfield (within which the majority of the site is located). Potential impacts in this area will be more direct in nature and more significant in scale.</p> <p>The WIZ will consider the site in the wider region, focusing on the District of Cherwell, the Local Authority area of Oxfordshire and the wider East Midlands region within which it sits. Potential impacts in this area are more indirect in nature and less significant in scale.</p> <p>Selection of these two spatial areas allows consideration of both local and regional potential impacts of the proposed development. The CIZ will be the focus for the consideration of impact to include an appreciation for social infrastructure and community facility capacity and provision.</p>	<p>market town and now has a population of approximately 43,000² (Census 2011). The Demographic Profile Report (November 2013) prepared by Barton Willmore aims to further understand the demographic structure of the NW Bicester Eco-Town proposals and uses the Chelmer Model to forecast population change, using two agreed scenarios for NW Bicester (a baseline and upper range trajectory). The model forecasts a total change in population across the overall study area of approximately 19,000 between 2011 and 2052 (based on either the NW Bicester baseline or upper range scenario), with the population of NW Bicester set to grow to 14,000 over this period (13,425 based on the 'upper range scenario'). Bicester's economy is focused on defence activities at the Ministry of Defence Bicester, storage and distribution, food processing, engineering and publishing. Its proximity to and close relationship with Oxford helps the town by creating opportunities for economic development..</p> <p>In terms of planned future development of the settlement, it is important to note the following significant developments:</p> <ul style="list-style-type: none"> ▪ Graven Hill - a strategic housing site of 1,631 homes at south west Bicester, including a health village, sports provision, employment land, a hotel, a new secondary school, a community hall and a 'local centre' ▪ Permission has also been granted for another site of 500 homes at Gavray Drive, including a new primary school, open space and a local wildlife site ▪ The first phase of Bicester town centre redevelopment has opened, including a superstore, cinema and 	<ul style="list-style-type: none"> ▪ Utilisation of population modelling prepared as part of the Eco-Town proposals. Reference will be made to both the Chelmer and Popcalc modelling that has been undertaken (the latter by Oxfordshire County Council), noting that , although there are differences in detail between the two models arising from the way in which they forecast future population, the population output for both models broadly corresponds. For the purposes of population, the study area comprises each of the Census wards making up the central area of the town as well as the wards immediately surrounding it. Further breakdown of employment and unemployment statistics including employment by sector ▪ Understanding 	<p>direct and indirect employment</p> <ul style="list-style-type: none"> ▪ The potential impact on accessing key services and amenities such as health facilities, care services, schools and transportation hubs ▪ The potential impacts on local leisure and recreation <p>During the functional stage of the site the impacts are envisaged to include:</p> <ul style="list-style-type: none"> ▪ The contribution to housing supply in terms of affordability and variety ▪ The contribution to the broader amenity and open space provision for the Bicester area ▪ The contribution to community facility and service provision including health care facilities, potential community meeting venues and accommodation for possible outreach projects ▪ The impact on education facilities – primary, secondary and tertiary ▪ The potential impact on crime and anti-social behaviour. In this instance there is the potential to engage with a Police Crime Prevention Design Advisor ▪ The long-term contribution to local business capabilities and local economy ▪ The impact of the proposals on existing recreation sites and Public Rights of Way 	<p>ensure the community is informed in advance of planned works and disruption.</p> <p>For the functional phase of the development, mitigation measures are likely to also include ensuring adequate provision of social and community infrastructure, a local employment and training strategy, provision of access routes and communication routes between the new and existing community, and development of a community integration strategy.</p>	<p>supplemented by a qualitative assessment of secondary disruption effects from traffic and other primary construction impacts.</p> <p>The methodology for assessing the 'functional' effects of the development mixes both quantitative and qualitative assessments as follows:</p> <ul style="list-style-type: none"> ▪ Analysis of proposed land use and floor space provision to determine employment generation potential from the new development, coupled with an assessment of the likely effect on the employment availability for the existing economically active population ▪ Comparison of the provision of new social and community infrastructure with identified needs and existing under provision within the existing community ▪ Consideration of cumulative effects, for example development of the site alongside other developments in the locality ▪ Recommendation of mitigation measure, where appropriate <p>Assessment of residual effects following implementation of mitigation measures</p>	<p>themes:</p> <ul style="list-style-type: none"> ▪ Tourism Officer, Cherwell District Council ▪ Public Rights of Way Officer, Oxfordshire County Council ▪ Healthcare Officer, Oxfordshire Clinical Commissioning Groups ▪ Bicester Town Council ▪ Local Constabulary, Banbury Constabulary ▪ Education Services, Oxfordshire County Council ▪ Leisure and Recreation Officer, Cherwell District Council ▪ Social Services, Oxfordshire County Council <p>Stakeholder events are to be held as part of the site design process and the information from these events will also be used to inform the assessment where appropriate.</p>

² North West Bicester Eco Town, Demographic Profile Report, Barton Willmore, November 2013

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		<p>smaller retail units. Phase 2 is proposed in the emerging Local Plan</p>	<p>the provision of existing community facilities and their capacity within the area</p> <ul style="list-style-type: none"> ▪ Baseline data will be used from published sources including the Office of National Statistics, the Annual Business Inquiry, and consideration for Cherwell DC Annual Monitoring Reports. This will also be supplemented by consultations with representatives of key themes being considered and by information prepared as part of the wider Masterplan proposal (for example the NW Bicester Draft Economic Strategy). ▪ Some of the socioeconomic datasets gathered will also provide the evidence base for the Health Impact Assessment <p>In terms of social nuisances resulting from either the construction or functional stages of the Masterplan Site, this will draw on the research findings of other</p>				

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			disciplines including 'air quality', 'noise' and 'landscape and visual' themes				
3.2.9 Waste - Operation & Construction	As Cherwell DC is the waste collection authority, the Study Area will comprise Cherwell District and any waste facilities that will receive waste arising from the Construction and Excavation, and Operational phases, of the development.	<p>Construction waste</p> <p>The existing site is largely undeveloped land. It is anticipated that there will be little or no demolition materials which would need to be considered for incorporation into the new-build phase of the project.</p> <p>Berkshire, Buckinghamshire and Oxfordshire have an estimated total Construction, Demolition and Excavation (C,D&E) waste arisings of 4,233,432 tonnes (2005) (Reference: C,D&E Waste: Survey of Arisings and Use of Alternatives to Primary Aggregates in England, 2005). Of this total:</p> <ul style="list-style-type: none"> 29% was recycled to produce graded and ungraded aggregates and soil (excluding topsoil) by the regions 25 recycling crushers; 41% entered licensed landfill sites (of this 28% was used for engineering and capping and 72% was waste); and 30% was used on exempt sites. <p>PPS: Eco-Towns – A supplement to PPS1 requires that Eco Towns ensure that no construction, demolition and excavation waste is sent to landfill, except for those types of waste where landfill is the least environmentally damaging option.</p> <p>Operational waste</p> <p>Cherwell DC recycling rates are already well above the average for Authorities in England. According to WasteDataFlow 57,378 tonnes of Municipal Waste was generated in Cherwell District in 2012/13 of which 31,300 tonnes was sent for recycling/composting/reuse. This equates to a recycling rate of 54.55%, compared to 60% in Oxfordshire and</p>	<p>Further data collection is proposed for the following:</p> <ul style="list-style-type: none"> Location of all treatment and disposal facilities for wastes generated during Construction and Excavation and Operational stages Any updated waste targets set by Cherwell DC Details of Cherwell DC waste and recycling collection systems (materials collected, receptacles provided, frequency of collection etc.) Details of any new preferred treatment/ disposal option for the region and implications on collections from new build developments 	<p>The following potential impacts have been identified:</p> <p>At a local level:</p> <ul style="list-style-type: none"> Waste collections and management – whether the local infrastructure has the capacity to receive and manage any likely waste arisings from the development. <p>At a regional level:</p> <ul style="list-style-type: none"> Waste capacity – whether the regional infrastructure has the capacity to manage or dispose of any residual waste arising from the development. <p>It is anticipated that construction material waste likely to arise from the new-build phase will consist of hard and inert materials, soils and stones, plastics, packaging (wooden and plastic), insulation material, miscellaneous metals, canteen and office waste.</p> <p>As a worst case scenario, it is anticipated that types of waste generated during operation will be similar to those already generated by residential/commercial activities within Cherwell District and the quantities of domestic household waste remain in keeping with existing wastage rates (measured as 'kg per household') Recycling rates will be at least equivalent to Cherwell District. However it is anticipated that wastage and recycling rates (Kg produced per household) are likely to be</p>	<p>Construction waste</p> <p>Against the context of the previously mentioned requirements of PPS1, the Eco Town has the opportunity to deliver Best Practice construction waste minimisation and management in accordance with the WRAP (Waste and Resources Action Programme) definition.</p> <p>Operational waste</p> <p>Against the context of the existing high recycling rates in the District and the requirements of PPS1, there is opportunity to design a showcase waste management system at the Eco Development.</p> <p>The waste management system (including waste storage and collection) should be designed to mitigate against potential local impacts and achieve maximum recycling and landfill diversion, thus mitigating against the potential impact of not meeting targets.</p> <p>It is anticipated that wastage and recycling rates (Kg produced per household) are likely to be considerably improved to meet project specific targets: an initial recycling rate of 70% and an initial residual waste level of 300kg/household(set in response to the requirements of PPS: Eco-Towns – A supplement to PPS1).</p> <p>It is assumed that any impacts</p>	<p>In order to assess the residual effects that the construction and operational waste produced by the new development two separate criteria will be used. Construction and operational waste will be assessed separately. These are detailed below:</p> <p>Potential waste impact classification: This will be determined by the level of wastes volumes likely to arise during the construction and operational phases of the development.</p> <p>Waste Management impact classification: This will assess the proposed waste management measures (mitigation) for the project, in conjunction with the capacity of the local and regional infrastructure to manage these wastes. Together this will be used to assess the residual impact of waste generated from the development.</p> <p>Significance of impacts: This will be determined by combining the two impacts (potential waste generated and waste management measures) in an assessment matrix.</p>	<p>Informal correspondence with the Head of Environmental Services at Cherwell District Council.</p> <p>Formal consultation required to:</p> <ul style="list-style-type: none"> Discuss waste management aspirations for the Eco Town; Determine a formal position with regards to any future waste facilities in the region and implications on waste management at the development;

	Proposed Study Area	Existing Site Description	Further Data Collection Proposed	Potential Impacts	Mitigation and Opportunities for Enhancement	Proposed Assessment Methodology	Consultation
		<p>45% in England.</p> <p>Most dry recyclables are currently delivered to M&M Materials Recovery Facility (MRF) in Witney, Oxfordshire (approximately 90%). The other 10% to Cheshire transfer station from where it is transferred to UPM MRF in Deeside.</p> <p>Cherwell District Council rolled out food collection services in October 2009, with everyone in the district being served by April 2010. The mixed garden waste and food waste goes to an in vessel composting facility (IVC) at Ardley (operated by Agrivert). This is in year three of a 15 year agreement.</p> <p>Most residual waste goes to Ardley Landfill. Residual waste generated in the north of the district goes to Banbury Waste Transfer station and then to Calvert in Buckinghamshire.</p> <p>In March 2011, Oxfordshire County Council awarded a 25 year contract for residual waste treatment to Viridor Oxfordshire Ltd. From 2014/15 all residual waste will be burnt to produce electricity at the new £200m energy from waste facility being built at Ardley in north Oxfordshire which will:</p> <ul style="list-style-type: none"> ▪ have capacity to treat 300,000 tonnes of waste per year – sufficient to treat all of Oxfordshire’s residual municipal waste; and ▪ divert at least 95% of Oxfordshire’s residual municipal waste from landfill 		<p>considerably improved to meet project specific targets: an initial recycling rate of 70% and an initial residual waste level of 300kg/household(set in response to the requirements of PPS: Eco-Towns – A supplement to PPS1)</p> <p>Environmental impacts of waste within treatment/ disposal facilities will not be included within this EIA.</p>	<p>of operational waste within treatment and disposal facilities will be addressed in the facility EIAs and covered by their license/permit conditions.</p>		
3.2.10 Flood risk & Hydrology	<p>The study area for the water environment consists of the site, along with the wider catchments of the two tributaries of the River Bure that flow through the site and the Bure itself to the A4095.</p> <p>The study area extends downstream of the site boundary to ensure that the assessment of the potential for flood risk impacts includes downstream third party lands.</p>	<p>Surface water runoff across the site flows largely at greenfield rates to the Bure and its tributaries, with the potential for localised ponding to occur in small low lying areas. There are also a number of ponds within the site boundary.</p> <p>Baseline flood risk within the site has been confirmed using a hydraulic model, which has been constructed to confirm flood plain extents. These are confined to the watercourse corridors and at the confluences between the River Bure and its two tributaries that flow through the</p>	<p>Consultation with the Environment Agency and Lead Local Flood Risk Authority is proposed to ensure that existing baseline data sets are up to date for the Site.</p>	<p>The development could lead to degradation of the water quality of surface and groundwater receptors during construction and operational phases of the development.</p> <p>Surface water runoff rates could be increased leading to an increase in flood risk elsewhere.</p> <p>Flooding of the development could occur should buildings be</p>	<p>Proposed mitigation and opportunities of enhancement are considered to be:</p> <ul style="list-style-type: none"> ▪ Implementation of a surface water drainage strategy utilising SuDS measures to ensure that surface water runoff from the site is maintained at greenfield rates and good water quality standards are promoted. ▪ Site master-planning to 	<p>A standalone Flood Risk Assessment (FRA) will be undertaken for this Scheme, and will be appended to the ES.</p> <p>The ES will consider the impacts of the proposed development upon the water quality and flow regimes of surface and groundwater receptors within and immediately downstream of the site using the methodology set</p>	<p>Consultation is ongoing with the Environment Agency and the drainage engineers at Cherwell DC.</p>

	Proposed Study Area	Existing Site Description	Further Data Collection Proposed	Potential Impacts	Mitigation and Opportunities for Enhancement	Proposed Assessment Methodology	Consultation
		<p>site.</p> <p>The Bure achieves Moderate Ecological Potential with regard to water quality and receives several consented discharges of effluent.</p> <p>Groundwater fed springs are likely to support baseflow to the tributaries of the Bure that flow through the site and feed the existing ponds within the site.</p>		placed within the flood plain.	<p>ensure that there is no loss of floodplain storage up to and including the 100 year event</p> <ul style="list-style-type: none"> Construction works in accordance with a CEMP to avoid water quality degradation Enhancement of water features to provide increased value for biodiversity and recreation. Minimised water consumption through both demand reduction and water use efficiency methods. The development will aspire to meet the water consumption requirement of Level 5 of the Code for Sustainable Homes 	<p>out in the paper 'Practical Methodology for Determining the Significance of Impacts on the Water Environment' (Mustow et al, 2005) and guidance provided in the Design Manual for Roads and Bridges.</p>	
3.2.11 Contaminated Land	<p>The study area for the contaminated land assessment is defined by the site boundary. Consideration will be given to factors outside the boundary which may have an influence on the site, such as landfill sites (gas generation). The assessment will address the potential risks to human health and controlled waters that the development may represent.</p>	<p>Since the earliest available historical map (1881) to the present day, the site has been dominated by agricultural activity with the railway to the south.</p> <p>Geologically, the Site is underlain by a thin cover of superficial deposits. At rock head, this is represented by the Cornbrash Formation, which is underlain by the Forest Marble Formation. This geological sequence is generally confirmed by the ground investigations undertaken.</p> <p>The bedrock is designated as a Secondary A aquifer. The site is not located with a Source Protection Zone and there are no major potable water supplies (such as public water supply wells) within 5 km of the Site centre.</p> <p>A historic landfill is recorded as present at Gowell Farm which is located to the south of the site boundary. This is currently part of Avonbury Business Park. Records suggest that this location may have been previously quarried for limestone. We understand that a ground</p>	<p>Further data collection is not proposed at this stage.</p>	<p>If contamination is present, the development could lead to mobilisation of contaminants which could pose a risk to receptors.</p> <p>If contamination is encountered this is likely to be mitigated via remediation prior to construction, so operational impacts will be negligible.</p>	<p>If unacceptable risks are identified, a remedial strategy will be prepared which will detail the work required to ensure that the site is suitable for proposed use.</p> <p>Mitigation measures during construction are considered to be</p> <ul style="list-style-type: none"> Dust suppression (damping down, wheel washing etc.) to minimise airborne dust Water mitigation – appropriate stockpiling of material to ensure controlled waters are not put at risk <p>Spillage mitigation – use of spill kits, drip trays.</p> <p>A CEMP will be produced to mitigate potential impacts.</p>	<p>Site investigation information (chemical results) will be used to assess the risk to human health and controlled waters. Appropriate screening values will be used such as published Soil Guideline Values and Water Quality Standards.</p>	<p>Environment Agency and Local Authority Contaminated Land Officer will be contacted to ensure that the baseline data previously obtained is still appropriate</p>

	Proposed Study Area	Existing Site Description	Further Data Collection Proposed	Potential Impacts	Mitigation and Opportunities for Enhancement	Proposed Assessment Methodology	Consultation
		investigation is going to be done on this area to determine the nature of the fill and any impact this may have on the surrounding proposed development.					
3.2.12 Transport	The study area will include links where traffic flows are forecast to increase by more than 10%. In order to ensure that the extent of these impacts is considered, the study area will include the entirety of Bicester for the purposes of initial assessment in order to be able to identify links where traffic levels are increased. This area encompasses the road network of Bicester within the twelve cordon locations (which are the points of entry/exit to Bicester).	<p>The site currently has access from the A4095 Lord's Lane from the south and is crossed by Bucknell Road east of the railway line. Other access would be via the proposed junctions on Banbury Road for the Exemplar development.</p> <p>The A4095 currently forms part of the ring road around Bicester and in the vicinity of the site has key roundabout junctions with the B4100 Banbury Road and Bucknell Road and links under the railway to the A4095 Howes Lane.</p> <p>Bucknell Road provides access to Bicester town centre to the south and the village of Bucknell to the north.</p>	Further data collection is not proposed. Baseline traffic data has been obtained from the Bicester Saturn Model for the Masterplan submission. Accident data has also been obtained for the Masterplan submission.	The development could lead to a change in severance due to difficulties in crossing roads with additional traffic volumes, or benefits of providing new routes and crossing. There may be delay to drivers from congestion on the road network and pedestrian delay in crossing roads. The levels of personal injury accidents may increase due to volumes of traffic or be benefitted by new link proposals and junction improvements. In addition, there may be increased fear and intimidation caused by traffic. Increased traffic levels experienced within sensitive areas such as existing residential areas of the town will be a particular concern. They will be a concern in terms of leading to intrusion/fear and delays to pedestrians crossing the roads. Derived air and noise impacts will be assessed in the relevant Air And Noise chapters.	<p>Mitigation measures include:</p> <ul style="list-style-type: none"> ▪ Comprehensive proposals for walking, cycling and public transport ▪ Strategy for construction traffic management ▪ Provision of new link road and junctions to replace existing A4095 Howes Lane and part of Lords Lane ▪ Travel Plan to demonstrate how sustainable travel will be maximised <p>Agreed junction mitigation strategy for off- site locations</p>	<p>A standalone Transport Assessment and separate Framework Travel Plan will be produced for the scheme.</p> <p>The environmental impacts of traffic will be assessed using the 'Guidelines for the Environmental Assessment of Road Traffic', Institute of Environmental Assessment, 1994.</p> <p>The base year is 2012 and the future year is 2031. The 'do minimum' scenario in 2031 includes all planned developments in Bicester except for the NW Bicester development (only the Exemplar is included). The 'do something scenario' includes all development including the proposed development of NW Bicester.</p>	<p>The organisations listed below have been consulted with respect to the Exemplar development and will continue to be consulted throughout the assessment process for the Masterplan development:</p> <ul style="list-style-type: none"> ▪ Cherwell District Council ▪ Oxfordshire County Council ▪ Highways Agency

4 SUMMARY AND NEXT STEPS

4.1 Summary

Section 3 of this Scoping Report provides an outline of the existing site description and highlights potential impacts that may arise as a result of the proposed development of the Site. Following this initial review, it is proposed to consider the following environmental topics in the EIA for the Application 1 (North of Railway) eco development site:

- Air Quality
- Noise
- Landscape and Visual Impact
- Cultural Heritage
- Human Health
- Agriculture and Land Use
- Ecology
- Socio-Economics and Community
- Waste (Construction and Operation)
- Flood Risk and Hydrology
- Contaminated Land
- Transport

Further data collection is required in order to inform the EIA. As part of this exercise, it is proposed to contact the following statutory and non-statutory organisations:

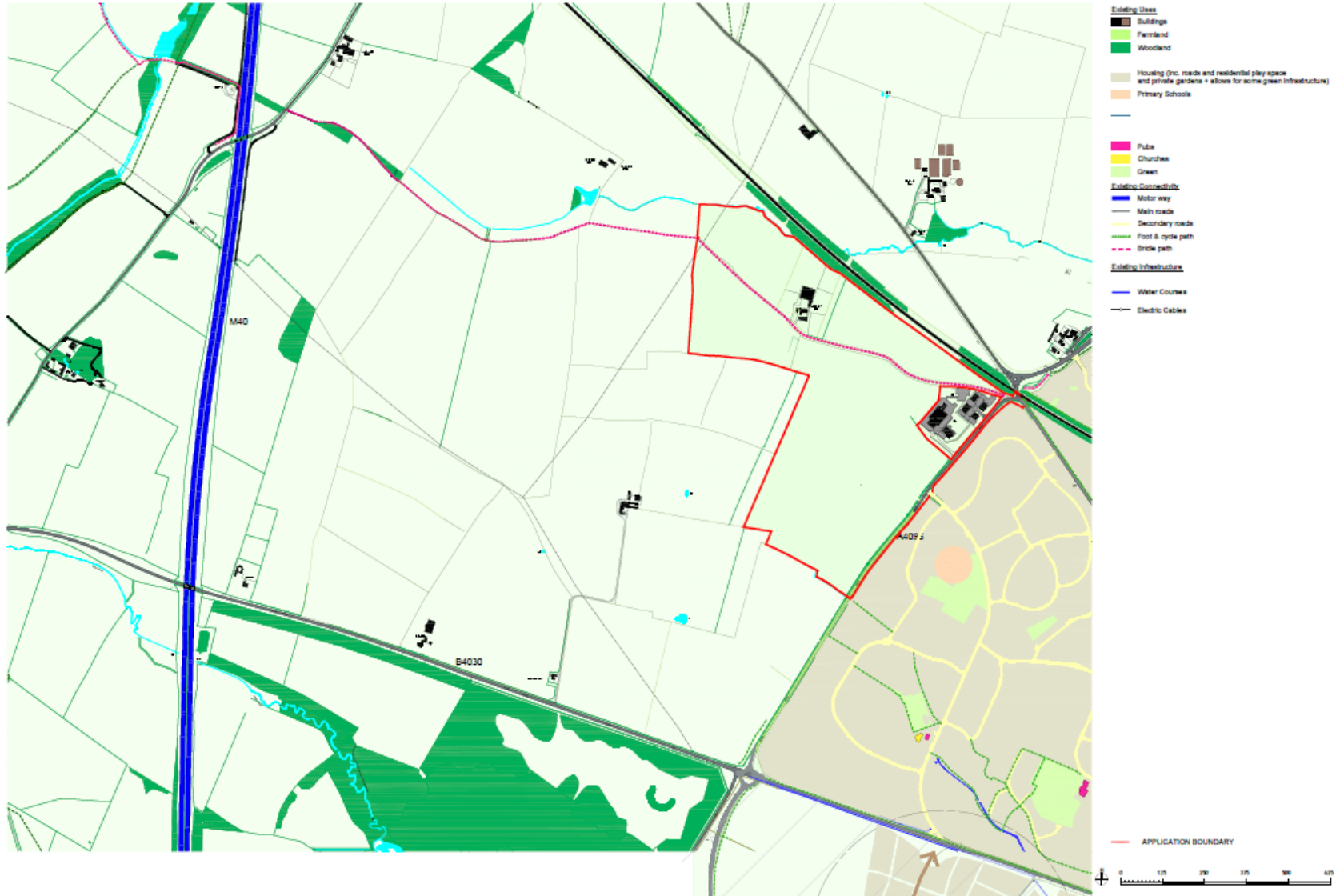
- Cherwell District Council
- Environment Agency
- English Heritage
- Natural England
- Oxfordshire County Council
- Local landfill operators
- Local waste management facilities
- Thames Valley Environmental Records Centre
- Parish Councils
- Oxfordshire Clinical Commissioning Groups
- Bicester Town Council
- Banbury Constabulary
- Thames Water

4.2 Next Steps

This Scoping Report sets out our proposed approach to the Site EIA, in terms of study areas, data collection, proposed methodologies and potential for mitigation and enhancement. The Report also sets out our proposed approach for consultation with Cherwell District Council and relevant consultees. These consultees have been identified for each topic, and are summarised in Section 4.1 above.

Following receipt of comments regarding our proposals for the Site, the EIA will be progressed, as agreed with Cherwell District Council. An Environmental Statement will be prepared and will be submitted with the Planning Application for the Site.

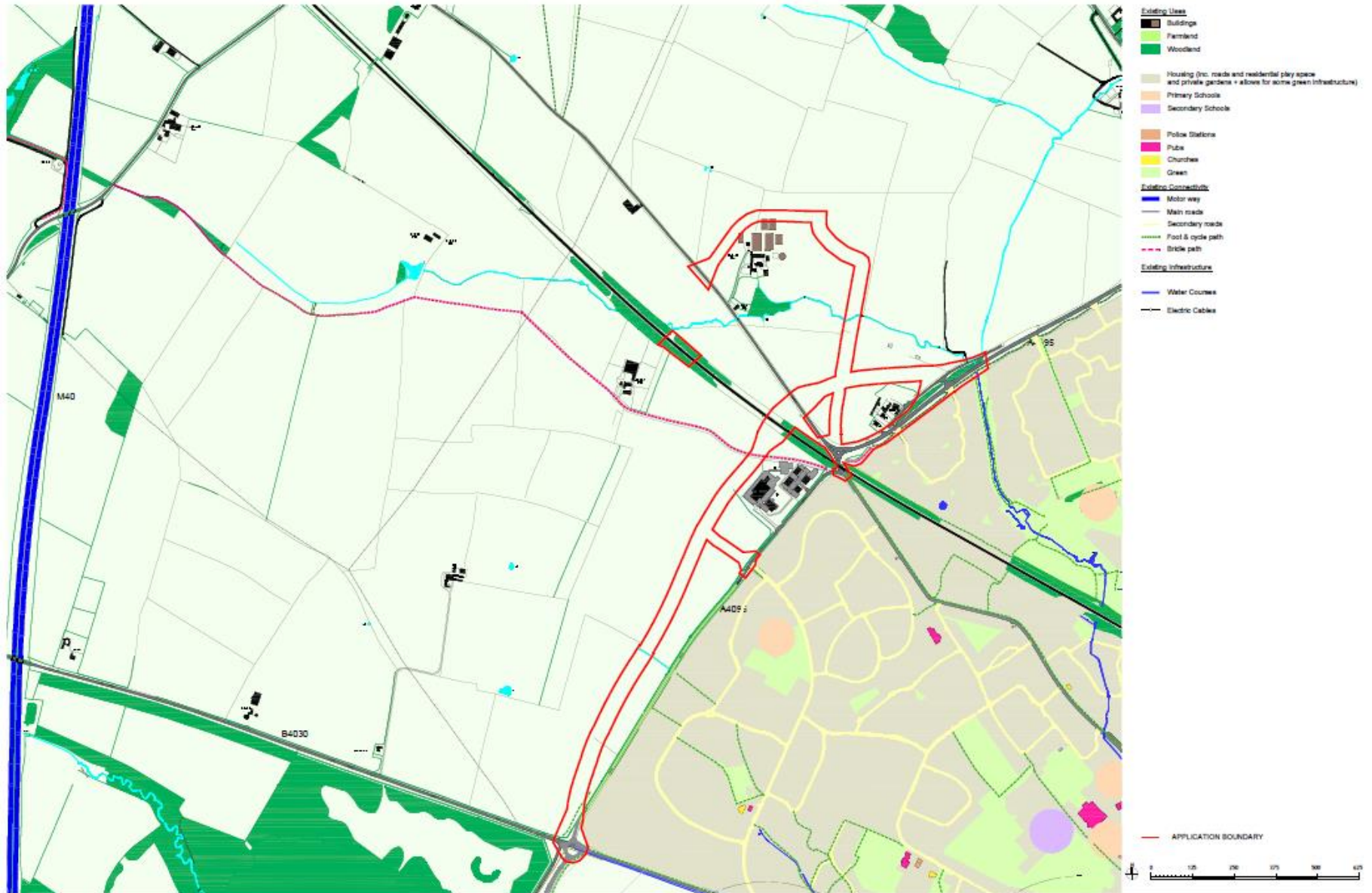
Application 2 (South of the Railway) Site Location



CLIENT	REVISIONS	DATE	STATUS	SCALE	PROJECT	DRAWING NAME	DRAWING NUMBER
A2 DOMINION	18-10-13	PRELIMINARY	1:5000 @ A1	NW BICESTER ECO DEVELOPMENT	APPLICATION 2 RED LINE	13016(sk)122B

FARRELLS

Application 3 (Infrastructure) Site Location



CLIENT	REVISIONS	DATE	STATUS	SCALE	PROJECT	DRAWING NAME	DRAWING NUMBER
A2 DOMINION	<ul style="list-style-type: none"> 1. 0.0000 14 2. 0.0000 14 3. 0.0000 14 4. 0.0000 14 	18-10-13	PRELIMINARY	1:5000 @ A1	NW BICESTER ECO DEVELOPMENT	APPLICATION 3 RED LINE	13016(6K)124D

FARRELLS