



Defence Infrastructure Organisation

Service Families Accommodation Model Homes Development Sling Road, Bulford

Report to inform a Habitats Regulations
Assessment





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Bulford Service Families Accommodation Site – Bulford Camp, Sling Road

Report to inform a Habitats Regulations Assessment

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EXECUTIVE SUMMARY

Jones Lang LaSalle (JLL) on behalf of the Defence Infrastructure Organisation (DIO) commissioned WSP to complete a report to inform a Habitat Regulations Assessment (HRA) for land at Sling Road, Bulford in Wiltshire (hereafter referred to as the 'Site'). Eight houses are proposed for construction as part of the Service Families Accommodation; hereafter referred to as the 'Proposed Development'. The Site covers approximately 1.13ha and is centred on grid reference SU 18864 44408.

Under the requirements of the Conservation of Habitats and Species Regulations 2017 (as amended)¹ ('The Habitats Regulations') it is necessary to consider whether the Proposed Development may have significant effects upon areas of nature conservation importance (Habitats Sites).

A desk-based assessment identified the potential for adverse effects of the Proposed Development upon Habitats Sites. The following sites were identified within a 10km (kilometre) Zone of Influence (Zoi) of the Site:

- Salisbury Plain Special Area of Conservation (SAC)
- Salisbury Plain Special Protection Area (SPA)
- River Avon SAC
- Porton Down (SPA)

No additional Habitats Sites supporting bird qualifying features are present within 20km of the Site.

Stage 1 – Screening for the HRA identified the potential for likely significant effects (LSE), following the precautionary principle, on Habitats Sites for six potential impact pathways:

- LSE from air quality due to an increase in dust for River Avon SAC and Salisbury Plain SAC and SPA;
- LSE due to accidental pollution events (run-off) for the River Avon SAC and Salisbury Plain SAC and SPA;
- LSE from construction derived disturbance to River Avon SAC;
- LSE due to increased recreational disturbance at the Salisbury Plain SAC and SPA;
- LSE due to urbanisation at the Salisbury Plain SAC and SPA; and
- LSE on water quality (nutrient neutrality) of the River Avon SAC.

Appropriate Assessment has concluded that there will be no adverse effects on the integrity of any of the Habitats Sites (either to the sites themselves or any functionally linked land) as a result of the Proposed Development, provided that the mitigation measures outlined in **Section 5** are implemented and the Nutrient Neutrality Management Plan (**Appendix B**) is adhered to. As such, no further HRA stages are required.

¹ Her Majesty's Stationary Office (2017). The Conservation of Habitats and Species Regulations 2017/490.

1 INTRODUCTION

1.1 PROJECT BACKGROUND

- 1.1.1. The Defence Infrastructure Organisation (DIO) (hereafter referred to as “the Client”) is seeking to develop land at Bulford for new services families accommodation (the “Proposed Development”).
- 1.1.2. The planning application boundary is shown on **Figure 1**. The land is currently 1.13ha of mostly neutral grassland and developed land (roads and pavement) with some scrub and individual trees near Bulford Camp (central grid reference SU 18864 44408), hereafter referred to as the “Site”.
- 1.1.3. The works for the Proposed Development will be conducted within the Site, and it is currently assumed that all welfare facilities, plant storage and material storage will be stored within the Site or on nearby hardstanding (hereafter referred to as the “Compound”) and therefore will not be assessed separately. If the Compound is situated anywhere other than within the Site or on nearby hardstanding (as demonstrated to WSP) then this location will need to be reviewed for potential impacts and this assessment updated as required.
- 1.1.4. Under the current design, the Proposed Development comprises proposals for additional housing (eight dwellings) and associated infrastructure to be built to the north of the existing Bulford Camp. Full planning permission will be sought for the Proposed Development from Wiltshire Council.
- 1.1.5. The ecological baseline for the Proposed Development has been determined through completion of a Preliminary Ecological Appraisal (PEA)² comprising a UK Habitat Classification (UKHab) survey, desk study and protected and notable species assessment, a preliminary Biodiversity Net-Gain (BNG) Assessment³ and a Tree Survey⁴ and Constraints Report plus follow up Arboricultural Impact Assessment (AIA)⁵.
- 1.1.6. A Nutrient Neutrality Technical Note⁶ has also been created in support of this document and is included at **Appendix B**.

² WSP (2026) – Bulford: Preliminary Ecological Appraisal. Report Reference: 70110456-001

³ WSP (2026) – Bulford: Biodiversity Net Gain Report

⁴ Amenity Tree Environmental Planning Consultants (2025) Tree Survey and Constraints Report - Bulford Demo Site

⁵ Amenity Tree Environmental Planning Consultants (2026) Arboricultural Impact Assessment (AIA) Bulford, Sling Rd

⁶ WSP (2026) Nutrient Neutrality Technical Note Bulford

2 HABITATS REGULATIONS ASSESSMENT PROCESS

2.1 LEGISLATIVE CONTEXT

Habitats Regulations Assessment

- 2.1.1. Under the requirements of UK law through the Conservation of Habitats and Species Regulations 2017 ('The Habitats Regulations') (as transposed from the European Council Directive 92/43/EEC 'The Habitats Directive' and the Council Directive 79/409/EEC 'The Wild Birds Directive') it is necessary to consider whether the Proposed Development is likely to have significant effects upon areas of nature conservation importance designated/classified under the Directives. The Habitats Regulations place a duty upon 'Competent Authorities' (in this case Wiltshire Council) to consider the potential for effects upon Habitats Sites⁷ (Special Areas of Conservation (SAC) Special Protection Areas (SPA), candidate SACs, Sites of Community Importance and any relevant Marine Sites) prior to granting consent for projects or plans. Should likely significant effects be identified by the initial screening process, it is necessary to further consider the effects by way of an 'Appropriate Assessment'. Overall, this process of assessment is known as Habitats Regulations Assessment (HRA).
- 2.1.2. Under updates to the Habitats Regulations in 2019, SPAs and SACs are considered to collectively form a National Site Network i.e. a coherent network of protected sites with overarching conservation objectives. It is a matter of Government policy (NPPF paragraph 194)⁸ that sites designated under the 1971 Ramsar Convention for their internationally important wetlands (commonly known as Ramsar sites), potential SACs (pSACs) and potential SPAs (pSPA) (where consultation has been initiated) are also protected in the same way as SACs and SPAs. Ramsar sites however do not form part of the National Site Network under the Habitats Regulations.
- 2.1.3. For the purposes of this report, and in line with NPPF terminology, all relevant sites as described above are collectively termed 'Habitats Sites'.
- 2.1.4. Following the UK's exit from the EU, The Conservation of Habitats and Species Regulations 2017 were amended by The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019. As advised by national governments in the UK, the Habitats Regulations remain in force, including the general provisions for the protection of Habitats Sites and the procedural requirements to undertake HRA to assess the implications of plans or projects for European sites. The changes made were only those necessary to ensure that they remain operable now that the UK has left the EU.
- 2.1.5. Regulation 63 (1) of the Habitats Regulations⁹ states that:

⁷ Termed European sites within The Habitats Regulations, following the UK's departure from the European Union, the National Planning Policy Framework (NPPF) (Ministry of Housing, Communities and Local Government, 2024) defines Habitats sites as 'Any site which would be included within the definition at regulation 8 of the Conservation of Habitats and Species Regulations 2017 for the purpose of those regulations.'

⁸ National Planning Policy Framework (Paragraph 194) - (Amended 07.02.2025) Found at: <https://www.gov.uk/government/publications/national-planning-policy-framework--2> (accessed 02.02.2026)

⁹ Regulation 63 of the Habitats Regulations. Available at: <https://www.legislation.gov.uk/uksi/2017/1012/regulation/63/made>

‘...a Competent Authority, before deciding to undertake, or give any consent, permission or other authorisation for, a plan or project which—

(a) is likely to have a significant effect on a European site or a European offshore marine site (either alone or in combination with other plans or projects), and

(b) is not directly connected with or necessary to the management of that site,

—must make an appropriate assessment of the implications for that site in view of that site’s conservation objectives.’

- 2.1.6. Where effects on a Habitats Site are likely to be significant, they must be subject to the second stage of the HRA process, Appropriate Assessment. The Habitats Regulations also make allowance for projects or plans to be completed if they satisfy ‘imperative reasons of overriding public interest’ (IROPI) where Stage 2 has concluded that an adverse effect on the integrity of one or more Habitats Sites cannot be ruled out. Regulations 64¹⁰ and 68¹¹ relate to such situations.
- 2.1.7. There are a number of Court of Justice of the European Union (CJEU) rulings which are relevant to this assessment, and these are summarised below for information. Further information is provided within **Appendix A**. As the general provisions for the protection of Habitats Sites and the procedural requirements to undertake HRA to assess the implications of plans or projects for Habitats Sites remain, this previous case law established prior to the UK’s exit from the EU is considered to apply unless superseded by the judgement of an appropriate UK court.

2.2 STAGES OF HABITATS REGULATIONS ASSESSMENT

- 2.2.1. The UK government has set out the step wise approach which should be followed to enable Competent Authorities to discharge their duties under The Habitats Regulations¹² and provides further clarity on the interpretation of Articles 6 (3) and 6 (4), and the actions required under Regulation 63⁹ (1) of The Habitats Regulations. The process used is usually summarised in three distinct stages of assessment.
- **Stage 1: Screening:** the process which identifies whether effects upon the Habitats Sites by a plan or project are possible, either alone or in combination with other plans or projects. The screening assessment then considers whether these effects are likely to be significant.
 - **Stage 2: Appropriate Assessment:** the detailed consideration of the effect on the integrity of the Habitats Sites by the plan or project, either alone or in combination with other plans or projects, with respect to the Habitats Site’s conservation objectives and its structure and function.
 - **Stage 3: Derogations:** the process under which a plan or project may still go ahead if it fails the integrity test at Stage 2. To qualify for a derogation, the plan or project must pass three legal tests:

¹⁰ Regulation 64 of the Habitats Regulations. Available at: <https://www.legislation.gov.uk/ukxi/2017/1012/regulation/64/made>.

¹¹ Regulation 68 of the Habitats Regulations. Available at: <https://www.legislation.gov.uk/ukxi/2017/1012/regulation/68/made>

¹² UK Gov. 2023. Guidance ‘Habitats regulations assessments: protecting a European site’. Available at: <https://www.gov.uk/guidance/habitats-regulations-assessments-protecting-a-european-site>.

- There are no feasible alternative solutions that would be less damaging or avoid damage to the site;
- The plan or project needs to be carried out for imperative reasons of overriding public interest (IROPI); and
- Necessary compensatory measures to maintain the overall coherence of the National Site Network can be secured.

2.2.2. In accordance with the People over Wind Judgment (People over Wind and Peter Sweetman v Coillte, 2018) (Case 323/17) targeted measures to mitigate effects on the Habitats Sites will not be considered at the HRA screening stage. The People Over Wind ruling states 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.”

2.2.3. UK government guidance to Competent Authorities carrying out HRA (Defra, Natural England (NE), Welsh Government, and Natural Resources Wales (NRW), 2021) further confirms this requirement. In relation to HRA screening, this guidance states that:

“At this stage, you should not consider any mitigation measures included by the proposer for the purpose of avoiding or minimising risk to a European site. These mitigation measures need to be considered at the appropriate assessment stage.”

2.3 ASSESSMENT METHODOLOGY

SCREENING (STAGE 1)

2.3.1. An initial broad screening of Habitats Sites to investigate the potential for effects pathways linking them to the Proposed Development has been undertaken and is referred to as ‘screening’. The screening process was wide-ranging and took into consideration the sensitivity and mobility of Habitats Site’s qualifying features, e.g. breeding birds, as well as the nature of the Proposed Works and working methods.

2.3.2. Its purpose was to identify the likely impacts upon Habitats Sites from the Proposed Development within a broad zone of influence, either alone or in combination with other plans or projects and considers whether these impacts are likely to be significant. It included:

- determining whether the Proposed Development is directly connected with, or necessary for, the management of applicable Habitats Sites;
- describing the elements of the Proposed Development that may have the potential for significant effects upon applicable Habitats Sites;
- undertaking an initial scoping for potential direct and indirect impacts upon applicable Habitats Sites;
- assessing the likely significance of any potential effects identified as resulting from these impacts, both alone and in-combination with other plans and projects; and
- excluding Habitats Sites where it can be objectively concluded that there will be no likely significant effects.

2.3.3. Results of the screening assessment are set out in **Section 3** to **Section 4**.

APPROPRIATE ASSESSMENT (STAGE 2)

- 2.3.4. The appropriate assessments are an extension of the assessment processes undertaken at the screening stage, with significant effects examined to determine whether there will be any adverse effects on the integrity of any Habitats Sites.
- 2.3.5. It should be noted that the judgement of the court in Case C-258/11 (Sweetman v An Bord Pleanála and others) states that that *“a plan or project...will adversely affect the integrity of that site if it is liable to prevent the lasting preservation of the constitutive characteristics of the site that are connected to the presence of a priority natural habitat whose conservation was the objective justifying the designation of the site in the list of SCIs, in accordance with the directive. The precautionary principle should be applied for the purposes of that appraisal”*.
- 2.3.6. Results of the Appropriate Assessment are set out in **Section 5**.

DATA SOURCES AND CONTEXT

- 2.3.7. The screening considers the baseline condition of Habitats Sites and their interest features¹³, including (where reported) data on:
- the site boundaries and the boundaries of the component SSSIs;
 - the conservation objectives;
 - information on the attributes of the Habitat Sites that contribute to and define their integrity;
 - the condition, vulnerabilities and sensitivities of the sites and their interest features, including known pressures and threats;
 - the approximate locations of the interest features within each site (if reported); and
 - designated or non-designated ‘functional habitats’ (if identified).
- 2.3.8. These data are derived from, where available / relevant:
- the most recent JNCC-hosted GIS datasets;
 - the Standard Data forms for SACs and SPAs and Information Sheets for Ramsar sites;
 - Article 12 and 17 reporting;
 - the published site conservation objectives;
 - Supplementary advice to the conservation objectives (SACO) where available¹⁴;
 - Site Improvement Plans (SIPs); and
 - the supporting Site of Special Scientific Interest’s favourable condition tables where relevant and where no SACOs applicable to the features are available.
- 2.3.9. For SPAs, the qualifying features are taken as those identified on the most recent JNCC datasets and citations, or NE conservation objectives sheets, where these post-date the most recent SPA

¹³ The term ‘interest features’ is often used interchangeably with ‘qualifying features’, but is more appropriately used as a broader term covering the qualifying species and other within-site features that may be relevant to site integrity, particularly ‘typical species’ (for SACs) and within-site supporting habitats for mobile species.

¹⁴ NE has published ‘*Supplementary advice on conserving and restoring site features*’ for most European sites in England which describe in more detail the range of ecological attributes which are most likely to contribute to a site’s overall integrity, and qualitative or quantitative targets for each attribute.

Review (i.e. it will be assumed that any amendments suggested by the SPA review have been made) unless otherwise explicitly identified by NE.

- 2.3.10. Where possible, the site data are used to identify other features that may be relevant to site integrity, particularly ‘typical species’ (for SACs), within-site supporting habitats, and non-Habitats Site or non-designated ‘functionally linked habitats’.
- 2.3.11. A typical species is broadly described by European Commission guidance as being any species (or community of species) which is particularly characteristic of, confined to, and/or dependent upon the qualifying Annex I habitat feature at a particular site. This may include those species which:
- are critical to the composition or structure of an Annex I habitat (e.g. constant species identified by the National Vegetation Classification (NVC) community classification);
 - exert a critical positive influence on the Annex I habitat’s structure or function (e.g. a bioturbator (mixer of soil/sediment), grazer, surface borer or predator);
 - are consistently associated with, and dependent upon, the Annex I habitat feature for specific ecological needs (e.g. feeding, sheltering), completion of life-cycle stages (e.g. egg-laying) and/or during certain seasons/times; or
 - are particularly distinctive or representative of the Annex I habitat feature at a particular site.
- 2.3.12. Within-site supporting habitats are those which support the population(s) of the qualifying species, and which are therefore critical to the integrity of the feature.
- 2.3.13. Functionally linked habitats or ‘functionally linked land’ (FLL) are generally taken to be habitats or features outside a Habitat Site boundary that are important or critical to the functional integrity of the site’s habitats and / or its qualifying features. These might include, for example:
- ‘buffer’ areas around a site (e.g. dense scrub areas preventing public access; areas of land that reduce the effects of agricultural run-off; etc.); or
 - specific features or habitats relied on by mobile species during their lifecycle (e.g. high-tide roosts for waders; significant maternity colonies for bats known to hibernate within a SAC; areas that are critical for foraging or migration; etc), recognising that ‘functionally-linked’ is not intended as a speculative catch-all covering any habitat that might be occasionally used by, or suitable for, a particular species¹⁵.

Conservation Objectives

- 2.3.14. Conservation Objectives benchmark Favourable Conservation Status (FCS) for each feature. Guidance¹⁶ from the UK Statutory Nature Conservation Bodies (SNCBs) provides a broad characterisation of FCS, stating that it “*relates to the long-term distribution and abundance of the populations of species in their natural range, and for habitats to the long-term natural distribution, structure and functions as well as the long-term survival of its typical species in their natural range.*”

¹⁵ Case law notes that such land should be necessary to the conservation of the protected habitat types and species (*Holohan v An Bord Pleanala C-461/17*) or play an important role in maintaining or restoring the population of qualifying species at favourable conservation status.

¹⁶ JNCC (2018). *Favourable Conservation Status: UK Statutory Nature Conservation Bodies Common Statement* [online]. Available at: <https://data.jncc.gov.uk/data/b9c7f55f-ed9d-4d3c-b484-c21758cec4fe/FCS18-InterAgency-Statement.pdf>. [Accessed March 2022].



It describes a situation in which individual habitats and species are maintaining themselves at all relevant geographical scales and with good prospects to continue to do so in the future”.

- 2.3.15. The high-level conservation objectives for all SACs and SPAs use the same format and include one or more of the following provisions (depending on the site qualifying features):
- 2.3.16. For SACs in England:
- *With regard to the SAC and the natural habitats and/or species for which the site has been designated (the ‘Qualifying Features’...), and subject to natural change; 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 [as applicable to the specific qualifying features of each site];*
 - *The extent and distribution of the qualifying natural habitats;*
 - *The extent and distribution of the habitats of qualifying species;*
 - *The structure and function (including typical species) of the qualifying natural habitats;*
 - *The structure and function of the habitats of qualifying species;*
 - *The supporting processes on which the qualifying natural habitats rely;*
 - *The supporting processes on which the habitats of qualifying species rely;*
 - *The populations of qualifying species; and,*
 - *The distribution of qualifying species within the site.*
- 2.3.17. For SPAs in England:
- *With regard to the SPA and the individual species and/or assemblage of species for which the site has been classified (the ‘Qualifying Features’...), and subject to natural change; ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the aims of the Wild Birds Directive, by maintaining or restoring:*
 - *The extent and distribution of the habitats of the qualifying features;*
 - *The structure and function of the habitats of the qualifying features;*
 - *The supporting processes on which the habitats of the qualifying features rely;*
 - *The population of each of the qualifying features; and*
 - *The distribution of the qualifying features within the site.*
- 2.3.18. NE has published SACOs for most Habitat Sites in England which describe in more detail the range of ecological attributes which are most likely to contribute to a site’s overall integrity, and which identify qualitative or quantitative targets for each attribute. The targets identify the desired state for the attribute (i.e. to help ensure the site’s conservation objectives are met) but do not represent thresholds to assess the significance of any given effect in HRAs. However, a proposal should not prevent the achievement of those targets. The attribute targets are considered at the screening and appropriate assessment stages, where relevant.

The conservation objectives for Ramsar sites are taken to be the same as for the corresponding SACs / SPAs (where sites overlap). Where Ramsar sites do not coincide with a SAC or SPA, or where the Ramsar site features are not ecologically coincident with SAC or SPA features, the conservation objectives and definitions of favourable condition for the underlying SSSIs are used.

2.4 IN-COMBINATION ASSESSMENT

- 2.4.1. It is a requirement of the Habitats Regulations to consider the effects of projects or plans “in combination” at the screening stage. Regulation 24, 63 and 105 of the Habitats Regulations require NE and other competent authorities to consider the effects of plans or projects alone and in combination with other plans or projects. The ‘in-combination’ requirement is undertaken in order to make sure that, prior to their authorisation, the effects of numerous proposals, which alone would not result in a significant effect, are further assessed to determine whether their combined effect would be significant enough to require more detailed assessment.
- 2.4.2. The landmark Waddenzee judgment provides a clear interpretation of the legislation. Paragraphs 53 and 54 of the Judgment state:
- “according to the wording of that provision [Article 6(3) of the Habitats Directive] an appropriate assessment of the implications for the site concerned of the plan or project must precede its approval and take into account the cumulative effects which result from the combination of the plan or project with other plans or projects in view of the sites conservation objectives. Such an assessment therefore implies that all the aspects of the plan or project which can, individually or in combination with other plans or projects, affect those objectives must be identified in the light of the best scientific knowledge in the field.”*
- 2.4.3. The types of plans and projects that should be considered in an in-combination assessment include the following:
- The incomplete or non-implemented parts of plans or projects that have already commenced.
 - Plans or projects given consent or given effect but not yet started.
 - Plans or projects currently subject to an application for consent or proposed to be given effect.
 - Projects that are the subject of an outstanding appeal.
 - Ongoing plans or projects that are the subject of regular review.
 - Any draft plans being prepared by any public body.
 - Any proposed plans or projects published for consultation prior to application.
 - Projects being proposed or being undertaken by a competent authority itself which require no external authorisation.
- 2.4.4. Based on this complexity and need for consistency in the assumptions relating to mitigation, a precautionary approach should be adopted when considering the HRA conclusions of overlapping plans and projects in-combination.

3 IDENTIFICATION OF HABITATS SITES

3.1 OVERVIEW

- 3.1.1. This section of the report confirms those Habitats Sites that are relevant to the assessment, i.e. those where the Proposed Development could lead to a conceivable risk of harm to the Habitats Sites. Habitats Sites at a conceivable risk of harm are identified by determining:
- the impact pathways generated by the Proposed Development that could potentially lead to harm to Habitats Sites; and
 - the spatial extent around the Proposed Development over which those impact pathways could conceivably have a material effect on the qualifying interests (reasons for designation) of the Habitats Sites.
- 3.1.2. Further information on potential impact pathways is presented in **Section 4**

3.2 STUDY AREA

- 3.2.1. This defines the geographic limits from the Proposed Development initially used to identify Habitats Sites to be considered within the HRA process and be screened for LSEs. The Study Area reflects the high sensitivity of qualifying interests of Habitats Sites and the fact they often support species that are mobile and wide ranging, such as birds.
- 3.2.2. The principal criterion defining the Study Area is a zone of 10km surrounding the location of the Proposed Development, a distance appropriate to encompass possible impact pathways from the Proposed Development to Habitats Sites. It also factors in relevant Impact Risk Zones (IRZ) used to assess planning applications for likely impacts on Habitat Sites.
- 3.2.3. Additionally, any Habitats Sites featuring qualifying ornithological interests within 20km of the Proposed Works were identified, and the Conservation Objectives for SPAs and Information Sheets for Ramsar sites were checked to identify terrestrial bird features. The 20km search distance is generally considered the maximum distance, beyond which, most non-marine bird species would not travel on a regular basis between foraging and roost sites (NatureScot, 2016)¹⁷.
- 3.2.4. All Habitats Sites within the above-described zones of influence have been included in this stage of the HRA process and are subject to screening for LSEs.

3.3 RELEVANT HABITATS SITES

- 3.3.1. As shown in Figure 2, four Habitats Sites lie within the Study Area:
- Salisbury Plain SAC (0.13km east);
 - Salisbury Plain SPA (0.13km east);
 - River Avon SAC (2.24km west); and
 - Porton Downs SPA (6.70km southeast)

¹⁷ NatureScot (2016). Habitats Regulations Appraisal (HRA) on the Firth of Forth - A Guide for developers and regulators. Available at: <https://www.nature.scot/doc/habitats-regulations-appraisal-hra-firth-forth-guide-developers-and-regulators>

- 3.3.2. These four Habitats Sites are all within the principal 10km zone. No Habitats Sites featuring qualifying ornithological interests are present between 10 and 20km.
- 3.3.3. The reasons for designation of these sites, as well as the conservation objectives, are summarised in Table 3-1. Table 3-1 also summarises known vulnerabilities of these sites, collated from the Natura 2000 Standard Data Forms (SDF)¹⁸, Natural England Citations, and Site Improvement Plans (SIP)¹⁹.

¹⁸ Joint Nature Conservation Committee (JNCC) (2016). SAC and SPA Standard Data Forms and Ramsar Information Sheets. Available online: <http://www.jncc.gov.uk/>.

¹⁹ Search for designated site details - <https://designatedsites.naturalengland.org.uk/> (accessed 02.02.2026)

Table 3-1 - Relevant Habitats Sites and known threats and pressures on these sites

Site Name	Site Size (ha)	Approx. Distance/ orientation from Site	Summary of reasons for designation summarised on Natura 2000 Standard Data Form or Ramsar Information Sheet ²⁰²¹²²²³	Activities with greatest effect upon the site, as listed on Natura 2000 Standard Data Form or Ramsar Information Sheet	Pressures and threats listed within the Site Improvement Plan (NE, undated) (T=Threat, P=Pressure) ²⁴²⁵
Salisbury Plain SAC	21,460	0.13 km E	- Annex I habitats which are a primary reason for selection of this site: - H5130 <i>Juniperus communis</i> formations on heaths or calcareous grasslands - H6210 Semi-natural dry grasslands and scrubland facies on calcareous substrates (<i>Festuco-Brometalia</i>). Important Orchid sites). - Annex II species that are a primary reason for selection of this site:	Negative impacts Threats and pressures: - M02 Changes in biotic conditions. - A04 Grazing - K04 Interspecific floral relations Positive Impacts Activities, management: - A02 Modification of cultivation practices - A04 Grazing - A06 Annual and perennial non-timber crops - D05 Improved access to site	- Changes in species distributions (P) - Air Pollution: risk of atmospheric nitrogen deposition (P)

²⁰ [Salisbury Plain SAC \(Natura 2000 Standard Data Form\)](#) (accessed July 2026)

²¹ [Salisbury Plain SPA \(Natura 2000 Standard Data Form\)](#) (accessed July 2026)

²² [River Avon SAC \(Natura 2000 Standard Data Form\)](#) (accessed July 2026)

²³ [Porton Down SPA \(Natura 2000 Standard Data Form\)](#) (accessed July 2026)

²⁴ [Site Improvement Plan: Salisbury Plain \(SIP209\)](#) (accessed July 2026)

²⁵ [Site Improvement Plan: Avon River and Valley \(SIP185\)](#) (accessed July 2026)

Site Name	Site Size (ha)	Approx. Distance/ orientation from Site	Summary of reasons for designation summarised on Natura 2000 Standard Data Form or Ramsar Information Sheet ²⁰²¹²²²³	Activities with greatest effect upon the site, as listed on Natura 2000 Standard Data Form or Ramsar Information Sheet	Pressures and threats listed within the Site Improvement Plan (NE, undated) (T=Threat, P=Pressure) ²⁴²⁵
Salisbury Plain SPA	19,714	0.13 km E	• I1065 Marsh fritillary butterfly, <i>Eurodryas Aurinia</i>. ■ Species for which the designation has been implemented: • Quail <i>Coturnix coturnix</i> (breeding site) • Hobby <i>Falco subbuteo</i> (breeding site) • Stone curlew <i>Burhinus oedicnemus</i> (breeding site) • Hen harrier <i>Circus cyaneus</i> (over-wintering)	Negative impacts Threats and pressures: ■ H02 Pollution to groundwater (point sources and diffuse sources) ■ M02 Changes in biotic conditions. Positive Impacts Activities, management: ■ A02 Modification of cultivation practices ■ A04 Grazing ■ A06 Annual and perennial non-timber crops	■ Changes in species distributions (P) ■ Air Pollution: risk of atmospheric nitrogen deposition (P)
River Avon SAC	417	2.24 km W	■ Annex I habitats which are a primary reason for selection of this site: • H3260 Water courses of plain to montane levels with the <i>Ranunculus fluitantis</i> and <i>Callitriche-Batrachion</i> vegetation ■ Annex II species that are a primary reason for selection of this site: • I1016 Desmoulin's whorl snail, <i>Vertigo moulinsiana</i> • F1095 Sea lamprey, <i>Petromyzon marinus</i>	Negative impacts Threats and pressures: ■ M02 Changes in biotic conditions. ■ H02 Pollution to groundwater (point sources and diffuse sources) ■ J02 Human induced changes in hydraulic conditions Positive Impacts Activities, management: ■ A02 Modification of cultivation practices ■ A04 Grazing	■ Physical modification (P) ■ Siltation (P) ■ Water Pollution (P/T) ■ Water abstraction (P/T) ■ Changes in species distributions (P) ■ Invasive species (P/T) ■ Public Access/Disturbance (P) ■ Hydrological changes (T)

Site Name	Site Size (ha)	Approx. Distance/ orientation from Site	Summary of reasons for designation summarised on Natura 2000 Standard Data Form or Ramsar Information Sheet ²⁰²¹²²²³	Activities with greatest effect upon the site, as listed on Natura 2000 Standard Data Form or Ramsar Information Sheet	Pressures and threats listed within the Site Improvement Plan (NE, undated) (T=Threat, P=Pressure) ²⁴²⁵
			- F1096 Brook lamprey, <i>Lampetra planeri</i> - F1106 Atlantic salmon, <i>Salmo salar</i> - F1163 Bullhead, <i>Cottus gobio</i>	- A06 Annual and perennial non-timber crops - B02 Forest and Plantation management & use	- Inappropriate weed control (T) - Change in land management (T) - Habitat fragmentation
Porton Down SPA	1562.32	6.70 km SE	- Species for which the designation has been implemented: - Stone curlew <i>Burhinus oedicnemus</i> (breeding)	Negative impacts Threats and pressures: - H04 Air pollution, air-borne pollutants - M02 Changes in biotic conditions. Positive Impacts Activities, management: - None listed	- Changes in species distributions (P) - Air Pollution: risk of atmospheric nitrogen deposition (P)

4 STAGE 1: SCREENING OF POTENTIAL EFFECTS

4.1 HABITATS SITE MANAGEMENT STATEMENT

- 4.1.1. The Proposed Development is not directly connected with, or necessary for, the management of any of the Habitats Sites listed in **Table 3-1**. It has not been conceived solely to further the conservation of the Habitats Sites, nor is it essential to their management. Therefore, further consideration of the Proposed Development within the HRA process is required.

4.2 CONSIDERATION OF EFFECTS

OVERVIEW

- 4.2.1. Utilising the information included within **Section 3**, the Proposed Development has been screened to identify whether potential impact pathways are likely to result in significant effects upon the Habitats Sites. This process has been undertaken considering the Proposed Development in isolation and in the absence of mitigation, with the results of this screening assessment set out in Table 3-1.
- 4.2.2. The Habitats Site's vulnerability information, summarised in **Table 3-1**, has been used to assist in identifying potential impacts and effects. The impacts included within **Table 4-1** are made with reference to relevant attributes discussed in supplementary advice for Habitats Sites from Natural England, and comprise the following:

CONSTRUCTION PHASE

- Land take – direct loss of land within the borders of a Habitats Site or of an area outside of a Habitats Site that considered to be functionally linked. Loss can be determined as an impact on connectivity, extent and distribution, nesting provision and food availability.
- Disturbance – increased risk of disturbance to qualifying features of the Habitats Sites through noise, vibration and visual disturbance during site clearance and construction from an increased presence of people and vehicles, operation of machinery, demolition and construction activities and lighting.
- Pollution/contaminants – run-off associated with isolated pollution events from construction plant or machinery.
- Air quality – an increased risk of dust and air pollution to levels that may detrimentally impact habitat quality, due to movement of machinery and vehicle emissions.

OPERATION PHASE

- Increased recreational disturbance – an increase in recreational disturbance from people residing in the new accommodation accessing the Habitats Sites for recreational purposes (dog walking, jogging etc).
- Urbanisation – impacts occurring due to increases in residents in close proximity to Habitats Sites including the potential for vandalism, deliberate fires, fly-tipping (particularly risk of introducing

invasive alien species from garden waste) and predation of sensitive qualifying species by domestic cats.

- Water quality – potential to cause an increase in nutrient loads on Habitats Sites adversely affected by nitrogen and/or phosphorus enrichment through the introduction of additional residents/contaminants into the catchment and the potential this creates to increase pollution load from wastewater requirements. Note, this is only a potential impact pathway for the River Avon SAC.

- 4.2.3. Desk study data and UK Habitat Classification (UKHab) survey results obtained to inform a PEA for the Proposed Development² have also been used to inform the consideration of effects. The desk study exercise included the purchase of bird species records for a 2km radius around the Site from Wiltshire and Swindon Biological Records Centre (WSBRC). The results of the desk study exercise and UKHab survey are included where relevant throughout this section, with the results of the UKHab survey for the Site presented on **Figure 3**.
- 4.2.4. Relevant threats and pressures identified for the Habitats Sites identified in **Table 3-1**, have been considered against impacts of the Proposed Works, and information included within **Section 3** of this report, to screen for LSE on Qualifying interests and their Conservation Objectives.
- 4.2.5. Results of this screening process for impacts identified are presented in **Table 4-1**.

Table 4-1 - Screening of Likely Significant Effects

Habitats Sites	Potential Impact Pathway	Screening	LSE
Salisbury Plains SAC	Land take (construction)	The Proposed Development will be entirely confined to the Site, which is located on the outskirts of Bulford Camp, specifically west of Sling Road, approximately 0.13km from the boundary of the SAC. The Site was surveyed on 18 May 2026 to classify the grassland present within the optimal flowering season and to determine if it could support the Annex II species marsh fritillary butterfly which is a qualifying interest feature of the SAC. The survey recorded that the grassland on Site is regularly managed through a mowing regime and comprised species such as cocks foot <i>Dactylis glomerata</i>, germander speedwell <i>Veronica chamaedrys</i>, yarrow <i>Achillea millefolium</i>, doves foot cranesbill <i>Geranium molle</i>, creeping buttercup <i>Ranunculus repens</i>, annual meadow grass <i>Poa annua</i>, cleavers <i>Galium aparine</i>, dandelion <i>Taraxacum officinale</i>, sheep's fescue <i>Festuca ovina</i> and Yorkshire fog <i>Holcus lanatus</i>. These species and the sward present are characteristic of other neutral grassland (g3c). Notwithstanding the proximity of the Site to the SAC, the grassland present does not provide suitable habitat to support marsh fritillary butterfly (damp grasslands dominated by tussock forming grasses or chalk grassland; presence of its larval foodplant devil's-bit scabious <i>Succisa pratensis</i>). As such, the Site would not be classed as functionally linked and loss of habitat here would not impact the qualifying species of the SAC directly or indirectly.	No
	Disturbance (construction)	The Proposed Development is likely to give rise to a temporary increase in noise, vibration and visual disturbance as a result of site clearance and construction activities. Works will be confined to the Site which is 0.13km from the SAC at its closest point. Furthermore, the Site is separated from the SAC by woodland which will provide a level of screening that will reduce any disturbance impacts reaching the SAC and the current levels of disturbance at the Site are already high. Whilst invertebrates (the SAC is designated in part for marsh fritillary butterfly) can be susceptible to increased noise and vibration, it is considered that due to the distance between the Site and the SAC, the lack of suitable habitat for the butterfly on Site (see row above), the current ambient disturbance, the confined and temporary nature of the construction works and the screening provided by the woodland, there is unlikely to be LSE on the SAC as a result of construction disturbance,	No

Habitats Sites	Potential Impact Pathway	Screening	LSE
	Pollution/contaminants (construction)	There is the potential for accidental spillage of chemicals to occur during construction, for example during refuelling of machinery. Should this reach the SAC through groundwater or any watercourses hydrologically linked to the SAC, pollution of Salisbury Plains SAC has the potential to detrimentally impact the qualifying habitats and species by altering the soil composition through introduction of contaminants. No aquatic habitat is present within the Site to provide hydrological connectivity, however, the Site is within 300m of the Nine Mile River, which rises within Salisbury Plain near Brimgerston Down before flowing south-west to Bulford. Notwithstanding this, neither the Nine Mile River nor its associated ponds are noted in the SACO for Salisbury Plain, nor are they identified as supporting habitats or functionally linked for the SAC qualifying features. Furthermore, no species associated with these aquatic habitats (or likely to be associated) are identified as typical species of the SAC. However, due to the proximity of the SAC (0.13km), direct run-off from the Site into the SAC, causing damage through contaminants to qualifying features or functionally linked land is possible. As such, LSE cannot be ruled out.	Yes
	Air quality (construction)	During construction works, there is potential for a temporary increase in vehicle emissions and dust to be produced. Atmospheric pollution is a recognised threat for the SAC with the qualifying habitats sensitive to changes in air quality. Exceedances in pollutants have the potential to modify the chemical status of the soils, accelerating or damaging plant growth and altering vegetation structure and composition. According to LA105 of the Design Manual for Roads and Bridges (DMRB), <i>"If construction activities are less than 2 years it is unlikely that the construction activities would constitute a significant air quality effect or impinge on the UK's reported ability to comply with the Air Quality Directive [Ref 4.N] given the short term duration of the construction activities as opposed to the long term operation of the project."</i>	Yes

Habitats Sites	Potential Impact Pathway	Screening	LSE
		The construction of the Proposed Development will not exceed 2 years. Furthermore, it is confined to the Site which is 0.13km from the SAC at its closest point with the majority of the qualifying habitats located much further away. As such, LSE related to vehicle emissions can be ruled out. Deposition of dust onto qualifying habitats has the potential to degrade habitat quality. While the extent and duration of these activities are not expected to result in significant airborne pollution, it is possible that construction works could result in dust pollution reaching the SAC. Guidance within the DMRB²⁶ recommends an air quality assessment for dust (Section 2.56 and 2.57) on designated sites: ▪ <i>The construction dust assessment shall determine the construction dust risk potential of the project to the receiving environment, which informs the appropriate level of mitigation.</i> While this guidance is primarily associated with roads it is considered good practice to include for Projects involving roads and the creation of construction dust projected as part of the Proposed Development. As such, there is potential for dust pollution to cause LSE due to the proximity of the Site to the SAC.	
	Air quality (operation)	The Proposed Development comprises the construction of new residential dwellings, which could increase the number of movements annually on the local road network surrounding the SAC. Increased numbers of local journeys could result in raised levels of nitrogen deposition on sensitive habitats within the SAC. However, the Proposed Development will only see a small increase in the number of dwellings (eight) which is unlikely to result in an increase to annual average daily traffic (AADT) above the threshold criteria (>1,000 vehicles on the local road network), in accordance with guidance set out in LA105 of the DMRB. As such, no likely significant effects associated with increased traffic during the operational phase are anticipated.	No

²⁶ <https://www.standardsforhighways.co.uk/search/html/a7f4cda-08f7-4f16-a89f-e30da703f3f4?standard=DMRB> (LA 105 Air quality (vertical barriers) - accessed 23.01.2026)

Habitats Sites	Potential Impact Pathway	Screening	LSE
	Increased recreational disturbance (operation)	The Proposed Development is for an increase in residential accommodation within close proximity to the SAC. There is an extensive network of public rights of way on Salisbury plain that, given the proximity of the Site, it can be anticipated that new residents would make use of. The Wiltshire Local Plan Review HRA uses a zone of influence for recreational disturbance, based on evidence from visitor surveys, of 6.4km for the SAC. The habitat qualifying features are vulnerable to recreational disturbance through erosion and trampling and associated impacts such as fire and vandalism. However, the SACO highlights military vehicle disturbance as the main contributing factor to this pressure. Increased recreational pressure is not listed as a threat or pressure in the SIP. Notwithstanding this, following the precautionary principle embedded in the HRA process, there remains some potential for a LSE.	Yes
	Urbanisation (operation)	Where sensitive sites are involved, development buffers of around 400m are typically used to minimise the effects of urbanisation. For example, Natural England has identified a 400m zone around the Chichester and Langstone Harbours SPA within which housing development should not be located due to the potential effects of urbanisation (particularly, the risk of chick predation by cats, which cannot be mitigated). Similarly, LPAs near the Thames Basin Heaths SPA have adopted a 400m zone around the SPA boundary where there is a presumption against new residential development as the impact on the SPA is considered likely to be adverse. Furthermore, 400m has been previously agreed with NE by other local authorities as an appropriate screening Zol for potential urban edge effects on heathland sites (in this example the New Forest SAC and SPA)²⁷. Salisbury Plain is just over 100m from the Site and so within the zone where impacts are possible. However, the recognised threats / pressures listed within the SIP are non-development related. The SAC is not designated for any species that would be vulnerable to cat predation, however, the habitats on site would be vulnerable to fire, vandalism and fly-tipping. Following the precautionary principle embedded in the HRA process, there remains some potential for a LSE.	Yes

²⁷ LUC (2018) Habitats Regulations Assessment of New Forest National Park Local Plan 2016-2036. Assessment of Regulation 19 submission draft.

Habitats Sites	Potential Impact Pathway	Screening	LSE
Salisbury Plains SPA	Land take (construction)	The Proposed Development will be entirely confined to the Site which is located on the outskirts of Bulford Camp, specifically west of Sling Road, approximately 0.13km from the boundary of the SPA. However, whilst the Site is outside of the boundary of the SPA, given the proximity of the Site to the SPA, if habitats on the Site are considered to be supporting habitat (also known as functionally linked land) then there is still the potential for LSE. The SACO for the SPA targets the maintenance of the extent, distribution and connectivity of supporting habitat for the qualifying species both within and outside the SPA, as key to maintaining the SPA's ability and capacity to support the bird populations. Salisbury Plains SPA is designated for qualifying species of breeding quail, hobby, stone curlew and non-breeding hen harrier. As such, supporting habitat in the context of Salisbury Plains SPA is considered to be:²⁸ ▪ heathland (hobby, hen harrier and stone curlew) ▪ wetland (hobby and hen harrier) ▪ broadleaved woodland (hobby only) including trees of a diameter of more than 60cm near the edges of woodland ▪ grassland (stone curlew and other qualifying species to a lesser extent); and ▪ arable farmland (stone curlew and quail). The Site is primarily composed of other neutral grassland with individual trees, some scrub and hardstanding. Woodland is adjacent to the south, northwest and west. The wider area consists of some hardstanding and gardens (dwellings, gardens and pavement). Beyond the Site are fields and calcareous grasslands surrounding the Nine Mile River. Grassland is present in the wider area elsewhere but is heavily managed/mowed.	No

²⁸ [Wiltshire Local Plan Review Habitats Regulations Assessment - Appropriate Assessment](#) (accessed 26.01.2026)

Habitats Sites	Potential Impact Pathway	Screening	LSE
		Targeted stone curlew surveys were undertaken between April and July 2026 ²⁹ which concluded that the Site itself is unsuitable for breeding stone curlew (and other qualifying bird species). As such, the Site is not considered to be functionally linked land for the qualifying species of the SPA and LSE in respect of land take can be ruled out.	
	Disturbance (construction)	The Proposed Development is likely to give rise to a temporary increase in noise, vibration and visual disturbance as a result of site clearance and construction activities. Works will be confined to the Site which is 0.13km from the SPA at its closest point, although the Site is separated from the SPA by woodland which will provide a level of screening that will reduce any disturbance impacts reaching the SPA and the current levels of disturbance at the Site are already high. Salisbury Plain SPA is designated for European hobby, quail, stone curlew and hen harrier. The HRA undertaken for the latest iteration of the Wiltshire Local Plan³⁰, currently under review, has assumed that effects of noise, vibration and light pollution from construction are capable of causing an adverse effect if development takes place within 500m of a Habitats Site that supports bird qualifying features. This is extended to Habitats Sites where stone curlew is a qualifying feature (due to lower densities of breeding) to within 1.5km of settlements³¹. The targeted stone curlew surveys for the Proposed Development considered a Survey Area of 1.5km from the Site in line with the above and best practice guidance³². No stone curlews were recorded within the Survey Area over six survey visits from April to July 2026 indicating a likely absence of breeding stone curlew, probably due to the urbanized nature of this section of the SPA and the proximity of the Site to Bulford.	No

²⁹ WSP (2026) Service Families Accommodation Model Homes Development Sling Road, Bulford. Stone Curlew Survey Report

³⁰ LUC (2024) Wiltshire Local Plan Review Habitats Regulations Assessment. Available at: Local_Plan_HRA_Report_Final_Report_September_2024.pdf

³¹ Footprint Ecology (2013) Further assessments of the relationship between buildings and stone-curlew distribution.

³² Tim Cowan (2017) RSPB stone-curlew monitoring and protection handbook – monitoring protocol. RSPB

Habitats Sites	Potential Impact Pathway	Screening	LSE
		Of the other species for which the SPA is designated, only quail was recorded during the surveys, outside of the 500m disturbance zone. As such, the Proposed Development will not result in LSE in respect of disturbance during construction.	
	Pollution/contaminants (construction)	There is the potential for accidental spillage of chemicals to occur during construction, for example during refuelling of machinery. Should this reach the SPA habitats through groundwater or any watercourses hydrologically linked to the SPA, pollution of Salisbury Plains SPA has the potential to detrimentally impact the qualifying habitats and species by altering the soil composition through introduction of contaminants. No aquatic habitat is present within the Site to provide hydrological links, however the Site is within 300m of the Nine Mile River, which rises within Salisbury Plain near Brighmerston Down before flowing south-west to Bulford. Notwithstanding this, neither the Nine Mile River nor its associated ponds are noted in the SACO for Salisbury Plain, nor are they identified as supporting habitats or functionally linked for the SPA qualifying features. Furthermore, no species associated with these aquatic habitats (or likely to be associated) are identified as typical species of the SPA. However, due to the proximity of the SAC (0.13km), direct run-off from the Site into the SPA, causing damage through contaminants to qualifying features or functionally linked land is possible. As such, LSE cannot be ruled out.	Yes
	Air quality (construction)	During construction works, there is potential for a temporary increase in vehicle emissions and dust to be produced. Atmospheric pollution is a recognised threat for the SPA with the habitats on which the qualifying species rely sensitive to changes in air quality. Exceedances in pollutants have the potential to modify the chemical status of the soils, accelerating or damaging plant growth and altering vegetation structure and composition. According to LA105 of the Design Manual for Roads and Bridges (DMRB), <i>"If construction activities are less than 2 years it is unlikely that the construction activities would constitute a significant air quality</i>	Yes

Habitats Sites	Potential Impact Pathway	Screening	LSE
		<i>effect or impinge on the UK's reported ability to comply with the Air Quality Directive [Ref 4.N] given the short term duration of the construction activities as opposed to the long term operation of the project."</i> The Proposed Development will not exceed 2 years. Furthermore, it is confined to the Site which is 0.13km from the SPA at its closest point with the majority of the site located much further away. As such, LSE related to vehicle emissions can be ruled out. Deposition of dust onto habitats has the potential to degrade habitat quality on which the qualifying species rely. While the extent and duration of these activities are not expected to result in significant airborne pollution, it is possible that construction works could result in dust pollution reaching the SPA. Deposition of dust onto qualifying habitats has the potential to degrade habitat quality. While the extent and duration of these activities are not expected to result in significant airborne pollution, it is possible that construction works could result in dust pollution reaching the SAC. Guidance within the DMRB²⁶ recommends an air quality assessment for dust (Section 2.56 and 2.57) on designated Sites: ▪ <i>The construction dust assessment shall determine the construction dust risk potential of the project to the receiving environment, which informs the appropriate level of mitigation.</i> While this guidance is primarily associated with roads it is considered good practice to include for Projects involving roads and the creation of construction dust/ projected as part of the Proposed Development. As such, there is potential for dust pollution to cause LSE.	
	Increased recreational disturbance (operation)	The Proposed Development is for an increase in residential accommodation within close proximity to the SPA. There is an extensive network of public rights of way on Salisbury plain that, given the proximity of the Site, it can be anticipated that new residents would make use of. The Wiltshire Local Plan Review HRA³³ uses a zone of influence for recreational disturbance, based on evidence from visitor surveys, of 6.4km for the SPA. The qualifying bird species of the SPA are susceptible to recreational disturbance from walking, dog walking and illegal off-road vehicles, and the habitats on which they rely from associated erosion and	Yes

³³ Wiltshire Council (2024) Wiltshire Local Plan Review Habitats Regulations Assessment Appropriate Assessment.

Habitats Sites	Potential Impact Pathway	Screening	LSE
		trampling and related impacts such as fire and vandalism. Disturbance can cause a natural threat response in birds leading to excessive energy expenditure, abandonment of nests and/or suitable breeding areas; reducing breeding success, impacting bird survival rates and ultimately contributing to population decline. As ground nesting birds, stone curlew and quail are particularly vulnerable to this threat. As such, LSE cannot be ruled out.	
	Urbanisation (operation)	Where sensitive sites are involved, development buffers of around 400m are typically used to minimise the effects of urbanisation. For example, Natural England has identified a 400m zone around the Chichester and Langstone Harbours SPA within which housing development should not be located due to the potential effects of urbanisation (particularly, the risk of chick predation by cats, which cannot be mitigated). Similarly, LPAs near the Thames Basin Heaths SPA have adopted a 400m zone around the SPA boundary where there is a presumption against new residential development as the impact on the SPA is considered likely to be adverse. Furthermore, 400m has been previously agreed with NE by other local authorities as an appropriate screening ZOI for potential urban edge effects on heathland sites (in this example the New Forest SAC and SPA) ³⁴ . Salisbury Plain is just over 100m from the Site and so within the zone where impacts are possible. The SPA is designated for bird species which could be vulnerable to cat predation, in particular the ground nesting species (stone curlew and quail). Furthermore, the habitats on site which support the qualifying species would be vulnerable to fire, vandalism and fly-tipping. As such, LSE cannot be ruled out.	Yes
River Avon SAC	Land take (construction)	The Proposed Development will be entirely confined to the Site located on the outskirts of Bulford Camp, specifically west of Sling Road which is 2.24km from the River Avon SAC at its closest point. Furthermore, the Site does not support any habitats associated with the SAC or its qualifying features and, as such, would not be considered to act as functionally linked land. Given the scale and nature of the works, the distance from the Site and the habitats present on Site, LSE in respect of land take can be ruled out.	No

³⁴ LUC (2018) Habitats Regulations Assessment of New Forest National Park Local Plan 2016-2036. Assessment of Regulation 19 submission draft.

Habitats Sites	Potential Impact Pathway	Screening	LSE
	Disturbance (construction)	The qualifying fish species of the River Avon SAC are sensitive to disturbance in the form of noise, vibration and increased light spill and Desmoulin's whorl snail is sensitive to increases in vibration. However, the Site is located 2.24km from the SAC at its closest point, a sufficient distance for these impacts not to be a consideration. Notwithstanding this, the Site is located approximately 300m from the Nine Mile River, a tributary of the River Avon and listed in the SACO for the SAC as <i>'integral to the natural functioning of the whole river system and also support the habitats and species for which the site was notified.'</i> Figure 4 shows the hydrological connectivity of the Site to the wider area. The Wiltshire Local Plan Review HRA uses 500m as the zone of influence for disturbance effects for the River Avon SAC. As the functionally linked Nine Mile River is within this zone of influence, LSE cannot be ruled out.	Yes
	Pollution/contaminants (construction)	There is the potential for accidental spillage of chemicals to occur during construction, for example during refuelling of machinery. Should this reach the River Avon SAC it has the potential to detrimentally impact the qualifying habitats and species through introduction of contaminants. No aquatic habitat is present within the Site, however, the Site is within 300m of the Nine Mile River, which is a tributary of the River Avon and considered within the SACO for the River Avon to be functionally linked.	Yes
	Air quality (construction)	During construction works, there is potential for a temporary increase in vehicle emissions and dust to be produced. The SACO for the River Avon SAC identifies the habitat for which the SAC is designated and the habitats on which the qualifying species rely to be habitat types considered sensitive to changes in air quality. Exceedances in pollutants have the potential to modify the chemical status of the substrate, accelerating or damaging plant growth, altering vegetation structure and composition and causing the loss of sensitive typical species associated with them. According to LA105 of the Design Manual for Roads and Bridges (DMRB), <i>"If construction activities are less than 2 years it is unlikely that the construction activities would constitute a significant air quality effect or impinge on the UK's reported ability to comply with the Air Quality Directive [Ref 4.N] given the short term duration of the construction activities as opposed to the long term operation of the project."</i>	Yes

Habitats Sites	Potential Impact Pathway	Screening	LSE
		The Proposed Development will not exceed 2 years. Furthermore, it is confined to the Site which is 2.24km from the SAC at its closest point. The DMRB also states that air pollution from roads is unlikely to be significant beyond 200m. The functionally linked Nine Mile River is also over 200m from the Site. As such, LSE related to vehicle emissions can be ruled out. Deposition of dust onto habitats has the potential to degrade habitat quality on which the qualifying species rely. Guidance within the DMRB indicates that impacts should be considered where dust emissions are expected to be low but present within 200m of a Habitats site²⁶. However, dust has the potential to contain contaminants that is at risk of remaining in the surrounding habitat and therefore being picked up as part of flooding events. In the absence of dust mitigation measures therefore LSE relating to dust pollution to the SAC, through the functionally linked Nine Mile River, cannot be ruled out.	
	Increased recreational disturbance (operation)	The Proposed Development is for an increase in residential accommodation. While recreational pressure is not listed as a threat or pressure for the qualifying features of the River Avon SAC, there is the potential that residential development could lead to an increase in public access to the river through leisure activities including fishing, water sports and walking, with associated trampling of habitats or disturbance to qualifying features. The limited scale of the Proposed Development, with just eight dwellings, is not expected to significantly increase recreational disturbance above baseline levels. In addition, while there is some limited access to the river banks available in local parks and urban areas in the broader locale, the majority of the river appears to flow through private land with no major car parks for public access. As such no significant impact pathway is present and LSE can be ruled out.	No

Habitats Sites	Potential Impact Pathway	Screening	LSE
	Urbanisation (operation)	Where sensitive sites are involved, development buffers of around 400m are typically used to minimise the effects of urbanisation. For example, Natural England has identified a 400m zone around the Chichester and Langstone Harbours SPA within which housing development should not be located due to the potential effects of urbanisation (particularly, the risk of chick predation by cats, which cannot be mitigated). Similarly, LPAs near the Thames Basin Heaths SPA have adopted a 400m zone around the SPA boundary where there is a presumption against new residential development as the impact on the SPA is considered likely to be adverse. Furthermore, 400m has been previously agreed with NE by other local authorities as an appropriate screening Zol for potential urban edge effects on heathland sites (in this example the New Forest SAC and SPA)³⁵. The River Avon SAC is located 2.24km from the Site and is therefore substantially outside of the zone where impacts from urbanisation could be anticipated. Notwithstanding this, the Site is within 300m of the Nine Mile River, which is a tributary of the River Avon and considered within the SACO for the River Avon to be functionally linked. However, the qualifying features of the SAC are not vulnerable to cat predation, fire or vandalism and given that the Nine Mile River is not directly accessible from the Site with any public access to the river along Public Rights of Way rather than road, the likelihood of fly-tipping occurring is negligible. As such, LSE can be ruled out.	No
	Water quality (operation)	The River Avon SAC is currently adversely affected by phosphorous enrichment. Diffuse pollution from, inter alia, sewage treatment works discharges are contributing to elevated levels of nutrients and dissolved oxygen levels in parts of the SAC. As the Proposed Development is for an increase in residential properties, this has the potential to increase nutrient inputs from wastewater into the catchment. In line with the requirements of the Habitats Regulations, new developments in the catchments of already impacted Habitats Sites must achieve nutrient neutrality to remove any uncertainty as to whether new growth will further deteriorate the designated site³⁶.	Yes

³⁵ LUC (2018) Habitats Regulations Assessment of New Forest National Park Local Plan 2016-2036. Assessment of Regulation 19 submission draft.

³⁶ Ricardo and Natural England (2022) Nutrient Neutrality Generic Methodology. NECR459. Natural England. Available at: <https://publications.naturalengland.org.uk/publication/5143927928913920>

Habitats Sites	Potential Impact Pathway	Screening	LSE
		Foul flows from the Proposed Development will be treated at Wessex Water's Ratfyn sewage treatment works which discharges treated effluent into the River Avon catchment. Nutrient load calculations carried as part of the nutrient neutrality assessment indicate that the Proposed Development will produce a total phosphorous load of 0.84kg/year pre-2030 and 0.16 kg/year post-2030.³⁷ Therefore, without mitigation, the Proposed Development will increase the phosphorous load in the River Avon catchment and will not achieve phosphorous neutrality.	
Porton Down SPA	Land take (Construction)	The Proposed Development will be entirely confined to the Site, which is located on the outskirts of Bulford Camp, specifically west of Sling Road, approximately 6.7km from the boundary of the SPA. The SACO for the SPA targets the maintenance of the extent, distribution and connectivity of supporting habitat for the qualifying species both within and outside the SPA, as key to maintaining the SPA's ability and capacity to support the bird population. Porton Down SPA is designated for breeding stone curlew. As such, supporting habitat in the context of Porton Down SPA is considered to be heathland, grassland and arable farmland. Green et al (2006)³⁸ noted that stone curlews travel up to about 3km from their nest to forage whilst Hawkes et al (2021)³⁹ found that 90% of foraging locations were within 1km during the nesting period and 90% within 5km of the day-roost post-breeding. Whilst they did record the longest distance travelled as 13km post-breeding, it is reasonable to assume that the Site is unlikely to represent functionally linked land for the Porton Down stone curlews given the distance, relatively small size of the Site and the presence of major infrastructure (including A roads and railways) between the Site and Porton Down SPA. As such LSE can be ruled out.	No

³⁷ 2030 is the date by which the Ratfyn sewage treatment works will be upgraded to achieve a Technically Achievable Limit (TAL) for total phosphorous of 0.25mg/l.

³⁸ Green, R. E., Tyler, G. A. and Bowden, C. G. R. (2006) Habitat selection, ranging behaviour and diet of the stone curlew (*Burhinus oedipnemus*) in southern England. *Journal of Zoology* 250(2): 161-183

³⁹ Hawkes, R. W., Smart, J., Brown, A., Green, R. E., Jones, H. and Dolman, P. M. (2021) Effects of experimental land management on habitat use by Eurasian stone-curlews. *Animal Conservation* 24(5): 743-755

Habitats Sites	Potential Impact Pathway	Screening	LSE
	Disturbance (Construction)	Qualifying species present within Porton Down SPA (Stone curlews - breeding) are at risk of disturbance while nesting from noise, vibration and increased presence of people arising from construction activities. Porton Down SPA is located 6.7km from the Site, separated by urban development and infrastructure (A roads and railways lines). Due to the scale and nature of the Proposed Development, the distance to the SPA and the barriers between the Site and SPA, it is not considered that an impact pathway for construction derived disturbance is present. Furthermore, as detailed above, it is not considered that the Site represents functionally linked land for the SPA. As such LSE can be ruled out.	No
	Pollution/contaminants (Construction)	There is the potential for accidental spillage of chemicals to occur during construction, for example during refuelling of machinery. Should this reach the Porton Down SPA it has the potential to detrimentally impact the qualifying species and the habitats on which it relies through introduction of contaminants The distance between the Site and the SPA is such that any pollution events would not impact the SPA and the Site is not considered to act as functionally linked land for the SPA. Furthermore, there is no direct connectivity to Porton Down SPA through any hydrological corridors with all waterbodies that are part of the wider hydrological network near Porton Down SPA flowing into the River Avon at Salisbury, south-west of the SPA. As such LSE can be ruled out	No
	Air quality (Construction)	During construction works, there is potential for a temporary increase in vehicle emissions and dust to be produced. Atmospheric pollution is a recognised threat for the SPA with the habitats on which the qualifying species relies sensitive to changes in air quality. Exceedances in pollutants have the potential to modify the chemical status of the soils, accelerating or damaging plant growth and altering vegetation structure and composition. The Proposed Development is separated from the SPA by a minimum distance of 6.7km and therefore it is considered reasonably unlikely that temporary emissions associated with construction traffic will detrimentally affect the quality of the habitats on which the SPA species rely. Deposition of dust onto habitats has the potential to degrade habitat quality on which the qualifying species relies. Guidance within the DMRB indicates that impacts should be considered where dust	No

Habitats Sites	Potential Impact Pathway	Screening	LSE
		emissions are expected to be low but present within 200m of a Habitats site. As the distance from the Site to the SPA is 6.7km it can be concluded there is no potential for dust pollution to cause LSE.	
	Increased recreational disturbance (operation)	As a ground nesting bird, stone curlew is highly susceptible to recreational disturbance from walking, dog walking and illegal off-road vehicles, and the habitats on which it relies from associated erosion and trampling and related impacts such as fire and vandalism. Disturbance can cause a natural threat response in birds leading to excessive energy expenditure, abandonment of nests and/or suitable breeding areas; reducing breeding success, impacting bird survival rates and ultimately contributing to population decline. Whilst the Proposed Development is for an increase in residential accommodation, there is no public access to Porton Down SPA and therefore no impact pathway present.	No
	Urbanisation (operation)	Where sensitive sites are involved, development buffers of around 400m are typically used to minimise the effects of urbanisation. For example, Natural England has identified a 400m zone around the Chichester and Langstone Harbours SPA within which housing development should not be located due to the potential effects of urbanisation (particularly, the risk of chick predation by cats, which cannot be mitigated). Similarly, LPAs near the Thames Basin Heaths SPA have adopted a 400m zone around the SPA boundary where there is a presumption against new residential development as the impact on the SPA is considered likely to be adverse. Furthermore, 400m has been previously agreed with NE by other local authorities as an appropriate screening Zol for potential urban edge effects on heathland sites (in this example the New Forest SAC and SPA)⁴⁰. As the distance from the Site to the SPA is 6.7km it can be concluded there is no potential for urbanisation to cause LSE.	No

⁴⁰ LUC (2018) Habitats Regulations Assessment of New Forest National Park Local Plan 2016-2036. Assessment of Regulation 19 submission draft.

5 APPROPRIATE ASSESSMENT

5.1 OVERVIEW

- 5.1.1. The screening assessment (**Table 4-1**) identified the potential for LSE as a result of the Proposed Development on three Habitats Sites:
- Salisbury Plain SAC due to the potential for accidental pollution events (construction), impacts on air quality due to an increase in dust (construction), increased recreational disturbance (operation) and urbanisation (operation);
 - Salisbury Plain SPA due to the potential for accidental pollution events (construction), impacts on air quality due to an increase in dust (construction), increased recreational disturbance (operation) and urbanisation (operation); and
 - River Avon SAC due to the potential for accidental pollution events (construction), impacts on air quality due to an increase in dust (construction), construction derived disturbance and impacts on water quality (nutrient neutrality) (operation).

5.2 SALISBURY PLAIN SITES

- 5.2.1. Salisbury Plain is an extensive and open rolling chalk plateau defined by its chalk grassland habitat with secondary and ancient woodland also present and significant stands of juniper scrub. The SAC covers 21,465.94ha and is underpinned by three SSSIs whilst the SPA is designated for 19,715.99ha which is entirely contiguous with the SAC and underpinned by one SSSI – Salisbury Plain SSSI.
- 5.2.2. Due to the overlapping nature of the Habitats Sites, and the identified impact pathways for LSE being the same, both the SAC and SPA are addressed together.
- 5.2.3. The SACOs produced by NE provide guidance on the ‘typical species’ considered to be associated with the Sites. For the SAC⁴¹ these comprise the invertebrate fauna associated with juniper populations and fungi which are entirely or partially dependant on juniper, devil’s-bit scabious as the main larval foodplant for the marsh fritillary butterfly, various vascular plants associated with chalk grasslands, assemblage of chalk grassland invertebrates, fairy shrimp *Chirocephalus diaphanus* and European rabbit *Oryctolagus cuniculus* which is important in maintaining the open, short-swards and areas of bare ground of the chalk grassland. It also cites the surrounding SSSIs and County Wildlife Sites on the chalk to be ‘multiple grassland ecological networks’ important for species dispersal and therefore considered functionally-linked. For the SPA⁴², these comprise the key prey items for the bird interest features (small birds and insects) and key food plants.
- 5.2.4. As discussed above, the Site and intervening land between the Site and the Habitats Sites is not considered to be functionally-linked land of either.
- 5.2.5. The Site is closest to the Salisbury Plain SSSI section of the SAC/SPA, specifically unit 135 of the SSSI. Unit 135 is considered to be in Unfavourable-No change condition due to the condition of the

⁴¹ <https://designatedsites.naturalengland.org.uk/TerrestrialAdvicePDFs/UK0012683.pdf> (Accessed July 2026)

⁴² <https://designatedsites.naturalengland.org.uk/TerrestrialAdvicePDFs/UK9011102.pdf> (Accessed July 2026)

grassland, specifically due to eutrophication and under grazing, though populations of marsh fritillary and the SPA bird interest features are considered to be favourable across the SSSI as a whole⁴³.

- 5.2.6. The Stage 1 Screening has indicated that the interest features of both Habitats Sites may be vulnerable to environmental changes associated with the Proposed Development in relation to accidental pollution events during construction, impacts on air quality from dust deposition during construction and increased recreational disturbance. These are discussed in turn in the following sub-sections.

POLLUTION EVENTS

Summary of Pathway

- 5.2.7. The Proposed Development has the potential to create localised pollution events during construction through accidental spillage of chemicals, for example during refuelling and maintenance of plant and machinery. Should contaminants be released and migrate beyond the Site boundary, given the proximity to Salisbury Plain, there is potential for pollution to reach the Habitats Sites. Such contamination could adversely affect the *Juniperus communis* formations on calcareous grasslands and semi-natural dry calcareous grassland habitats SAC interest features through alteration of soil chemistry, nutrient enrichment, or introduction of harmful substances. Indirect effects on the habitat supporting the SAC Marsh Fritillary population interest feature and the SPA bird interest features could also occur where contamination affects habitat quality or characteristic vegetation communities.

Baseline and predicted changes

- 5.2.8. Whilst the combined SIP for the SAC and SPA highlights conservation management as the primary measure to combat the pressure of changes in species distribution, a pollution event as described above on a significant scale or through repeated occurrences could prevent the conservation objectives of the Habitats Sites (as detailed within their SACOs) being achieved through preventing the maintenance and/or restoration of the extent and distribution of the interest features within the area of Salisbury Plain closest to the Site, the vegetation structure, species composition and soil and nutrient conditions.
- 5.2.9. The area of the Habitats Sites which has the potential to be reached by a pollution event would be Unit 135 of the underpinning Salisbury Plain SSSI. As stated above, this unit is currently considered to be in Unfavourable-No change condition with the grassland present already not achieving the conservation objectives for the SAC.
- 5.2.10. Notwithstanding this, the Site is separated from the Habitats Sites by woodland and urban development and there are no direct hydrological pathways between them. As such, despite the small intervening distance, the probability of contaminants reaching Salisbury Plain is reduced.

⁴³<https://designatedsites.naturalengland.org.uk/SiteDetail.aspx?SiteCode=S1006531&SiteName=Salisbury%20Plain&countyCode=&responsiblePerson=&SeaArea=&IFCAAarea=> (Accessed July 2026)

Mitigation

- 5.2.11. The Proposed Development will incorporate industry standard pollution prevention measures (Environment Agency et al., 2026⁴⁴; CIRIA, 2015⁴⁵) within a Construction Environment Management Plan (CEMP) that will be followed throughout the construction phase. These will include, inter alia:
- Adoption of the waste hierarchy (prevent, minimise, re-use, recycle or recover before disposal),
 - All stored materials will be covered to prevent dust and litter dispersion, and to prevent ingress of rainwater.
 - Any storage of liquids and chemicals will be away from open drains, watercourses, wells, springs or boreholes.
 - Fuel tanks and chemical stores to be located on impermeable ground and surrounded by bunds.
 - Drip trays will be used under any static plant machinery and will be regularly inspected for oil accumulation.
 - Refuelling zones will be implemented away from watercourses, ditches and unsealed ground.
 - Spill kits will be provided on site for the duration of the works and construction staff will be trained in their correct application. Any used spill kits are to be disposed of as hazardous waste.
 - A spill emergency protocol will be outlined detailing immediate containment steps, staff training requirements and emergency contacts.
 - Containment and appropriate disposal of any contaminated run-off such as vehicle cleaning run-off, water pumped from excavations and concrete and cement washout.
 - Waste Acceptance Criteria & classification of excavated material will be undertaken prior to the main works. The aim will be to re-use all the excavated material on site but, where removal of excess is required, this will be stored in stockpiles and will be barricaded by sandbags wrapped in polythene to prevent any spillage. The waste will subsequently be disposed of appropriately at non-hazardous landfill.
 - Any hazardous soils, if present, shall be removed by a licenced waste carrier and accompanied by a hazardous waste consignment note. Hazardous waste will not be mixed with non-hazardous waste.
 - Where evidence of contamination is encountered onsite (i.e. discoloured soils, unexpected odours, fibrous texture to the soils, presence of underground tanks, evidence of waste pits), works shall halt and the Principal Contractor's Environment Manager contacted.

Assessment of Effects

- 5.2.12. Given the small scale of the Proposed Development, the reduced likelihood of contaminants reaching the designated sites due to the lack of hydrological pathways between them and the Site and the buffering effect of the woodland and urban development between them, the small proportion of the Habitats Sites that would be impacted and the implementation of the above mitigation measures through a CEMP; the risk of contaminants reaching Salisbury Plain is considered negligible. As such, accidental pollution events during construction are not considered likely to result in adverse effects on the integrity of Salisbury Plain SAC or SPA, nor their qualifying features.

⁴⁴ <https://www.gov.uk/guidance/pollution-prevention-for-businesses> (access July 2026)

⁴⁵ Charles, P. and Edwards, P. (Eds.) (2015) Environmental Good Practice on Site Guide (fourth Edition). CIRIA

AIR QUALITY

Summary of pathway

- 5.2.13. The Proposed Development has the potential to cause the deposition of dust onto qualifying habitats with a consequent degradation of habitat quality during construction works. LSE from airborne pollution due to vehicle emissions and general construction activities were screened out at Stage 1.

Baseline and Predicted Changes

- 5.2.14. Deposition of dust onto qualifying habitats has the potential to degrade habitat quality through smothering of vegetation and localised nutrient enrichment. Relevant receptors within Salisbury Plain SAC comprise the juniper habitat, calcareous grassland habitat and supporting habitat used by Marsh Fritillary. For the SPA, relevant receptors are the supporting habitat for the bird interest features.
- 5.2.15. As discussed above, unit 135 of the Salisbury Plain SSSI is the area of the designated sites which would likely be impacted which is already in Unfavourable-No change condition. Additional stress on the habitats here would prevent this unit from achieving favourable condition, thereby undermining the conservation objectives for the SAC and SPA.
- 5.2.16. Notwithstanding this, the Site is separated from the Habitats Sites by woodland and urban development which would provide some buffering of the designated area.
- 5.2.17. However, in the absence of any specific measures to reduce the creation of airborne dust and prevent its dispersal, there is the potential for dust pollution to adversely affect qualifying habitats due to the proximity of the Site to the Habitats Sites.

Mitigation

- 5.2.18. The Proposed Development will incorporate industry standard pollution prevention measures (Environment Agency et al., 2021; CIRIA, 2015) within a CEMP that will be followed throughout the construction phase, as described in paragraph 5.2.11 above. In addition to those already listed, the following specific dust suppression measures will also be included:
- Haul roads to be damped down where necessary and kept clean of dirt and soils.
 - Wheel washing to be implemented to prevent mud tracking onto roads.
 - Speed limits to be used on haul roads.
 - Dust suppression to be used on any cutting, grinding and drilling activities (measures to include wetting or vacuum extraction).
 - All plant to be properly maintained, and recorded within the site plant log, and throttled down or switched off when not in use.
 - Drop heights during loading and unloading will be minimised to reduce dust generation.
 - Stockpile management to be used as appropriate, including enclosing or using sheets on fine aggregate stockpiles if present.
 - Dust and air quality to be monitored regularly at boundary locations, particularly along the closest boundaries with the designated sites.
 - Rapid-response procedure to be implemented in the event of elevated dust levels, to include enhanced damping or temporary pauses in work.

Assessment of Effects

- 5.2.19. Given the small scale of the Proposed Development, the buffering effect of the woodland and urban development between the Site and the Habitats Sites, the small proportion of the Habitats Sites that would be impacted and the implementation of the above mitigation measures through a CEMP; the risk of dust reaching Salisbury Plain is considered negligible. As such, the Proposed Development will not result in adverse effects on the Habitats Sites as a result of impacts on air quality.

INCREASE IN RECREATIONAL ACTIVITY

Summary of Pathway

- 5.2.20. The Salisbury Plain sites support qualifying bird species and habitats which are susceptible to impacts from recreational activities such as walking and dog walking. The purpose of the Proposed Development is to create new residential accommodation, thereby increasing the number of residents within close proximity of the Habitats Sites who could be expected to use those sites for recreational purposes, thereby increasing the pressure on them (the Wiltshire Local Plan Review HRA uses a zone of influence for recreational disturbance, based on evidence from visitor surveys, of 6.4km for Salisbury Plain).

Baseline and Predicted changes

- 5.2.21. The Salisbury Plain SIP identifies changes in species distribution as a pressure for the Habitats Sites, though it links this primarily to conservation management. Increased recreational pressure is not listed as a threat or pressure in the SIP.
- 5.2.22. Notwithstanding this, habitat qualifying features of the SAC and those supporting the bird interest features of the SPA are vulnerable to recreational disturbance through erosion and trampling and associated impacts such as fire and vandalism, though the SACO for the SAC highlights military vehicle disturbance as the main contributing factor to this pressure.
- 5.2.23. The qualifying bird species of Salisbury Plain SPA are potentially sensitive to disturbance arising from recreational activities. Increased recreational use can result in direct disturbance to birds, particularly from walkers, dog walkers and unauthorised off-road vehicle use. Disturbance may cause birds to alter their behaviour, expend additional energy avoiding disturbance, abandon suitable nesting or foraging areas, and in severe cases reduce breeding productivity. Stone curlew, as a ground-nesting species, is particularly sensitive to disturbance and human presence during the breeding season.
- 5.2.24. The Proposed Development is small in scale, comprising only eight dwellings within an existing residential area associated with Bulford Camp, and would represent only a minor increase in the local residential population. Furthermore, the development would not create new public access routes into the SPA or alter existing patterns of access.
- 5.2.25. The targeted stone curlew survey, undertaken between April and July 2026 recorded no stone curlew presence within a 1.5km Survey Area around the Site. The closest recorded stone curlews were observed 9.3km away. Incidental recordings of two quail were made during the surveys, over 500m from the Site. No other bird interest features were recorded during the surveys.

Mitigation

- 5.2.26. No specific mitigation is deemed necessary for the Proposed Development. However, the MoD actively manages their land holding within Salisbury Plain for the conservation of stone curlew in

accordance with a Management Plan which was first produced in 2000. The MoD has also undertaken visitor surveys to inform this and which have informed Wiltshire Council's planning policies. They have also prepared a Recreation Access Action Plan, reviewing existing Public Rights of Way and accessible open spaces and identifying opportunities for additional routes for running and dog walking which would reduce potential conflict with stone curlew and provide information on responsible access for service personnel and families.

- 5.2.27. A HRA and Mitigation Strategy for Salisbury Plain SPA⁴⁶ has been produced and is regularly reviewed (most recently in 2024) by Wiltshire Council which evaluates whether planned residential development and associated recreational activity, particularly dog walking, could adversely affect the internationally important stone curlew population within Salisbury Plain SPA. Based on over a decade of monitoring, visitor surveys and habitat management, the report concludes that the existing mitigation strategy (including the MoD contributions above) is effective, stone curlew populations remain in favourable condition, and planned housing growth will not have an adverse effect on the integrity of the SPA, provided the mitigation measures continue to be implemented.

Assessment of Effects

- 5.2.28. Whilst it is reasonable to assume that some future residents may make use of the surrounding countryside for recreation, the scale of the Proposed Development is very limited and any associated increase in recreational activity would be negligible in the context of the existing level of public access and recreational use across Salisbury Plain. Given the absence of SPA qualifying species within the Site and the wider 1.5km survey area, together with the lack of functionally linked supporting habitat and the continued implementation of the stone curlew management plan and associated mitigation, the Proposed Development would not be expected to result in disturbance of qualifying habitats, species or their supporting habitats.

URBANISATION

Summary of Pathway

- 5.2.29. The Salisbury Plain sites support qualifying bird species and habitats which are susceptible to impacts from cat predation (SPA) and fire, vandalism and/or fly-tipping (both). The purpose of the Proposed Development is to create new residential accommodation, thereby increasing the number of residents within close proximity of the Habitats Sites. As detailed within the screening assessment, the Site is within a distance of the SAC and SPA where impacts from urbanisation are generally considered to be possible.

Baseline and Predicted changes

- 5.2.30. The Salisbury Plain SIP identifies changes in species distribution as a pressure for the Habitats Sites, though it links this primarily to conservation management. Urbanisation is not specifically listed as a threat or pressure in the SIP.
- 5.2.31. Notwithstanding this, habitat qualifying features of the SAC and those supporting the bird interest features of the SPA are vulnerable to impacts associated with urbanisation including fire, vandalism and fly-tipping which would have the potential to destroy habitat and/or change species composition.

⁴⁶ Wiltshire Council (2024), HRA and Mitigation Strategy for Salisbury Plain SPA (in relation to recreational pressure from residential development). Review 2024.

Furthermore, predation of some species by cats is known to be sizeable (Woods et al, 2003)⁴⁷ and can be potentially significant for some Habitats Sites.

- 5.2.32. The Proposed Development is small in scale, comprising only eight dwellings within an existing residential area associated with Bulford Camp, and would represent only a minor increase in the local residential population not all of whom would necessarily own cats and/or engage in anti-social behaviours. Furthermore, the Site is not directly adjacent to the designated areas which are separated from the Site by woodland, fields and other urban development. As such, the likelihood of residents fly-tipping within the designated areas is further reduced.
- 5.2.33. The targeted stone curlew survey, undertaken between April and July 2026 recorded no stone curlew presence within a 1.5km Survey Area around the Site. The closest recorded stone curlews were observed 9.3km away. Incidental recordings of two quail were made during the surveys, over 500m from the Site. No other bird interest features were recorded during the surveys. This suggests that the qualifying bird populations are located away from the Site and would not be vulnerable to cats occupying the newly-built houses.

Mitigation

- 5.2.34. No specific mitigation is deemed necessary for the Proposed Development. However, as described above, the MoD actively provide information on responsible access to Salisbury Plain for service personnel and families which includes reference to the dangers to the protected area from fires, vandalism and litter.

Assessment of Effects

- 5.2.35. The scale of the Proposed Development is very limited and the likelihood of any significant impacts from urbanisation would be negligible. Given the absence of SPA qualifying species within the Site, with the closest recorded over 500m away (quail; 9.3km for stone curlew), together with the lack of easy access for activities such as fly-tipping directly from the Site and the information on responsible access provided by the MoD to residents, the Proposed Development would not be expected to result in urbanisation impacts to the qualifying habitats, species or their supporting habitats.

5.3 RIVER AVON SAC

- 5.3.1. The River Avon rises in the Pewsey Vale as a network of clay streams fed by chalk springs. These converge to a chalk river running through Salisbury Plain and is joined by the main Wiltshire tributaries at Salisbury, developing into a large calcareous river. The Avon and its tributaries are each of interest in their own right, possessing contrasting geologies. They are included in the SAC primarily on account of their importance for the internationally rare or threatened habitats and species they support - the chalk stream habitat with water crowfoot and starwort vegetation, Atlantic salmon, sea lamprey, brook lamprey, bullhead and Desmoulin's whorl snail.

⁴⁷ Woods, M., McDonald, R. A. and Harris, S. (2003) Predation of wildlife by domestic cats *Felis catus* in Great Britain. Mammal Review 33(2): 174-188.

- 5.3.2. The SACO⁴⁸ produced by NE provides guidance on the ‘typical species’ considered to be associated with the SAC, listing the plant species associated with the river, diverse invertebrate assemblages, otter *Lutra lutra*, and water vole *Arvicola amphibius*.
- 5.3.3. The SAC itself is 2.24km from the Site at its closest point. However, the Site is located approximately 300m from the Nine Mile River, a tributary of the River Avon and listed in the SACO as ‘integral to the natural functioning of the whole river system and also supports the habitats and species for which the site was notified’. In the main, it is the potential for LSE on the Nine Mile River as functionally-linked land of the SAC that was identified within the Stage 1 Screening assessment.
- 5.3.4. The Stage 1 Screening has indicated that the interest features of the River Avon SAC may be vulnerable to environmental changes associated with the Proposed Development in relation to accidental pollution events during construction, impacts on air quality from dust deposition during construction, construction generated disturbance and impacts on water quality (nutrient neutrality) during operation. These are discussed in turn in the following sub-sections.

POLLUTION EVENTS

Summary of Pathway

- 5.3.5. The Proposed Development has the potential to create localised pollution events during construction through accidental spillage of chemicals, for example during refuelling and maintenance of plant and machinery. Should contaminants be released and migrate beyond the Site boundary, given the proximity to the Nine Mile River, there is potential for pollution to reach this watercourse which has been associated with the SAC within the SACO. Such contamination could adversely affect the qualifying interest features of the SAC should they be present here as these qualifying features are sensitive to pollutants, increases in sediment loading and changes to the chemical composition of surface waters.

Baseline and predicted changes

- 5.3.6. No watercourses, ponds or other aquatic habitats are present within the Site. However, the Site lies approximately 300m from the Nine Mile River, a tributary of the River Avon which forms part of the wider River Avon catchment. Therefore, a theoretical hydrological pathway exists whereby pollutants released during construction could enter local drainage pathways and ultimately affect the River Avon SAC if not appropriately managed.
- 5.3.7. However, notwithstanding its mention within the SACO, the Nine Mile River is not considered to act as functionally linked habitat for the qualifying features of the River Avon SAC because it does not support populations of the SAC qualifying species or habitats at a scale that is important to maintaining their favourable conservation status:
- Macrophyte survey data from the EA ‘Ecology and Fish Data Explorer’ suggests that some of the plant species characteristic of the water courses of plain to montan levels may be present (e.g. water-cress *Rorippa nasturtium-aquaticum* agg, water parsnip *Berula erecta*, and water forget-me-not *Myosotis scorpioides*) although some key indicators (e.g. *Ranunculus peltatus* in winterbournes, stream water-crowfoot *R. penicillatus* ssp. *pseudofluitans* in the middle reaches

⁴⁸ <https://designatedsites.naturalengland.org.uk/TerrestrialAdvicePDFs/UK0013016.pdf> (Accessed July 2026)

and *Callitriche* sp.) are not recorded. The feature is assumed to be present in the lowest reaches of the river only.

- Desmoulin's whorl snail is associated with stands of swamp and fen vegetation alongside the River Avon, and associated wetlands, rather than the River Avon itself. No records of this species close to Nine Mile River have been provided by the desk study data and there is a lack of suitable habitat present to support populations. As such they are considered to be likely absent.
- No fish survey data for sea lamprey within the Nine Mile River is available in the EA 'Ecology and Fish Data Explorer' data. However, this species is understood to be limited to the lower reaches of the River Avon SAC based on other information sources (e.g. Wheeldon 2003)⁴⁹ and so it is assumed to be absent.
- No fish survey data for brook lamprey within the Nine Mile River is available in the EA 'Ecology and Fish Data Explorer' data. However, this species is likely to be able to utilise the lower (i.e. non-winterbourne) reaches based on EA fish monitoring data from the River Bourne and the River Avon but the habitat here is considered to provide only local value and in the wider context of the River Avon SAC not significant.
- No fish survey data for Atlantic salmon within the Nine Mile River is available in the EA 'Ecology and Fish Data Explorer' data. However, this species is likely to be able to utilise the lower (i.e. non-winterbourne) reaches based on EA fish monitoring data from the River Bourne and the River Avon. Significant spawning sites are limited in the river though and use is likely to be sporadic.
- Bullhead have been recorded within the Nine Mile River (EA 'Ecology and Fish Data Explorer' data) and are therefore known to be present. They are considered to be well distributed throughout the River Avon SAC, as supported by the SACO which states:
"Surveying to inform Wessex Waters Low Flow Studies in 2006-7...found bullhead to be well distributed throughout the catchment at relatively high numbers."
 They are considered to be a relatively sedentary species (Smyly, 1957)⁵⁰ with a home range typically between 4 to 48m, depending on population density (Downhower et al, 1990)⁵¹. This sedentary nature means that habitat within the Nine Mile River does not comprise territories utilised by populations associated with the River Avon SAC.

Mitigation

- 5.3.8. Notwithstanding the above assessment, industry standard pollution prevention measures, as listed in paragraph 5.2.11, will be detailed within a CEMP and implemented throughout the construction period.

⁴⁹ Wheeldon J (2003) The River Avon cSAC Conservation Strategy [online]. English Nature, Peterborough. Available at: <https://cms.wiltshire.gov.uk/documents/s149489/WCO21RiverAvoncSACConservationStrategy.pdf>. [Accessed Dec 2024].

⁵⁰ Smyly, W.J.P. (1957) The life history of the bullhead or Miller's thumb (*Cottus gobio* L.). Proceedings of the Zoological Society of London 128: 431-453.

⁵¹ Downhower, J.F., Lejeune, P. & Brown, L. (1990) Movements of the chabot (*Cottus gobio*) in a small stream. Polskie Archiwum Hydrobiologii 37: 119-126.

Assessment of effects

- 5.3.9. Given the distance of the Site from the SAC itself, the assessment that the nearby Nine Mile River is not functionally-linked land for any of the qualifying interest features of the SAC and the implementation of industry standard pollution prevention measures, the risk of contaminants reaching the River Avon SAC is considered negligible. As such, accidental pollution events during construction are not considered likely to result in adverse effects on the integrity of the SAC or SPA, or its qualifying features.

AIR QUALITY

Summary of pathway

- 5.3.10. The Proposed Development has the potential to cause the deposition of dust onto qualifying habitats with a consequent degradation of habitat quality during construction works. LSE from airborne pollution due to vehicle emissions and general construction activities were screened out at Stage 1.

Baseline and Predicted Changes

- 5.3.11. Deposition of dust onto qualifying habitats has the potential to degrade habitat quality through smothering of vegetation and localised nutrient enrichment. However, the River Avon SAC is located approximately 2.24km from the Site at its closest point and, as described in the sub-section above, the much closer Nine Mile River is not considered to be functionally-linked land for any of the interest features of the SAC. Construction activities have the potential to generate dust through excavation, vehicle movements and handling of materials. However, dust effects are generally limited to relatively short distances from the source and decrease rapidly with distance. As such, there is no credible pathway by which construction-derived dust could result in deposition on the SAC's qualifying habitats or affect the ecological conditions supporting its qualifying species.

Mitigation

- 5.3.12. Notwithstanding the above assessment, dust suppression measures, as listed in paragraph 5.2.18, will be detailed within a CEMP and implemented throughout the construction period.

Assessment of effects

- 5.3.13. As the Nine Mile River has been assessed as not providing functionally-linked land for any of the interest features of the SAC, and the distance to the SAC itself is such that increased dust deposition would not reach it, there is no credible pathway by which construction-derived dust could result in deposition on the SAC's qualifying habitats or affect the ecological conditions supporting its qualifying species and therefore the integrity of the SAC will be maintained.

CONSTRUCTION DERIVED DISTURBANCE

Summary of pathway

- 5.3.14. The Proposed Development has the potential to give rise to temporary increases in noise, vibration and visual disturbance (human presence and lighting) during the duration of the construction works. The Wiltshire Local Plan Review HRA identifies a precautionary zone of influence of 500m for disturbance effects associated with the River Avon SAC. Whilst the Site is located over 2km from the SAC itself, this impact pathway was screened in at Stage 1 on a precautionary basis as the Nine Mile River is located within this zone.

Baseline and Predicted Changes

- 5.3.15. No watercourses or qualifying habitats are present within the Site and no in-channel works are proposed. Whilst the Nine Mile River lies approximately 300m from the Site and forms part of the wider River Avon catchment, as outlined above, it has been assessed as part of this Stage 2 Appropriate Assessment and determined to not comprise functionally linked habitat for the qualifying features of the River Avon SAC. The River Avon SAC itself is located approximately 2.24km from the Site at its closest point.
- 5.3.16. Given the substantial separation distance between the Site and the River Avon SAC, the absence of in-channel works, and the temporary nature of construction activities, noise, vibration and visual disturbance generated during construction would not be expected to disturb qualifying species of the SAC or affect the ecological function of qualifying habitats.

Mitigation

- 5.3.17. Not required.

Assessment of Effects

- 5.3.18. The Proposed Development is limited in scale, comprising eight dwellings within an existing residential area associated with Bulford Camp. Construction activities will be temporary, localised and do not involve any in-channel works. The River Avon SAC is located too far away for disturbance effects capable of affecting the distribution, abundance, behaviour or conservation status of its qualifying features to be experienced and the nearby Nine Mile River has been determined to not function as functionally linked habitat for the SAC. Therefore, the Proposed Development will not result in an adverse effect on the integrity of the River Avon SAC, either alone or in combination with other plans or projects, as a result of construction-derived noise, vibration, lighting or visual disturbance.

WATER QUALITY (NUTRIENT NEUTRALITY)

Summary of pathway

- 5.3.19. Poor water quality due to enrichment from elevated nitrogen and phosphorus levels is one of the primary reasons for freshwater habitats and estuaries being in unfavourable condition. Typically, available phosphorous is the limiting factor on plant growth in freshwater aquatic systems, for which a significant source is treated wastewater.
- 5.3.20. In increasing the number of residents within the River Avon catchments, the Proposed Development has the potential to increase nutrient discharges to that catchment from wastewater.

Baseline and predicted changes

- 5.3.21. The River Avon SAC is currently adversely affected by phosphorous enrichment which causes dominance by attached forms of algae and a loss of characteristic plant species. The consequent changes to plant growth and community composition also affect the wider food web, impact dissolved oxygen levels and increase siltation. The SACO states that *'at this SAC, elevated levels of phosphorus are preventing the targets from being achieved across much of the catchment'* and it lists the target to:

'Restore the natural nutrient regime with any anthropogenic enrichment above natural/background concentrations limited to levels at which adverse effects on characteristic biodiversity are unlikely'.

- 5.3.22. In line with the SACO and requirements of the Habitats Regulations, new developments in the catchments of already impacted Habitats Sites must achieve nutrient neutrality to remove any uncertainty as to whether new growth will further deteriorate the designated site.
- 5.3.23. Foul flows from the Proposed Development will be treated at Wessex Water's Ratfyn sewage treatment works which discharges treated effluent into the River Avon catchment. Nutrient load calculations carried out as part of the nutrient neutrality assessment undertaken to support the planning application for the Proposed Development indicate that it will produce a total phosphorous load of 0.84kg/year pre-2030 and 0.16 kg/year post-2030.
- 5.3.24. Therefore, without mitigation, the Proposed Development will increase the phosphorous load in the River Avon catchment and will not achieve phosphorous neutrality.

Mitigation

- 5.3.25. WSP has compiled a Nutrient Neutrality and Mitigation Strategy concluding that the preferred mitigation option to offset the above is the purchase of nutrient mitigation credits from an approved credit scheme in the River Avon catchment. The scheme must be upstream of Ratfyn STW. This document has been appended to this HRA assessment (**Appendix B**).

Assessment of Effects

- 5.3.26. Providing the mitigation strategy detailed in Appendix B is followed, the contribution of the Proposed Development to nutrient increases within the River Avon catchment can be suitably offset to ensure the SAC can meet its conservation objectives.

5.4 POTENTIAL IN-COMBINATION EFFECTS

- 5.4.1. When assessing the potential for adverse effects on the integrity of a Habitats Site of a plan or project in light of the conservation objectives for the Habitats Sites, it is necessary to consider the potential for in-combination effects with other plans and projects on the designated interest features of the sites. This should include:
- approved but as yet uncompleted plans or projects;
 - permitted ongoing activities such as discharge consents of abstraction licences; and
 - plans and projects for which an application has been made and which are currently under consideration but not yet approved by competent authorities.
- 5.4.2. Wiltshire Council's website was searched for any proposed developments that could lead to in-combination effects.
- 5.4.3. The search identified a range of other plans and projects, primarily comprising minor residential refurbishments and additions within Bulford Camp. These developments were at varying stages of the planning process, from recently submitted applications to schemes that have been granted permission.
- 5.4.4. Many of the identified developments are located at some distance from the Habitats Sites taken forward to AA or from the areas potentially affected by the Proposed Works. In addition, the nature and scale of these developments means that they are likely to result in highly localised effects and, in many cases, do not give rise to the same impact pathways (e.g., noise or visual effects affecting qualifying bird species) relevant to the Proposed Works.
- 5.4.5. Even if multiple developments were to occur concurrently with the Proposed Works, any effects would be localised, spatially separated and unlikely to interact in a manner that would result in cumulative impacts on habitat use, bird distribution or site integrity. Therefore, based on the location, scale and nature of the current planning applications available online, no likely in-combination effects are identified.

CONCLUSION

- 5.4.6. This assessment has identified and screened four Habitats sites for potential LSEs arising from the Proposed Works at the Bulford Service Families Accommodation Development.
- 5.4.7. Likely Significant Effects were screened in for all but one of these Habitats Sites - the Porton Down SPA - due its 6.7km distance from Site and lack of linking pathways.
- 5.4.8. All three other sites were screened for adverse effects on the integrity of the Habitats Sites, with six potential impact pathways identified: air quality due to an increase in dust, accidental pollution events (run-off), construction derived disturbance, increased recreational disturbance, urbanisation and water quality, Many of these pathways could be ruled out due to the lack of supporting habitat present on Site, identified in recent habitat and targeted bird surveys and further, detailed assessment concluding a lack of functionally-linked habitat close by. Appropriate mitigation measures which will be set out within a CEMP have been detailed to ensure impacts from pollution and dust deposition will be negligible.
- 5.4.9. As the Proposed Works are not predicted to lead to adverse effects on the integrity of any of the identified Habitats Sites, further stages of assessment under the Habitats Regulations are not required.

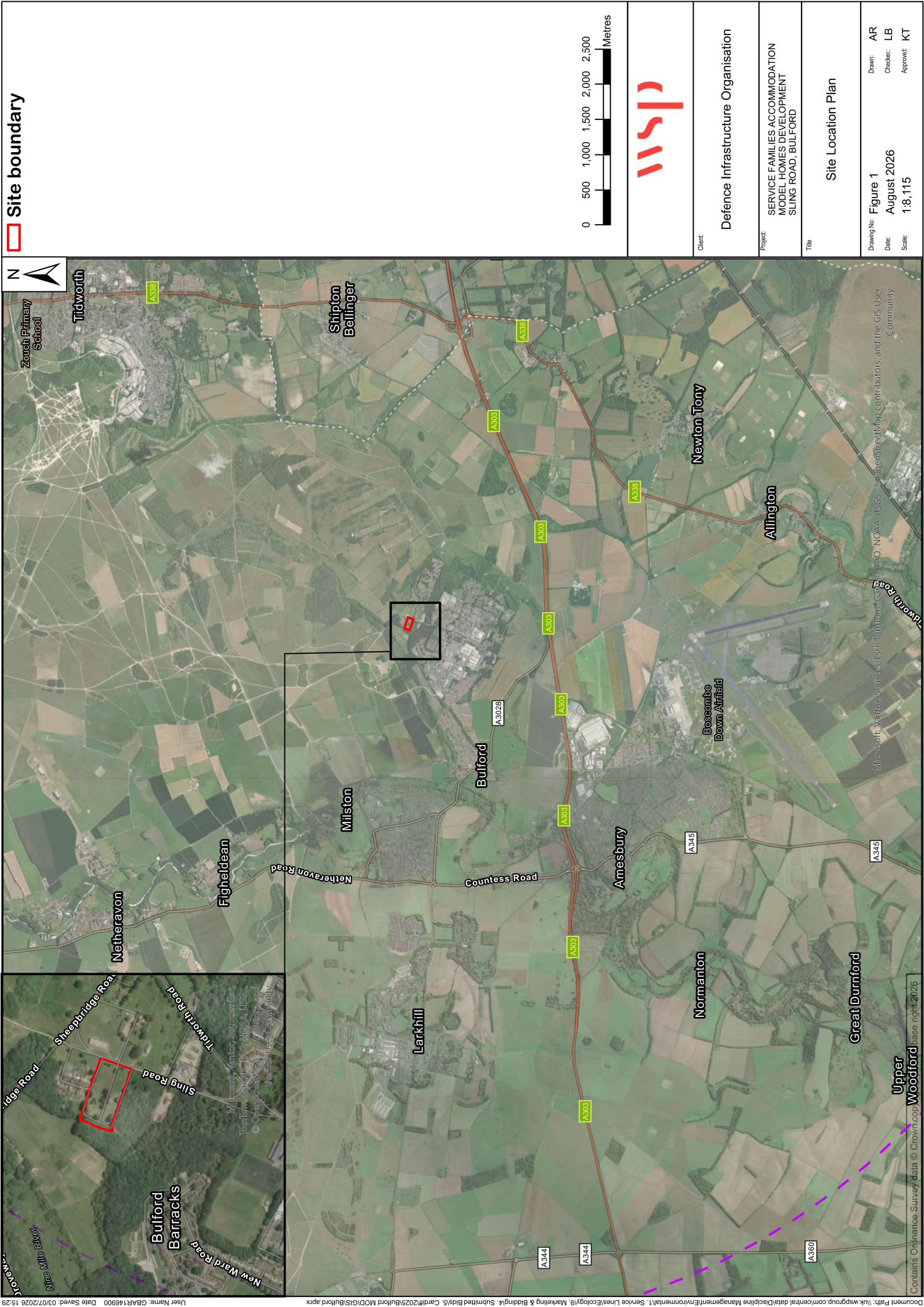
6 FIGURES

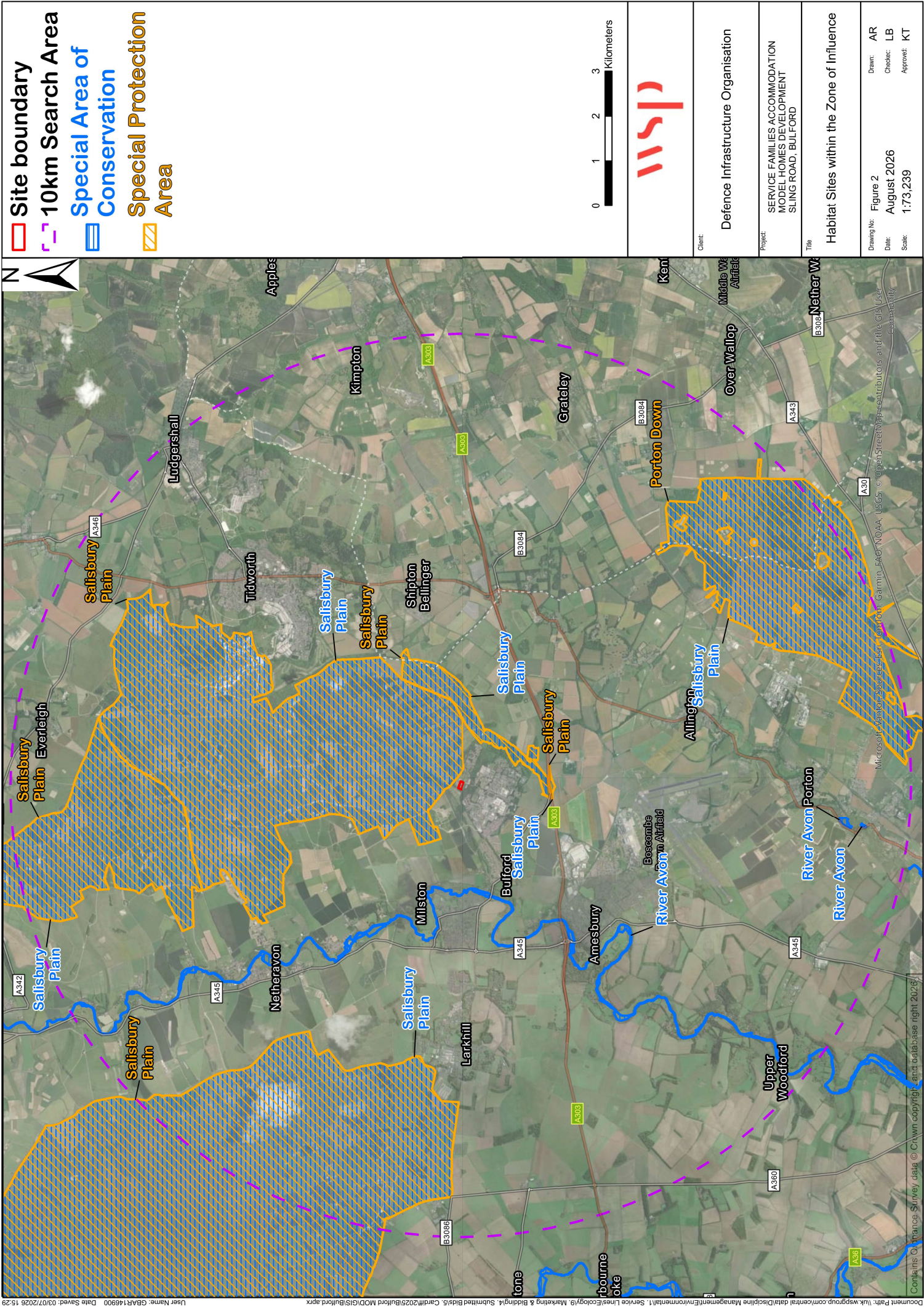
Figure 1 – Site Location Plan

Figure 2 – Habitats Sites within the Zone of Influence

Figure 3 – UKHAB Plan of the Site

Figure 4 - Hydrological Connectivity of Site to Wider Area









- Site boundary
- 500m Search Area
- Waterbodies



Client:

Defence Infrastructure Organisation

Project:

SERVICE FAMILIES ACCOMMODATION
MODEL HOMES DEVELOPMENT
SLING ROAD, BULFORD

Title:

Hydrological Connectivity of the
Site to Wider Area

Drawing No:

Figure 4

Drawn: AR

Date:

August 2026

Checked: LB

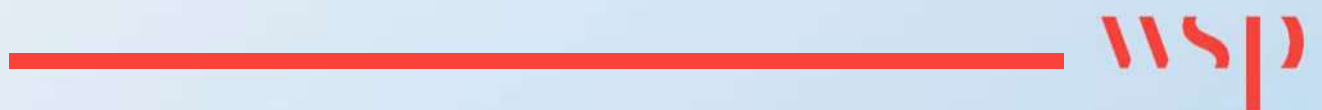
Scale:

1:4,200

Approved: KT

Appendix A

CJEU RULINGS



The Council for Justice of the European Union rulings

A number of CJEU rulings are relevant to the HRA screening exercise and are noted below.

The Wealden Judgement

The Wealden Judgement⁵², handed down in March 2017, has introduced additional complexities into the assessment process in relation to in-combination and cumulative effects.

Prior to this Judgement, air quality impacts on Habitats Sites were only considered alongside roads where the traffic growth associated with the individual Plan or Proposed Development being assessed exceeded specified screening criteria. These criteria were typically based on changes in vehicle movements and taken from the Design Manual for Roads and Bridges (DMRB, HA207/07⁵³), namely: increases of 1000 vehicles per day or 200 Heavy Goods Vehicles per day (as Annual Average Daily Traffic (AADT)).

The Wealden Judgement means that every single plan or project which, alone, is predicted to give rise to any increase in traffic or other air emission (however small) must be subjected to an in-combination assessment with other plans or projects (which would include those plans or projects with a similar tiny impact). However, the judgement did not rule out the application of thresholds in principal and this approach is normally taken as the basis of the assessment.

The judgement has led to a more detailed analysis of three key questions to discern which plans and project are those where a detailed “in combination” assessment is required in relation to changes in air quality⁵⁴:

1. Is your plan or project putting emissions into the air?;
2. If so, are those emissions at a level where they could actually be measured / perceived?; and,
3. If so, is there a realistic (rather than hypothetical) risk that those emissions, alone, will have an adverse effect on the ecology of a SAC / SPA?

A fuller justification will be required when applying the threshold approach.

People over Wind (The Sweetman Case)

The Court of Justice of the European Union’s (CJEU’s) decision in the matter of People Over Wind and Sweetman v Coillte Teoranta (C-323/17) (hereafter referred to as the ‘Sweetman Case’)⁵⁵, states that:

‘Article 6(3) 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

⁵² Judgment in Wealden District Council v. Secretary of State for Communities and Local Government, Lewes District Council and South Downs National Park Authority [2017] EWHC 351 (Admin) DATE: 21 Mar 2017.

⁵³ DMRB Design Manual for Roads and Bridges (DMRB) Volume 11, Section 3, Part 1. Available at: <http://dmrb.net/ha/standards/dmrb/vol11/section3/ha20707.pdf> (Accessed 02/12/18).

⁵⁴ <https://www.freeths.co.uk/2017/04/25/environmental-bulletin-spring-2017/>

⁵⁵ Sweetman v. An Bord Pleanála, Case C-258/11, CJEU judgment 11 April 2013.

concerned, of a plan or project, it is not appropriate, at the screening stage, to take account of measures intended to avoid or reduce the harmful effects of the plan or project on that site.'

In the new judgement the CJEU concluded that mitigation measures could not be considered as part of the project, and thus that the screening stage of HRA should not take account of them. This will undoubtedly be tested further in the courts in coming months and years, but the key issue is whether the mitigation measures proposed can genuinely be considered as part of the project, in that they would happen in any case, irrespective of the Habitats site. If not, then they should be considered mitigation measures, and considered at the Appropriate Assessment stage of HRA.

This is an emerging issue for local authorities and means that, because of the potential for 'in-combination effects and the fact that HRA Screening should not take into account measures targeted at mitigating effects on Habitats Sites. Therefore, it is becoming increasingly commonplace for local authorities to conduct an Appropriate Assessment of all project, plans and planning applications (i.e. these are often no longer screened out, by way of an HRA Screening as has been the practise to date).

CJEU Ruling in the Netherlands nitrogen and agriculture cases c-293/17 and c-294/17

The final Court Judgement in relation to these two cases was handed down on the 7th November 2018. The judgement relates to the assessment of agricultural activities under the Habitats Regulations, but has potential implications for the assessment of changes in nitrogen (N) deposition in relation to air quality (as the air quality calculations draw upon N deposition rates from APIS⁵⁶ and guidance within the DMRB which assumes a 2% reduction in N deposition year on year).

Of particular relevance to the assessment of air quality effects on Habitats Sites, the Court of Justice of the European Union ruled that:

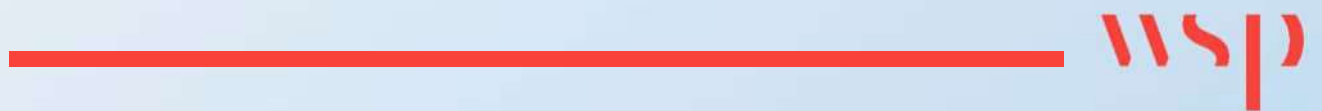
"An 'appropriate assessment' may only take into account the existence of Article 6(1) 'conservation measures', or Article 6(2) 'preventive measures', or specific measures adopted for a conservation programme, or 'autonomous' measures not in the programme, if the expected benefits of those measures **are certain** at the time of the assessment.

The Ruling makes clear that certainty and a thorough and in-depth examination of the scientific soundness is required that there is no reasonable scientific doubt as to the absence of adverse effects of each plan or project on the integrity of the site concerned.

⁵⁶ Air Pollution Information System (APIS). Available at: <http://www.apis.ac.uk/> [Accessed 02/12/18]

Appendix B

NUTRIENT NEUTRALITY ASSESSMENT & MITIGATION STRATEGY





BULFORD CAMP NNAMS

DATE:	29 January 2026	CONFIDENTIALITY:	Confidential
SUBJECT:	Bulford Camp Nutrient Neutrality Assessment & Mitigation Strategy		
PROJECT:	UK0038589.3630	AUTHOR:	James Ellaway
CHECKED:	James Ellaway	APPROVED:	James Ellaway

EXECUTIVE SUMMARY

The Ministry of Defence (MOD) is proposing to construct eight service family dwellings on Bulford Camp in Wiltshire.

A November 2018 European Court of Justice decision regarding the EU Habitats Directive resulted in Natural England (NE) imposing nutrient neutrality requirements to protect multiple 'Habitats' sites that are adversely affected by nitrogen and/or phosphorus enrichment. The River Avon is a 'Habitats' site that is adversely affected by phosphorus enrichment. The proposed development at Bulford Camp is located within the catchment of the River Avon and the proposed development must therefore achieve phosphorus neutrality.

Foul flow nutrient loads will be treated through Wessex Water's Ratfyn Sewage Treatment Works (STW).

The sustainable drainage strategy (SuDS) consists of infiltration of surface water into the ground.

The preferred mitigation option is the purchase of nutrient mitigation credits from an approved credit scheme in the River Avon catchment. The scheme must be upstream of Ratfyn STW. Only one such scheme is known – that currently being developed by Greenshank Environmental.

As credit availability in the catchment is highly constrained, and demand is likely to be high, it is recommended that the MOD immediately engage with Greenshank Environmental to secure a provisional credit allocation.

The Bulford Camp development will achieve phosphorus neutrality.

INTRODUCTION

The Ministry of Defence (MOD) is proposing to construct eight service family dwellings on Bulford Camp in Wiltshire.

A November 2018 European Court of Justice decision regarding the EU Habitats Directive resulted in Natural England (NE) imposing nutrient neutrality requirements to protect 'Habitats' sites that are adversely affected by nitrogen and/or phosphorus enrichment. Habitats sites are:

- Special Areas of Conservation (SAC).
- Special Protection Areas (SPA).
- Ramsar sites.

The proposed development at Bulford Camp is located within the catchment of the River Avon SAC, which is adversely affected by phosphorus enrichment.

NE's nutrient neutrality requirements apply to all new developments that will cause an increase in nutrient loads that affect 'Habitats' sites that are deteriorating because of nutrient enrichment. All such developments must demonstrate nutrient neutrality before planning approval can be granted. The Bulford Camp development must therefore achieve phosphorus neutrality.

Natural England has published generic technical guidance¹ and a nutrient neutrality calculator for the River Avon catchment². These documents have been used to inform the nutrient load calculations for the proposed development which have been developed in a bespoke Microsoft Excel spreadsheet to accurately reflect the percentage impermeability of the development.

EXISTING AND PROPOSED LAND USES

The existing and proposed land use areas are detailed in Table 1. Figures and full details are provided in Appendix A.

Table 1 – Bulford Camp Development Site Existing and Proposed Land Use Areas (ha)

Land Use	Existing	Proposed
Residential Urban	0.00	0.51
Open Urban	0.06	0.04
Greenspace	1.10	0.61
Total Site Area	1.16	1.16

SUSTAINABLE DRAINAGE SYSTEM – PHOSPHORUS REMOVAL

The proposed development is underlain by freely draining soils. Surface water will be attenuated through the sustainable drainage system (SuDS) and then infiltrated.

CIRIA C808 *Using SuDS to reduce phosphorus in surface water runoff* specifies phosphorus removal efficiency values for a range of SuDS features. Row 4 of Table 2.1 in CIRIA C808 specifies that 100% removal of phosphorus can be achieved through infiltration of runoff to ground, based on compliance with the criteria detailed in Table 2.

Table 2 – CIRIA C808 Surface Water Runoff Infiltration Criteria

Criterion	Bulford Camp Compliance
<i>The SuDS device will not be subject to significant flooding (i.e. it is not in flood zone 2 or 3)</i>	<i>Complies, the whole site is in FZ1.</i>
<i>The SuDS device is in an area where the high-water table depth is at least 1m below the base of the infiltration device (taking account of season variations and any underlying trends)</i>	<i>Complies, this is a lesser standard than required by the Lead Local Flood Authority.</i>
<i>The total pollution risk score for the SuDS device (calculated in accordance with Appendix C Groundwater quality and runoff of Highways England LA113 (2020) and Table 26.6 of CIRIA C753 is <180</i>	<i>Complies, the total pollution risk score is, conservatively, 130.</i>
<i>The SuDS device is at least 5m away from any surface water feature including a river, stream or lake.</i>	<i>Complies.</i>

The total phosphorus load in runoff that can be infiltrated to ground can be deducted from the development's TP load. The total phosphorus load in surface water runoff generated from the urban land uses on the development is 0.27kg/year, all of which will be removed through infiltration.

¹ <https://publications.naturalengland.org.uk/publication/5143927928913920>

² <https://www.gov.uk/government/publications/river-avon-sac-nutrient-neutrality-calculator>



WASTEWATER TREATMENT STRATEGY

Foul flows from the proposed development will be treated at Wessex Water's Ratfyn STW which has a current total phosphorus (TP) discharge consent limit of 1.00mg/l.

The *Levelling Up and Regeneration Act* (LURA) 2023 requires larger wastewater treatment works in nutrient neutrality affected catchments to be upgraded to achieve a Technically Achievable Limit (TAL) for total phosphorus of 0.25mg/l by 1 April 2030. Ratfyn STW's permit limit will therefore be improved to 0.25mg/l by 1 April 2030.

The treated effluent will be discharged into the River Avon catchment.

The nutrient load calculations and mitigation strategy are detailed below.

NUTRIENT LOAD CALCULATIONS

The phosphorus load has been calculated based on foul flow treatment at Ratfyn STW. The calculations are informed by Natural England's Nutrient Neutrality Calculator for the River Avon modified with a site-specific PIMP value of 39% as measured from the indicative layout and uplifted by 10% to account for urban creep. The calculations use the following site-specific information:

- Soils: Freely draining.
- Within a Nitrate Vulnerable Zone: Yes.
- Annual rainfall: 750 – 800mm/year.
- Number of dwellings: 8.
- Ratfyn STW phosphorus treatment performance (pre-2030): 1.00mgTP/l.
- Ratfyn STW phosphorus treatment performance (post-2030): 0.25mgTP/l.

A summary of the nutrient load generated by the development is provided in Table 1. Full calculations are provided in **Appendix A**.

The calculations indicate that phosphorus mitigation will be required to deliver nutrient neutrality for the development both pre- and post-2030.

Table 1 – Phosphorus Load Calculations

Load Contribution	Total Phosphorus Load (kg/year)	
	Pre-2030	Post-2030
Wastewater load (A)	0.76	0.19
Future land use load (B)	0.29	0.29
Existing land use load (C)	0.07	0.07
Nutrient load removed through the SuDS (D)	0.27	0.27
Future nutrient load (= A + (B - C) - D)	0.70	0.13
Precautionary buffer (20%)	0.14	0.03
Future nutrient load	0.84	0.16

PREFERRED MITIGATION STRATEGY

The pre-2030 phosphorus load will be mitigated through the purchase of the relevant number of TP mitigation credits from a mitigation scheme approved by Natural England in the River Avon catchment. This will mitigate both the pre-2030 and post-2030 phosphorus loads.



The post-2030 phosphorus load of 0.16kg/year will require the purchase of *permanent* phosphorus credits. In contrast, the pre-2030 phosphorus load of 0.84kg/year could be mitigated through the purchase of 0.68kg of *temporary* phosphorus credits (if available in the catchment) plus the 0.16kg/year of *permanent* phosphorus credits required post-2030. If temporary credits are not available in the catchment, all of the 0.84kg of mitigation credits must be permanent.

This mitigation strategy will deliver phosphorus neutrality for the development.

MITIGATION CREDIT SCHEMES

Wiltshire Council is developing a mitigation credit scheme for the Avon catchment³. However, the Bulford Camp development does not qualify as ‘planned development’ which is defined as:

‘applications that comply with housing site allocation policies (Appendix D, Wiltshire Core Strategy) and / or Core Policy 2 (Delivery Strategy) of the Wiltshire Core Strategy apart from Core Policy 37 (Military Establishments).’

The Council scheme also does not currently have any credits available in the relevant sub-catchment for Bulford Camp or, indeed, any sub-catchment in the River Avon catchment.

Private developers of phosphorus mitigation schemes in the Hampshire Avon catchment are:

- **Greenshank Environmental** has a credit scheme in development in the relevant sub-catchment. They anticipate credits being priced at around £55,000 per kilogram of TP. Regulatory approvals are expected to be obtained in Spring 2026 with credit allocations available shortly thereafter.
- **PO4 Limited** operates a phosphorus credit scheme in Bicton, near Fordingbridge. Credits are priced at £75,000 per kilogram of phosphorus. Unfortunately, as Bicton is downstream of Ratfyn STW, credits from this scheme are not suitable for mitigation of the Bulford Camp development.
- **Environmental Trading Platform** is a broker of nutrient mitigation credits. ETP’s website currently shows no credit availability in the River Avon catchment. ETP has responded to a request for information confirming that they do not have any suitable credits available.
- **EnTrade** is a broker of nutrient mitigation credits. Their website currently shows no credit availability in the River Avon catchment. EnTrade have responded to a request for information confirming that they also do not have any suitable credits available.

The availability of phosphorus credits in the Avon catchment is very low, and the demand is likely to significantly exceed supply. It is recommended that the MOD immediately enter negotiations with Greenshank Environmental to secure a provisional allocation of credits.

ALTERNATIVE MITIGATION OPTIONS

If mitigation credits aren’t secured, alternative mitigation options exist but are likely to incur significantly higher costs and will require significant time, effort and costs to address design, planning, regulatory, delivery, commissioning and in-perpetuity⁴ management and operation. Potential examples include:

- Replacement of any existing septic tanks on Bulford Camp (or in the catchment upstream) with higher quality package treatment plants.
- Agricultural reversion to greenspace, meadow or wetland on MOD (or other) land holdings.
- Water efficiency improvements to existing properties on the base to reduce the volume of effluent discharged to Ratfyn STW.

³ <https://www.wiltshire.gov.uk/article/6209/Phosphorus-and-nitrogen-mitigation>

⁴ Defined by Natural England as the 90 – 125 year design life of the dwellings.



- Removal of surface water from the on-site combined network to reduce volumes of effluent discharged to Ratfyn STW.

Given the complexity of these approaches, they are only recommended if mitigation credits cannot be secured.

CONCLUSION

The surface water phosphorus load from the development will be treated through SuDS and infiltrated, removing 100% of the surface water phosphorus load. The foul flow phosphorus load will be treated through Ratfyn STW.

Without mitigation, the development will increase the phosphorus load in the River Avon catchment, and will not achieve phosphorus neutrality.

The preferred mitigation option is the purchase of nutrient mitigation credits from a Natural England-approved scheme in the River Avon catchment upstream of Ratfyn STW. The availability of phosphorus mitigation credits in the catchment is very low, and demand is likely to significantly exceed supply.

It is recommended that the MOD immediately enters into negotiations with Greenshank Environmental, the operators of the only known and potentially viable mitigation scheme in the catchment.

The purchase of mitigation credits will deliver phosphorus neutrality for the development.



APPENDIX A – NUTRIENT LOAD CALCULATIONS

Existing Landuse

Google Earth historic aerial mapping confirms that the land use has been primarily greenspace with a small area of unused road classed as open urban since at least 2005.

Land Use Classification	Area (ha)
Greenspace	1.10
Open urban	0.06
Total Area	1.16

2025



2017



2005

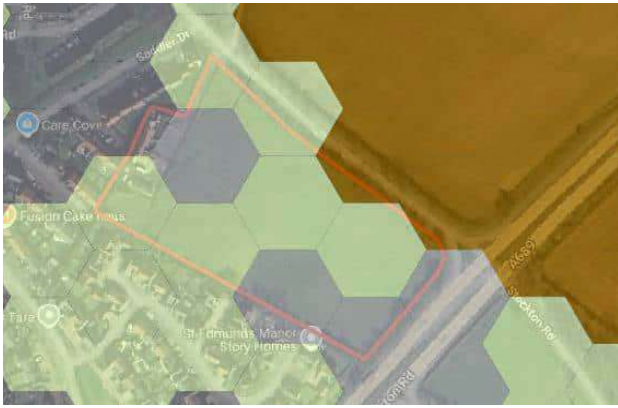


The Crop Map of England (CROME) confirms that the majority of the site is lowland grazing (light green tiles refer to 'Grass') plus a small area of existing urban (grey tile)

2023



2019



Future Landuse

Land Use Classification	Area (ha)
Residential urban land	0.51
Open urban	0.04
Greenspace	0.61
Total	1.16



Rainfall: Rainfall across site is in the range of 750mm to 80mm per year, based on information from the NRFA.

43021 - Avon at Knapp Mill

Soil Types: Soilscape 3 - freely draining shallow lime-rich soils over chalk or limestone

Nitrate Vulnerable Zone: The site is located within a Nitrate Vulnerable Zone

The screenshot displays the MAGIC web application interface. At the top, the 'MAGIC' logo is on the left, followed by a search bar containing 'County, Place, Postcod...'. To the right of the search bar are several icons: a person, a location pin, a building, a document, and a map. Further right are two dropdown menus: 'OSGB36' and '1:819,629'. Below the search bar, a legend box is open, titled 'Legend'. Inside the legend, it states 'Only layers selected and visible at this map scale will be shown'. Under the 'Magic' heading, there is a section for 'Designations'. Under 'Land-Based Designations', the 'Statutory' sub-category is expanded, showing 'Nitrate Vulnerable Zones 2017 Designations (England)' with a corresponding red square icon. The background is a map of the United Kingdom, with a large red area covering much of the south and east, indicating the designated zones. Labels on the map include 'Howe Forest National Park' and 'South Downs National Park'. At the bottom left, there is a scale bar for 20 km and coordinate information: 'Coords: [356322,103584] | Grid Ref:ST56320358 | Scale 1:819629'.

Table A.3: EMCs for nitrogen and phosphorus for three key types of urban land use.

Land use	Nitrogen event concentration (mg N/l)	mean	Phosphorus event concentration (mg P/l)	mean
Residential	2.85		0.41	
Commercial/industrial	1.52		0.30	
Open urban land	1.68		0.22	

The EMCs were combined with a standard method for calculating urban runoff which requires only rainfall as an input. The HR Wallingford Modified Rational Method was used, as shown in equation 1.

Equation 1

$$L = R \cdot Pr$$

Where:

L = annual average runoff (mm)

R = annual average rainfall (mm)

Pr = percentage runoff (%)

$$Pr = 0.829 \cdot PIMP + 0.078 \cdot U - 20.7$$

$PIMP$ = the percentage of land that is impervious (whole number)

U = catchment wetness index. Calculated by (use 41 if rainfall over 760 mm):

$$U = -129.5 + (0.424 \cdot R) - (2.28 \cdot 10^{-4} \cdot R^2) - (4.56 \cdot 10^{-8} \cdot R^3)$$

For phosphorus, the value for PIMP was set as 80%, as this has been suggested as the proportion of impervious surfaces once urban creep (the paving over of pervious surfaces) reaches a maximum. The use of an 80% PIMP value, while high, accounts for the potential increases in impervious surfaces that may occur over the lifetime of a development. Research has also suggested that non-paved gardens account for between 19-27% of the entire urban area. As gardens are the primary type of permeable surface within residential areas, the use of an 80% PIMP value is considered to be precautionary as an area with 19% coverage by non-paved gardens would indicate that around 80% of the remaining urban residential area would be impermeable surfaces.

Values based on 80% PIMP specified by Natural England

Variable	Residential Urban			Commercial/Industrial			Open Urban		
	Min	Max	Mean	Min	Max	Mean	Min	Max	Mean
L - Annual average runoff (mm)	366.14	390.54		366.14	390.54		366.14	390.54	
R - Annual average rainfall (mm)	750	800		750	800		750	800	
Pr - Percentage runoff (%)	48.82	48.82		48.82	48.82		48.82	48.82	
PIMP - Percentage of land that is impervious (%)	80	80		80	80		80	80	
U - Catchment wetness index (use 41 if rainfall > 760mm)	41.00	41.00		41.00	41.00		41.00	41.00	
Annual runoff (mm)	366.14	390.54		366.14	390.54		366.14	390.54	
Annual runoff (m)	0.37	0.39		0.37	0.39		0.37	0.39	
Volume per hectare (m ³ /ha/yr)	3661.35	3905.44		3661.35	3905.44		3661.35	3905.44	
TP EMC (mg/l)	0.41	0.41		0.30	0.30		0.22	0.22	
TP EMC (kg/l)	0.0004	0.0004		0.0003	0.0003		0.0002	0.0002	
TP Export Rate (kg/ha/yr)	1.50	1.60	1.55	1.10	1.17	1.14	0.81	0.86	0.83

Site-specific values based on housing density

A site-specific PIMP value of 35% has been adopted for the residential urban land use based on the development consisting of 'open housing' plus a 10% uplift to account for urban creep. The measured impermeable surface area is 0.17ha (33%) of the residential land use of 0.51ha.	
The site-specific PIMP:	35%
Urban creep allowance (10%)	4%
Site specific PIMP for the residential landuse	39%

Variable	Residential Urban			Commercial/Industrial			Open Urban		
	Min	Max	Mean	Min	Max	Mean	Min	Max	Mean
L - Annual average runoff (mm)	111.22	118.63		366.14	390.54		366.14	390.54	
R - Annual average rainfall (mm)	750	800		750	800		750	800	
Pr - Percentage runoff (%)	14.83	14.83		48.82	48.82		48.82	48.82	
PIMP - Percentage of land that is impervious (%)	39	39		80	80		80	80	
U - Catchment wetness index (use 41 if rainfall > 760mm)	41.00	41.00		41.00	41.00		41.00	41.00	
Annual runoff (mm)	111.22	118.63		366.14	390.54		366.14	390.54	
Annual runoff (m)	0.11	0.12		0.37	0.39		0.37	0.39	
Volume per hectare (m ³ /ha/yr)	1112.18	1186.32		3661.35	3905.44		3661.35	3905.44	
TP EMC (mg/l)	0.41	0.41		0.3	0.3		0.22	0.22	
TP EMC (kg/l)	0.0004	0.0004		0.0003	0.0003		0.0002	0.0002	
TP Export Rate (kg/ha/yr)	0.46	0.49	0.47	1.10	1.17	1.14	0.81	0.86	0.83

Figure 11.1 and Table 11.2 from Urban Drainage, Second Edition by David Butler and John Davies, 2004

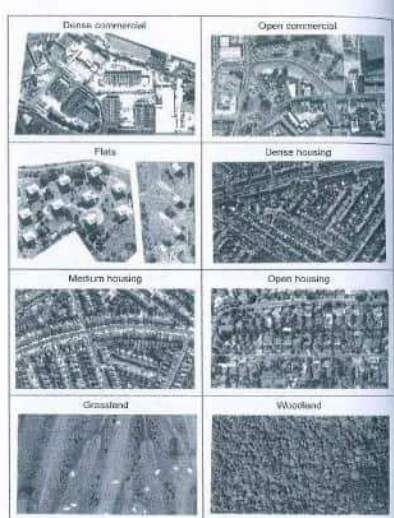


Fig. 11.1 Various land use categories in London (developed by Thames Water Utilities Ltd on their Beckton and Crossness sewerage modelling projects in association with consulting engineers BGP Reid Crowther Ltd and Montgomery Watson Ltd and reproduced with permission).

Table 11.2 Approximate percentage imperviousness of land-use types in London

Land-use category	PIMP
Dense commercial	100
Open commercial	65
Dense housing	55
Flats	50
Medium housing	45
Open housing	35
Grassland	<10
Woodland	<10

Notes

- These calculations are based on the May 2024 Natural England calculation method modified with:
A) A site-specific PIMP value of 39% for the residential urban land use based on open density housing (35%) plus a 10% uplift to account for urban creep.
B) Urban runoff infiltrated with a TP removal efficiency of 100% as detailed in CIRIA C808.
- The proposed development consists of 8 residential dwellings.
- Foul flows will be treated at Ratfyn STW which has an existing TP discharge limit of 1.00mg/l and a post-2030 limit of 0.25mg/l.

LOAD CALCULATION

Site Characteristics

Total site area (ha)	1.16
Number of dwellings	8
No. of residents per dwelling (No.)	2.40
Wastewater volume - dwellings (litres/person/day)	120
Wastewater generated (litres/day)	2304

Wastewater Load

	Pre-2030	Post-2030
WWTW discharge consent limit (mg/l)	1.00	0.25
90% of WWTW consent limit (mg/l)	0.90	0.23
Nutrient load from wastewater (mg/day)	2074	518
Nutrient load from wastewater (mg/year)	757382	189346
Nutrient load from wastewater (kg/year)	0.76	0.19

Existing Landuse Load

Existing Land use	Area (ha)	Total Phosphorus Export Rate (kg/ha/year)	Total Phosphorus Load (kg/year)
Greenspace	1.10	0.02	0.02
Open Urban	0.06	0.83	0.05
Total	1.16	-	0.07

Future Landuse Load

Future Land use	Area (ha)	Total Phosphorus Export Rate (kg/ha/year)	Total Phosphorus Load (kg/year)
Residential urban land	0.51	0.47	0.14
Open urban	0.04	0.83	0.03
Greenspace	0.61	0.02	0.01
Total	1.16	-	0.29

SuDS Urban Land Use Load Reduction

Total nutrient load from urban land draining to the SuDS (kg/year)	0.27
Estimated SuDS removal efficiency (%)	100.0%
Total SuDS nutrient reduction (kg/year)	0.27

Future Nutrient Load

Load Contribution	Total Phosphorus Load (kg/year)	
	Pre-2030	Post-2030
Wastewater load (A)	0.76	0.19
Future land use load (B)	0.29	0.29
Existing land use load (C)	0.07	0.07
Nutrient load removed through the SuDS (D)	0.27	0.27
Future nutrient load (= A + (B - C) - D)	0.70	0.13
Precautionary buffer (20%)	0.14	0.03
Future nutrient load	0.84	0.16

Conclusions

- The existing land use has been split into greenspace and open urban based on Google Earth historical aerial imagery.
- The existing landuse TP export rates have been obtained from the Natural England Calculator.
- The future landuse areas have been taken from the Indicative Masterplan.
- A site-specific residential urban land use phosphorus export rate has been derived using a site-specific percentage impermeability (PIMP) value and has been used instead of the default value specified by NE which was based on unrealistically high PIMP values (80%). The calculations are detailed in the 'Urban P Export Rate & PIMP' tab.
- The SuDS strategy for the development consists of infiltration to ground. The SuDS will be designed in accordance with CIRIA C753 *The SuDS Manual* to treat all sub-annual rainfall events. In accordance with CIRIA C808 *Using SuDS to reduce phosphorus in surface water runoff* a SuDS total phosphorus removal efficiency of 100% has been adopted.
- The development will not be phosphorus neutral and will require mitigation of the pre-2030 residual TP load of 0.84kg/year. As the post-2030 load is smaller than the pre-2030 load, no further mitigation would be required post-2030.
- The pre-2030 residual phosphorus load will be fully mitigated through the purchase of 0.84kg of TP mitigation credits. The credits will then fully mitigate the post-2030 development and provide nutrient neutrality.
- The proposed development will be phosphorus neutral.**

Screenshot of Natural England's Nutrient Export Coefficients

Current land use information			
Description of required information	Data entry column - user inputs required		
Operational catchment:	Avon Hampshire		
Soil drainage type:	Freely draining		
Annual average rainfall (mm):	750.1 - 800		
Within nitrate vulnerable zone (NVZ):	Yes		
Current land uses			
Existing land use type(s) - user inputs required	Area (ha) - user inputs required	Annual phosphorus export (kg TP/yr)	
Greenspace	1.00	0.02	
Open urban land	1.00	0.83	
Residential urban land	1.00	1.55	



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