



BLENHEIM ESTATE

HOMES

Land East of
Park View
Woodstock

Report to inform a Habitats Regulations Assessment



**Land East of Park View,
Woodstock**

Report to inform a Habitats
Regulations Assessment

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1 Introduction

Background

- 1.1 BSG Ecology was commissioned by Blenheim Estate Homes on 25 March 2021 to carry out ecological survey and assessment work to inform the Proposed Development of Land East of Park View, Woodstock ('the Site'). Following its appointment BSG Ecology has carried out a desk study and a range of baseline ecological surveys, the results of which have informed subsequent ecological impact assessment.
- 1.2 BSG Ecology has prepared Technical Appendix E: Natural Heritage of the Environmental Statement (ES). As part of ecological impact assessment to inform the planning application submission BSG Ecology has identified one European site¹, Oxford Meadows Special Area of Conservation (SAC) which could potentially be impacted by the Proposed Development. This site is afforded protection under the Conservation of Habitats and Species Regulations 2017 (as amended) and this legislation places a legal duty on 'competent authorities' to ensure their protection.
- 1.3 The Proposed Development was previously included in the Local Plan as PR10 (Cherwell District Council, 2015), but following a review by the Local Plan Examiner, was subsequently removed due to its distance from Oxford (albeit free of technical obstacles) and the number of dwellings redistributed to other allocated sites. A Habitats Regulations Assessment (HRA) of the Local Plan was undertaken by Atkins on behalf of Cherwell District Council (CDC) in 2018 (Atkins, 2018) which concluded that the *'Partial Review of the Cherwell Local Plan 2011-2031 (Part 1): Oxford's Unmet Housing Needs Proposed Submission Plan incorporating Focused Changes and Minor Modifications will not have an effect on the integrity of the Oxford Meadows SAC either alone or in-combination with other projects and plans.'* The HRA was subsequently updated in 2019 (Atkins, 2019) following the removal of PR10 from the Local Plan and the report states that the modifications to the Local Plan do not include any new sites and *'the overall number of dwellings proposed remains the unchanged'*. On this basis, the conclusions of the HRA Stage 1 and Stage 2 Appropriate Assessment (Atkins, 2018) that there would be no effect on the integrity of the Oxford Meadows SAC in-combination with other projects and plans remained valid.
- 1.4 The Annual Monitoring Report 2021 (Cherwell District Council, 2021) sets out that there is a shortfall in 'deliverable' housing sites in the district and there is less than a five-year supply of such sites, both between 2021 to 2026 and 2022 to 2027. For the period 2021 to 2026 there is a shortfall of 1864 dwellings and for 2022 to 2027 there is a shortfall of 2255 dwellings. This demonstrates that the 500 dwellings proposed as part of this development will fall within the capacity of the overall number of dwellings assessed within the 2018 and 2019 HRA and a conclusion of no effect on the Oxford Meadows SAC either alone or in-combination with other projects and plans is likely to remain valid.
- 1.5 This document provides information that will help CDC to discharge its' duties as the 'competent authority' as defined under Regulation 63 (1) of the Conservation of Habitats and Species Regulations 2017 (as amended)². It is presented as a shadow Habitats Regulations Assessment (HRA)³.

Site description

- 1.6 A detailed description of the habitats recorded within the Site provided at Technical Appendix E of the ES (BSG Ecology, 2022). In summary, the Site comprises a single arable field, with poor semi-improved grassland field margins and broadleaved semi-natural woodland and hedgerows at the boundaries. The Site is approximately 48.65 ha in extent and located to the south-east of Woodstock; the extent of the Site is shown on Figure 1 at Appendix 1.

¹ The term 'European site' includes Special Areas of Conservation, Special Protection Areas and Ramsar sites. In the National Planning Policy Framework the term 'habitats sites' is used synonymously.

² On 31 January 2020 the UK left the EU at which point the 2017 Regulations were amended by The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019.

³ Under the Conservation of Habitats and Species Regulations 2017 (as amended) the 'competent authority' is responsible for completing a Habitats Regulations Assessment (HRA). If an HRA is carried out by a third party with the objective of it being adopted by the competent authority, this is often referred to as a shadow HRA.

Description of project

- 1.7 Outline planning application to develop up to 500 dwellings, a community square (0.21 ha) and a primary road with associated infrastructure, open space, engineering and ancillary works.
- 1.8 The area covered by the HRA is the area that has been covered by the desk study and by the ecological surveys. The extent of the study area reflects the potential Zone of Influence (Zoi) of the Proposed Development, which varies depending upon the sensitivity of the ecological receptor (species, habitat or designated site) that is being considered and the extent of impacts arising from the Proposed Development.

Consultation

- 1.9 A scoping report was issued to CDC by Terence O'Rourke in December 2021, however no scoping opinion was received. A scoping response from Natural England was received on 28 January 2022, which identified that the Proposed Development may impact upon Oxford Meadows SAC.
- 1.10 There has been regular liaison by BSG Ecology with relevant members of the project team led by Terence O'Rourke throughout the design stages of the Proposed Development.

Report Structure

- 1.11 This report documents the HRA for the Proposed Development at Land East of Park View, Woodstock. It identifies, analyses and quantifies (where possible) potential negative impacts on Oxford Meadows SAC. The report is structured as follows:
- Section 1: sets out the purpose of the report and provides an overview of the project.
 - Section 2: describes the Habitats Regulations Assessment process.
 - Section 3: sets out the scope of the assessment and how this has been derived.
 - Section 4: identifies the European sites (i.e. Oxford Meadows SAC) that may potentially be impacted by the project, together with ecological information about the designated site.
 - Section 5: sets out the screening for any Likely Significant Effects, which has been carried out in the absence of mitigation measures.
 - Section 6: describes the Appropriate Assessment, which includes mitigation measures where appropriate.
 - Section 7: presents the conclusions of the assessment.

Contributors

- 1.12 The report has been prepared by Rachel Bamford, MCIEEM. Rachel is a Senior Ecologist at BSG Ecology. She has developed expertise in delivering ecological support for a wide range of projects including residential and major infrastructure projects. She has a sound knowledge and practical experience of the field survey techniques required for habitats and protected species, underpinned by a good understanding of wildlife legislation and its application.
- 1.13 The report has been reviewed by Peter Shepherd, Director at BSG Ecology. Peter has worked in the ecological sector for more than 25 years. During this time, he has contributed to a wide range of projects, both as author and technical reviewer. This has included Environmental Impact Assessment (EIA), HRA, large and small scale habitat and biodiversity design within new developments, management planning for a wide range of sites, biodiversity infrastructure provision in masterplans, research and training provision.
- 1.14 Further details of the experience and qualifications of the above can be found at <http://www.bsg-ecology.com/people/>.

2 Habitats Regulations Assessment

Legislation

- 2.1 This section describes the legislation and policy as it applies now that the UK has left the European Union.
- 2.2 Guidance from Defra has been provided on the application of the relevant legislation in the post-Brexit period in their policy paper published on 01 January 2021 available at <https://www.gov.uk/government/publications/changes-to-the-habitats-regulations-2017/changes-to-the-habitats-regulations-2017>.
- 2.3 The Conservation of Habitats and Species Regulations 2017 (as amended) provide for the protection of particular habitats, plants and animals through the creation of, and specific decision-making procedures applied to, the 'national site network' (Regulation 3 'Interpretation'). This 'national site network' includes SACs and Special Protection Areas (SPAs) that were designated or classified both in that period when the UK was a member of the EU and designated since the UK has left the EU.
- 2.4 It is UK Government policy (in England this is identified in paragraph 181 of the National Planning Policy Framework, 2021) that all competent authorities should treat candidate SACs (cSACs) and potential SPAs (pSPAs) as being within the provisions of the Conservation of Habitats and Species Regulations 2017 (as amended).
- 2.5 In this report the term 'European Sites' is used to refer collectively to SACs, cSACs, SPAs and pSPAs. Although they are referred to as the 'national site network' in those recently amended parts of the Habitats Regulations, the decision-making procedures concerning HRA, as set out in Regulation 63, continue to refer to them as 'European Sites' (as does much of the available guidance) and for that reason in this report they are referred to collectively as European Sites.

Habitats Regulations Assessment process

- 2.6 The requirements of the Habitats Regulations with regard to the implications of plans or projects are set out within Regulation 63 of the Habitats Regulations. The step-based approach implicit within this regulation is referred to as a 'Habitats Regulations Assessment', which is the term that has been used throughout this report.
- 2.7 It is a requirement of any public body (referred to as a competent authority within the Habitats Regulations) to undertake an HRA when they are proposing to carry out a project, implement a plan or authorise another party to carry out a plan or project. Competent authorities are required to record the process undertaken, ensuring that there will be no adverse effects on the integrity of any European Site, because of a plan or project whether alone or in combination with other plans or projects. In this case the competent authority is Cherwell District Council.

Assessment stages

- 2.8 The assessment of a plan or project goes through several stages, with guidance having been published to aid competent authorities fulfil their responsibilities (e.g., Defra, 2021). Those stages are summarised in Table 1 below.

Table 1: Stages in the Habitats Regulations Assessment process

Stage	Description	Legislative Context
Purpose	Determines if the purpose of the plan or project is directly connected with, or necessary, to the management of a European Site. If it is, then no further assessment is necessary	Regulation 63(1)(b)
Scoping	The identification of any European Site that might be within scope of a HRA, i.e., those European Sites should be taken forward to the screening stage based on a wide consideration of spatial and ecological factors. Such European Sites may be located within the plan or project area but may also include sites located in neighbouring authority areas.	
Screening	Assessment of whether a plan or project, either alone or in combination with other plans or projects, is likely to have a significant effect on any European Sites' qualifying features (habitats and species) and the achievement of the European Site's conservation objectives. This is also known as the 'test of likely significant effect' (ToLSE).	Regulation 63(1)(a)
Appropriate Assessment	Consideration of the impacts of the proposals to determine whether or not it is possible to conclude with certainty that the project will not result in any adverse effect on the integrity of any European Site, either alone or in combination with other plans or projects and with reference to the European Site's conservation objectives. This is also known as the test of 'adverse effect on integrity' (AEoI). At this stage consent may be granted for the plan or project if it is possible to conclude with certainty that the proposal will not result in any adverse effect on the integrity of any European Site, either alone or in combination with other plans or projects.	Regulation 63(5)
If it cannot be concluded with certainty that the proposal will not result in any adverse effect on the integrity of any European Site then proceed to:		
Assessment of alternative solutions	Assess whether there is an alternative solution to the plan or project, i.e., one that avoids adverse effects on European Sites. If no such alternative solution exists, the process continues to an assessment of whether there are 'imperative reasons of overriding public interest' (IROPI) for the plan or project to proceed.	Regulation 64(1)
Assessment of IROPI	Assess whether a plan or project can be justified as being needed for 'imperative reasons of overriding public interest' (IROPI).	Regulation 64(1)
Compensatory measures	Identify and secure any necessary compensatory measures to ensure that the overall coherence of the 'national site network' is protected.	Regulation 68

Applying case law to the HRA process

- 2.9 The Court of Justice of the European Union (CJEU) and UK Court judgments have identified that in the HRA process the assessment may not have lacunae (gaps or omissions) and must contain complete, precise and definitive findings capable of removing all reasonable scientific doubt as to the effects of the proposed works on the European Site concerned. Court judgments have identified that in the HRA process all aspects of the plan or project which can, by themselves or in combination

with other plans or projects, affect the conservation objectives of European Sites concerned must be identified in the light of the best scientific knowledge available in the field.

- 2.10 A CJEU judgment in 2018 (People Over Wind and Sweetman, 12 April 2018, C-323/17) has provided clarification as to when avoidance or reduction (i.e., mitigation) measures can be considered within the HRA process. The headline for the case is:

“In the light of all the foregoing considerations, the answer to the question referred is that Article 6(3) of the Habitats Directive must be interpreted as meaning that, in order to determine whether it is necessary to carry out, subsequently, an appropriate assessment of the implications, for a site concerned, of a plan or project, it is not appropriate, at the screening stage, to take account of the measures intended to avoid or reduce the harmful effects of the plan or project on that site”.

- 2.11 This case means that a competent authority cannot rely on avoidance or reduction measures that allow a conclusion of ‘no likely significant effect’ to be reached: instead, it is necessary to accept that there is a ‘likely significant effect’ in the absence of these measures, and move to the next stage, i.e., appropriate assessment, at which point such mitigation measures can be considered. This judgment is accounted for in this report.
- 2.12 A further CJEU judgment (Holohan & Ors. v An Bord Pleanála, 7 November 2018, C-461/17) provides further clarification about the HRA process, requiring that all habitats and species associated with a European Site (irrespective of whether or not they are qualifying features) must be considered in the assessment if impacts on those non-qualifying habitats or species are liable to affect the conservation objectives of the European Site through, for instance, effects on ecological processes or food chains. This judgment is also accounted for in this report.
- 2.13 It is noted that relevant case law still applies following the UK’s departure from the EU, and that the 2017 Regulations amendments in The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019, will apply.

Functionally linked land

- 2.14 A development has the potential to impact a European site either directly, for example as a result of land-take, or indirectly, for example as a result of changes in air quality. When assessing impacts, it is important to note that impacts need to be considered on ‘functionally linked land’. Functionally linked land can be defined as follows (Chapman & Tyldesley, 2016):

‘The term ‘functional linkage’ refers to the role or ‘function’ that land or sea beyond the boundary of a European site might fulfil in terms of ecologically supporting the populations for which the site was designated or classified. Such land is therefore ‘linked’ to the European site in question because it provides an important role in maintaining or restoring the population of qualifying species at favourable conservation status.’

- 2.15 In this report consideration has been given to whether or not the Proposed Development will impact land that is functionally linked to Oxford Meadows SAC.

3 Scope of the assessment

Overview

- 3.1 There are no standard criteria for determining the spatial scope of an HRA and so the decision to include or exclude European sites from an assessment needs to be supported by application of the source-pathway-receptor conceptual model, which highlights whether there is any potential pathway that connects the development to any European sites. In this case the spatial scope of the assessment is informed by identifying the impacts that could potentially arise as a result of the Proposed development, assessing the spatial and temporal scope of those impacts and understanding the effects on sensitive receptors that might arise.

Potential impact mechanisms

- 3.2 Impacts that may arise are limited to changes in air quality during the operational phase of the Proposed Development resulting in the degradation of habitats and species for which the Oxford Meadows SAC is designated.
- 3.3 As the proposed development is residential by nature, it is not expected that there will be a decommissioning phase for the Proposed Development. Nevertheless, if the development is subsequently demolished and the site cleared, it is expected to result in similar impacts to those described during the construction phase (as described in Technical Appendix X: Natural Heritage, BSG Ecology, 2022) and therefore will not result in adverse impacts to the Oxford Meadows SAC.

Scope of the assessment

- 3.4 The Zol for the Proposed Development is the area over which ecological features may be affected by biophysical changes as a result of the proposed work and associated activities. This may extend beyond the Site boundary. The Zol has been used to determine the extent of the desk study, baseline ecological surveys and biological / non-biological (air quality) assessments.
- 3.5 During the operational phase of the Proposed Development the Zol is considered to be the Site and a buffer area around it within which impacts may occur depending upon the sensitivity of the ecological receptors being considered. The following potential types of adverse effect, with their associated Zol have been considered in this assessment:
- **Degradation of habitats (airborne pollution – nitrous oxides and ammonia):** Air quality impacts due to increased emissions from engine exhausts. Impacts may occur on designated sites and on land that is functionally linked to a European site (see *Functionally linked land* above) (Zol is 10 km from the Site).
- 3.6 Taking into account these impact mechanisms and the Zols that have been adopted for the assessment, the HRA has considered impacts on the following European site: Oxford Meadows SAC.
- 3.7 No other European sites have been identified where the impacts and effects of the proposed development need to be considered.

4 Information on the relevant European sites

4.1 Set out below is information relating to Oxford Meadows SAC (Table 2).

Table 2: Summary details of Oxford Meadows SAC

Site name: Oxford Meadows SAC
Site code: UK0012845
Year designated: 2005
Area: 267.4 ha
<p>Qualifying interest features:</p> <ul style="list-style-type: none"> Annex I habitats that are a primary reason for selection of this site: 6510 Lowland hay meadows (<i>Alopecurus pratensis</i>, <i>Sanguisorba officinalis</i>) Annex II species that are a primary reason for selection of this site: 1614 Creeping marshwort <i>Apium repens</i>
<p>Conservation objectives:</p> <p>Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring:</p> <ul style="list-style-type: none"> The extent and distribution of qualifying natural habitats and habitats of qualifying species The structure and function (including typical species) of qualifying natural habitats The structure and function of the habitats of qualifying species The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely The populations of qualifying species, and, The distribution of qualifying species within the site.
Distance: Approximately 5.2 km to the south-east of the Site boundary.
<p>Sources of information:</p> <p>Site citation - http://publications.naturalengland.org.uk/publication/5815888603250688?category=6528471664689152</p> <p>JNCC Natura 2000 Data Form - https://jncc.gov.uk/jncc-assets/SAC-N2K/UK0012845.pdf</p> <p>Conservation Objectives - http://publications.naturalengland.org.uk/publication/5815888603250688?category=6528471664689152</p> <p>Supplementary advice on conserving and restoring site features - http://publications.naturalengland.org.uk/publication/5815888603250688?category=6528471664689152</p> <p>Site Improvement Plan - http://publications.naturalengland.org.uk/publication/5815888603250688?category=6528471664689152</p>

Site condition

4.2 Condition assessments are not available for the Oxford Meadows SAC; however, condition assessments have been completed by Natural England for the component Sites of Special Scientific Interest (SSSIs) for the SAC. The component SSSIs are: Cassington Meadows SSSI, Pixey and Yarnton Meads SSSI, Wolvercote Meadows SSSI, Port Meadow with Wolvercote Common and Green SSSI. The results of the condition assessments for these SSSIs are summarised in Table 3.

4.3 The vast majority of the component SSSIs are in 100% favourable condition, with only 1.29% of Port Meadow with Wolvercote Common and Green SSSI listed as being in unfavourable recovering condition. The condition assessment for Port Meadow with Wolvercote Common and Green SSSI and the Site Improvement Plan for the SAC identify that hydrological changes and invasive species (*Crassula* populations) have contributed to the past decline of parts of the sites.

Table 3: Summary of condition assessment for the component SSSIs of the Oxford Meadows SAC.

Component SSSI	Date of Condition Assessment	Favourable condition	Unfavourable recovering	Unfavourable no change	Unfavourable declining	Partially destroyed
Cassington Meadows SSSI	2011	100%	-	-	-	-
Pixey and Yarnton Meads SSSI	2010-2012	100%	-	-	-	-
Wolvercote Meadows SSSI	2010	100%	-	-	-	-
Port Meadow with Wolvercote Common and Green SSSI	2010	98.71%	1.29%	-	-	-

Site vulnerabilities

4.4 Known threats and pressures on the SAC (as listed on the JNCC Natura 2000 Data Form) are invasive non-native species (INNS), pollution to surface waters and human induced changes in hydraulic conditions.

4.5 The Site Improvement Plan for the Oxford Meadows SAC identifies two key issues that have affected the condition of the site. These are:

- Hydrological changes
- Invasive species

4.6 Of these two key issues, the Proposed Development is unlikely to result in an additional effect. Recreational pressure and air quality issues are not identified as a key issue in the Site Improvement Plan. However, air quality is included in the supplementary advice document for the conservation objectives for the SAC (Natural England, 2019).

5 Identification of any Likely Significant Effects

The 'Screening' process

- 5.1 The term 'screening' is routinely adopted to describe the initial stages of the Habitats Regulations Assessment. The purpose of screening is to:
- Identify all aspects of the project that are not likely to have a significant effect on a European site, either alone or in combination with other plans or projects. These can then be screened out from further assessment.
 - Identify those aspects of the project where it is likely to have a significant effect on a European site, either alone or in combination with other plans or projects. These aspects will require 'appropriate assessment' and mitigation measures may need to be introduced.

Likely significant effects

- 5.2 Current guidance defines a 'likely' effect as one that cannot be ruled out on the basis of objective information. In the Waddenzee case the CJEU provides further clarity on this point, advising that a project should be subject to appropriate assessment '*if it cannot be excluded, on the basis of objective information, that it will have a significant effect on the site, either individually or in combination with other plans and projects*'⁴. Therefore, 'likely' should be interpreted as a significant effect that, objectively, cannot be ruled out.
- 5.3 An effect may be significant if it undermines the conservation objectives for the European site. The assessment of whether a potential effect is significant for the site's interest features must consider, amongst other things, the characteristics and specific environmental conditions of the site concerned. The Advocate General's Opinion for the Sweetman case C-127/02⁵ provides further clarification, stating that consideration of the likelihood of a significant effect is simply a case of determining whether the plan or project is capable of having a significant effect.
- 5.4 As previously noted, the CJEU judgment C-323/17 (People Over Wind) means that it is not possible to rely on mitigation measures that allow a conclusion of 'no likely significant effect' to be reached. This judgment has been taken into account in this assessment.

Testing for Likely Significant Effects of the project alone

- 5.5 The following section of this report carries out the screening of likely significant effects. This fulfils the requirement of Regulation 63 of the Habitats Regulations that a proposed project is assessed to determine whether or not it is likely to have a significant effect on the qualifying features (species and habitats) of any European Site, either alone or in combination with other plans or projects.
- 5.6 As part of the screening process, it is noted that the project is not directly connected with or necessary to the management of any European site.
- 5.7 The Oxford Meadows SAC is the only European site that has been screened for any likely significant effects. No other European sites are present within 10 km of the Site.
- 5.8 Potential effects arising during the construction and post-construction phases of the development have been considered in the absence of mitigation measures. One potential impact mechanism has been considered as follows:
- **Degradation of habitats arising from increases in airborne pollutants (nitrous oxides, ammonia and nitrogen deposition):** Traffic associated with the Proposed Development post-construction will use roads that fall within 200 m of the Oxford Meadows SAC. It is therefore concluded that, in the absence of mitigation, the Proposed Development is likely to have a significant effect on the SAC as a result of changes in air quality.

⁴ See paragraph 45 of European Court of Justice case C-127/02 dated 7th September 2004, 'the Waddenzee ruling'.

⁵ Sweetman v. An Bord Pleanála, Case C-258/11, CJEU judgment 11 April 2013.

- 5.9 The following impact mechanisms have been discounted for the reasons stated:
- **Habitat degradation during construction:** The Proposed Development is located 5.2 km from the SAC and consequently there is no mechanism by which SAC habitats could be impacted by the Proposed Development, either directly or indirectly.
 - **Habitat degradation due to recreational pressure (post-construction):** The Proposed Development is located 5.2 km from the SAC and would be accessed via car on the A44 and potentially the A40 and A34, three major road networks in the area. The SAC has Public Rights of Way (PRoWs) through the lowland hay meadow habitat for which it is designated. Recreational pressure is not currently listed on the Natura 2000 Data Form as a risk for the Oxford Meadows SAC. However, increased visitor numbers from Proposed Development have the potential to cause increased tramping, littering and dog fouling within the Oxford Meadows SAC and impact on the habitat and species for which it is designated.
 - The HRA for the Cherwell Local Plan (Atkins, 2018) sets out that there is limited parking provision at Oxford Meadows SAC and references previous studies which identified that the majority of visitors are from Oxford, walking up to 1.9 km to the SAC. Given the distance of the Proposed Development from the SAC and presence of major roads (i.e. A34, A40, A44 and A4165) surrounding the SAC, visitors from the Proposed Development are likely to be deterred from visiting the SAC. Further, Policies ESD17, BSC10 and BSC11 of the Local Plan (Cherwell District Council, 2015) require developments to provide public open space over and above that typically required. Accordingly, large areas of Public Open Space are included in the Proposed Development, with a number of on-site recreational footpaths incorporated. This is likely to ameliorate any increase in visitors to the SAC. It is therefore reasonable to conclude that the Proposed Development will not have a significant effect on the habitats and species for which the SAC is designated due to recreational pressure.

Potential in-combination effects

- 5.10 The screening assessment has concluded that, in the absence of mitigation measures, the Proposed Development is likely to have a significant effect on the Oxford Meadows SAC as a result of changes in air quality post-construction. As this conclusion has been reached when considering the Proposed Development alone, an 'in-combination' assessment is not necessary.

Conclusion of screening assessment

- 5.11 Taking these factors into account and applying the precautionary principle, it has been concluded that there is a risk that the Proposed Development will have a significant effect on the qualifying features of the Oxford Meadows SAC in-combination with other projects and plans. It therefore follows that the requirement for an 'appropriate assessment' under Regulation 63(5) of the Habitats Regulations is triggered.
- 5.12 No other likely significant effects have been identified for the development when considered alone or in-combination with other projects and plans and with reference to the Oxford Meadows SAC.

6 Appropriate Assessment

Scope of the Appropriate Assessment

- 6.1 The European site that has been screened into the appropriate assessment is the Oxford Meadows SAC. No other European sites have been identified that are likely to be affected by the Proposed Development, either directly or indirectly.
- 6.2 The appropriate assessment considers the potential effects that might arise post-construction due to an increase in airborne pollutants from the Proposed Development, both alone and in-combination with other plans and projects. Impacts and effects have been assessed with reference to the Conservation Objectives for the Oxford Meadows SAC, which are described in Section 4 (Table 2).
- 6.3 Impacts and effects have been assessed with reference to the Conservation Objectives for the Oxford Meadows SAC, which are described in Section 4 (Table 2).
- 6.4 The assessment has taken into account the *Holohan v An Bord Pleanála* ECJ case (C-462/17), which requires that an assessment considers habitats and species, within or outside of a European site boundary, if they are necessary for the conservation of the qualifying features (habitat types and species) of a European site.

Degradation of habitats - airborne pollutants (nitrous oxides and ammonia)

- 6.5 Changes in air quality are not currently listed on the Natura 2000 Data Form as a risk for the Oxford Meadows SAC or listed as a key issue in the Site Improvement Plan. However, air quality is included in the supplementary advice document for the conservation objectives for the SAC (Natural England, 2019) as an attribute to consider in achieving the conservation objectives of the SAC, in particular the objective of maintaining or restoring the supporting processes on which qualifying natural habitats and the habitats of qualifying species rely. Changes in air quality was assessed within the HRA undertaken of the CDC Local Plan (Atkins, 2018 and Atkins, 2019) due to the potential sensitivity of habitats and species for which the SAC is designated.

Impact of emissions on Oxford Meadows SAC

- 6.6 The Air Pollution Information System (APIS, 2016) provides a searchable database and information on pollutants and their impacts on habitats and species. Data available for the Oxford Meadows SAC indicate that the site's qualifying features are potentially vulnerable to increases in nitrogen oxides (NO_x), ammonia (NH₃) and nitrogen deposition.
- 6.7 Table 4 provides a summary of those interest features that are considered to be vulnerable to pollutant levels that exceed relevant critical loads and critical levels. The site data show that NO_x, ammonia and mean nitrogen deposition are below the critical levels and critical load, however the maximum nitrogen deposition is above the lower critical load for lowland hay meadows and creeping marshwort *Apium repens*.

Table 4: Pollutant critical loads and levels – Oxford Meadows SAC.

Qualifying feature	Pollutant	Critical load / level	Site data		
			Min	Max	Mean
Lowland hay meadows	NO _x	30 kg/N/ha/yr	14.4	24.6	20.3
Lowland hay meadows	Ammonia	3 ug NH ₃ /m ³	1.7	2.7	2.0
Lowland hay meadows	Nitrogen deposition	20-30 kg/N/ha/yr	15.9	22.4	17.8
Creeping marshwort	NO _x	30 kg/N/ha/yr	14.4	24.6	20.3

Qualifying feature	Pollutant	Critical load / level	Site data		
			Min	Max	Mean
Creeping marshwort	Ammonia	3 ug NH ₃ /m ³	1.7	2.7	2.0
Creeping marshwort	Nitrogen deposition	20-30 kg/N/ha/yr	15.9	22.4	17.8

- 6.8 Air quality impacts may arise as a result of emissions from engine exhausts, which may increase as a result of the Proposed Development due to an increase in traffic on the roads surrounding the Oxford Meadows SAC (A40 and A34). Increases in the levels of NO_x, ammonia and/or nitrogen deposition may result in the modification of the chemical status of the substrate of the habitat, accelerating or damaging plant growth, altering the vegetation structure and composition and causing the loss of sensitive typical species associated with it (Natural England, 2019)
- 6.9 Industry Guidance (Natural England, 2018) advises that traffic related impacts on air quality need to be considered for designated sites located within 200 m of relevant roads. The guidance states that *'With regard to potential risks from road traffic emissions, Natural England and Highways England are in agreement that protected sites falling within 200 metres of the edge of a road affected by a plan or project need to be considered further'*. The guidance then goes on to note that *'where (unusually) there is a credible risk that air quality impacts might extend beyond 200 metres from a road, Natural England may advise that additional sites should also be scoped into the HRA.'*

Annual Average Daily Traffic (AADT)

- 6.10 Traffic data for use in the assessment was provided by DTA (the transport planning consultants for the Proposed Development) and supplemented with data from the Department for Transport's national database to extend the study area to the Oxford Meadows SAC (WSP, 2022). The data was evaluated to determine whether there is likely to be any change in Annual Average Daily Traffic (AADT) as a result of the Proposed Development alone on the sections of the A40 and A34 that pass the Oxford Meadows SAC. The modelling shows that there will likely be no increase in AADT for the A40 and a minor increase of 559 AADT for the A34 as a result of the Proposed Development alone. These values (which account for all additional traffic) are well below Natural England's screening threshold for adverse effects of road traffic emissions (Natural England, 2018). As the Proposed Development alone will not exceed 1000 AADT for either road, any increases in emissions associated with an increase in road traffic will be negligible. This is supported by the results of the air quality modelling, as described below.

NO_x

- 6.11 The air quality assessment (WSP, 2022) modelling shows that NO_x does not exceed the critical level (30 µg/m³) for the majority of receptor locations, with only small increases of less than 0.3 µg/m³. Only one receptor location (OM T4) is predicted to see an increase in NO_x equating to 1% of the critical level (but not exceeding this threshold), however this is at the roadside on the boundary of the designated site and therefore will not affect habitats and species for which Oxford Meadows SAC is designated. As such, the Proposed Development alone is not likely to have a significant effect on the qualifying features of the Oxford Meadows SAC as a result of NO_x emissions.

Ammonia (NH₃)

- 6.12 The results of the air quality assessment (WSP, 2022) for ammonia show that increases above the critical level (3 µg/m³) are predicted for many of the receptor points within Oxford Meadows SAC, however this is the case both with and without the Proposed Development and results in a change of less than 1% of the critical level. Only one receptor location (OM T4) has a predicted increase that equates to more than 1% of the critical level, however this is adjacent to the A34 and on the boundary of the designated site and therefore will not affect habitats and species for which Oxford Meadows SAC is designated. As such, the Proposed Development alone is not likely to have a significant effect on the qualifying features of the Oxford Meadows SAC as a result of ammonia emissions.

Nitrogen deposition

- 6.13 The modelling shows that nitrogen deposition will exceed the lower critical load (20 kg/ha/y¹) in 2034 at almost all receptor locations, primarily due to elevated baseline deposition rates which are already in exceedance of the critical load. The data shows that although nitrogen deposition is predicted to exceed the upper critical load at OM T3, OM T4, OM T6 and OM T7 at between 10 m and 30 m from the A34, the Proposed Development will not be providing a significant additional load as shown by the contribution of the Proposed Development being less than 1 % at all locations. This is also the case where the lower critical load is exceeded. As such, the Proposed Development alone is not likely to have a significant effect on the qualifying features of the Oxford Meadows SAC as a result of nitrogen deposition.

Summary of likely significant effects from the Proposed Development alone

- 6.14 Based on the information and assessment above, the Proposed Development alone is not likely to have any significant effects on the Oxford Meadows SAC.

In-combination assessment

- 6.15 There is a requirement under Regulation 63(1)a to complete an assessment of whether a plan or project, either alone or in combination with other plans or projects, is likely to have a significant effect on any European sites' qualifying features (habitats and species) and the achievement of the European site's conservation objectives. An assessment has been completed of the Proposed Development alone, but a further assessment is therefore required of the Proposed Development in combination with other plans and projects.
- 6.16 The air quality assessment presents a comparison between the 2034 'With Development' scenario against the 2019 baseline scenario, using the future year (2030) emissions factors for both scenarios.

AADT

- 6.17 Traffic data for use in the assessment was provided by DTA and supplemented with data from the Department for Transport's national database to extend the study area to the Oxford Meadows SAC (WSP, 2022). The data was evaluated to determine whether there is likely to be any change in AADT as a result of the Proposed Development in-combination with other plans and projects on the sections of the A40 and A34 that pass the Oxford Meadows SAC. The modelling shows that, in combination, there will likely be no increase in AADT for the A40 and a minor increase of 559 AADT for the A34. These values (which account for all additional traffic) are well below Natural England's screening threshold for adverse effects of road traffic emissions (Natural England, 2018). As the Proposed Development alone will not exceed 1000 AADT for either road, any increases in emissions associated with an increase in road traffic will be negligible. However, the results of the air quality modelling predict changes in NO_x, ammonia and nitrogen deposition that equate to a change of 1% of the critical levels/load, as described below.

NO_x

- 6.18 The air quality assessment (WSP, 2022) modelling shows that a change in NO_x concentration equivalent to more than 1% of the critical level is predicted at all receptor locations up to 200 m, except for OM T2 where the critical level is exceeded up to 110 m. However, for most receptor locations, even with the additional predicted contribution the critical level (30 µg/m³) will not be exceeded. In addition, levels will have significantly reduced from the 2019 baseline (2019 emission), with most locations showing approximately 40% decline in NO_x in 2034 (plus committed development and the Proposed Development).
- 6.19 The critical level is predicted to be exceeded at four transects: OM T3 (0 to 20 m), OM T4 (0 to 30 m), OM T5 (0 m) and OM T6 (0 to 30 m). The first 20 m of OM T3, the first 15 m of OM T4 and at 0 m on OM T5 comprise roadside vegetation rather than the grassland for which the SAC is designated and therefore exceedances in these areas are unlikely to have an adverse effect on the SAC. Therefore, the critical level within the SAC will be exceeded only within a 15 to 30 m wide strip along the eastern side of the A34 (Pixey and Yarnton Meads SSSI) at OM T4 and OM T6. The 2034

baseline level of NO_x with committed development is above the critical level and the additional contribution of the project (plus committed developments) to the total level of NO_x is a maximum of 0.7 %. This translates to a maximum area of 1.15 ha which represents 0.4% of the total area of the Oxford Meadows SAC (267.4 ha). Therefore, an adverse effect on the integrity of the Oxford Meadows SAC as a result of NO_x levels is unlikely due to the limited extent of the affected area relative to the total SAC. This is largely consistent with the findings of the HRA undertaken on behalf of Cherwell District Council (2018).

Ammonia (NH₃)

- 6.20 The results of the air quality assessment (WSP, 2022) show that as a result of the Proposed Development in combination with other projects, increases that equate to more than 1% of the critical level are predicted for many of the receptor points within Oxford Meadows SAC, although the majority do not exceed, the critical level (3 µg/m³) for ammonia. Exceedances over the 3 µg/m³ critical level are predicted up to 50 m at OM T1 and OM T2 along the A40 (Pixey and Yarnton Meads SSSI), 150 m to 160 m at OM T3 and OM T7 and up to 10 m at OM T5 to the west of the A34 (Pixey and Yarnton Meads SSSI), and up to 40 m at OM T4 and OM T6 to the east of the A34 (Pixey and Yarnton Meads SSSI).
- 6.21 As described above for NO_x, the first 20 m of OM T3, first 30 m of OM T7, first 15 m of OM T4 and the first 10 m and along the A40 comprise roadside vegetation rather than the grassland for which the SAC is designated and therefore exceedances in these areas are unlikely to have an adverse effect on the SAC. The area where the critical level is exceeded therefore translates to a maximum area of 9.8 ha which equates to 3.5% of the total of the Oxford Meadows SAC (267.4 ha). There is a general increase in ammonia levels compared to the 2019 baseline, with 2034 baseline showing the same increases as when committed development is also taken into account (this is the case both with and without the Proposed Development). Contributions of ammonia are primarily associated with agricultural practices rather than vehicle emissions which will be the primary source for committed development and the Proposed Development.

Nitrogen deposition

- 6.22 The air quality assessment (WSP, 2022) modelling shows that as a result of the Proposed Development in combination with other projects increases in nitrogen deposition that equate to more than 1% of the critical load are predicted at all transects within the Oxford Meadows SAC.
- 6.23 However, the existing baseline exceeds the lower critical load (20 kg/ha/y¹) at all locations within the SAC apart from OM T5, which is below. This is the case both with and without the Proposed Development, with the Proposed Development contributing a maximum of 0.4% at OM T4 at 20 m from the A34. This is largely due to high 2019 baseline levels of nitrogen deposition that are already above the lower critical load, with a general trend of declining nitrogen deposition in 2034. The upper critical level (30 kg/ha/y¹) is exceeded at 0 to 10 m at OM T4, which comprises roadside vegetation rather than the grassland for which the SAC is designated and therefore exceedances in these areas are unlikely to have an adverse effect on the SAC. The upper critical level is also exceeded at 0 to 10 m at OM T6, which affects grassland habitat within the SAC.
- 6.24 Taking into account the areas of each transect that comprises roadside vegetation rather than the grassland for which the SAC is designated (as described above for NO_x and ammonia), the lower critical load is exceeded within approximately 14.14 ha of the SAC, which equates to 5.29% of the total area of the designated site. the upper critical load is exceeded within approximately 0.51 ha, which equates to 0.19 % of the total area of the SAC. This occurs both with and without the Proposed Development.

Summary of likely significant effects from the Proposed Development in-combination

- 6.25 As set out in the paragraphs above, the critical levels of NO_x and ammonia and critical load of nitrogen deposition will be exceeded within parts of the Oxford Meadows SAC that lie within 200 m of the A40 and A34. However, the Proposed Development contributes negligible amounts of these pollutants and exceedances are predicted to occur regardless of whether the Proposed Development proceeds. Further, these exceedances affect a relatively small area in the context of the overall area

of the SAC, with a maximum of 5.19% likely to be affected by nitrogen deposition over the critical load, with or without the Proposed Development.

- 6.26 In determining whether the Proposed Development will result in adverse harm to the integrity of the SAC consideration has been given to whether the Proposed Development would prevent or significantly restrict the ability to deliver the conservation objectives for the site and in particular restoring NO_x and ammonia levels and nitrogen deposition loads to below the critical thresholds set out for these pollutants for lowland meadow habitats.
- 6.27 A review of the APIS (2016) website identifies that in 2018 road transport only accounted for 9.49 % of nitrogen deposition within the Oxford Meadows SAC. The largest contribution to nitrogen deposition is agricultural practices, with livestock and fertiliser application combined totalling a 35% contribution, followed by non-agricultural waste at 16.4% and other transport at 12.8%. As such road traffic as a source of the pollutants makes a relatively small contribution to the total levels and loads of pollutants. In addition, the data on APIS also shows that nitrogen deposition from road transport has declined in the period 2012 to 2018 from 0.98 kgN/ha/yr to 0.77 kgN/ha/yr. This demonstrates a general trend of declining nitrogen deposition that is anticipated to continue to 2034 (as is reflected in the air quality assessment) and in future years as technology continues to evolve and fossil fuel driven vehicles are replaced by electric and hybrid vehicles.
- 6.28 Therefore, the Proposed Development in-combination with other projects and plans is unlikely to prevent or significantly restrict the ability to deliver the conservation objectives for the site and as such the Proposed Development is considered unlikely to have an adverse effect on the integrity of the Oxford Meadows SAC.

7 Conclusion

- 7.1 An HRA has been carried out that considers the effects of an outline planning application that is proposed at Land East of Park View, Woodstock. Potential impact mechanisms have been identified and a ZoI determined, which has led to the conclusion that the effects of the development need to be assessed on the Oxford Meadows SAC.
- 7.2 The HRA screening process has concluded that the Proposed Development is not directly connected with or necessary to the management of the Oxford Meadows SAC.
- 7.3 The HRA screening identified that a likely significant effect may arise as a result of the Proposed Development on the Oxford Meadows SAC when considered alone and in-combination with other plans and projects. One potential impact mechanism has been considered: changes in air quality (post-construction) resulting in degradation of qualifying habitats and species.
- 7.4 The initial screening assessment of likely significant effects has been carried out in the absence of mitigation measures and is therefore compliant with the judgment - *People Over Wind - Sweetman vs Coillte* (European Court, 12 April 2018).
- 7.5 A shadow appropriate assessment has been completed, which has concluded that the Proposed Development will not have an adverse effect on the integrity of the Oxford Meadows SAC alone or in-combination with other plans and projects. Although in-combination the critical level/load of NO_x, ammonia and nitrogen deposition will be exceeded in places within the SAC, this would occur regardless without the Proposed Development. Further, there is a trend of declining nitrogen deposition due to a move towards electric vehicles and away from fossil fuels and the area affected by such changes as a percentage of the total area of the SAC is small. As such, significant effects as a result of the Proposed Development are unlikely. This conclusion is consistent with that reached in the Addendum to the Local Plan HRA (Atkins, 2019).

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Appendix 1: Location Plan. Drawing number TOR-SK001 (TOR, 2022)

