Wiltshire Council

Wiltshire Local Plan Review Habitats Regulations Assessment

Appropriate Assessment

Final report
Prepared by LUC
September 2024

Wiltshire Council

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Appropriate Assessment

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Chapter 1
Introduction

1.1 LUC was commissioned by Wiltshire Council to carry out a Habitats Regulations Assessment (HRA) of its Local Plan Review.

1.2 LUC have also been commissioned by Wiltshire Council to undertake a HRA of its Gypsies and Travellers Development Plan Document. The HRA of the Gypsies and Travellers Development Plan Document[1] should be read in conjunction with this HRA.

1.3 This iteration of the HRA assesses the impacts of the Regulation 19 Local Plan Review that is being consulted on in Autumn 2023 and should be read in conjunction with this document.

Background to the Local Plan Review

Core Strategy and Local Plan Review

1.4 Wiltshire Council adopted its Core Strategy in January 2015, replacing the South Wiltshire Core Strategy as well as policies from the local plans of the former district councils.

1.5 The updated Local Development Scheme (December 2022) sets out the timescales for preparing the Local Plan Review and specifies that the review will involve rolling forward the housing and employment requirements in the adopted Wiltshire Core Strategy to cover the period 2020 - 2038 and to maintain consistency with national policy. The Local Plan Review aims to review and refine the polices in the adopted Core Strategy, including the policies that were saved from the former District Council Local Plans and policies relating to town centres and recreation.

Revised Spatial Strategy

Wiltshire Council published its Emerging Spatial Strategy in January 2021. Following consultation, Wiltshire Council developed a Revised Spatial Strategy which forms an integral part of the Local Plan Review, its contents are summarised in **Chapter 2**. The previous HRA Screening assessed the proposed growth in housing market areas within the RSS with the aim of identifying any likely significant effects on European sites as a result of the Local Plan Review, so that Wiltshire Council could make informed decisions and prepare appropriate strategic mitigation in advance, if required.

[1] LUC. (2022). Wiltshire Gypsies and Travellerss DPD HRA: Screening Report.

1.6 Subsequently, policies and site allocations have been allocated and this report assesses whether they will result in adverse effects on each European site's integrity.

The requirement to undertake HRA of development plans

1.7 The requirement to undertake HRA of development plans was confirmed by the amendments to the Habitats Regulations published for England and Wales in 2007[2]; the currently applicable version is the Habitats Regulations 2017, as amended[3]. When preparing the development plans, Wiltshire Council is therefore required by law to carry out an HRA. Wiltshire Council can commission consultants to undertake HRA work on its behalf and this (the work documented in this report) is then reported to and considered by Wiltshire Council as the 'competent authority'. Wiltshire Council will consider this work and would usually only progress a Plan if it considers that the Plan will not adversely affect the integrity[4] of any 'European site', as defined below (the exception to this would be where 'imperative reasons of overriding public interest' can be demonstrated; see **para 3.14**. The requirement for authorities to comply with the Habitats Regulations when preparing a Plan is also noted in the Government's online Planning Practice Guidance (PPG)[5].

1.8 HRA refers to the assessment of the potential effects of a development plan on one or more sites afforded the highest level of protection in the UK: SPAs and SACs. These were classified under European Union (EU) legislation but since 1 January 2021 are protected in the UK by the Habitats Regulations 2017[2] (as amended). Although the EU Directives from which the UK's Habitats Regulations originally derived are no longer binding, the Regulations still make reference to the lists of habitats and species that the sites were designated for, which are listed in annexes to the EU Directives:

- SACs are designated for particular habitat types (specified in Annex 1 of the EU Habitats Directive[6]) and species (Annex II). The listed habitat types and species (excluding birds) are those considered to be most in need of conservation at a European level. Designation of SACs also has regard to the threats of degradation or destruction to which the sites are exposed and, before EU exit day, to the coherence of the 'Natura 2000' network of European sites. After EU exit day, regard is had to the importance of such sites for the coherence of the UK's 'national site network'.
- SPAs are classified for rare and vulnerable birds (Annex I of the EU Birds Directive[7]), and for regularly occurring migratory species not listed in Annex I.

1.9 The term 'European sites' was previously commonly used in HRA to refer to 'Natura 2000' sites[8] and Ramsar sites (international designated under the Ramsar Convention). However, a Government Policy Paper[9] on changes to the Habitats Regulations 2017 post-Brexit states that:

- Any references to Natura 2000 in the 2017 Regulations and in guidance now refer to the new 'national site network'.
- The national site network includes existing SACs and SPAs; and new SACs and SPAs designated under these Regulations.
- Designated Wetlands of International Importance (known as Ramsar sites) do not form part of the national site network. Many Ramsar sites overlap with SACs and SPAs and may be designated for the same or different species and habitats.

1.10 Although Ramsar sites do not form part of the new national site network, Government guidance[10] states that:

"Any proposals affecting the following sites would also require an HRA because these are protected by government policy:

- proposed SACs
- potential SPAs
- Ramsar sites - wetlands of international importance (both listed and proposed)
- areas secured as sites compensating for damage to a European site."

1.11 Furthermore, the NPPF[11] and practice guidance[12] currently state that competent authorities responsible for carrying out HRA should treat Ramsar sites in the same way as SACs and SPAs. The legislative requirement for HRA does not apply to other nationally designated wildlife sites such as Sites of Special Scientific Interest or National Nature Reserves.

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[2] The Conservation (Natural Habitats, &c.) (Amendment) Regulations 2007 (2007) SI No. 2007/1843. TSO (The Stationery Office), London.
[3] The Conservation of Habitats and Species Regulations 2017 (2017) SI No. 2017/1012, as amended by The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 (SI 2019/579).
[4] The integrity of a site is the coherence of its ecological structure and function, across its whole area, that enables it to sustain the habitat, complex of habitats and/or the levels of populations of the species for which it was designated. (Source: UK Government Planning Practice Guidance)
[5] https://www.gov.uk/guidance/appropriate-assessment
[6] Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora (the 'Habitats Directive')
[7] Directive 2009/147/EC of 30 November 2009 on the conservation of wild birds (the 'Birds Directive')
[8] The network of protected areas identified by the EU: https://ec.europa.eu/environment/nature/natura2000/index_en.htm
[9] https://www.gov.uk/government/publications/changes-to-the-habitats-regulations-2017/changes-to-the-habitats-regulations-201
[10] Defra and Natural England (2021) Guidance - Habitats regulations assessments: protecting a European site, https://www.gov.uk/guidance/habitats-regulations-assessments-protecting-a-european-site
[11] NPPF para 176, available from https://www.gov.uk/guidance/national-planning-policy-framework
[12] The HRA Handbook, Section A3. David Tyldesley & Associates, a subscription based online guidance document: https://www.dtapublications.co.uk/handbook/European

1.12 For simplicity, this report uses the term 'European site' to refer to all types of designated site for which Government guidance[13] requires an HRA.

1.13 The overall purpose of an HRA is to conclude whether or not a proposal or policy, or a whole development plan would adversely affect the integrity of the European site in question. This is judged in terms of the implications of the plan for a site's 'qualifying features' (i.e. those Annex I habitats, Annex II species, and Annex I bird populations for which it has been designated). Significantly, HRA is based on the precautionary principle. Where uncertainty or doubt remains, an adverse effect should be assumed.

Structure of this report

1.14 This chapter has introduced the requirement to undertake HRA of the Local Plan Review. The remainder of the report is structured as follows:

- **Chapter 2** summarises the content of RSS, which forms an integral part of the Local Plan Review.
- **Chapter 3** describes the approach to the HRA. It also describes recent case law, summarises the key issues that will need to be considered during the HRA process and describes the identification of European sites in and around Wiltshire that could be affected by the Local Plan Review.
- **Chapter 4** describes the European sites in and around Wiltshire and their key vulnerabilities.
- **Chapter 5** reports the findings of the Screening Stage of the HRA.
- **Chapter 6** reports the findings of the Appropriate Assessment stage of the HRA
- **Chapter 7** describes the next steps that will be carried out in the HRA of the Local Plan Review.

1.15 The information in the main body of the report is supported by the following appendices:

- **Appendix A** presents a map showing the European sites in Wiltshire and within 15km of Wiltshire.
- **Appendix B** sets out detailed information about the European sites that are the focus of the HRA.
- **Appendix C** presents the screening matrix of policies.
- **Appendix D** presents a map of strategic roads within Wiltshire County.
- **Appendix E** presents a map of site allocations proposed as part of the Local Plan
- **Appendix F** presents the findings of the air quality assessment.

[13] Defra and Natural England (2021) Guidance - Habitats regulations assessments: protecting a European site, https://www.gov.uk/guidance/habitats-regulations-assessments-protecting-a-european-site

Chapter 2
Revised Spatial Strategy

2.1 This chapter is intended to summarise the content of the RSS. The key elements of the RSS include:

- A change in the plan period to 2020-2038.
- Updated assessments of housing and employment requirements.

Housing and employment requirements

2.2 The RSS identifies the scale of growth of approximately 36,740 new dwellings and approximately 160ha of employment land within the plan period, as shown in **Tables 2.1** and **2.2** respectively.

Table 2.1: Housing requirements

Housing Market Area	Scale of Growth 2020-2038	Residual at 2022[14]
Chippenham	13,640	4,840
Salisbury	11,010	5,880
Swindon	3,450	2,170
Trowbridge	8,650	1,910
Total	36,740	14,800

Table 2.2: Employment land requirements

Settlement	Employment land scales of growth (ha)	Additional Employment land allocations (ha)
Chippenham		
Calne	5.1	3.2
Chippenham	42.5	15.0
Devizes	9.9	-
Melksham	5.0	5.0
Chippenham HMA Rural Area	13.5	-
Malmesbury	3.3	-

[14] Residual relates to the figure left to be planned for

Settlement	Employment land scales of growth (ha)	Additional Employment land allocations (ha)
Total	79.3	23.2
Salisbury		
Salisbury	12.3	-
Tidworth and Ludgershall	10.7	0.7
Salisbury HMA Rural Area	2.0	-
Total	25.0	0.7
Swindon		
Marlborough	1.8	1.8
Royal Wootton Bassett	6.9	1.8
Total	8.7	3.6
Trowbridge		
Trowbridge	27.4	-
Warminster	5.6	-
Westbury	16.7	-
Total	49.7	0
Grand total	162.7	27.5

Chapter 3
Approach to HRA

3.1 The HRA should be undertaken by the 'competent authority', in this case Wiltshire Council. LUC has been commissioned by Wiltshire Council to carry out HRA work on the Council's behalf, although this is to be reported to and considered by Wiltshire Council as the competent authority during the development of the Plan, before finally adopting the Local Plan Review. The HRA also typically requires close working with Natural England as the statutory nature conservation body[15] to obtain the necessary information, agree the process, outcomes and mitigation proposals. Where a plan or project requires appropriate assessment consultation with Natural England is a statutory requirement.

3.2 The Environment Agency, while not a statutory consultee for the HRA, is also in a strong position to provide advice and information throughout the process as it is required to undertake HRA for its existing licences and future licensing of activities.

Stages of HRA

3.3 The HRA of development plans is undertaken in stages (as described below) and should conclude whether or not a proposal would adversely affect the integrity of the European site in question.

3.4 LUC has been commissioned by Wiltshire Council to carry out HRA work on the Council's behalf, and the outputs will be reported to and considered by Wiltshire Council, as the competent authority, before adopting the Plan.

Requirements of the Habitats Regulations

3.5 In assessing the effects of a Local Plan in accordance with Regulation 105 of the Conservation of Habitats and Species Regulations 2017 (as amended) (the 'Habitats Regulations'), there are potentially two tests to be applied by the competent authority: a 'Significance Test', followed if necessary by an Appropriate Assessment which would inform the 'Integrity Test'. The relevant sequence of questions is as follows:

3.6 Step 1: Under Reg. 105(1)(b), consider whether the plan is directly connected with or necessary to the management of the sites. If not, proceed to Step 2.

3.7 Step 2: Under Reg. 105(1)(a) consider whether the plan is likely to have a significant effect on a European site, either

[15] Regulation 5 of The Conservation of Habitats and Species Regulations 2017 (SI 2017/1012), as amended by The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 (SI 2019/579)

alone or in combination with other plans or projects (the 'Significance Test'). If yes, proceed to Step 3.

Steps 1 and 2 are undertaken as part of Stage 1: HRA Screening, shown in **Table 3.1**.

3.8 Step 3: Under Reg. 105(1), make an Appropriate Assessment of the implications for the European site in view of its current conservation objectives (the 'Integrity Test'). In so doing, it is mandatory under Reg. 105(2) to consult Natural England, and optional under Reg. 105(3) to take the opinion of the general public.

This step is undertaken during Stage 2: Appropriate Assessment, shown in **Table 3.1**.

3.9 Step 4: In accordance with Reg. 105(4), but subject to Reg. 107, give effect to the land use plan only after having ascertained that the plan would not adversely affect the integrity of a European site.

3.10 [This step follows Stage 2 where a finding of 'no adverse effect' is concluded. If it cannot be it proceeds to Step 5 as part of Stage 3 of the HRA process]

3.11 Step 5: Under Reg. 107, if Step 4 is unable to rule out adverse effects on the integrity of a European site and no alternative solutions exist then the competent authority may nevertheless agree to the plan or project if it must be carried out for 'imperative reasons of overriding public interest' (IROPI).

3.12 [This step is undertaken during Stage 3: Assessment where no alternatives exist and adverse impacts remain taking into account mitigation shown in **Table 3.1**]

Typical stages of HRA

3.13 Table 3.1 summarises the stages and associated tasks and outcomes typically involved in carrying out a full HRA of a development plan, based on various guidance documents[16,17,18].

Table 3.1: Stages of HRA

Stage	Task	Outcome
Stage 1: HRA Screening	Description of the development plan and confirmation that it is not directly connected with or necessary to the management of European sites. Identification of potentially affected European sites and their conservation objectives[19]. Assessment of likely significant effects of the development plan alone or in combination with other plans and projects, prior to consideration of avoidance or reduction ('mitigation') measures[20].	Where effects are unlikely, prepare a 'finding of no significant effect report'. Where effects judged likely, or lack of information to prove otherwise, proceed to Stage 2.
Stage 2: Appropriate Assessment (where Stage 1 does not rule out likely significant effects)	Information gathering (development plan and European Sites[21]). Impact prediction. Evaluation of development plan impacts in view of conservation objectives of European sites. Where impacts are considered to directly or indirectly affect qualifying features of European sites, identify how these effects will be avoided or reduced ('mitigation').	Appropriate assessment report describing the plan, European site baseline conditions, the adverse effects of the plan on the European site, how these effects will be avoided or reduced, including the mechanisms and timescale for these mitigation measures. If effects remain after all alternatives and mitigation measures have been considered proceed to Stage 3.

[16] UK Government Planning Practice Guidance, available from https://www.gov.uk/guidance/appropriate-assessment
[17] European Commission (2001) Assessment of plans and projects significantly affecting European Sites. Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC.
[18] The HRA Handbook. David Tyldesley & Associates, a subscription based online guidance document: https://www.dtapublications.co.uk/handbook/European
[19] Conservation objectives are published by Natural England for SACs and SPAs: http://publications.naturalengland.org.uk/category/6490068894089216
[20] In line with the CJEU judgment in Case C-323/17 People Over Wind v Coilte Teoranta, mitigation must only be taken into consideration at this stage and not during Stage 1: HRA Screening.
[21] In addition to European site citations and conservation objectives, key information sources for understanding factors contributing to the integrity of European sites include (where available) conservation objectives supplementary advice and Site Improvement Plans prepared by Natural England: http://publications.naturalengland.org.uk/category/5458594975711232

Stage	Task	Outcome
Stage 3: Assessment where no alternatives exist and adverse impacts remain taking into account mitigation	Identify 'imperative reasons of overriding public interest' (IROPI). Demonstrate no alternatives exist. Identify potential compensatory measures.	This stage should be avoided if at all possible. The test of IROPI and the requirements for compensation are extremely onerous.

3.14 It is normally anticipated that an emphasis on Stages 1 and 2 of this process will, through a series of iterations, help ensure that potential adverse effects are identified and eliminated through the inclusion of avoidance and mitigation measures designed to avoid or reduce effects. The need to consider alternatives could imply more onerous changes to a plan document. It is generally understood that so called 'imperative reasons of overriding public interest' (IROPI) are likely to be justified only very occasionally and would involve engagement with the Government.

Case law

3.15 This HRA has been prepared in accordance with relevant case law findings, including most notably the 'People over Wind' and 'Holohan' rulings from the Court of Justice for the European Union (CJEU).

3.16 The *People over Wind, Peter Sweetman v Coillte Teoranta* (April 2018) judgment ruled that Article 6(3) of the Habitats Directive should be interpreted as meaning that mitigation measures should be assessed as part of an Appropriate Assessment and should not be taken into account at the screening stage. The precise wording of the ruling is as follows:

> "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 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.

3.17 In light of the above, the HRA screening stage does not rely upon avoidance or mitigation measures to draw conclusions as to whether the Local Plan could result in likely significant effects on European sites, with any such measures being considered at the Appropriate Assessment stage as relevant.

3.18 This HRA also fully considers the *Holohan v An Bord Pleanala* (November 2018) judgement which stated that:

> Article 6(3) of Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora must be interpreted as meaning that an 'appropriate assessment' must, on the one hand, catalogue the entirety of habitat types and species for which a site is protected, and, on the other, identify and examine both the implications of the proposed project for the species present on that site, and for which that site has not been listed, and the implications for habitat types and species to be found outside the boundaries of that site, provided that those implications are liable to affect the conservation objectives of the site.

3.19 In undertaking this HRA, LUC has fully considered the potential for effects on species and habitats, including those not listed as qualifying features, to result in secondary effects upon the qualifying features of European sites, including the potential for complex interactions and dependencies. In addition, the potential for offsite impacts, such as through impacts to functionally linked land, and or species and habitats located beyond the boundaries of a European site, but which may be important in supporting the ecological processes of the qualifying features, has also been fully considered in this HRA.

3.20 In addition to this, the HRA takes into consideration the 'Wealden' judgement from the CJEU.

3.21 *Wealden District Council v Secretary of State for Communities and Local Government, Lewes District Council and South Downs National Park Authority* (2017) ruled that it was not appropriate to scope out the need for a detailed assessment for an individual plan or project based on the annual average daily traffic (AADT) figures detailed in the Design Manual for Roads and Bridges or the critical loads used by Defra or Environmental Agency without considering the in-combination impacts with other plans and projects.

3.22 In light of this judgement, the HRA therefore considers traffic growth based on the effects of development from the Local Plan in combination with other drivers of growth such as development proposed in neighbouring districts and demographic change.

3.23 The HRA also takes into account the *Grace and Sweetman* (July 2018) judgement from the CJEU which stated that:

> ""there is a distinction to be drawn between protective measures forming part of a project and intended avoid or reduce any direct adverse effects that may be caused by

the project in order to ensure that the project does not adversely affect the integrity of the area, which are covered by Article 6(3), and measures which, in accordance with Article 6(4), are aimed at compensating for the negative effects of the project on a protected area and cannot be taken into account in the assessment of the implications of the project".

"As a general rule, any positive effects of the future creation of a new habitat, which is aimed at compensating for the loss of area and quality of that habitat type in a protected area, are highly difficult to forecast with any degree of certainty or will be visible only in the future"

"A mitigation strategy may only be taken into account at AA (a.6(3)) where the competent authority is "sufficiently certain that a measure will make an effective contribution to avoiding harm, guaranteeing beyond all reasonable doubt that the project will not adversely affect the integrity of the area"

• Otherwise it falls to be considered to be a compensatory measure to be considered under a.6(4) only where there are "imperative reasons of overriding public interest"

3.24 The Appropriate Assessment of the Local Plan therefore only considers the existence of measures to avoid or reduce its direct adverse effects (mitigation) if the expected benefits of those measures are beyond reasonable doubt at the time of the assessment.

Screening methodology

3.25 HRA Screening of the Local Plan Review will be undertaken in line with current available guidance and seek to meet the requirements of the Habitats Regulations.

3.26 The purpose of the screening stage is to:

- Identify all aspects of the plan which would have no effect on a European site, so that that they can be eliminated from further consideration in respect of this and other plans;
- Identify all aspects of the plan which would not be likely to have a significant effect on a European site (i.e. would have some effect, because of links/connectivity, but which are not significant), either alone or in combination with other aspects of the same plan or other plans or projects, which therefore do not require 'appropriate assessment'; and
- Identify those aspects of the plan where it is not possible to rule out the risk of significant effects on a European site, either alone or in combination with other plans or projects. This provides a clear scope for the parts of the plan that will require appropriate assessment.

Identification of European sites which may be affected by the Local Plan Review

3.27 To initiate the search of European sites that could potentially be affected by the Local Plan Review, it is established practice in HRAs to consider European sites within the local planning authority area covered by a Plan, and also within a buffer distance from the boundary of the Plan area.

3.28 A distance of 15km from the Wiltshire boundary was used as a starting point to identify European sites that could be affected by impacts relating to the Local Plan Review. The use of this distance is common practice in HRAs of English Local Plans. In addition to this, consideration was also given to European sites potentially connected to the plan area beyond this distance, for example through hydrological pathways or recreational visits by residents of Wiltshire.

Potential impacts of the Local Plan on European sites

3.29 In our experience of HRA of Local Plans, and based on previous statutory consultee comments on HRAs undertaken elsewhere, the type of development (and related activities) that are permitted by Local Plans have the potential to result in the following broad types of impacts that could affect European sites:

- **Physical loss of or damage to habitats** e.g. from development or activities within the European sites themselves or at functionally-linked sites;
- **Non-physical disturbance e.g. noise, vibration or light** from construction or development in close proximity to sensitive species;
- **Non-toxic contamination** e.g. from creation of dust which can smother terrestrial habitats, affect turbidity of aquatic habitats and contribute to nutrient enrichment;
- **Recreation pressure** e.g. dog walking, cycling, trampling, littering, fire, or predation by pets;
- **Air pollution** from changes in traffic volumes on roads close to sensitive habitats; and
- **Changes in water quality or quantity** e.g. changes in flow caused by abstraction/discharge, accidental pollution, or increased nutrient loading from sewage treatment.

3.30 Further consideration of the types of impact that could be relevant to the Local Plan Review and possible impact pathways to European sites is provided in **Chapter 5**.

Assessment of 'likely significant effect'

3.31 As required under Regulation 105 of The Conservation of Habitats and Species Regulations 2017 (SI 2017/1012), as amended by The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 (SI 2019/579), an

assessment will be undertaken of the 'likely significant effects' of the policy approaches set out within the draft Local Plan Review. The assessment will be undertaken to identify which policies would be likely to have a significant effect on European sites in Wiltshire (+15km). This assessment will need to be repeated with each iteration of the Local Plan Review.

3.32 A risk-based approach involving the application of the precautionary principle will be adopted in the assessment, such that a conclusion of 'no significant effect' will only be reached where it is considered very unlikely, based on current knowledge and the information available, that a proposal in the Local Plan Review would have a significant effect on the integrity of a European site.

Interpretation of 'likely significant effect'

3.33 Relevant case law helps to interpret when effects should be considered as being likely to result in a significant effect, when carrying out HRA of a Plan.

3.34 In the Waddenzee case[22], the European Court of Justice ruled on the interpretation of Article 6(3) of the Habitats Directive (translated into Reg. 102 in the Habitats Regulations), including that:

- An effect should be considered 'likely', "if it cannot be excluded, on the basis of objective information, that it will have a significant effect on the site" (para 44).
- An effect should be considered 'significant', "if it undermines the conservation objectives" (para 48).
- Where a plan or project has an effect on a site "but is not likely to undermine its conservation objectives, it cannot be considered likely to have a significant effect on the site concerned" (para 47).

3.35 An opinion delivered to the Court of Justice of the European Union[23] commented that:

"The requirement that an effect in question be 'significant' exists in order to lay down a de minimis threshold. Plans or projects that have no appreciable effect on the site are thereby excluded. If all plans or projects capable of having any effect whatsoever on the site were to be caught by Article 6(3), activities on or near the site would risk being impossible by reason of legislative overkill."

3.36 This opinion (the 'Sweetman' case) therefore allows for the authorisation of plans and projects whose possible effects, alone or in combination, can be considered 'trivial' or de minimis; referring to such cases as those "which have no appreciable effect on the site". In practice such effects could be screened out as having no likely significant effect; they would be 'insignificant'.

In-combination effects

3.37 Regulation 105 of the Habitats Regulations 2017 requires an Appropriate Assessment where "*a land use plan is likely to have a significant effect on a European site (either alone or in combination with other plans or projects) and is not directly connected with or necessary to the management of the site*". Therefore, it will be necessary to consider whether any impacts identified from the Local Plan Review may combine with other plans or projects to give rise to significant effects in-combination.

3.38 Where the Local Plan Review is likely to have an effect on its own e.g. due to water pollution (due to impact pathways being present), but it is not likely to be significant, the in-combination assessment at Screening stage will need to determine whether there may also be the same types of effect from other plans or projects that could combine with the Local Plan Review to produce a significant effect. If so, this likely significant effect (e.g. water pollution) arising from the Local Plan Review in combination with other plans or projects, would then need to be considered through the Appropriate Assessment stage to determine if water pollution would have an adverse effect on integrity of the relevant European site. Where the screening assessment has concluded that there is no impact pathway between development proposed in the Local Plan Review and the conditions necessary to maintain qualifying features of a European site, then there will be no in-combination effects to assess at the Screening or Appropriate Assessment stage. This approach accords with recent guidance on HRA[24].

3.39 If impact pathways are found to exist for a particular effect but it is not likely to be significant from the Local Plan Review alone, the in-combination assessment will identify which other plans and programmes could result in the same impact on the same European site. This will focus on planned growth (including housing, employment, transport, minerals and waste) around the affected site, or along the impact corridor, for example, if impacts could arise as a result of changes to a waterway, then planned growth in local authorities along that waterway will be considered.

3.40 The potential for in-combination impacts will therefore focus on plans prepared by local authorities that overlap with European sites that are within the scope of this HRA. The findings of any associated HRA work for those plans will be reviewed where available. Where relevant, any strategic projects in the area that could have in-combination effects with the Local Plan Review will also be identified and reviewed.

[22] European Court of Justice in Case C-127/02 Landelijke Vereniging tot Behoud van de Waddenzee
[23] Advocate General's Opinion to CJEU in Case C-258/11 Sweetman and others v An Bord Pleanala 22nd Nov 2012.
[24] The HRA Handbook. David Tyldesley & Associates, a subscription based online guidance document [online] Available at: https://www.dtapublications.co.uk/handbook/European

3.41 The online HRA Handbook suggests the following plans and projects may be relevant to consider as part of the in-combination assessment:

- Applications lodged but not yet determined, including refusals subject to an outstanding appeal or legal challenge;
- Projects subject to periodic review e.g. annual licences, during the time that their renewal is under consideration;
- Projects authorised but not yet started;
- Projects started but not yet completed;
- Known projects that do not require external authorisation;
- Proposals in adopted plans; and
- Proposals in draft plans formally published or submitted for final consultation, examination or adoption.

3.42 The need for in-combination assessment also arises at the Appropriate Assessment stage, as discussed in the Appropriate Assessment section below.

Screening Assessment

3.43 Each Local Plan Review policy will be considered, alone and in-combination with other policies and/or plans from neighbouring authorities.

3.44 A risk-based approach involving the application of the precautionary principle will be adopted, such that a conclusion of 'no significant effect' will only been reached where it is considered unlikely, based on current knowledge and the information available, that a Local Plan policy would have a significant effect on the integrity of a European site.

3.45 For some types of impacts, the potential for likely significant effects can been determined on a proximity basis, using GIS data to determine the proximity of potential development locations to the European sites that are the subject of the assessment. However, there are many uncertainties associated with using set distances as there are very few standards available as a guide to how far impacts will travel. Therefore, where assumptions have been made, these are set out in **Chapter 5** Screening Assessment; these will be reviewed as the HRA progresses.

3.46 A screening matrix has been prepared to assess which draft policies are likely to have a significant effect on European sites. The screening matrix is appended to the HRA report (Appendix C) and will be summarised in the main body of the report. The structure of the screening matrix is shown in **Table 3.2** below.

Table 3.2: Proposed structure of the HRA screening matrix

Policy / option / housing market area	Likely activities (operations) to result as a consequence	Potential effects if implemented	Does the policy / option / housing market area need to be screened into the Appropriate Assessment?

3.47 The screening assessment will record the likely impacts of each policy on European sites and their qualifying habitats and species, using the colour categories shown below.

Red	There are likely to be significant effects (**will require** Appropriate Assessment)
Amber	There may be significant effects, but this is currently uncertain (**will require** Appropriate Assessment).
White	There are unlikely to be significant effects (**will not require** Appropriate Assessment).

3.48 The Appropriate Assessment will then focus on those policies that have been screened in.

Appropriate Assessment methodology

3.49 Following the screening stage, if likely significant effects on European sites are unable to be ruled out, the plan-making authority is required under Regulation 105 of the Habitats Regulations 2017 to make an 'Appropriate Assessment' of the implications of the plan for European sites, in view of their conservation objectives. European Commission Guidance states that the Appropriate Assessment should consider the impacts of the plan (either alone or in combination with other projects or plans) on the integrity of European sites with respect to their conservation objectives and to their structure and function.

Assessing the effects on site integrity

3.50 A site's integrity depends on it being able to sustain its 'qualifying features' (i.e. those Annex 1 habitats, Annex II species, and Annex 1 bird populations for which it has been designated) and to ensure their continued viability. A high degree of integrity is considered to exist where the potential to meet a site's conservation objectives is realised and where the site is capable of self-repair and renewal with a minimum of external management support.

3.51 A conclusion needs to be reached as to whether or not the Local Plan Review would adversely affect the integrity of a European site. As stated in the European Commission

Guidance, assessing the effects on the site(s) integrity involves considering whether the predicted impacts of the Local Plan policies (either alone or in combination) have the potential to:

- Cause delays to the achievement of conservation objectives for the site;
- Interrupt progress towards the achievement of conservation objectives for the site;
- Disrupt those factors that help to maintain the favourable conditions of the site;
- Interfere with the balance, distribution and density of key species that are the indicators of the favourable condition of the site;
- Cause changes to the vital defining aspects (e.g. nutrient balance) that determine how the site functions as a habitat or ecosystem;
- Change the dynamics of relationships that define the structure or function of the site (e.g. relationships between soil and water, or animals and plants);
- Interfere with anticipated natural changes to the site;
- Reduce the extent of key habitats or the population of key species;
- Reduce the diversity of the site;
- Result in disturbance that could affect the population, density or balance between key species;
- Result in fragmentation; or
- Result in the loss of key features.

3.52 The conservation objectives for each European site (**Appendix B**) are generally to maintain the qualifying features in favourable condition. The Site Improvement Plans for each European site provide a high level overview of the issues (both current and predicted) affecting the condition of the European features on the site(s) and outline the priority measures required to improve the condition of the features. These have been drawn on to help to understand what is needed to maintain the integrity of the European sites.

3.53 For each European site where an uncertain or likely significant effect is identified in relation to the Local Plan, the potential impacts will be set out and judgements made (based on the information available) regarding whether the impact will have an adverse effect on the integrity of the site. Consideration will be given to the potential for mitigation measures to be implemented that could reduce the likelihood or severity of the potential impacts such that there would not be an adverse effect on the integrity of the site.

Chapter 4
European Sites in and around Wiltshire

4.1 Geographical Information Systems (GIS) data have been used to map the locations and boundaries of European sites in and within 15km of the Wiltshire boundary (**Appendix A**), using publicly available data from Natural England. All European sites lying partially or wholly within 15km have been included, along with any further-distant European sites that could be significantly affected by development within Wiltshire. A distance of 15km is generally considered appropriate for identifying potential impact pathways, but European sites located beyond this distance are included where they share functional ecological connectivity to impact sources associated with the Local Plan Review area, for example via river systems.

4.2 European sites identified for inclusion in the HRA are listed in **Table 4.1** below. Detailed information about each site is provided in **Appendix B**.

Table 4.1: European sites in Wiltshire and within 15km of Wiltshire

European Site	Closest Distance / Location from Wiltshire County
Special Areas of Conservation (SACs)	
Bath and Bradford on Avon Bats	Within Wiltshire
Chilmark Quarries	Within Wiltshire
Great Yews	Within Wiltshire
Kennet and Lambourn Floodplain	Within Wiltshire
North Meadow & Clattinger Farm	Within Wiltshire
Pewsey Downs	Within Wiltshire
Prescombe Down	Within Wiltshire
River Avon	Within Wiltshire
Salisbury Plain	Within Wiltshire
The New Forest	Within Wiltshire
Fontmell and Melbury Downs	Adjacent / south-west
Mottisfont Bats	2.9km / north-east
River Lambourn	3.4km / east

European Site	Closest Distance / Location from Wiltshire County
Kennet Valley Alderwoods	5.7km / north-east
Mells Valley	5.8km / west
Hackpen Hill	7.2km / north-east
Dorset Heaths	8.2km / south
Mendip Woodlands	8.4km / west
Solent Maritime	9.9km / south-east
Emer Bog	10.8km / east
Rodborough Common	11.0km / north-west
Cotswolds Beechwoods	14.2km / north-west
Special Protected Areas (SPAs)	
Porton Down	Within Wiltshire
Salisbury Plain	Within Wiltshire
New Forest	Adjacent / south
Avon Valley	8.0km / south
Solent and Southampton Water	9.1km / south-east
Solent and Dorset Coast	10.8km / south-east
Ramsar sites	
New Forest	Adjacent / south
Avon Valley	8.0km south
Dorset Heathlands	8.2km / south
Solent and Southampton Water	9.1km / south-east

4.3 European sites beyond 15km of Wiltshire but which have been screened in as there are potential pathways by which they could be impacted as a result of the Local Plan Review are listed in **Table 4.2** below. Detailed information about each site is provided in **Appendix B**.

Table 4.2: European sites beyond 15km of Wiltshire which but have potential impact pathways

European Site	Closest Distance / Location from Wiltshire County	Potential Pathways
Special Areas of Conservation (SACs)		
Severn Estuary	19.6km / north-west	Hydrological connectivity via Avon Bristol and Somerset North Streams
Special Protected Areas (SPAs)		
Severn Estuary	19.6km / north-west	Hydrological connectivity via Avon Bristol and Somerset North Streams
Somerset Levels and Moors SPA	29.2km / west	Hydrological connectivity via River Brue
Ramsar sites		
Severn Estuary	19.6km / north-west	Hydrological connectivity via Avon Bristol and Somerset North Streams
Somerset Levels and Moors Ramsar	29.2km / west	Hydrological connectivity via River Brue

4.4 The attributes of these European sites which contribute to and define their integrity have been described within **Appendix B**. In doing so, reference was made to the Natura 2000 standard data forms published on the JNCC website, Natural England's Site Improvement Plans and Conservation Objectives Supplementary Advice. This analysis enables European site interest features to be identified, along with the features of each site which determine site integrity and the specific sensitivities of the site. This information will allow an analysis of how the potential impacts of the Local Plan may affect the integrity of each site.

Chapter 5
Screening Assessment

Screening of Policies

No 'Likely Significant Effect' Predicted

5.1 The following policies are not expected to directly result in new development that will come forward as part of the Local Plan and therefore will not result in significant effects on European sites:

- Policy 1: Settlement Strategy
- Policy 3: Reserve Sites for Housing and Broad Locations of Growth
- Policy 5: Securing infrastructure provision from new development
- Policy 21: New Community Area of Search
- Policy 31: Salisbury Central Area
- Policy 32: Salisbury Skyline
- Policy 34: Churchfields Employment Area
- Policy 37: Boscombe Down
- Policy 38: Porton Down
- Policy 43: Land safeguarded for education at Tanner's Lane, Shrewton
- Policy 56: Trowbridge Central Area
- Policy 65: Existing Employment Land
- Policy 67: Sequential Test and Retail Impact Assessment
- Policy 68: Managing Town Centres
- Policy 72: Development Impacts on the Primary and Major Road Networks
- Policy 73: Transport: Demand Management
- Policy 74: Movement of Goods
- Policy 76: Providing Affordable Homes
- Policy 78: Meeting Wiltshire's Housing Needs
- Policy 80: Self and Custom Build Housing
- Policy 81: Community Facilities

- Policy 82: Housing in the Countryside
- Policy 83: Health & Wellbeing
- Policy 85: Sustainable Construction and Low Carbon Energy
- Policy 87: Embodied Carbon
- Policy 91: Conserving and enhancing Wiltshire's landscape
- Policy 97: Contaminated Land
- Policy 98: Ensuring High Quality Design and Place Shaping
- Policy 99: Ensuring the Conservation and Enhancement of the Historic Environment
- Policy 100: The Stonehenge, Avebury and Associated Sites World Heritage Site

5.2 The following policies will not result in development and will contribute to ensuring the safeguarding of European sites:

- Policy 4: Addressing Climate Change
- Policy 29: Suitable Alternative Natural Greenspace, South Salisbury
- Policy 54: North Trowbridge Country Park
- Policy 59: Land at Brook Street
- Policy 63: Westbury Country Park
- Policy 70: Sustainable Transport
- Policy 71: Transport and New Development
- Policy 84: Public Open Space and Play Facilities
- Policy 88: Biodiversity and Geodiversity
- Policy 89: Biodiversity Net Gain
- Policy 90: Woodland, Hedgerows and Trees
- Policy 92: Conserving and Enhancing Dark Skies
- Policy 93: Green and Blue Infrastructure
- Policy 95: Flood Risk
- Policy 96: Water Resources
- Policy 101: Air Quality

5.3 The following policies could result in some development, but the development arising would be either located away from sensitive European sites within the urban area or would be small in scale so would not be expected to contribute significantly to increased vehicle traffic, recreation pressure or changes to water quantity and quality:

- Policy 18: Land east of Melksham
- Policy 19: Land off Bath Road
- Policy 20: Land North of the A3102
- Policy 48: Land at Marsh Farm
- Policy 49: Land at Midge Hall Farm
- Policy 50: Land West of Maple Drive
- Policy 51: Land at Woodshaw

Likely Significant Effects predicted

5.4 The following policies are highlighted as having potential impact pathways to European sites and Likely Significant Effects cannot be ruled out:

- Policy 2: Delivery Strategy
- Policy 6: Chippenham Principal Settlement
- Policy 7: Land South of Chippenham and East of Showell Farm
- Policy 8: Chippenham Town Centre
- Policy 9: Calne Market Town
- Policy 10: Land off Spitfire Road, Calne
- Policy 11: Land to the north of Spitfire Road, Calne
- Policy 12: Corsham Market Town
- Policy 13: Land south of Dicketts Road, Corsham
- Policy 14: Devizes Market Town
- Policy 15: Land at the Devizes Wharf, Assize Court and Wadworth Brewery, Devizes
- Policy 16: Malmesbury Market Town
- Policy 17: Melksham Market Town
- Policy 22: Salisbury Principal Settlement
- Policy 23: Land North East of Old Sarum, Salisbury
- Policy 24: Land at Netherhampton Road Garden Centre
- Policy 25: Land north of the Beehive Park and Ride, Old Sarum
- Policy 26: Land North of Downton Road
- Policy 27: Land south of Harnham
- Policy 28: Land west of Coombe Road, Harnham
- Policy 30: Land east of Church Road, Laverstock
- Policy 33: The Maltings and Central Car Park
- Policy 35: Salisbury District Hospital Campus
- Policy 36: Amesbury Market Town
- Policy 39: Tidworth and Ludgershall Market Town
- Policy 40: Land South East of Empress Way

- Policy 41: Land at Bulbridge Estate, Wilton
- Policy 42: Land at Dead Maid Quarry Employment Area, Mere
- Policy 44: Marlborough Market Town
- Policy 45: Land at Chopping Knife Lane, Marlborough
- Policy 46: Land off Barton Dene
- Policy 47: Royal Wootton Bassett Market Town
- Policy 52: Trowbridge Principal Settlement
- Policy 53: Land north of Trowbridge
- Policy 55: Land at Innox Mills, Trowbridge
- Policy 57: Bradford on Avon Market Town
- Policy 58: Warminster Market Town
- Policy 60: Westbury Market Town
- Policy 61: Land West of Mane Way, Westbury
- Policy 62: Land at Bratton Road, Westbury
- Policy 64: Additional Employment Land
- Policy 66: Military Establishments
- Policy 69: Tourism and Related Development
- Policy 75: Strategic Transport Network
- Policy 77: Rural Exception Sites
- Policy 79: First Homes Exception Sites
- Policy 86: Renewable Energy
- Policy 94: Wiltshire's Canals and the Boating Community

Screening of Impacts

5.5 For many of the broad impacts that could arise from the Local Plan Review, the potential for significant effects will be determined by location, using GIS data to determine the proximity of potential development locations to the European sites that are the subject of the assessment.

5.6 However, there are many uncertainties associated with using set distances as there are very few standards available as a guide to how far impacts will travel. Therefore, a number of assumptions will be applied in relation to assessing the potential effects on European sites that may result from the Local Plan, as described below.

5.7 Other types of potential effect may be identified during the HRA process. If so, any assumptions that the assessment of those effects is based on will be set out in the HRA.

Physical loss of habitat

5.8 Any development resulting from the Local Plan Review would take place within the County. Therefore, only European sites within the County's boundary could be affected through physical damage or loss of habitat from within the European site's boundaries. The HRA identified the following European sites within the boundary of Wiltshire:

- Bath and Bradford on Avon Bats SAC;
- Salisbury Plain SAC and SPA.
- Chilmark Quarries SAC;
- Great Yews SAC;
- Porton Down SPA;
- Prescombe Down SAC;
- River Avon SAC;
- The New Forest SAC.
- Kennet and Lambourn Floodplain SAC;
- North Meadow & Clattinger Farm SAC; and
- Pewsey Downs SAC.

5.9 All other European sites were located outside of the Wiltshire boundary and were therefore screened out of the assessment.

5.10 Only one site allocation was identified to partially lie within the boundaries of a European Site. This was Policy 33: The Maltings and Central Car Park which lies partially within the River Avon SAC boundary. Further assessment is required at the Appropriate Assessment stage to determine the potential impacts of this site allocation in relation to physical damage and loss and where mitigation measures were required.

5.11 All other European sites do not have site allocations within their boundaries so were screened out.

5.6 There is potential for likely significant effects on the River Avon SAC in relation to physical damage and loss and therefore this effect is considered further at the Appropriate Assessment stage.

Physical loss of habitat - functionally linked habitat

5.12 Habitat loss from development in areas outside of the European site boundaries may also result in likely significant effects where that habitat contributes towards maintaining the interest feature for which the European site is designated. This includes land which may provide offsite movement corridors or feeding and sheltering habitat for mobile species such as bats,

birds and fish (usually referred to as 'functionally linked' habitat).

5.13 European sites which have been screened out of the assessment as they are situated outside of the Wiltshire boundary and do not support mobile qualifying features susceptible to offsite habitat loss include:

- Cotswold Beechwoods SAC;
- Emer Bog SAC;
- Fontmell and Melbury Downs SAC;
- Hackpen Hill SAC;
- Kennet Valley Alderwoods SAC;
- Mendip Woodlands SAC;
- River Lambourn SAC; and
- Rodborough Common SAC.

5.14 The following qualifying species may use functionally linked habitat within the Wiltshire boundary and so be impacted by loss of offsite functionally linked habitats:

- Bat species of Bath and Bradford on Avon Bats SAC, Chilmark Quarries SAC and Mottisfont SAC.
- Bird species of Avon Valley SPA and Ramsar, Porton Down SPA, Salisbury Plain SPA, New Forest SPA and Severn Estuary SPA and Ramsar.
- Migratory fish species of Severn Estuary SAC and Ramsar and River Avon SAC.
- Desmoulin's whorl snail of River Avon SAC and Kennet and Lambourn Floodplain SAC.
- Stag beetle, great crested newt and southern damselfly of New Forest SAC and Ramsar.

Functionally linked habitat - bats

5.15 The following SACs are designated for supporting populations of bats:

- Bath and Bradford on Avon Bats SAC (greater horseshoe bat *Rhinolophus ferrumequinum*, Bechstein's bat *Myotis bechsteinii*, and lesser horseshoe bat *Rhinolophus hipposideros*);
- Chilmark Quarries SAC (greater horseshoe bat, barbastelle bat *Barbastella barbastellus*, Bechstein's bat and, lesser horseshoe bat);
- Mottisfort SAC (barbastelle bat); and
- Mells Valley SAC (greater horseshoe bat).

5.16 Different bat species are considered to have different requirements of areas within which habitat availability and quality will have a significant influence on the resilience and conservation status of the colony using the roost. Guidance from the Bat Conservation Trust[25] term this area 'Core Sustenance Zones' (CSZ). Wiltshire Council have also produced their own planning document[26] and termed this area 'Core Areas'. These two terms are considered interchangeable for the purposes of this assessment, but the radii vary between the two documents as shown in **Table 5.1** below. In line with the precautionary principle, the larger of the two radii has been used in this assessment.

Table 5.1: Core areas for bats surrounding a roost

Species	Bat Conservation Trust Core Sustenance Zones (radius)	Wiltshire Bat SAC Planning Guidance Core Areas (radius)
Greater horseshoe bat	3km	4km
Lesser horseshoe bat	2km	2km
Bechstein's bat	1km	1.5km
Barbastelle	6km	6km*

*except at Mottisfont Bats SAC, where local evidence justifies a requirement for a 7.5km radius[30]

Bath and Bradford on Avon Bats SAC

5.17 The qualifying species of Bath and Bradford on Avon Bats SAC habitat preferences include pasture, woodland, hedgerows and wetland.

5.18 One site allocation (Policy 13 – Land south of Dicketts Road, Corsham) falls within the CSZ (4km) of Bath and Bradford on Avon Bats SAC. Habitats within this site allocation include pasture and hedgerows. Further assessment is required at the Appropriate Assessment stage to determine the potential impacts of this site in relation to offsite functional habitat damage and loss and whether mitigation measures were required.

5.19 A review of sites allocations within core areas around core roosts identified within the Trowbridge Bat Mitigation Strategy (TBMS)[27] and which are located outside of the SAC identified the following site allocation:

- Policy 53: Land North of Trowbridge – Yellow Zone: Medium Risk.

5.20 As detailed in the TBMS, the yellow medium risk zone represents the areas where habitat has been shown to be of

[25] Bat Conservation Trust - Core Sustenance Zones https://www.bats.org.uk/our-work/landscapes-for-bats/core-sustenance-zones

[26] Wiltshire Council/Natural England - Bat Special Areas of Conservation (SAC). https://www.wiltshire.gov.uk/planning-bio-ecological-survey

[27] Johns Associates (2020) Trowbridge Bat Mitigation Strategy SPD

importance, or is highly likely to be of importance, for Bechstein's, greater horseshoe and / or lesser horseshoe bat.

5.21 A review of sites allocations within core areas around core roosts identified with in the Wiltshire Bat SAC Planning Guidance document[28] and Wiltshire Planning Explorer[29], and which are located outside of the SAC identified the following site allocations:

- Policy 7: Land South of Chippenham and East of Showell Farm***
- Policy 13: Land south of Dicketts Road, Corsham***
- Policy 53: Land North of Trowbridge***
- Policy 55: Land at Innox Mills, Trowbridge *
- Policy 61: Land West of Mane Way, Westbury**
- Policy 62: Land at Bratton Road, Westbury**

*Located within the 4km buffer zone for greater horseshoe bats and 2km buffer for lesser horseshoe bats.

**Located within 4km buffer zone for greaterhorseshoe bats only.

***Located within an impact zone for bats identified in the Wiltshire Planning Explorer This zone comprises a 1.5km core area for Bechstein's bats.

5.22 Further assessment is required at the Appropriate Assessment stage to determine impacts of these sites in relation to loss of offsite functional habitat damage and loss and whether mitigation measures were required.

5.23 There is potential for likely significant effects to occur at Bath and Bradford on Avon Bats SAC in relation to physical loss of functionally linked habitat and therefore this effect is considered further at the Appropriate Assessment stage.

Chilmark Quarries SAC

5.24 Habitat preferences of qualifying species of Chilmark Quarries SAC include pasture, woodland, hedgerows, wetland and woodland streams and ponds.

5.25 No site allocations are located within the largest CSZ (6km) associated with Chilmark Quarries and therefore no likely significant effect to Chilmark Quarries SAC is predicted as a result of direct physical damage and loss of functionally linked habitat either alone or in-combination with other plans and projects.

Mottisfont SAC

5.26 A report from Natural England[30] concluded that a distance of 7.5km from the Mottisfont SAC should be used to identify plans that would be likely to have an impact upon habitats used by the Mottisfont Bat SAC barbastelles. Habitat preferences for barbastelle include woodland and areas with water, such as woodland ponds and streams.

5.27 No site allocations are located within the CSZ (7.5km) for Mottisfont SAC and therefore, no likely significant effect to the Mottisfont SAC is predicted as a result of direct physical damage and loss of functionally linked habitat either alone or in-combination with other plans and projects.

Mells Valley SAC

5.28 Given Mells Valley SAC CSZ (4km) and its distance from the Wiltshire Council boundary (5.8km), no likely significant effect to the Mells Valley SAC is predicted as a result of direct physical damage and loss at functionally linked habitat either alone or in-combination with other plans and projects.

5.29 Therefore, no likely significant effect to the Mells Valley SAC is predicted as a result of direct physical damage and loss of functionally linked habitat either alone or in-combination with other plans and projects.

Functionally linked habitat - birds

5.30 The distance for consideration of offsite functionally linked habitat for birds is dependent on many factors such as species and local conditions. Where targeted studies determining areas of functionally linked habitat were available, the conclusions were reviewed and considered within this HRA. Where no studies were available, a distance of 2km from the European site has been applied unless otherwise stated. Notable species which are known to have functionally linked habitat further afield include golden plover *Pluvialis apricaria* and lapwing *Vanellus Vanellus*, which are known to use a much greater distance of up to 10km[31].

Porton Down SPA

5.31 Porton Down SPA is located within the Wiltshire boundary and is designated for breeding stone curlew *Burhinus oedicnemus*. This species may rely upon land outside of the SPA. Habitat preferences for this species include short semi-natural grassland and arable farmland.

5.32 No specific studies were available for this European site and therefore a distance of 2km was applied.

[28] Available here: https://cms.wiltshire.gov.uk/documents/s149190/BIO21BatSpecialAreasofConservationSACPlanningGuidanceforWiltshire.pdf
[29] Available here: https://experience.arcgis.com/experience/88c3030c2e864645aaec7dc3e0ac4cb6/page/Page/
[30] Jonathan Cox Associates (2010), Mottisfont Bats Special Area of Conservation (SAC) Protocol for Planning Officers.
[31] Unpublished discussion with Natural England in relation to the Dover Local Reg 19 Consultation (2023).

5.33 No site allocations are located within 2km of this European site and therefore, no likely significant effect to the Porton Down SPA is predicted as a result of direct physical damage and loss of functionally linked habitat either alone or in-combination with other plans and projects.

Salisbury Plain SPA

5.34 Salisbury Plain SPA is located within the Wiltshire boundary. The SPA is designated for breeding Eurasian hobby *Falco subbuteo*, common quail *Coturnix coturnix*, stone-curlew and non-breeding hen harrier *Circus cyaneus*. These species may rely upon land outside of the SPA. Habitat preferences for this species include heathland (hobby, hen harrier and stone-curlew), wetland (hobby and hen harrier), broadleaved woodland (hobby only), grassland (stone curlew and other species to a lesser extent) and arable farmland (stone curlew and common quail).

5.35 No specific studies were available for this European site and therefore a distance of 2km was applied. One site allocation (Policy 62: Land at Bratton Road, Westbury) is within 2km of Salisbury Plain SPA. This site allocation includes arable farmland habitat which may be used by qualifying bird species. Further assessment is required to determine the potential impacts of this site in relation to offsite functional habitat loss and whether mitigation measures are required.

5.36 There is potential for likely significant effects to occur at Salisbury Plain SPA in relation to physical loss and damage to offsite habitats of importance to qualifying bird species of Salisbury Plain SPA and therefore this effect is considered further at the Appropriate Assessment stage.

New Forest SPA

5.37 New Forest SPA, which is designated for breeding Dartford warbler *Sylvia undata,* Eurasian hobby *Falco subbuteo*, European honey-buzzard *Pernis apivorus*, European nightjar *Caprimulgus europaeus*, woodlark *Lullula arborea*, wood warbler *Phylloscopus sibilatrix*, and wintering hen harrier, lies adjacent to the south of the Salisbury housing market area. These species may rely upon land outside of the SPA. Habitat preferences for these species include heathland, wetland, broadleaved woodland and coniferous woodland.

5.38 No specific studies were available for this European site and therefore a distance of 2km was applied. No site allocations lie within 2km of New Forest SPA.

5.39 Therefore, no likely significant effect to the New Forest SPA is predicted as a result of direct physical damage and loss of functionally linked habitat either alone or in-combination with other plans and projects.

Avon Valley SPA and Ramsar

5.40 Avon Valley SPA lies 9km to the south of the Wiltshire boundary and is designated for supporting Bewick's swan *Cygnus columbianus bewickii* and gadwall *Anas strepera*. Avon Valley Ramsar is designated for supporting gadwall, northern pintail *Anas acuta* and black-tailed godwit *Limosa limosa islandica*. The habitat preferences for qualifying bird species includes farmland, grassland, lakes, ponds, wetlands and rivers.

5.41 No specific studies were available for this European site. However, given the Avon Valley SPA and Ramsar has direct connectivity through the River Avon to WIltshire boundary and based on the species the European site is designated for, functionally linked habitat is expected to be located along the riparian corridor and in line with the precautionary principle, a distance of 10km was applied.

5.42 No site allocations lie within 10km of Avon Valley SPA and Ramsar. Therefore, no likely significant effect to the Avon Valley SPA and Ramsar is predicted as a result of direct physical damage and loss of functionally linked habitat either alone or in-combination with other plans and projects.

Solent Designations

5.43 Solent and Southampton Water SPA and Ramsar is designated for supporting dark-bellied brent goose *Branta bernicla bernicla,* teal *Anas crecca*; ringed plover *Charadrius hiaticula*; black-tailed godwit *Limosa islandica*, Mediterranean gull *Larus melanocephalus*, sandwich tern *Sterna sandvicensis*; roseate tern *Sterna dougallii*; common tern *Sterna hirundo*; little tern *Sterna albifrons* and the waterbird assemblage. Solent and Dorset Coast SPA is designated for supporting sandwich, common and little terns. These species may rely upon land outside of the SPA. Habitat preferences for these species include supralittoral sediment, standing open water, arable and improved grassland.

5.44 Solent Waders and Brent Geese Strategy Steering Group (SW&BGS) have published Solent Waders and Brent Goose Strategy[32] and accompanying map which shows functionally linked habitat for dark-bellied brent goose and wader species. None of the published sites are within Wiltshire.

5.45 Therefore, no likely significant effect to the Solent and Southampton Water SPA and Ramsar, and Solent and Dorset Coast SPA is predicted as a result of direct physical damage and loss at functionally linked habitat either alone or in-combination with other plans and projects.

[32] Solent Waders and Brent Goose Strategy Steering Group (2020). Solent Waders and Brent Goose Strategy. Available at: https://solentwbgs.wordpress.com/page-2/ [Accessed on 01/03/2022]

Severn Estuary SPA and Ramsar

5.46 Severn Estuary SPA and Ramsar lies 20km northwest of the Wiltshire boundary and is designated for supporting Bewick's swan, gadwall, greater white-fronted goose *arina albifrons*, dunlin *Calidris alpina*, shelduck *Tadorna tadorna*, redshank *Tringa arina* and the assemblage of waterfowl. The habitat preferences for qualifying bird species of Severn Estuary SPA and Ramsar includes farmland, grassland, lakes, ponds, wetlands and rivers.

5.47 Natural England is currently developing the Severn & Avon Vales' Functionally Linked Land (FLL) map which will model likely foraging and supporting areas around Severn Estuary SPA and Ramsar[33]. Severn & Avon Vale is a floodplain which is a significant landscape feature for birds of the SPA. An extensive study reported in 2020[33] presented the data which will inform the Natural England FLL modelling and mapping process.

5.48 The study identified Bewick's swan, gadwall and waterfowl species were recorded above the threshold of significance (>1% of Severn Estuary SPA population) at the lakes of the Cotswold Water Park in the north of the Wiltshire. The waterfowl species pochard *Aythya arina* and teal *Anas crecca* were proven to have functional linkages between Severn Estuary SPA and lakes at the Cotswold Water Park. The study also suggested, but did not prove, a functional linkage between Severn Estuary SPA and the Cotswold Water Park for Bewick's swan.

5.49 No site allocations are located within the identified area of Cotswold Water Park.

5.50 Given the distance of the nearest site allocation, the difference in habitats and that Wiltshire is located in a different landscape character area, impacts from the Local Plan Review on Severn Estuary SPA and Ramsar are considered highly unlikely.

5.51 Therefore, no likely significant effect to the Severn Estuary SPA and Ramsar is predicted as a result of direct physical damage and loss of functionally linked habitat either alone or in-combination with other plans and projects.

Somerset Levels and Moors SPA and Ramsar

5.52 Somerset Levels and Moors SPA and Ramsar is designated for supporting Bewick's swan, teal, golden plover, lapwing, wigeon *Anas penelope*, mute swan *Cygnus olor,* pintail *Anas acuta*, shoveler *Anas clypeata* and the assemblage of waterfowl. The habitat preferences for qualifying bird species of Somerset Levels and Moors SPA and Ramsar includes farmland, grassland, lakes, ponds, wetlands, rivers, marine and intertidal.

5.53 No specific relevant studies were available for this European site. However, the qualifying species include golden plover and lapwing which can travel relatively large daily distances between roosting and feeding grounds. Based on a discussion with Natural England, a 10km buffer is deemed appropriate for these species[33]. Nevertheless, Somerset Levels and Moors SPA and Ramsar is located 29.2km from the Local Plan Review area. A review of landscape scale mapping indicates that there are no geographic features (floodplain river valleys etc) which would encourage commuting between the locations at such considerable distances.

5.54 Therefore, no likely significant effect to the Somerset Levels and Moors SPA and Ramsar is predicted as a result of direct physical damage and loss of functionally linked habitat either alone or in-combination with other plans and projects.

Functionally linked habitat – fish

River Avon SAC

5.55 The River Avon SAC is designated for supporting sea lamprey *Petromyzon marinus*, brook lamprey *Lampetra planeri*, Atlantic salmon *Salmo salar*, and bullhead *Cottus gobio*. Sea lamprey and Atlantic salmon are migratory and therefore have the potential to be dependent upon watercourses located outside the boundaries of the SAC but with functional hydrological connectivity. Brook lamprey and bullhead are reliant on a mosaic of aquatic habitats, potentially including areas outside of the relevant SAC boundaries.

5.56 A review of data sources, including Environment Agency Data Explorer[34] and Hampshire Catchment Partnership[35] identified no site allocations within key tributaries hydrologically connected to the River Avon SAC.

5.57 Therefore, no likely significant effect to the River Avon SAC is predicted as a result of direct physical damage and loss of functionally linked habitat either alone or in-combination with other plans and projects.

River Lambourn SAC

5.58 The River Lambourn SAC is designated for supporting brook lamprey and bullhead. Brook lamprey and bullhead are reliant on a mosaic of aquatic habitats, potentially including areas outside of the relevant SAC boundaries.

5.59 A review of data sources, including Environment Agency Data Explorer identified no site allocations are located within the River Lambourn catchment. Therefore, no likely significant

[33] Link Ecology Ltd (2020). Identification of Land with Proven or Possible Functional Linkages With The Severn Estuary SSSI/SPA Phase 5 (Gloucestershire And Worcestershire)
[34] Available here: https://environment.data.gov.uk/catchment-planning
[35] Available here: https://wessexrt.maps.arcgis.com/apps/MapSeries/index.html?appid=ce58ac7bbb5c455eb2302633e2890be8

effect to the River Lambourn SAC is predicted as a result of direct physical damage and loss at functionally linked habitat either alone or in-combination with other plans and projects.

Severn Estuary SAC and Ramsar

5.60 The Severn Estuary SAC and Ramsar is designated for supporting Atlantic salmon, sea trout *Salmon trutta*, sea lamprey, river lamprey *Lampetra fluviatilis*, allis shad *Alosa alosa*, twaite shad *Alosa fallax* and eel *Anguilla Anguilla*. All of these species are migratory and therefore have the potential to be dependent upon watercourses located outside the boundaries of the SAC and Ramsar but with functional hydrological connectivity.

5.61 The Severn Estuary SAC and Ramsar is fed by several rivers, including Avon and Bristol North Streams. A review of data sources, including the Environment Agency Data Explorer identified the following site allocations within key tributaries of the Avon Bristol Urban catchment:

- Policy 10: Land off Spitfire Road, Calne
- Policy 20: Land north of New A3102
- Policy 53: Land North of Trowbridge

5.62 The Bristol Avon Urban catchment is a highly urbanised catchment, which is subject to pollution from surface water run-off and physical modifications, such as flood protection, impoundments and urban development infrastructure, which provide unsuitable conditions for species, such as Atlantic salmon, which require clean water conditions, and can cause barriers to fish. It is therefore considered unlikely for proposed development to result in impacts to the Severn Estuary SPA and Ramsar site.

5.63 Therefore, no likely significant effect to the Severn Estuary SAC and Ramsar is predicted as a result of direct physical damage and loss at functionally linked habitat either alone or in-combination with other plans and projects.

Functionally linked habitat - Desmoulin's whorl snail

5.64 The River Avon SAC, Kennet and Lambourn Floodplain SAC and Solent Maritime SAC are designated for supporting Desmoulin's whorl snail *Vertigo moulinsiana*. Habitats outside of these SAC boundaries may contribute to maintaining the population of this species. The habitat preferences for this species includes permanently wet, usually calcareous, swamps, fens and marshes, bordering rivers, lakes and ponds, or in river floodplains.

5.65 Given the sedentary nature of the species and niche habitat requirements it is considered that any functionally linked habitat, which contributes to maintaining the population of this species is likely to be within 500m of each of the European site's boundaries[36].

River Avon SAC

5.66 Two site allocations are within 500m of the River Avon SAC and its tributaries. These are: Policy 26: Land North of Downton Road, Salisbury and Policy 30: Land east of Church Road, Laverstock.

5.67 Therefore, there is potential for proposed development at these site allocations to result in direct physical loss and damage to offsite habitats of importance to Desmoulin's whorl snail *Vertigo moulinsiana* either alone or in-combination with other plans and projects.

Kennet and Lambourn Floodplain SAC

5.68 No site allocations are within 500m of Kennet and Lambourn Floodplain SAC.

5.69 Therefore, no likely significant effect to the Kennet and Lambourn Floodplain SAC is predicted as a result of direct physical damage and loss at functionally linked habitat either alone or in-combination with other plans and projects.

Solent Maritime SAC

5.70 The Solent Maritime SAC is located 9.9km from the Wiltshire boundary. Therefore, no likely significant effect to the Solent Maritime SAC is predicted as a result of direct physical damage and loss at functionally linked habitat either alone or in-combination with other plans and projects.

Functionally linked habitat – other species

New Forest SAC and Ramsar

5.71 New Forest SAC and Ramsar is located adjacent to the southern Wiltshire boundary, although small sections lie within the county. Qualifying species include southern damselfly *Coenagrion mercuriale*, great crested newt *Triturus cristatus* and stag beetle *Lucanus cervus.* Habitats located outside of the SAC and Ramsar may also contribute to maintaining the population of these species. Studies have shown that:

- Stag beetle dispersal distances are generally lower than 2km[37].

[36] No specific guidance on functionally linked habitat for Desmoulin's whorl snail was found. The 500m was based on professional judgement with consideration of *Ecology of Desmoulin's Whorl Snail (Vertigo moulinsiana)* - http://publications.naturalengland.org.uk/file/117011

[37] Méndez, M. and Thomaes, A. (2021), *Biology and conservation of the European stag beetle: recent advances and lessons learned*. Insect Conserv Divers, 14: 271-284.

- Great crested newt typically inhabit the land within 500m of their breeding ponds and are known to only travel up to 2km from their breeding ponds[38].
- Most southern damselfly are known to only travel up to 150m during their lifetime[39].

5.72 It is reasoned that any stag beetle/great crested newt/southern damselfly populations which form the meta-population associated with New Forest SAC and Ramsar would be within 2km of the New Forest SAC and Ramsar.

5.73 No site allocations lie within 2km of New Forest SAC and Ramsar.

5.74 Therefore, no likely significant effect to New Forest SAC and Ramsar is predicted as a result of direct physical damage and loss at functionally linked habitat either alone or in-combination with other plans and projects.

Dorset Heaths SAC and Ramsar

5.75 Dorset Heaths SAC and Ramsar is located 8.2km from the Wiltshire boundary, qualifying species include southern damselfly and great crested newt for the SAC and southern damselfly for the Ramsar. Habitats located outside of this European site may also contribute to maintaining the population of these species.

5.76 As above, it is reasoned that any great crested newt/southern damselfly populations which form the meta-population associated within Dorset Heaths SAC and Ramsar would be within 2km of the Dorset Heaths SAC and Ramsar. Dorset Heaths SAC and Ramsar is located 8.3km from the Wiltshire boundary.

5.77 Therefore, no likely significant effect to the Dorset Heaths SAC and Ramsar is predicted as a result of direct physical damage and loss at functionally linked habitat either alone or in-combination with other plans and projects.

Therefore, the following European sites have been screened in for assessment at the appropriate assessment stage in relation to the physical damage and loss at functionally linked habitat:

- Bath and Bradford on Avon Bats SAC;
- Salisbury Plain SPA; and
- River Avon SAC

Non-physical disturbance

5.78 Noise and vibration effects, e.g. during the construction of new housing or other development, are most likely to disturb bird species and are thus a key consideration with respect to European sites where birds are the qualifying features, although such effects may also impact upon some mammals and fish species. Artificial lighting at night (e.g. from street lamps, flood lighting and security lights) is most likely to affect bat populations and some nocturnal bird species, and therefore have an adverse effect on the integrity of European sites where bats or nocturnal birds are a qualifying feature.

5.79 It has been assumed (on a precautionary basis and based on our experience of previous HRAs and consultation with Natural England) that the effects of noise, vibration and light pollution are capable of causing an adverse effect if development takes place within 500m of a European site (or functionally linked habitat) with qualifying features sensitive to these disturbances.

5.80 For European sites with stone curlew as a qualifying feature, a distance of 1.5km has been used as it is known these species breed at significantly lower densities within 1.5km of settlements[40] as a result of non-physical disturbance.

5.81 European sites which may be adversely affected by noise, vibration and light pollution as a result of the Local Plan Review include those within 500m (or 1.5km if a site is designated for stone curlew populations) of site allocations, which support species susceptible to non-physical disturbance.

5.82 The following European sites are located within Wiltshire or are within 500m of the County boundary and support species likely to be significantly affected as a result of noise, vibration and light pollution:

- Bath and Bradford on Avon Bats SAC
- Chilmark Quarries SAC
- Porton Down SPA
- Salisbury Plain SPA
- New Forest SPA
- River Avon SAC

Bath and Bradford on Avon Bats SAC and Chilmark Quarries SAC

5.83 Bath and Bradford on Avon Bats SAC and Chilmark Quarries SAC are designated for their populations of bats (see **paragraph 5.16**). Habitat preferences for these qualifying species include pasture, woodland, hedgerows, wetland and woodland streams and ponds. These species are likely to be impacted by artificial lighting at night.

[38] Froglife. Great Crested Newt Conservation Handbook - https://www.froglife.org/info-advice/our-publications/great-crested-newt-conservation-handbook/
[39] McHattie, S (2002). *Analysis of data on dispersal in southern damselflies (Coenagrion mercuriale)*
[40] Footprint Ecology (2013) Further assessments of the relationship between buildings and stone-curlew distribution

5.84 No site allocations lie within 500m of Bath and Bradford on Avon Bats SAC or Chilmark Quarries SAC.

5.85 Therefore, no likely significant effect to the Bath and Bradford on Avon Bats SAC and Chilmark Quarries SAC is predicted as a result of non-physical disturbance either alone or in-combination with other plans and projects.

Porton Down SPA and Salisbury Plain SPA

5.86 Porton Down SPA and Salisbury Plain SPA are located within the Wiltshire boundary and are designated for breeding stone curlew. As established in **para 5.81**, this species is known to breed at significantly lower densities within 1.5km of settlements[40] as a result of non-physical disturbance.

5.87 No site allocations lie within 1.5km of Porton Down SPA or Salisbury Plain SPA.

5.88 Therefore, no likely significant effect to Porton Down SPA and Salisbury Plain SPA is predicted as a result of non-physical disturbance either alone or in-combination with other plans and projects.

New Forest SPA

5.89 The New Forest SPA is located adjacent to the south of the Wiltshire boundary and is designated for qualifying bird species (see **paragraph 5.38**). These species are likely to be impacted by noise and vibration effects. No site allocations lie within 500m of New Forest SPA.

5.90 Therefore, no likely significant effect to New Forest SPA is predicted as a result of non-physical disturbance either alone or in-combination with other plans and projects.

River Avon SAC

5.91 The River Avon SAC is designated for supporting sea lamprey *Petromyzon marinus*, brook lamprey *Lampetra planeri*, Atlantic salmon *Salmo salar*, and bullhead *Cottus gobio* which may be impacted by non-physical disturbance. The site is also designated for its population of Desmoulin's whorl snail, however this species is considered unlikely to be significantly affected as a result of non-physical disturbance.

5.92 One site allocation was identified to partially lie within the boundaries of the River Avon SAC. This was Policy 33: The Maltings, Salisbury. One site allocation is within 500m of the River Avon SAC. This is: Policy 26: Land North of Downton Road.

5.93 Therefore, there is potential for development proposed within these policies to result in non-physical disturbance to the qualifying fish species of River Avon SAC either alone or in-combination with other plans and projects.

Therefore, the following European sites have been screened in for assessment at the appropriate assessment stage in relation to the non-physical disturbance:

- River Avon SAC

Non-physical disturbance – functionally linked habitat

5.94 Non-physical disturbance may also adversely affect qualifying species at functionally linked habitat. It was established in the **Physical Loss of Habitat – Functionally Linked Habitat** section above that the following qualifying species may use functionally linked habitat within the Wiltshire boundary:

- Bat species of Bath and Bradford on Avon Bats SAC, Chilmark Quarries SAC and Mottisfont SAC.
- Bird species of Avon Valley SPA and Ramsar, Porton Down SPA, Salisbury Plain SPA, New Forest SPA and Severn Estuary SPA and Ramsar.
- Migratory fish species of Severn Estuary SAC and Ramsar and River Avon SAC.
- Desmoulin's whorl snail of River Avon SAC and Kennet and Lambourn Floodplain SAC.
- Stag beetle, great crested newt and southern damselfly of New Forest SAC and Ramsar.

5.95 All other European sites were either not considered to use functionally linked habitat within the Wiltshire boundary and/or did not support qualifying features that relied on functionally linked habitat.

Bath and Bradford on Avon Bats SAC

5.96 Bat species are sensitive to light pollution. It was established in the **Physical Loss of Habitat – Functionally Linked Habitat** section above that the following site allocations were located within 500m of the CSZ and/or core areas, defined by the TBMS[27],Wiltshire Bat SAC Planning Guidance document[28], and Wiltshire Planning Explorer[29]:

- Policy 7: Land South of Chippenham and East of Showell Farm
- Policy 13: Land South of Dicketts Road, Corsham
- Policy 53: Land North of Trowbridge
- Policy 55: Land at Innox Mills, Trowbridge
- Policy 61: Land West of Mane Way, Westbury
- Policy 62: Land at Bratton Road, Westbury

5.97 No further site allocations are located within 500m of the CSZ or core area of the SAC.

5.98 Therefore, there is potential for development proposed within these policies to result in non-physical disturbance to

off-site habitats of importance for qualifying bat species of Bath and Bradford on Avon Bats SAC, either alone or in-combination with other plans and projects.

Chilmark Quarries SAC and Mottisfont SAC

5.99 Bat species are sensitive to light pollution. It was established in the **Physical Loss of Habitat – Functionally Linked Habitat** section above that no site allocations lie within the CSZ for Chilmark Quarries SAC and Mottisfont SAC. There are also no site allocations that lie within 500m of the CSZ.

5.100 Therefore, no likely significant effect to Chilmark Quarries SAC and Mottisfont SAC is predicted as a result of non-physical disturbance at functionally linked habitat either alone or in-combination with other plans and projects.

Avon Valley SPA and Ramsar

5.101 Qualifying bird species of Avon Valley SPA and Ramsar are sensitive to noise and vibration. No site allocations are within 500m from the 10km established in the **Physical Loss of Habitat – Functionally Linked Habitat** section above.

5.102 Therefore, no likely significant effect to Avon Valley SPA and Ramsar is predicted as a result of non-physical disturbance at functionally linked habitat either alone or in-combination with other plans and projects.

Porton Down SPA and Salisbury Plain SPA

5.103 Breeding stone curlew are sensitive to noise and vibration. No site allocations are within 500m from the 2km buffer established in the **Physical Loss of Habitat – Functionally Linked Habitat** section above.

5.104 Therefore, no likely significant effect to Porton Down SPA and Salisbury Plain SPA is predicted as a result of non-physical disturbance at functionally linked habitat either alone or in-combination with other plans and projects.

Severn Estuary SPA and Ramsar

5.105 Qualifying bird species of Severn Estuary SPA and Ramsar are sensitive to noise and vibration. No site allocations are within 500m from the identified area with functional linkage in the **Physical Loss of Habitat – Functionally Linked Habitat** section above.

5.106 Therefore, no likely significant effect to Severn Estuary SPA and Ramsar is predicted as a result of non-physical disturbance at functionally linked habitat either alone or in-combination with other plans and projects.

New Forest SPA

5.107 Qualifying bird species of New Forest SPA are sensitive to noise and vibration. No site allocations are located within 500m from the 2km functional linkage buffer identified in the **Physical Loss of Habitat – Functionally Linked Habitat** section above.

5.108 Therefore, no likely significant effect to New Forest SPA is predicted as a result of non-physical disturbance at functionally linked habitat either alone or in-combination with other plans and projects.

Kennet and Lambourn Floodplain SAC

5.109 Desmoulin's whorl snail is unlikely to be significantly affected as a result of noise, vibration and light pollution resulting from the Local Plan Review therefore no likely significant to Kennet and Lambourn Floodplain SAC is predicted as a result of non-physical disturbance at functionally linked habitat either alone or in-combination with other plans and project.

River Avon SAC and Severn Estuary SAC and Ramsar

5.110 Migratory fish species may be affected by non-physical disturbance. As outlined above, Desmoulin's whorl snail is unlikely to be significantly affected as a result of non-physical disturbance.

5.111 As established above (see **para 5.62**), Severn Estuary SAC and Ramsar is fed by River Avon SAC in Avonmouth which is located 30km from the Wiltshire boundary. One site allocation is located within 500m of River Avon SAC tributaries (Policy 30: Land east of Church Road, Laverstock).

5.112 This site allocation is approximately 80km from Severn Estuary SAC. Given the distance from Severn Estuary SAC and Ramsar, no likely significant effect to the Severn Estuary SAC and Ramsar is predicted as a result of non-physical disturbance at functionally linked habitat either alone or in-combination with other plans and projects.

5.113 As one site allocation is within 500m of River Avon SAC tributary, there is potential for proposed development at this site allocation to result in non-physical disturbance to offsite habitats of importance to qualifying fish species of River Avon SAC either alone or in-combination with other plans and projects.

New Forest SAC and Ramsar

5.114 Stag beetle, great crested newt and southern damselfly are unlikely to be significantly affected as a result of noise, vibration and light pollution resulting from the Local Plan Review.

5.115 Therefore, no likely significant effect to the New Forest SAC and Ramsar is predicted as a result of non-physical disturbance at functionally linked habitat either alone or in-combination with other plans and projects.

Therefore, the following European sites have been screened in for assessment at the appropriate

assessment stage in relation to the non-physical disturbance at functionally linked habitat:

- River Avon SAC
- Bath and Bradford on Avon Bats SAC

Non-toxic contamination

5.116 Non-toxic contamination can include the creation of dust which can smother habitats preventing natural processes, and may also lead to effects associated with increased sediment and dust which can potentially affect the turbidity of aquatic habitats, and can also contribute to nutrient enrichment which can lead to changes in the rate of vegetative succession and habitat composition.

5.117 The effects of non-toxic contamination are most likely to be significant if development takes place within 500m of a European site with qualifying features sensitive to these disturbances, such as riparian and wetland habitats, or sites designated for habitats and plant species. This is the distance that, in our experience, provides a robust assessment of effects in plan-level HRA and meets with the agreement of Natural England.

5.118 The following European sites are located within or are within 500m of the Wiltshire boundary and support qualifying features sensitive to these disturbances so may be adversely affected by non-toxic contamination as a result of the Local Plan Review:

- Great Yews SAC;
- North Meadow & Clattinger Farm SAC;
- Pewsey Downs SAC;
- Prescombe Down SAC;
- River Avon SAC;
- Salisbury Plain SAC and SPA;
- The New Forest SAC, SPA and Ramsar; and
- Fontmell and Melbury Downs SAC.

5.119 All other European sites have been screened out as they are more than 500m from the Wiltshire boundary and/or they do not support qualifying features sensitive to non-toxic contamination.

Great Yews SAC

5.120 Great Yews SAC is designated for its yew *Taxus baccata* woodland which is sensitive to non-toxic contamination. No site allocations are within 500m of this European site.

5.121 Therefore, no likely significant effect to Great Yews SAC is predicted as a result of non-toxic contamination at functionally linked habitat either alone or in-combination with other plans and projects.

North Meadow & Clattinger Farm SAC

5.122 North Meadow and Clattinger Farm SAC is designated for its lowland hay meadows which is sensitive to non-toxic contamination. No site allocations are within 500m of this European site.

5.123 Therefore, no likely significant effect upon North Meadow & Clattinger Farm SAC is predicted as a result of non-toxic contamination at functionally linked habitat either alone or in-combination with other plans and projects.

Pewsey Downs SAC, Prescombe Down SAC and Fontmell and Melbury Downs SAC

5.124 Pewsey Downs SAC, Prescombe Down SAC and Fontmell and Melbury Downs SAC are designated for their semi-natural dry calcareous grasslands and scrubland which are sensitive to non-toxic contamination. No site allocations are within 500m of Pewsey Downs SAC, Prescombe Down or Fontmell and Melbury Downs SAC.

5.125 Therefore, no likely significant effect to Pewsey Downs SAC, Prescombe Down SAC and Fontmell and Melbury Downs SAC is predicted as a result of non-toxic contamination at functionally linked habitat either alone or in-combination with other plans and projects.

River Avon SAC

5.126 River Avon SAC is designated for its water course habitat which is sensitive to non-toxic contamination. Two site allocations are located within 500m of River Avon SAC. These are: Policy 26: Land North of Downton Road and Policy 33: The Maltings and Central Car Park.

5.127 Therefore, there is potential for the above site allocations to result in non-toxic contamination to the qualifying habitats of River Avon SAC either alone or in-combination with other plans and projects.

Salisbury Plain SAC and SPA

5.128 Salisbury Plain SAC and SPA is designated for its semi-natural dry calcareous grasslands and scrubland and juniper *Juniperus communis* formations on heaths or calcareous grasslands which are sensitive to non-toxic contamination. No site allocations are within 500m of Salisbury Plain SAC and SPA.

5.129 Therefore, no likely significant effect to Salisbury Plain SAC and SPA is predicted as a result of non-toxic contamination at functionally linked habitat either alone or in-combination with other plans and projects.

The New Forest SAC and Ramsar

5.130 The New Forest SAC and Ramsar is designated for a variety of habitats including wet and dry heath, woodlands and fens, all of which are sensitive to non-toxic contamination. No site allocations are within 500m of The New Forest SAC.

5.131 Therefore, no likely significant effect to New Forest SAC and Ramsar is predicted as a result of non-toxic contamination at functionally linked habitat either alone or in-combination with other plans and projects.

Therefore, the following European sites have been screened in for assessment at the appropriate assessment stage in relation to non-toxic contamination:

- River Avon SAC

Non-toxic contamination – functionally linked habitat

5.132 Non-toxic contamination may also adversely affect qualifying features at functionally linked habitats. It was established in the **Physical Loss of Habitat - Functionally Linked Habitat** section above that the following qualifying species may use functionally linked habitat within the Wiltshire boundary:

- Bat species of Bath and Bradford on Avon Bats SAC, Chilmark Quarries SAC and Mottisfont SAC.
- Bird species of Avon Valley SPA and Ramsar, Porton Down SPA, Salisbury Plain SPA, New Forest SPA and Severn Estuary SPA and Ramsar.
- Migratory fish species of Severn Estuary SAC and Ramsar and River Avon SAC.
- Desmoulin's whorl snail of River Avon SAC and Kennet and Lambourn Floodplain SAC.
- Stag beetle, great crested newt and southern damselfly of New Forest SAC and Ramsar

Bath and Bradford on Avon Bats SAC, Chilmark Quarries SAC and Mottisfont Bats SAC

5.133 Habitat preferences for designated bats include woodland, hedgerow, scrub, unimproved rough grassland, intensively grazed pasture, watercourses and wetlands. Non-toxic contamination is unlikely to change these habitats to an extent that it significantly effects opportunities for commuting and foraging bats.

5.134 Therefore, no likely significant effect to the Bath and Bradford on Avon Bats SAC, Chilmark Quarries SAC and Mottisfont Bats SAC is predicted as a result of non-toxic contamination at functionally linked habitat either alone or in-combination with other plans and projects.

Avon Valley SPA and Ramsar

5.135 Habitat preferences for the qualifying bird species include farmland, grassland, lakes, ponds, wetlands and rivers. Aquatic habitats are sensitive to non-toxic contamination. No site allocations are within 500m from the 10km established in the **Physical Loss of Habitat - Functionally Linked Habitat** section above.

5.136 Therefore, no likely significant effect to Avon Valley SPA and Ramsar is predicted as a result of non-toxic contamination at functionally linked habitat either alone or in-combination with other plans and projects.

Porton Down SPA

5.137 Habitat preferences for the qualifying bird species include farmland, grassland, lakes, ponds, wetlands and rivers. Aquatic habitats are sensitive to non-toxic contamination. No site allocations are within 500m of the 2km established in the **Physical Loss of Habitat – Functionally Linked Habitat section** above.

5.138 Therefore, no likely significant effect to Porton Down SPA is predicted as a result of non-toxic contamination at functionally linked habitat either alone or in-combination with other plans and projects.

Salisbury Plain SPA

5.139 Habitat preferences for the qualifying bird species include heathland, wetland, broadleaved woodland, grassland and arable farmland. These habitats, particularly wetland, are sensitive to non-toxic contamination. No site allocations are within 500m of the 2km established in the **Physical Loss of Habitat – Functionally Linked Habitat section** above.

5.140 Therefore, no likely significant effect to Salisbury Plain SPA is predicted as a result of non-toxic contamination at functionally linked habitat either alone or in-combination with other plans and projects.

New Forest SPA

5.141 Habitat preferences for the qualifying bird species include woodland, farmland, heathland, coastal marshes, fenland, river valleys and wetland. These habitats are sensitive to non-toxic contamination. No site allocations are within 500m of the 2km established in the **Physical Loss of Habitat – Functionally Linked Habitat section** above.

5.142 Therefore, no likely significant effect to New Forest SPA is predicted as a result of non-toxic contamination at functionally linked habitat either alone or in-combination with other plans and projects.

New Forest SAC and Ramsar

5.143 Habitat preferences for the qualifying species: stag beetle; great crested newt and southern damselfly include

ponds, ditches, streams, fen and woodland. Non-toxic contamination is unlikely to change woodland to an extent that it significantly effects opportunities for stag beetle. However, great crested newt and southern damselfly may be affected through non-toxic contamination of watercourses. No site allocations are within 500m of the 2km established in the **Physical Loss of Habitat – Functionally Linked Habitat section** above.

5.144 Therefore, no likely significant effect to New Forest SAC and Ramsar is predicted as a result of non-toxic contamination at functionally linked habitat either alone or in-combination with other plans and projects.

Severn Estuary SPA and Ramsar

5.145 Habitats preferences for qualifying bird species include farmland, grassland, lakes, ponds, wetlands and rivers. Aquatic habitats are sensitive to non-toxic contamination. No site allocations are within 500m of the identified area in the **Physical Loss of Habitat – Functionally Linked Habitat section** above.

5.146 Therefore, no likely significant effect to Severn Estuary SPA and Ramsar is predicted as a result of non-toxic contamination at functionally linked habitat either alone or in-combination with other plans and projects.

Severn Estuary SAC and Ramsar

5.147 Habitats preferences for qualifying fish species include aquatic and wetland habitats. Aquatic habitats are sensitive to non-toxic contamination.

5.148 As established above (see **para 5.62**), Severn Estuary SAC and Ramsar is fed by River Avon SAC in Avonmouth which is located 30km from the Wiltshire boundary. One site allocation is located within 500m of River Avon SAC tributaries (Policy 30: Land east of Church Road, Laverstock).

5.149 This site allocation is approximately 80km from Severn Estuary SAC. Given the distance from Severn Estuary SAC and Ramsar, no likely significant effect to the Severn Estuary SAC and Ramsar is predicted as a result of non-toxic contamination at functionally linked habitat either alone or in-combination with other plans and projects.

River Avon SAC and Kennet and Lambourn Floodplain SAC

5.150 Habitat preferences for the qualifying invertebrate and fish species include aquatic and wetland habitats. Aquatic habitats are sensitive to non-toxic contamination.

5.151 No site allocations are within the 500m zone established in the **Physical Loss of Habitat – Functionally Linked Habitat section** above for Kennet and Lambourn Floodplain SAC. Therefore, no likely significant effect to Kennet and Lambourn Floodplain SAC is predicted as a result of non-toxic contamination at functionally linked habitat either alone or in-combination with other plans and projects.

5.152 One site allocation is within 500m of the River Avon SAC tributaries. This is Policy 30: Land east of Church Road, Laverstock.

5.153 Therefore, there is potential for proposed development as part of this policy to result in non-toxic contamination to offsite habitats of importance to qualifying fish and invertebrate species of River Avon SAC either alone or in-combination with other plans and projects.

Therefore, the following European sites have been screened in for assessment at the appropriate assessment stage in relation to non-toxic contamination at functionally linked habitat:

- River Avon SAC

Air pollution

5.154 Air pollution is most likely to affect European sites where plant, soil and water habitats are the qualifying features, but some qualifying animal species may also be affected, either directly or indirectly, by any deterioration in habitat as a result of air pollution. Deposition of pollutants to the ground and vegetation can alter the characteristics of the soil, affecting the pH and nitrogen (N) availability that can then affect plant health, productivity and species composition. All of the sites have plant and/or water habitats or species as their qualifying feature.

5.155 In terms of vehicle traffic, nitrogen oxides (NOx, i.e. NO and NO2) are considered to be the key pollutants. Deposition of nitrogen compounds may lead to both soil and freshwater acidification, and NOx can cause eutrophication of soils and water. The HRA will refer to the UK Air Pollution Information System[41] to determine whether concentrations of NOx at the European sites are currently exceeding critical loads or not.

5.156 Based on the Highways Agency Design Manual for Road and Bridges (DMRB) Document LA105: Air Quality[42] (which was produced to provide advice regarding the design, assessment and operation of trunk roads (including motorways)), it is assumed that air pollution from roads is unlikely to be significant beyond 200m from the road itself. Where increases in traffic volumes are forecast, this 200m buffer needs to be applied to the relevant roads in order to make a judgement about the likely geographical extent of air pollution impacts.

[41] http://www.apis.ac.uk/

[42] https://www.standardsforhighways.co.uk/dmrb/search/10191621-07df-44a3-892e-c1d5c7a28d90

5.157 The DMRB Guidance for the assessment of local air quality in relation to highways developments provides criteria that should be applied to ascertain whether there are likely to be significant impacts associated with routes or corridors. Based on the DMRB guidance, affected roads which should be assessed are those where:

- Daily traffic flows will change by 1,000 AADT (Annual Average Daily Traffic) or more; or
- Heavy duty vehicle (HDV) flows will change by 200 AADT or more; or
- Daily average speed will change by 10 km/hr or more; or
- Peak hour speed will change by 20 km/hr or more; or
- Road alignment will change by 5m or more.

5.158 In line with the Wealden judgment[43], Natural England now expects to see in-combination air pollution effects assessed. The implication of the judgment is that, where the road traffic effects of other plans or projects are known or can be reasonably estimated (including those of adopted plans or consented projects), then these should be included in road traffic modelling by the local authority whose local plan or project is being assessed. The screening criteria of 1,000 AADT should then be applied to the traffic flows of the plans in combination.

5.159 It has been assumed that only those roads forming part of the primary road network (motorways and 'A' roads) might be likely to experience any significant increases in vehicle traffic as a result of development (i.e. greater than 1,000 AADT etc.). As such, where a site is within 200m of only minor roads, no significant effect from traffic-related air pollution is considered to be the likely outcome.

5.160 Strategic roads within the Wiltshire boundary and a 15km buffer include the motorways M3, M4, M5, M27, M32 and M271 and 70 'A' roads, which are highlighted in **Figure D-1, Appendix D.** European sites which are situated within 200m of a strategic road and their corresponding SSSI units condition are provided in **Table 5.2** below.

Table 5.2: European sites situated within 200m of a strategic road and their corresponding SSSI units condition.

European Site	Strategic Road	SSSI Unit	SSSI Unit Condition*
Avon Valley SPA and Ramsar	A31	-	All favourable
	A338	56	Unfavourable no change
		154	Unfavourable recovering
Bath and Bradford on Avon Bats SAC	A4	-	All favourable
	A363	-	
	A3062	3	Unfavourable recovering
Fontmell and Melbury Downs SAC	A350	10	Unfavourable recovering
Kennet and Lambourn Floodplain SAC	A34	4	Unfavourable recovering
	A338	1	
	A4	1	
The New Forest SAC, SPA and Ramsar	M27	313	Unfavourable declining
		399	Unfavourable recovering
	A36	163	Unfavourable recovering
		2	
		6	Unfavourable no change
	A31	73, 91, 93, 95, 114, 123, 125, 134, 290, 341, 399	Unfavourable recovering
		313	Unfavourable declining

[43] Wealden District Council v. (1) Secretary of State for Communities and Local Government; (2) Lewes District Council; (3) South Downs National Park Authority and Natural England

European Site	Strategic Road	SSSI Unit	SSSI Unit Condition*
	A35	314, 326, 327, 330, 337, 341, 346, 362, 363, 470, 500, 502, 527, 531, 533, 537, 538	Unfavourable recovering
		1	Unfavourable no change
	A336	315	Unfavourable recovering
	A337	315, 375, 379, 400, 401, 486, 492, 496	Unfavourable recovering
		571	Unfavourable declining
North Meadow and Clattinger SAC	A419	-	All favourable
Porton Down SPA	A30	6	Unfavourable recovering
	A343	12	
River Avon SAC	A30	57, 62	Unfavourable no change
	A3028	53	
	A3094	58, 61	
	A350	59	
	A36	55, 59, 60	
	A31	51, 154	Unfavourable recovering
		46, 56	Unfavourable no change
		49	Unfavourable declining
	A338	154	Unfavourable recovering
		20, 31, 46, 55, 62, 63	Unfavourable no change
		45	Unfavourable declining
	A360	1	Unfavourable recovering
	A303	2	Unfavourable recovering
		54	Unfavourable no change
	A345	20, 21, 53, 54	
River Lambourn SAC	M4	2	Unfavourable recovering
	A338	2	
	A34	2	
	A339	3	
	A4	3	
Rodborough Common SAC	A46	-	All favourable
Salisbury Plain SAC and SPA	A342	-	All favourable
	A30	6	Unfavourable Recovering

European Site	Strategic Road	SSSI Unit	SSSI Unit Condition*
	A303	138, 171	
	A338	147	
	A343	12	
	A360	42	
Solent and Dorset Coast SPA	M271	-	All favourable
Solent and Southampton Water SPA and Ramsar	A35	1	Unfavourable no change
Solent Maritime SAC	A46	1	
*Unless otherwise stated, units in favourable condition were not included.			

5.161 All of the other European sites are situated over 200m from strategic roads and were therefore screened out.

Traffic data

5.162 To determine the impacts of air pollution in relation to proposed development within the Local Plan Review in relation to the European sites within **Table 5.2** above (excluding Bath and Bradford on Avon Bats SAC) road traffic AADT figures were required for the following roads where they pass within 200m of a the above European sites: A31, A30, A3028, A303, A3094, A31, A336, A337, A338, A339, A34, A342, A343, A345, A35, A350, A36, A360, A4, A419, A46, M27, M271 and M4.

5.163 Traffic data modelling on a county wide scale was undertaken by Atkins. The 1000 AADT threshold was exceeded within 200m of the following European Sites:

- River Avon SAC;
- Salisbury Plain SPA and SAC; and
- Porton Down SPA

5.164 All other sites did not exceed the 1000 AADT threshold and so have been screened out.

5.165 An Air Quality Assessment (AQA) was undertaken by Air Quality Assessments Ltd in 2024[44] to assess the air quality effects of proposed development in the Local Plan on European sites. Specifically, the assessment considered the impacts to the River Avon SAC, Salisbury Plain SPA and SAC and Porton Down SPA. The findings of the AQA are provided in full in **Appendix F** and confirmed the following:

The assessment has demonstrated that the screening threshold for NOx has been exceeded at the Salisbury Plain SAC and SPA and at the Porton Down SPA.

The screening threshold for ammonia concentrations has been exceeded at the River Avon SAC, the Salisbury Plain SAC and SPA and the Porton Down SPA.

The screening threshold for nutrient nitrogen deposition has been exceeded at the Salisbury Plain SAC and SPA and the Porton Down SPA.

The screening threshold for acid nitrogen deposition has been exceeded at the Salisbury Plain SAC and SPA.

5.166 Given that the minimum threshold has been exceeded, there is potential for likely significant effects to occur and as such requires further consideration at Appropriate Assessment.

5.167 Therefore, there is potential for proposed development as part of the Local Plan review to result in increased air pollution at Salisbury Plain SAC and SPA, Porton Down SPA and River Avon SAC.

Therefore, the following European sites have been screened in for assessment at the appropriate assessment stage in relation to air pollution:

- Salisbury Plain SAC and SPA;
- Porton Down SPA; and
- River Avon SAC

[44] Air Quality Assessment Ltd (September 2024). Wiltshire Local Plan Review: Air Quality Assessment.

Air pollution - functionally linked habitat

5.168 Air pollution may also adversely affect qualifying features at functionally linked habitats. It was established in the **Physical Loss of Habitat - Functionally Linked Habitat section** above that the following qualifying species may use functionally linked habitat within the Wiltshire boundary:

- Bat species of Bath and Bradford on Avon Bats SAC, Chilmark Quarries SAC and Mottisfont Bats SAC.
- Bird species of Avon Valley SPA and Ramsar, Porton Down SPA, Salisbury Plain SPA, New Forest SPA and Severn Estuary SPA and Ramsar.
- Migratory fish species of Severn Estuary SAC and Ramsar and River Avon SAC.
- Desmoulin's whorl snail of River Avon SAC and Kennet and Lambourn Floodplain SAC.
- Stag beetle, great crested newt and southern damselfly of New Forest SAC and Ramsar

5.169 A review of strategic roads within 200m of the established buffers in the **Physical Loss of Habitat – Functionally Linked Habitat** section above identified that for the European sites considered in **Table 5.2,** no additional strategic roads are within the buffers, other than the ones identified within **Table 5.2** above. Therefore, the conclusions drawn above also apply to functionally linked land.

5.170 In addition to the above, the Severn Estuary SPA and Ramsar is considered below, as this was not included in **Table 5.2**, given that it is not within 200m of a strategic road, however functionally linked habitat may still be impacted if it lies within 200m of a strategic road.

Severn Estuary SPA and Ramsar

5.171 Habitat preferences for qualifying bird species include farmland, grassland, lakes, ponds, wetlands and rivers. Habitats in identified areas with functional linkage in the **Physical Loss of Habitat – Functionally Linked Habitat section above** include lakes, ponds, wetlands and rivers.

5.172 Three strategic roads pass within 200m of these habitats including the A361, A417 and A419. All of these points correspond to Cotswold Water Park SSSI Unit 11 which is in Favourable condition. Traffic data established these roads would not exceed 1000 AADT as a result of the Local Plan. Therefore, no likely significant effect to Severn Estuary SPA and Ramsar is predicted as a result of air pollution at functionally linked habitat either alone or in-combination with other plans and projects.

Severn Estuary SAC and Ramsar

5.173 As established above (see **para 5.62**), Severn Estuary SAC and Ramsar is fed by River Avon SAC in Avonmouth which is located 30km from the Wiltshire boundary. One site allocation is located within 500m of River Avon SAC tributaries (Policy 30: Land east of Church Road, Laverstock).

5.174 This site allocation is approximately 80km from Severn Estuary SAC. Given the considerable distance from Severn Estuary SAC and Ramsar, no likely significant effect to the Severn Estuary SAC and Ramsar is predicted as a result of air pollution at functionally linked habitat either alone or in-combination with other plans and projects.

Therefore, no likely significant effect to Severn Estuary SAC, SPA and Ramsar site is predicted as a result of an increase in air pollution from proposed development in the Local Plan Review either alone or in-combination with other plans and projects.

Recreation and urban impacts

5.175 Recreational activities and human presence can result in significant effects on European sites as a result of erosion and trampling, associated impacts such as fire and vandalism or disturbance to sensitive features, such as birds through both terrestrial and water-based forms of recreation.

5.176 The Local Plan Review will result in housing growth and associated population increase within the Wiltshire boundary. The Local Plan Review anticipates a need for approximately 36,740 new homes during the plan period. Where increases in population are likely to result in significant increases in recreation at a European site, either alone or in-combination, the potential for likely significant effects will require assessment.

5.177 European sites with qualifying bird species are likely to be particularly susceptible to recreational disturbances from walking, dog walking, angling, illegal use of off-road vehicles and motorbikes, wildfowling, and water sports. An increase in recreational pressure from development therefore has the potential to disturb bird populations of SPA and Ramsar sites as a result of both terrestrial and water-based recreation.

5.178 In addition, recreation can physically damage habitat as a result of trampling and also through erosion associated with boat wash and terrestrial activities such as use of vehicles.

5.179 Each European site will typically have a 'Zone of Influence' (ZOI) within which increases in population would be expected to result in likely significant effects. ZOIs are usually established following targeted visitor surveys and the findings are therefore typically specific to each European site (and often to specific areas within a European site). The findings are likely to be influenced by a number of complex and interacting factors and therefore it is not always appropriate to apply a generic or non-specific ZOI to a European site. This is particularly the case in relation to coastal European sites, which have the potential to draw large number of visitors from areas much further afield.

5.180 In contrast to coastal European sites, the ZOI for non-coastal European sites are typically less variable, with visitors travelling from areas more local to a site. Although these sites are unique in their own right, they tend not have the same draw as coastal sites and with recreational activities more easily managed and directed to alternative greenspace in the area. Using a precautionary approach and based on the findings of the Monitor of Engagement with the Natural Environment (MENE) survey[45] a ZOI of 16km has been applied to all non-coastal European sites where an alternative ZOI is not available. The 16km ZOI derived from the MENE data relates to the distance of '6 to 10 miles' that 75% of visitors from Wiltshire travel to reach a natural environment. ZOIs are typically based on the distance that 75% of visitors travel from; therefore, 16km is considered likely to represent a highly precautionary ZOI in this assessment, and one which may be modified following the emergence of new information. The following European sites were screened out of further assessment based upon either a lack of sensitivity of the qualifying features, or distance, together with professional judgement and the findings of similarly comparable Sites elsewhere:

- Fontmell and Melbury Downs SAC;
- Great Yews SAC;
- Hackpen Hill SAC;
- Kennet and Lambourn Floodplain SAC;
- Kennet Valley Alderwoods SAC;
- Mendip Woodlands SAC;
- North Meadow and Clattinger Farm SAC (Clattinger Farm component only)[46];
- Pewsey Downs SAC;
- Prescombe Down SAC; and
- River Lambourn SAC.

5.181 Existing visitor survey work available for all other European sites within is summarised in **Table 5.3** below.

Table 5.3: Zone of Influence (ZOI) derived from existing visitor survey work

European Site	ZOI
Avon Valley SPA and Ramsar	16.0km*
Bath and Bradford on Avon Bats SAC[47]:	
Bath and Bradford on Avon Bats SAC (Trowbridge - Core roosts – relating to red zone, high risk in the TBMS)	0.6km[48]**
Bath and Bradford on Avon Bats SAC (Green Lane Wood – relating to yellow zone, medium risk zone in TBMS)	2.66km
Bath and Bradford on Avon Bats SAC (Trowbridge - Pickett and Clanger Woods – relating to yellow zone, medium risk zone in TBMS)	3.36km
Chilmark Quarries SAC	0.6km
Cotswolds Beechwoods SAC	15.4km[49]
Dorset Heathlands SAC and Ramsar	4.4km[50]
Emer Bog SAC	3.7km[51]
Mells Valley SAC	16.0km*
Mottisfont Bats SAC	7.5km[52]
North Meadow and Clattinger Farm SAC (North Meadow)	9.4km[53]
Porton Down SPA	N/A***
River Avon SAC	16.0km*
Rodborough Common SAC	3.8km[54]
Salisbury Plain SAC and SPA	6.4km[55]
Severn Estuary SAC, SPA and Ramsar	7.7km[56]
Solent and Southampton Water SPA and Ramsar	5.6km[57]
Solent Maritime SAC	5.6km****
Solent and Dorset Coast SPA	5.6km****
The New Forest SAC, SPA and Ramsar	13.8km[58]

[45] Natural England (2020) Monitoring Engagement with the Natural Environment, MENE Visit data Year 1 to 10 filtered by resident local authority (Wiltshire) and distance travelled (q8), http://publications.naturalengland.org.uk/publication/4897139222380544
[46] As confirmed by Natural England during a meeting on 11th March 2022 between Wiltshire Council and Natural England.
[47] There are differing ZOIs for this SAC to reflect areas of high risk where core maternity roosts for Bechstein's bat exist, such as at woodland sites around Trowbridge, and which are functionally and demographically linked to the SAC but are not component sites of the SAC itself.
[48] Panter C., Lake S. & Liley D. (2018). Trowbridge Visitor Survey and Recreation Management Strategy.
[49] Liley D & Panter C. Footprint Ecology (2022). Cotswold Beechwoods SAC Recreation Mitigation Strategy.
[50] Panter, C & Calls, Z. (2020). Dorset Heaths 2019 Visitor Survey.
[51] Habitats Regulations Assessment for Test Valley Revised Local Plan DPD. Unpublished visitor study by QA Research.
[52] Mottisfont Bats Special Area of Conservation (SAC) Protocol for Planning Officers: Report to Natural England. Jonathan Cox Associates. 2010.
[53] North Meadow Recreational Disturbance Mitigation Strategy
[54] Panter, C & Calls, Z. (2019). Rodborough Common Visitor Survey.
[55] Panter, C., & Liley, D. (2015). Salisbury Plain Visitor Survey 2015.
[56] EPR (2016) Severn Estuary (Stroud District) Visitor Survey Report.
[57] Solent Recreation Mitigation Strategy. BirdAware, 2019.
[58] Wiltshire Council (2022). Interim Recreation Mitigation Strategy for The New Forest Internationally Protected Sites

European Site	ZOI

*Assumed 16.0km as detailed in **paragraph 5.180**

Reference has been made to the TBMS, which identifies areas of medium and high risk in relation to recreation.**

***Not accessible to the public.

****Solent and Southampton Water SPA and Ramsar ZOI applied

5.182 In the absence of specific evidence to determine a ZOI for recently identified core roosts for Bechstein's Bats to the south of Chippenham, a buffer of 1.5km has been applied, which has been identified by Wiltshire Council as an appropriate core area used by these bats.

5.183 A review of the European sites and their recreational ZOI determined that the following European sites do not have a recreational ZOI that extend to the site allocations and can therefore be screened out of further assessment:

- Chilmark Quarries SAC;
- Cotswolds Beechwoods SAC;
- Dorset Heathlands SAC and Ramsar;
- Emer Bog SAC;
- Mottisfont Bats SAC;
- Rodborough Common SAC;
- Severn Estuary SPA SAC and Ramsar;
- Solent Dorset Coast SPA;
- Solent Maritime SAC; and
- Solent Southampton SPA and Ramsar.

5.184 Although the ZOI for North Meadow and Clattinger Farm SAC (North Meadow component only) does not extend into any of the site allocations, there is potential for development to come forward as small sites and windfall development associated with Policy 2: Delivery Strategy, Policy 69: Tourism and related development and Policy 77: Rural exceptions. Therefore, there is potential for development resulting from these policies to result in recreational impacts on the qualifying features of North Meadow and Clattinger Farm SAC either alone or in-combination with other plans and projects.

5.185 All other European sites have a ZOI that extends into at least one site allocation as shown in **Table 5.4**.

Table 5.4: Site allocations which fall within European Sites ZOI

European Site	Site allocation
Avon Valley SPA and Ramsar	■ Policy 26: Land North of Downton Road ■ Policy 27: Land south of Harnham ■ Policy 28: Land west of Coombe Road, Harnham, Salisbury
Bath and Bradford on Avon Bats SAC	■ Policy 7: Land South of Chippenham and East of Showell Farm ■ Policy 13: Land south of Dicketts Road, Corsham ■ Policy 53: Land North of Trowbridge ■ Policy 55: Land at Innox Mills, Trowbridge ■ Policy 61: Land to the west of Mane Way ■ Policy 62: Land at Bratton Road, Westbury
Mells Valley SAC	■ Policy 53: Land north of Trowbridge ■ Policy 55: Innox Mills, Trowbirdge ■ Policy 62: Land at Bratton Road, Westbury ■ Policy 61: Land to the west of Mane Way
The New Forest SAC, SPA and Ramsar	■ Policy 24: Land at Netherhampton Road Garden Centre, Salisbury ■ Policy 27: Land south of Harnham ■ Policy 28: Land west of Coombe Road, Harnham, Salisbury ■ Policy 26: Land north of Downton Road, Salisbury ■ Policy 33: The Maltings and Central Car Park ■ Policy 30: Land East of Church Road, Laverstock
River Avon SAC	■ Policy 41: Land at Bulbridge Estate, Wilton ■ Policy 46: Land off Barton Dene ■ Policy 45: Land at Chopping Knife Lane, Marlborough ■ Policy 15: Land at the Devizes Wharf, Assize Court and Wadworth Brewery, Devizes ■ Policy 40: Land south east of Empress Way, Ludgershall ■ Policy 23: Land north-east of Old Sarum, Salisbury ■ Policy 25: Land north of the Beehive Park and Ride, Old Sarum, Salisbury

European Site	Site allocation
	■ Policy 30: Land East of Church Road, Laverstock ■ Policy 33: The Maltings and Central Car Park ■ Policy 26: Land North of Downton Road ■ Policy 27: Land south of Harnham ■ Policy 28: Land west of Coombe Road, Harnham, Salisbury ■ Policy 24: Land at Netherhampton Road Garden Centre, Salisbury ■ Policy 53: Land north of Trowbridge ■ Policy 55: Innox Mills, Trowbridge ■ Policy 62: Land at Bratton Road, Westbury ■ Policy 61: Land to the west of Mane Way, Westbury
Salisbury Plain SAC	■ Policy 62: Land at Bratton Road, Westbury ■ Policy 61: Land to the west of Mane Way ■ Policy 40: Land south east of Empress Way, Ludgershall
Salisbury Plain SPA	■ Policy 62: Land at Bratton Road, Westbury ■ Policy 61: Land to the west of Mane Way, Westbury ■ Policy 40: Land south east of Empress Way, Ludgershall

Therefore, the following European sites have been screened in for assessment at the appropriate assessment stage in relation to recreational pressure:

- Avon Valley SPA and Ramsar;
- Bath and Bradford on Avon Bats SAC;
- Mells Valley SAC;
- North Meadow and Clattinger Farm SAC;
- The New Forest SAC SPA and Ramsar;
- River Avon SAC; and
- Salisbury Plain SAC and SPA.

Water quantity

5.186 An increase in demand for water abstraction resulting from the growth proposed in the plan could result in changes in hydrology at European sites. Depending on the qualifying features and particular vulnerabilities of the European sites, this could result in likely significant effects, for example, due to changes in environmental or biotic conditions, water chemistry and the extend and distribution of preferred habitat conditions.

5.187 The following sites have qualifying features that have potential to be sensitive to changes in water quantity:

- Avon Valley SPA and Ramsar;
- Dorset Heaths SAC and Ramsar;
- Emer Bog SAC;
- Fontmell and Melbury Downs SAC;
- Great Yews SAC;
- Kennet and Lambourn Floodplain SAC;
- Kennet Valley Alderwoods SAC;
- North Meadow & Clattinger Farm SAC;
- Pewsey Downs SAC;
- Prescombe Down SAC;
- River Avon SAC;
- River Lambourn SAC;
- Salisbury Plain SAC and SPA;
- Solent and Southampton Water SPA and Ramsar;
- Solent Maritime SAC;
- Severn Estuary SAC, SPA and Ramsar;
- Somerset Levels and Moors SPA and Ramsar; and
- The New Forest SAC, SPA and Ramsar.

5.188 All other European sites were screened out as their qualifying features are not considered sensitive to changes in water quantity.

5.189 European sites with the potential to be affected by changes in water quantity are likely to be sites that lie within the Wiltshire boundary or those that are hydrologically connected to the Wiltshire boundary and therefore potentially effected by areas of development to be set out within the Local Plan Review.

5.190 Of the European sites susceptible to changes in water quantity, hydrological connections to Wiltshire boundary couldn't be ruled out for the following sites:

- Avon Valley SPA and Ramsar;
- Emer Bog SAC;
- Kennet and Lambourn Floodplain SAC;
- River Lambourn SAC;
- Kennet Valley Alderwoods SAC;
- North Meadow & Clattinger Farm SAC;
- River Avon SAC;
- Salisbury Plain SAC and SPA;
- Severn Estuary SAC, SPA and Ramsar;
- Solent and Southampton Water SPA and Ramsar;
- Solent Maritime SAC;
- Somerset Levels and Moors SPA and Ramsar; and
- The New Forest SAC, SPA and Ramsar.

5.191 Due to the lack of hydrological connectivity between the following European sites and the site allocations, the following sites were screened out of further assessment:

- Dorset Heath SAC and Ramsar;
- Fontmell and Melbury Downs SAC;
- Great Yews SAC;
- Pewsey Downs SAC;
- Porton Down SAC; and
- Prescombe Down SAC.

Water Resource Management Plans

5.192 Proposed development within the Local Plan could contribute to the need to abstract additional water from the reservoirs or groundwater. A large part of Wiltshire falls within the Wessex Water supply area, with smaller parts supplied by Thames and Southern Water.

5.193 Wessex Water's Water Resource Management Plan[59] (WRMP) final planning scenario consists of demand management schemes (e.g. metering and water efficiency measures). These will not result in any new development or water abstraction, and will be largely implemented within urban areas. The HRA[60] of the WRMP concluded that, the plan is not likely to have a significant effect, alone or in combination, on the integrity of any European sites.

5.194 The WRMP identifies existing and proposed water abstraction sources. The following European sites are subject to abstraction at various sources:

- River Avon SAC
- Avon Valley SPA and Ramsar

5.195 No additional European sites are proposed as new abstraction sources between 2020 – 2025.

5.196 Therefore, there is potential for development proposed as part of the Local Plan to result in changes in water quantity of River Avon SAC and Avon Valley SPA either alone or in-combination with other plans and projects.

Kennet and Lambourn Floodplain SAC

5.197 In addition to this and following consultation with the Environment Agency[61] and Thames Water, it is understood that there is concern relating to increased abstraction within the River Kennet catchment, which lies upstream of the Kennet and Lambourn Floodplain SAC. Therefore, in line with a precautionary approach impacts from water quantity to this European site was considered further at the Appropriate Assessment.

Therefore, the following European sites have been screened in for assessment at the appropriate assessment stage in relation to changes in water quantity:

- Avon Valley SPA and Ramsar;
- River Avon SAC; and
- Kennet and Lambourn Floodplain SAC.

Water Quality

5.198 The sites identified within the water quantity section are also sensitive in changes in water quality (see **para 5.186**).

5.199 All other European sites were screened out as their qualifying features are not considered sensitive to changes in water quality.

5.200 European sites with the potential to be affected by changes in water quality are likely to be sites that lie within the Wiltshire boundary or those that are hydrologically connected to the Wiltshire boundary and therefore potentially effected by areas of development to be set out within the Local Plan Review.

5.201 Natural England have also identified sites in unfavourable condition due to excessive nutrients, which require nutrient neutrality as mitigation[62] and are therefore sensitive to changes in water quality resulting from proposed development within the local plan.

[59] Wessex Water (2019) Final water resources management Plan: https://www.wessexwater.co.uk/environment/water-resources/management-plan
[60] Ricardo (2017) Wessex Water: Draft Water Resources Management Plan (dWRMP) 2019– Habitats Regulation Assessment, Stage 1 Screening
[61] Environment Agency – Letter dated 24/03/23 was provided in relation to *Potential Site Allocations - Marlborough*
[62] Natural England Water Quality and Nutrient Neutrality Advice. Table 1, Annex C: Existing sites in unfavourable condition due to excessive nutrients which

5.202 Of the European sites susceptible to changes in water quality, the following were within or considered to be hydrologically connected to the Wiltshire boundary and identified as requiring nutrient neutrality:

- River Avon SAC;
- Solent and Southampton Water SPA and Ramsar;
- Solent Maritime SAC;
- Solent and Isle of Wight Lagoons SAC;
- Solent and Dorset Coast SPA;
- Portsmouth Harbour SPA and Ramsar; and
- Chichester and Langstone Harbours SPA and Ramsar.

5.203 Although River Lambourn SAC is within Wiltshire, this is only a very small area and no housing is proposed in locations with hydrological connectivity, and so it has been screened out.

5.204 A small section of the water catchment areas for the Somerset Levels and Moors SPA and Ramsar was located in the north-east of Wiltshire. However, no development was proposed and as such was screened out from further assessment.

Kennet and Lambourn Floodplain SAC

5.205 In addition to the above and following consultation with the Environment Agency[63] and Thames Water in March 2023, it is understood that there is concern relating to the water quality of the Kennet and Lambourn Floodplain SAC as a result of proposed development located in and around Marlborough. This is supported by correspondence with the Environment Agency dated 24th March 2023, which stated: "*We have concerns about the proposed growth around Marlborough in terms of future water quality. Marlborough sewage treatment works (STW) is directly upstream of the Kennet SSSI/SAC. The STW has a high spilling record, and we are unsure of headroom capacity for further development.*" Therefore, in line with a precautionary approach, impacts from water quality to this European site was considered further at the Appropriate Assessment.

River Itchen SAC

5.206 It is understood that there is uncertainty in relation to water resource provision in the Southern Water supply area and as a result the impacts of abstraction and drought on the River Itchen SAC. Following changes to the Southern Water Abstraction licences by Environment Agency to protect the River Itchen SAC, compensation and mitigation packages have been agreed between the Environment Agency, Natural England and Southern Water. It is understood that this may lead to the provision of compensation measures being identified and delivered by Southern Water in order to enact a drought order. It is understood that locations for compensatory habitat could be along the River Test, River Meon or Dorset River Stour. These will be identified and confirmed by Southern Water in due course. It should be noted that any compensatory measures will be subject to the same level of protection as the River Itchen SAC.

5.207 A small area of Wiltshire is located within the Test catchment and therefore the provision of development in this catchment area has the potential to result in increases in nutrient levels, specifically phosphorous, and therefore may result in a likely significant effect on the River Itchen SAC, once compensatory habitat has been formally identified and secured by Southern Water. A review of site allocations identified one allocation known as Policy 41: Land at Empress Way, Ludgershall within the catchment of the River Test. In line with a precautionary approach, this HRA has therefore considered the impacts relating to water quality on the River Itchen SAC in further detail at the Appropriate Assessment.

5.208 Due to the lack of hydrological connectivity between the following European sites and the Wiltshire boundary or site allocations, and/or them not having development proposed within their catchment areas, the following sites were screened out of further assessment:

- Avon Valley SPA and Ramsar;
- Dorset Heaths SAC and Ramsar;
- Emer Bog SAC;
- Fontmell and Melbury Downs SAC;
- Great Yews SAC;
- Kennet Valley Alderwoods SAC;
- North Meadow & Clattinger Farm SAC;
- Pewsey Downs SAC;
- Porton Down SAC;
- Prescombe Down SAC;
- River Lambourn SAC;
- Salisbury Plain SAC and SPA;
- Severn Estuary SAC, SPA and Ramsar; and
- The New Forest SAC, SPA and Ramsar.

Therefore, the following European sites have been screened in for assessment at the appropriate assessment stage in relation to changes in water quality:

require a Habitats Regulations Assessment (HRA) and where nutrient neutrality is being deployed as mitigation. 16th March 2022 Issue 1 Final

[63] Environment Agency – Letter dated 24/03/23 was provided in relation to *Potential Site Allocations - Marlborough*

- River Avon SAC;
- Solent and Southampton Water SPA and Ramsar;
- Solent Maritime SAC;
- Solent and Isle of Wight Lagoons SAC;
- Solent and Dorset Coast SPA;
- Portsmouth Harbour SPA and Ramsar;
- Chichester and Langstone Harbours SPA and Ramsar;
- Kennet and Lambourn Floodplain SAC; and
- River Itchen SAC.

Summary of screening assumptions

5.209 Table 5.5 summarises, the outcome of the screening assessment and which European sites require further assessment at the appropriate assessment stage in relation to each broad impact type.

Table 5.5: Summary of screening assumptions

European site	Physical damage/loss of habitat	Non-physical disturbance	Non-toxic contamination	Air pollution	Impacts of recreation	Water quantity	Water quality
Avon Valley Ramsar	No LSE	No LSE	No LSE	No LSE	Potential LSE	Potential LSE	No LSE
Avon Valley SPA	No LSE	No LSE	No LSE	No LSE	Potential LSE	Potential LSE	No LSE
Bath and Bradford on Avon Bats SAC	Potential LSE^	Potential LSE^	No LSE	No LSE	Potential LSE	No LSE	No LSE
Chichester and Langstone Harbours SPA	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	Potential LSE
Chichester and Langstone Harbours Ramsar	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	Potential LSE
Chilmark Quarries SAC	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE
Cotswolds Beechwoods SAC	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE
Dorset Heathlands Ramsar	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE
Dorset Heaths SAC	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE
Emer Bog SAC	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE
Fontmell and Melbury Downs SAC	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE

European site	Physical damage/loss of habitat	Non-physical disturbance	Non-toxic contamination	Air pollution	Impacts of recreation	Water quantity	Water quality
Great Yews SAC	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE
Hackpen Hill SAC	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE
Kennet and Lambourn Floodplain SAC	No LSE	No LSE	No LSE	No LSE	No LSE	Potential LSE	Potential LSE
Kennet Valley Alderwoods SAC	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE
Mells Valley SAC	No LSE	No LSE	No LSE	No LSE	Potential LSE	No LSE	No LSE
Mendip Woodlands SAC	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE
Mottisfont Bats SAC	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE
North Meadow & Clattinger Farm SAC	No LSE	No LSE	No LSE	No LSE	Potential LSE	No LSE	No LSE
Pewsey Downs SAC	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE
Porton Down SPA	No LSE	No LSE	No LSE	Potential LSE	No LSE	No LSE	No LSE
Portsmouth Harbour SPA	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	Potential LSE
Portsmouth Harbour Ramsar	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	Potential LSE
Prescombe Down SAC	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE
River Avon SAC	Potential LSE*	Potential LSE*	Potential LSE*	Potential LSE	Potential LSE	Potential LSE	Potential LSE
River Itchen SAC	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	Potential LSE
River Lambourn SAC	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE
Rodborough Common SAC	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE

European site	Physical damage/loss of habitat	Non-physical disturbance	Non-toxic contamination	Air pollution	Impacts of recreation	Water quantity	Water quality
Salisbury Plain SAC	No LSE	No LSE	No LSE	Potential LSE	Potential LSE	No LSE	No LSE
Salisbury Plain SPA	Potential LSE^	No LSE	No LSE	Potential LSE	Potential LSE	No LSE	No LSE
Severn Estuary SAC	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE
Severn Estuary SPA	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE
Severn Estuary Ramsar	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE
Solent and Dorset Coast SPA	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	Potential LSE
Solent and Isle of Wight Lagoons SAC	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	Potential LSE
Solent and Southampton Water SPA	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	Potential LSE
Solent and Southampton Water Ramsar	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	Potential LSE
Solent Maritime SAC	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	Potential LSE
Somerset Levels and Moors SPA	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE
Somerset Levels and Moors Ramsar	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE
The New Forest Ramsar	No LSE	No LSE	No LSE	No LSE	Potential LSE	No LSE	No LSE
The New Forest SAC	No LSE	No LSE	No LSE	No LSE	Potential LSE	No LSE	No LSE
The New Forest SPA	No LSE	No LSE	No LSE	No LSE	Potential LSE	No LSE	No LSE

*Including functionally linked habitat

^Including functionally linked habitat only

Chapter 6
Appropriate Assessment

6.1 Following the screening stage, the plan-making authority is required under Regulation 105 of the Habitats Regulations 2017 (as amended) to make an 'Appropriate Assessment' of the implications of the plan for European sites, in view of their conservation objectives.

6.2 European Commission Guidance[64] states that the Appropriate Assessment should consider the impacts of the plan (either alone or in combination with other projects or plans) on the integrity of European sites with respect to their conservation objectives and to their structure and function.

6.3 This stage seeks to determine whether implementation of the Local Plan will result in an adverse effect on the integrity of the whole European site in question (many European sites are made up of a number of fragments of habitat). It also considers the potential for in-combination effects from development proposed in neighbouring authorities' Local Plans or from major infrastructure projects. Consideration was given to mitigation measures that may be included in the Local Plan to reduce the likelihood and significance of effects on European sites.

6.4 A European site's integrity depends on it being able to sustain its 'qualifying features' (i.e. those Annex 1 habitats, Annex II species, and Annex 1 bird populations for which it has been designated) and to ensure their continued viability. A high degree of integrity is considered to exist where the potential to meet a European site's conservation objectives is realised and where the European site is capable of self-repair and renewal with a minimum of external management support.

6.5 Likely significant effects arising from the plan, either alone or in-combination, were identified for the following sites and impact types:

- **Physical damage and loss** – in relation to the Bath and Bradford on Avon Bats SAC (offsite only), the Salisbury Plain SPA (offsite only) and the River Avon SAC (on and offsite).
- **Non-physical disturbance** – in relation to the River Avon SAC (on and offsite) and the Bath and Bradford on Avon Bats SAC (offsite only).
- **Non-toxic contamination** – in relation to the River Avon SAC (on and offsite).

[64] Assessment of plans and projects significantly affecting European sites. Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC. European Commission Environment DG, November 2001.

- **Air quality** – in relation to the River Avon SAC, Salisbury Plain SAC and SPA, and Porton Down SPA.
- **Impacts of recreation** – in relation to the Avon Valley SPA and Ramsar, the Bath and Bradford on Avon Bats SAC, the Mells Valley SAC, the River Avon SAC, the Salisbury Plain SAC, the Salisbury Plain SPA, the New Forest SPA SAC and Ramsar and the North Meadow and Clattinger Farm SAC.
- **Water quantity –** in relation to the Avon Valley SPA and Ramsar, the River Avon SAC and the Kennet and Lambourn Floodplain SAC.
- **Water quality** – in relation to the River Avon SAC, the Kennet and Lambourn Floodplain SAC, the River Itchen SAC and the Solent (including the Solent Maritime SAC, the Solent and Isle of Wight Lagoons SAC, the Solent and Southampton Water SPA and Ramsar site, the Solent, Dorset Coast SPA, the Portsmouth Harbour SPA and Ramsar site and the Chichester and Langstone Harbours SPA and Ramsar site).

6.6 Appropriate Assessment has been undertaken for these European sites to determine whether the plan will result in Adverse Effects on Integrity.

6.7 The Appropriate Assessment focuses on those impacts that are judged likely to have a significant effect on the qualifying features of a European site, or where insufficient certainty regarding this remained at the screening stage. As described in **Chapter 1**, a conclusion needs to be reached as to whether or not a policy or site allocation in the plan would adversely affect the integrity of a European site. To reach a conclusion, consideration was given to whether the predicted impacts of the proposals (either alone or in combination) have the potential to:

- Delay the achievement of conservation objectives for the site;
- Interrupt progress towards the achievement of conservation objectives for the site;
- Disrupt factors that help to maintain the favourable conditions of the site; and
- Interfere with the balance, distribution and density of key specie that are the indicators of the favourable condition of the site.

6.8 The conservation objectives for the above European sites are to ensure that the integrity of the site is maintained or restored as appropriate, and to ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring:

- The extent and distribution of qualifying natural habitats;
- The structure and function (including typical species) of qualifying natural habitats;
- The supporting processes on which qualifying natural habitats rely;
- The structure and function of the habitats of qualifying species;
- The populations of qualifying species; and
- The distribution of qualifying species within the site.

Physical damage and loss - onsite

River Avon SAC

6.9 The plan proposes development within the site boundary of the SAC. Proposed allocations with potential to result in a likely significant effect as a result of physical damage and loss identified in the screening assessment was Policy 33: The Maltings and Central Car Park.

6.10 A review of this proposed site allocation found habitats present within the site boundary include two sections of the River Avon SAC within the site allocation (0.6% of the River Avon SAC) as well as a section bordering the eastern boundary, car parks, buildings, tree lines, scattered trees and grassland.

6.11 The proposed site does not support any suitable habitat for Desmoulin's whorl snail given the highly urbanised habitats bordering the sections of the River Avon SAC. Qualifying fish species of the River Avon SAC will likely be using the sections of the river within the site allocation and therefore may be impacted by the proposed development should sections of the river be lost.

Mitigation

6.12 To provide certainty that physical damage and loss will not adversely affect the integrity of the River Avon SAC, the following measures outlined in the Local Plan Review will need to be adhered to and implemented successfully. This will require site-specific assessments to be undertaken at the project-level.

6.13 Policies detailed within the plan will provide safeguards and mitigation measures from physical damage and loss of habitats. Specifically, Policy 88: Biodiversity and Geodiversity states:

> "Development proposals will need to clearly demonstrate how the mitigation hierarchy has been sequentially applied.
>
> Development proposals must demonstrate how they protect features of nature conservation value, both terrestrial and aquatic, and geological value as part of the design rationale. There is an expectation that such features shall be retained, sufficiently buffered, and managed favourably to maintain their ecological value, connectivity and functionality in perpetuity. Furthermore,

development proposals must secure and implement measures, including appropriate compensatory measures where necessary, to ensure no net loss of biodiversity and the local biodiversity resource, and to secure the integrity of local ecological networks and provision of ecosystem services.

All development proposals shall incorporate appropriate measures to avoid and reduce disturbance of sensitive wildlife species and habitats throughout the lifetime of the development.

Any development potentially affecting a UK National Site Network site must provide avoidance measures in accordance with the strategic plans or guidance where possible, otherwise bespoke measures must be provided to demonstrate that the proposals would have no adverse effect upon the UK National Site Network. Any development that would have an adverse effect on the integrity of a European nature conservation site and where the impacts cannot be satisfactorily mitigated, will not be supported."

6.14 In addition, supporting text for this policy outlines the requirement for:

"The Hampshire Avon is an internationally important chalk river which has been designated as a Special Area of Conservation (SAC) for its sensitive habitats and species. Development within the catchment has the potential to have a detrimental effect upon its qualifying features. Most of these impacts can be avoided or mitigated through measure such as buffer zones, access management, habitat management and construction method statements.""It is important for all watercourses, not just main rivers and ordinary watercourses, that development demonstrates how adverse impacts are to be avoided. It is anticipated that most development proposals within 20m of a watercourse should be accompanied by a Construction Environment Management Plan."

Conclusion

6.15 Provided that the above policy mitigation is implemented successfully, adverse effects on the integrity of the River Avon SAC, as a result of impacts from physical habitat damage and loss will be avoided.

Physical damage and loss – functionally linked land (offsite)

River Avon SAC

6.16 The plan proposes development in areas where qualifying SAC species, including Desmoulin's whorl snail may make used of offsite habitat. Proposed allocations with potential to result in likely significant effect as a result of physical damage and loss were identified in the screening assessment and included:

- Policy 26: Land North of Downton Road; and
- Policy 30: Land east of Church Road, Laverstock

6.17 A desk-based review was undertaken to identify the potential impacts from these proposed allocations on offsite habitat used by Desmoulin's whorl snail. This included the following components to inform the assessment:

- A review of data sources, including aerial imagery and Magic Map Application to identify the main habitat types and land use within each site allocation and establish their potential value for this qualifying species.
- Recognition of factors likely to affect suitability of allocations for these species, including presence of permanently wet, usually calcareous, swamps, fens and marshes, bordering rivers, lakes and ponds, or in river floodplains, which Desmoulin's whorl snail relies on.
- Consideration of the site's location within the landscape. For example, whether there is direct functional connectivity between the site allocation and the European site.

Habitat Preferences - Desmoulin's whorl snail

6.18 Desmoulin's whorl snail are found in permanently wet, usually calcareous, swamps, fens and marshes, bordering rivers, lakes and ponds, or in river floodplains.

6.19 As detailed in the Screening Assessment, this species was identified to travel within 500m of the European site's boundaries, given the sedentary nature of the species and niche habitat requirements.

6.20 Two site allocations were identified within 500m of the SAC and its tributaries and as such have been subject to further, more detailed assessment to determine the suitability of these sites for this qualifying species. The findings of this assessment are presented below.

- **Policy 26: Land North of Downton Road**
  - This site allocation consists of two arable fields. It is bordered to the north by lowland fen and the River Avon SAC. The habitats on site are not suitable for Desmoulin's whorl snail so it is unlikely this policy will result in an adverse effect on integrity of this site. However, given the suitability of the adjacent fen habitat, mitigation measures are considered below to avoid any impact from the proposed development.
- **Policy 30: Land east of Church Road**
  - This site allocation consists of two arable fields. It is separated from the River Bourne (a tributary of River

Avon SAC) by Church Road. The habitat on site is not suitable for this species and therefore no adverse effect on integrity can be concluded in relation to this site.

Mitigation

6.21 To provide certainty that the impact from proposed development on offsite functional habitat is considered to be small-scale and unlikely to result in a significant adverse effect on the integrity to the SAC. However, to provide certainty that the loss of offsite functional habitat will not adversely affect the integrity of the River Avon SAC, the following safeguard measures will be required to be implemented at project level:

- As outlined above, Policy 88: Biodiversity and Geodiversity will provide protection measures to European sites, including River Avon SAC. This will require development to demonstrate that the mitigation hierarchy has been applied, that features of nature conservation value are retained, sufficiently buffered and managed favourably, and where development potential affects a UK National Site Network Site that avoidance measures must be provided. For the latter, where development would have an adverse effect on integrity and where impacts cannot be satisfactorily mitigated for then the development proposals would not be supported.

  In addition, Policy 88 supporting text also stipulates that most development proposals within 20m of a watercourse should be accompanied by a Construction Environment Management Plan to ensure that adjacent sensitive habitats, including the River Avon SAC, are protected.

- Policy 93: Green and Blue Infrastructure outlines how development will make provision for the retention and enhancement of Wiltshire's green and blue infrastructure network. This provides further support for the retention and enhancement of the river network, which the River Avon SAC forms part of.

Conclusion

6.22 Provided that the above policy mitigation is implemented successfully, adverse effects on the integrity of the River Avon SAC, as a result of impacts from physical habitat damage and loss of functionally linked habitat will be avoided.

Bath and Bradford on Avon Bats SAC

6.23 The plan proposes development in areas where qualifying SAC bat species may make use of offsite habitat for foraging, commuting and roosting. Proposed allocations with potential to result in a likely significant effect as a result of physical damage and loss were identified in the screening assessment and included:

- Policy 7: Land South of Chippenham and East of Showell Farm;
- Policy 13: Land south of Dicketts Road, Corsham;
- Policy 53: Land North of Trowbridge;
- Policy 55: Land at Innox Mills, Trowbridge
- Policy 61: Land West of Mane Way, Westbury
- Policy 62: Land at Bratton Road, Westbury

6.24 A desk-based review was undertaken to identify the potential impacts from this proposed allocation on offsite habitat used by greater horseshoe bat *Rhinolophus ferrumequinum*, Bechstein's bat *Myotis bechsteinii*, and lesser horseshoe bat *Rhinolophus hipposideros*. This included the following components to inform the assessment:

- A review of data sources, including aerial imagery and Magic Map Application to identify the main habitat types and land use within each site allocation and establish their potential value for this qualifying species.
- Recognition of factors likely to affect suitability of allocations for these species, including presence of woodland, pasture, hedgerows and wetland.
- Consideration of the site's location within the landscape. For example, whether there is direct functional connectivity between the site allocation and the European site.

Bat habitat preferences

6.25 Greater horseshoe, Bechstein's and lesser horseshoe bats use pasture, woodland, hedgerow and wetland habitats. Bechstein's bats are particularly reliant on ancient woodland habitat for roosting and foraging and as such is particularly vulnerable to impacts from habitat loss and fragmentation.

6.26 As detailed in the Screening Assessment, these species were identified to travel within a Core Sustenance Zone (CSZ) of 4km. This CSZ was determined by an extensive literature review and refers to the area surrounding a bat roost within which habitat availability and quality will have a significant influence on the resilience and conservation of the bat colony using the roost.

6.27 One site allocation (Policy 13: Land south of Dicketts Road, Corsham) was identified which falls within the CSZ (4km) of the Bath and Bradford on Avon Bats SAC and as such has been subject to further, more detailed assessment to determine the suitability of this site for these qualifying species. The findings of this assessment are presented below.

- **Policy 7: Land South of Chippenham and East of Showell Farm**
  - Habitats within the site allocation consisted of arable and pasture with a network of hedgerows. A number

of farm buildings were noted, and small blocks of woodland were recorded, including in the north of the site allocation and in the south near to the watercourse, which intersected the two sections of the site allocation. Hedgerow, pasture, woodland and watercourses may be used by greater horseshoe, lesser horseshoe bats and Bechstein's bats.

- **Policy 13: Land south of Dicketts Road, Corsham**
  - Habitats within this site allocation consist of pasture and hedgerows with a pocket of scattered trees. Hedgerows, pasture and scattered trees may be used by greater horseshoe and lesser horseshoe bats, however the site is bordered to the north by the urbanised area of Corsham which limits its suitability. The site is not considered of importance for Bechstein's bat due to the absence of woodland.
  - The site is connected to larger areas of farmland in the wider landscape to the south. Given the presence of suitable habitat, there is potential for this habitat to be used by lesser horseshoe and greater horseshoe for foraging purposes, although given the size of the site in relation to surrounding suitable habitat and proximity to residential developments, it is unlikely to be a key foraging habitat.

6.28 In addition, Policy 53: Land North of Trowbridge was identified within core areas identified in the TBMS (**see para 5.20**). The latter considered these sites to be of medium risk, which represents the areas where habitat has been shown to be of importance, or is highly likely to be of importance, for Bechstein's, greater horseshoe and / or lesser horseshoe bat.

6.29 Policy 55: Land at Innox Mills, Trowbridge was identified were within the 4km buffer zone for greater horseshoe bats and 2km buffer for lesser horseshoe bats in the Bat SAC Planning Guidance document. Policy 62: Land at Bratton Road, Westbury and Policy 61: Land West of Mane Way, Westbury were identified within the buffer zone for greater horseshoe only.

6.30 The TBMS outlines that impacts in the yellow zone as identified by the strategy would arise from individual sites alone and in-combination with other development as a result of loss and/or damage of habitats of importance, including:

- Buildings;
- Grassland;
- Hedgerows;
- Trees;
- Scrub;
- Waterbodies;
- Riparian Corridors; and
- Availability/access to roosts.

6.31 Further, more detailed assessment was carried out to determine the suitability of these sites for these qualifying species. The findings of this assessment are presented below.

- Policy 13: Land south of Dicketts Road, Corsham
  - Habitats within the site allocation consist of arable and pasture with a network of hedgerows and scattered trees. Buildings were present in the north of the site.
- Policy 53: Land north of Trowbridge
  - Habitats within the site allocation consist of arable and pasture with a network of hedgerows and broadleaved scattered trees. Buildings were noted in the north.
- Policy 62: Land at Bratton Road, Westbury
  - Habitats within the site allocation consist of arable and pasture with a network of hedgerows.
- Policy 55: Land at Innox Mills, Trowbridge
  - Habitats within the site allocation consist of disused hard standing and buildings with scattered scrub and scattered trees.
- Policy 61: Land West Mane Way, Westbury
  - Habitats within the site allocation consist of arable and pasture with a network of hedgerows, tree lines and scattered trees. A pond was noted in the east and a small area of woodland in the north east.

Mitigation

6.32 To provide certainty that physical damage and loss of functionally linked land will not adversely affect the integrity of the Bath and Bradford on Avon Bats SAC, the following measures outlined in the Local Plan Review will need to be adhered to and implemented successfully. This will require site-specific assessments to be undertaken at the project-level.

6.33 Specific mitigation includes:

- Bat surveys will be required for any development coming forward within 4km of the Bath and Bradford on Avon Bats SAC and/or within core areas identified in the Trowbridge Bat Mitigation Strategy, Corsham Batscape Strategy, Wiltshire Bat SAC Planning Guidance document and Wiltshire Planning Explorer to determine the individual and cumulative importance of the habitats for these species and inform mitigation proposals.
- A commitment to mitigation is required within the plan dependent on the findings of bat surveys. If required,

mitigation will need to ensure the protection of key bat habitat and creation and enhancement of habitats suitable for these species.

6.34 Policies detailed within the plan will provide safeguards and mitigation measures from physical damage and loss of habitats. This includes mitigation provided as part of Policy 88: Biodiversity and Geodiversity, which provides overarching requirements for development proposals to demonstrate the application of mitigation hierarch and that no adverse effects will occur as a result of development. Further to this, Policy 88 provides reference to Wiltshire Bats SAC Planning Guidance and Trowbridge Bat Mitigation Strategy SPD. All development that comes forward as part of the Local Plan Review must demonstrate that they accord with these strategies and guidance documents.

6.35 In addition, mitigation will be provided through Policy 90: Woodland, Hedgerows and Trees and Policy 93: Green and Blue Infrastructure, which outline the requirements to retain and enhance the integrity, quantity, quality and connectivity of existing green and blue infrastructure, including for woodlands, hedgerows and trees, which are a key habitat features for bats of the SAC. Policy 86: Renewable Energy also outlined mitigation for defined SAC bat sustenance zones.

6.36 Further to this, site specific policies provide mitigation for bats of the SAC. This includes policies:

- Policy 13: Land South of Dicketts Road, Corsham;
- Policy 14: Devizes Market Town;
- Policy 52: Trowbridge Principal Settlement;
- Policy 53: Land North of Trowbridge; and
- Policy 55: Land at Innox Mills, Trowbridge.

6.37 Key mitigation for site specific policies included requirement for habitat creation throughout the site layout to provide connectivity to adjacent and nearby habitats to support qualifying bat species, the protection and enhancement of core bat habitat that is informed by appropriate surveys, assessments and provision of appropriate mitigation, including financial contributions towards management, monitoring and any offsite measures. This will be informed by the Corsham Batscape Strategy and Trowbridge Bat Mitigation Strategy.

6.38 Additional mitigation is also provided in relation to Policy 7: Land South of Chippenham and East of Showell Farm, which provides detail on specific measures, including ensuring connectivity to adjacent and nearby habitats, enhancement of retained habitat features and provision of wet woodland planting.

Conclusion

6.39 Provided that the above policy mitigation is implemented successfully, adverse effects on the integrity of the Bath and Bradford on Avon Bats SAC, as a result of impacts from physical habitat damage and loss at functionally linked habitat will be avoided.

Salisbury Plain SPA

6.40 The plan proposes development in areas where qualifying SPA bird species may make use of offsite habitat for foraging, roosting and loafing. Proposed allocations with potential to result in a likely significant effect as a result of physical damage and loss identified in the screening assessment was Policy 62: Land at Bratton Road, Westbury.

6.41 A desk-based study was undertaken to identify potential impacts from proposed allocations on offsite habitat used by the qualifying bird species. The desk-based study relied on a sequential approach, whereby if a site's suitability for qualifying bird species was considered negligible or low for a specific reason (e.g. distance or habitat type) no further investigations for that allocation were carried out. If, following the initial review of distance and habitat, a site's potential suitability for qualifying bird species could not be ruled out, a more detailed assessment including mapping of existing relevant bird records may be required. The initial desk study included the following components to inform the assessment:

- Identification of the qualifying bird species which are susceptible to the loss of the habitat types affected and ruling out those species unlikely to utilise the habitat types located within the site allocations (e.g. species restricted to marine habitats).
- A review of aerial imagery and Magic Map Application to identify main habitat types and land use within each site allocation and establish their potential value for qualifying birds.
- Recognition of factors likely to affect suitability of allocations for bird species, including openness, size, shape, proximity of negative factors such as tall boundary features and urban environs, and potential existing source of disturbance.
- Consideration of the site's location within the landscape. For example, is there direct functional connectivity along flight lines between the allocation and the European sites? Are there landscape scale features which would reduce the suitability of the allocation, e.g. urban areas located along flight lines?
- A review of the site's location within flood risk zones, because many of the SPA bird species favour sites which do or do not flood.

Bird Habitat Preferences

6.42 Bird habitat preferences were cross referenced against the habitat types present within each allocation to determine the suitability of site allocations for qualifying species. Known habitat preferences are summarised in **Table 6.1** below, which were taken from the RSPB and British Trust for Ornithology websites. **Table 6.1** also assessed whether each bird species is susceptible to the loss of habitats located within the site allocations.

Table 6.1: Typical Habitat Preferences of Qualifying Bird Species of Salisbury Plain SPA

Bird Species	Season	Species Habitat Preferences (relative to season of designation)	Susceptible to loss of offsite habitat as a result of the plan
Eurasian hobby *Falco subbuteo*	Summer	Eurasian hobbies prefer open countryside such as lowland farmland, heathland and wetland sites for hunting, as well as gravel pits in late summer. Hobbies breed in woodland and trees, often close to flooded gravel pits and other wetland habitats, taking advantage of the large number of dragonflies.	**Yes – this species may use farmland and breeds in woodland.**
Common quail *Coturnix coturnix*	Summer	Farmland birds, they spend most of their time on the floor, hidden in open grassland or arable fields.	**Yes – this species uses pasture and arable fields.**
Stone-curlew *Burhinus oedicnemus*	Summer	The stone-curlew is a bird of dry, open places with bare, stony ground or very short vegetation. They nest on open, bare ground within short, semi-natural grass heath or downland, and on arable fields typically associated with chalky and sandy soils.	**Yes – this species may use arable fields.**
Hen harrier *Circus cyaneus* (non-breeding)	Winter	The hen harrier lives in open areas with low vegetation. In winter, they move to lowland farmland, heath and, coastal marshes, fenland and river valleys.	**Yes – this species may use farmland.**

6.43 The review of habitat types located within the site allocations, in light of individual bird species preferences, identified the following bird species as being potentially susceptible to the loss of offsite habitat associated with site allocations proposed within the Local Plan. This included:

- Eurasian hobby
- Common quail
- Stone-curlew
- Hen harrier

6.44 Following a review of these species' habitat preferences and in line with previous discussions with Natural England with regards to recognised buffer zones within which these species are likely to rely on offsite habitats, a distance of 2km was applied.

Assessment of Site Allocations

6.45 Following the establishment of typical habitat preferences for each species, each site allocation proposed in the plan within 2km of the Salisbury Plain SPA was assessed for its suitability in supporting the qualifying bird species listed above i.e. Eurasian hobby, common quail, stone-curlew and hen harrier. The assessment was based on a number of parameters, as described in **Table 6.2** below. Typically, site allocations displayed varying combinations of the parameters outlined below and findings on suitability for SPA qualifying birds were therefore subject to professional judgement. The findings of the assessment of site allocations are set out in **Table 6.3** in relation to bird species that are qualifying features of the SPA.

Table 6.2: Habitat suitability rating criteria

Suitability for Salisbury Plain SPA Birds	Typical Description
High	Large sites' area of suitable habitat (e.g. lowland farmland, heathland, wetland, woodland) capable of supporting significant numbers of SPA birds; absence of any notable negative factors such as public rights of way (PRoW) and edge features; land parcel functionally linked with wider habitat and directly linked to SPA via green corridor; site may be prone to flooding (although note absence of flooding favoured by common quail and stone-curlew); typically close to SPA.
Moderate	Sites support large areas of functionally linked suitable habitat capable of attracting numbers of SPA birds which by themselves are unlikely to be significant, but which may contribute to supporting significant numbers of birds in-combination with other sites. Likely to be further from SPA, and with presence of some limiting factors.
Low	Smaller or fragmented sites; habitats present may be suitable for supporting low numbers of SPA birds on occasion but limited by negative factors such as size, distance from SPA; absence of sight lines and reductions in 'openness' as a result of edge features such as trees, scrub, and buildings; edge features likely to be close to centre of site; suitability may be compromised by existing recreational use; may be isolated within urban areas.
Negligible	Habitats present are entirely unsuitable for SPA birds, for example existing developed land or small urban infill sites.

Table 6.3: Suitability of allocations for qualifying bird species of Salisbury Plain SPA

Site allocation name	Review of Site Parameters	Assessment of Suitability for SPA Qualifying birds
Housing Allocations		
Policy 62: Land at Bratton Road	Distance from European site: Approximately 1.6km northwest of Salisbury Plain SPA, at the closest point Size: ~17.60ha Habitats Present: Five pastoral fields with hedgerows. The site is bordered by a small pocket of broadleaved woodland in the southeast, a well-used PRoW to the west and further west is the urban area of Westbury. Bratton road borders the south and further arable and pastoral fields border the north and east. Use of Site: Pasture for grazing horses. Potential for disturbance from dog walkers from neighbouring Westbury. In addition, it is understood that there are extensive ground works underway on adjacent land to the east.	Low*
*This assessment is supported by a Wiltshire Council Senior Ecologist who has undertaken a visit of the site in 2023.		

6.46 The desk-based review of site allocations identified that based on a precautionary approach, the site allocation has low potential to support significant numbers of SPA/Ramsar qualifying bird species, either alone or cumulatively with other allocations, and were therefore discounted from further consideration in terms of offsite functional land.

Conclusion

6.47 <u>No adverse effects on the integrity of the Salisbury Plain SPA as a result of offsite damage and loss of habitat are predicted.</u>

Non-physical disturbance

River Avon SAC

6.48 Proposed allocations in the plan identified within 500m of the SAC have potential to result in a likely significant effect on qualifying fish species as a result of disturbance from noise and vibrations and from increased light spill. Site allocations identified in the Screening Assessment were:

- Policy 33: The Maltings and Central Car Park, Salisbury

- Policy 26: Land North of Downton Road, Salisbury

6.49 Due to the proximity of these proposed site allocations to the SAC, appropriate mitigation measures will be required to ensure no adverse effects on integrity.

6.50 In addition to this, there is potential for impacts to occur in relation to offsite functional habitat that qualifying fish species of the SAC rely on. A desk-based review was undertaken to identify any site allocations that lie within 500m of the tributaries of the River Avon SAC. The review identified the following site allocations that lie beyond 500m of the SAC but is located within 500m of a tributary:

- Policy 30: Land east of Church Road, Laverstock

6.51 This additional site allocation will therefore require appropriate mitigation measures as detailed below to ensure no adverse effects on integrity of the SAC.

Mitigation

6.52 To provide certainty that physical damage and loss of functionally linked land will not adversely affect the integrity of the River Avon SAC the following measures outlined in the Local Plan Review will need to be adhered to and implemented successfully. This will require site-specific assessments to be undertaken at the project-level.

6.53 Mitigation and safeguarding measures will be provided within the plan through Policy 88: Biodiversity and Geodiversity, which provides overarching requirements for development proposals to demonstrate the application of mitigation hierarchy and that no adverse effects will occur as a result of development.

6.54 Specifically, the supporting text to Policy 88 states:

> “The Hampshire Avon is an internationally important chalk river which has been designated as a Special Area of Conservation (SAC) for its sensitive habitats and species. Development within the catchment has the potential to have a detrimental effect upon its qualifying features. Most of these impacts can be avoided or mitigated through measure such as buffer zones, access management, habitat management and construction method statements.”

6.55 “It is important for all watercourses, not just main rivers and ordinary watercourses, that development demonstrates how adverse impacts are to be avoided. It is anticipated that most development proposals within 20m of a watercourse should be accompanied by a Construction Environment Management Plan”. Additionally, Policy 92: Conserving and enhancing dark skies specifies:

> "Development proposals must ensure that all opportunities to reduce light pollution are taken."

6.56 Policy 91: Conserving and enhancing Wiltshire's Landscapes provides safeguarding measures by specifying development must be:

> "Be located and designed to prevent erosion of relative tranquillity (light pollution and noise) and intrinsically dark landscapes, and use opportunities to enhance areas in which tranquillity have been eroded."

Conclusion

6.57 Provided that the above mitigation is implemented successfully, adverse effects on the integrity of the River Avon SAC as a result of non-physical disturbance of habitat will be avoided.

Bath and Bradford on Avon Bats SAC

6.58 Proposed allocations in the plan identified within 500m of the SAC or the CSZ zone have potential to result in a likely significant effect on qualifying bat species as a result of disturbance from noise and vibrations and from increased light spill. No site allocations were identified within 500m of the SAC itself, however, there were site allocations identified within 500m of the CSZ and core areas defined by the TBMS, Wiltshire Bat SAC Planning Guidance document and Wiltshire Planning Explorer:

- Policy 7: Land South of Chippenham and East of Showell Farm;
- Policy 13: Land South of Dicketts Road, Corsham;
- Policy 53: Land North of Trowbridge;
- Policy 55: Land at Innox Mills, Trowbridge;
- Policy 61: Land West of Mane Way, Westbury; and
- Policy 62: Land at Bratton Road, Westbury

6.59 No further site allocations are located within 500m of the CSZ or core area of the SAC.

6.60 Due to the proximity of these site allocations to the SAC CSZ and core areas, there is potential for impacts on functionally linked habitat and so appropriate mitigation measures will be required to ensure no adverse effects.

Mitigation

6.61 To provide certainty that physical damage and loss of functionally linked land will not adversely affect the integrity of the Bath and Bradford on Avon Bats SAC, the following measures outlined in the Local Plan Review will need to be adhered to and implemented successfully. This will require site-specific assessments to be undertaken at the project-level.

6.62 Mitigation and safeguarding measures will be provided within the plan through Policy 88: Biodiversity and Geodiversity, which provides overarching requirements for development proposals to demonstrate the application of mitigation hierarchy and that no adverse effects will occur as a result of development. Further to this, the supporting text to Policy 88 provides reference to Wiltshire Bats SAC Planning Guidance and Trowbridge Bat Mitigation Strategy Supplementary Planning Document. All development that comes forward as part of the Local Plan Review must demonstrate that they accord with these strategies and guidance documents.

6.63 Site-specific mitigation will be provided through policies, including:

- Policy 7: Land South of Chippenham and East of Showell Farm
- Policy 13: Land South of Dicketts Road, Corsham;
- Policy 14: Devizes Market Town;
- Policy 52: Trowbridge Principal Settlement;
- Policy 53: Land North of Trowbridge; and
- Policy 55: Land at Innox Mills, Trowbridge.

6.64 Policy 13 states:

> "Habitat creation throughout the site layout to provide connectivity to adjacent or nearby habitats, to support protected bat species and the condition of the Bath and Bradford Bats Special Area of Conservation. Design and layout will be informed by appropriate surveys, impact assessments and the Corsham Batscape Strategy. Appropriate mitigation to protect bats, including financial contributions towards management, monitoring, and any off-site measures as necessary."

6.65 Policy 14 states:

> "connect to green and blue infrastructure and protect and enhance important bat habitats around the town."

6.66 Policy 52 states:

> "Respect the integrity of the Bath and Bradford on Avon Bats Special Area of Conservation (SAC) by protecting and enhancing important bat habitats around the town, as set out in the Trowbridge Bat Mitigation Strategy and any associated strategies"

6.67 Policy 53 state:

> "Core bat habitat will be protected and enhanced. Design and layout, including a dark corridor on the eastern boundary of the site, will be informed by appropriate surveys, impact assessments and Trowbridge Bat Mitigation Strategy (TBMS)"
>
> "Appropriate mitigation to protect bats, including funding contributions towards management, monitoring and any-off site measures as necessary, as informed by the TBMS"

6.68 Policy 55 states:

> "Core bat habitat will be protected and enhanced. Design and layout will be informed by appropriate surveys, impact assessments and the Trowbridge Bat Mitigation Strategy (TBMS) and including funding contributions towards management, monitoring and any-off site measures as necessary, as informed by the TBMS"

Conclusion

6.69 <u>Provided that the above mitigation is implemented successfully, adverse effects on the integrity of the Bath and Bradford on Avon Bats SAC, as a result of non-physical disturbance of habitat will be avoided.</u>

Non-toxic contamination

River Avon SAC

6.70 The River Avon SAC is sensitive to siltation, a type of non-toxic contamination. Excessive sediment supply can lead to the smothering of coarse substrates and the loss of flora and fauna dependent on them, including *Ranunculus* plants, and egg an larval survival in salmon, lampreys and bullhead.

6.71 Proposed allocations in the plan identified within 500m of the SAC have potential to result in likely significant effect on qualifying fish and invertebrate species as a result of non-toxic contamination. Site allocations in the Screening Assessment were:

- Policy 26: Land North of Downton Road
- Policy 33: The Maltings and Central Car Park

6.72 Additionally, there is potential for impacts to occur in relation to offsite functional habitat that qualifying fish species of the SAC rely on. A desk-based review was undertaken to identify any site allocations that lie within 500m of the tributaries of the River Avon SAC. The review identified the following site allocations that lie beyond 500m of the SAC but is located within 500m of a tributary:

- Policy 30: Land east of Church Road, Laverstock

6.73 Due to the proximity of these proposed site allocations to the SAC, appropriate mitigation measures will be required to ensure no adverse effects on integrity.

Mitigation

6.74 Mitigation and safeguarding measures are provided within the plan, including:

- Policy 88: Biodiversity and Geodiversity, which outlines how negative impacts on biodiversity and geodiversity will be avoided.

6.75 At project level, any proposals within 20m of the River Avon SAC and its tributaries should be subject to project level construction and environmental management plans, or equivalent, are implemented to avoid non-toxic contamination.

Conclusion

6.76 Provided that the above mitigation is implemented successfully, adverse effects on the integrity of the River Avon SAC, as a result of non-toxic contamination of habitat will be avoided.

Air Pollution

Salisbury Plain SPA and SAC and Porton Down SPA

6.77 Salisbury Plain SPA and SAC are situated in the centre of Wiltshire, with the SPA encompassing three distinct areas and the SAC encompassing four, one of which lies across the eastern boundary of Wiltshire where it is also designated as Porton Down SPA. The SAC is designated for its semi-natural dry calcareous grasslands and scrubland and juniper *Juniperus communis* on heaths or calcareous grasslands, all of which the qualifying bird features of the SPA sites rely upon. Qualifying bird species of the SPA sites include Eurasian hobby, common quail, stone-curlew and hen harrier, all which rely on the availability of invertebrates and/or small birds. The designated habitats of the SAC upon which the SPA bird species indirectly rely are susceptible to changes in airborne pollutants associated with vehicular emissions, which would change the quality of the vegetation present.

6.78 Salisbury Plain SPA and SAC are located within 200m of the A342, A30, A303, A338, A343 and A360, whilst Porton Down SPA is located within 200m of the A30 and A343 only.

6.79 Corresponding SSSI units, which overlap the SAC and SPA are identified within the Screening Assessment (see **Table 5.2**).

6.80 A review of the SSSI site condition assessments was undertaken to confirm the current condition of the component SSSI units of the SAC and SPA in those areas susceptible to the changes in air quality. This approach confirmed that in terms of current condition, all the above Units were in 'unfavourable – recovering' condition.

6.81 It is recognised that Common Standards Monitoring, which is used to monitor the condition of the component SSSIs, was not designed to recognise adverse effects associated with deposition of pollutants, and often habitats are slow to display visible signs of the effects of changes in air quality. Therefore, the absence of apparent adverse factors does not necessarily indicate an absence of effects associated with nutrient enrichment and airborne pollutants.

6.82 An Air Quality Assessment (AQA)[65] was undertaken to assess the impacts of development in the Local Plan review. This considered the impacts of air pollutants related to road traffic, including nitrogen oxide, nitrogen deposition and acid deposition at identified ecological receptor points, which were located within European sites at the closest point to the road to demonstrate the maximum impact. Following consultation with Natural England, an updated assessment[43] was requested to also consider the exposure of relevant ecological receptors to concentrations of Ammonia (NH_3). Concentrations have been predicted using the ADMS Roads (v5.0.1.3) dispersion model (CERC, 2023) for this assessment. The methodology applied to assess ammonia was agreed with Natural England prior to commencing the work. Both assessments were completed based on two scenarios, the Do Minimum and the Do Something scenarios. The findings of the assessment are presented below.

Nitrogen Oxides (NOx)

6.83 For NOx, the AQA identified 14 out of 19 receptor locations to exceed the process contribution of 1% of the relevant critical level for Salisbury Plain SAC, 12 out of 12 receptor locations for Salisbury Plain SPA and 2 out of 7 receptor locations for Porton Down SPA. Therefore, further assessment was required to determine the Predicted Environmental Concentration (PEC), which is the process contribution plus the concentration/deposition rate of the pollutant already present in the environment. This identified that the PEC for NOx at all receptor locations were below the 30µg/m^3 critical level both without and with the Local Plan at all receptors. Therefore, no significant effects were predicted as a result of increased NOx as a result of the Local Plan alone and in-combination with other plans and projects.

6.84 Therefore, no adverse effects on the integrity of Salisbury Plain SAC and SPA and Porton Down SPA is predicted as a result of the Local Plan Review in relation to NOx.

Ammonia (NH_3)

6.85 For NH_3, the AQA identified 18 out of 19 receptor locations to exceed the process contribution of 1% of the relevant critical level for Salisbury Plain SAC, 12 out of 12 receptor locations for Salisbury Plain SPA and 5 out of 7

[65] LUC (June 2023). Wiltshire Local Plan Review: Air Quality Assessment. Draft report

receptor locations for Porton Down SPA. This comprised a total area of 2.1ha (0.01%) of the Salisbury Plain SPA, 7.6ha (0.04%) of the Salisbury Plain SAC and 0.1ha (0.01%) of Porton Down SPA. Therefore, further assessment was required to determine the PEC.

6.86 The assessment identified that the predicted NH_3 PECs are below the 3µg/m^3 critical level both without and with the Local Plan at the Porton Down SPA and therefore no impact on integrity of the SPA is predicted as a result of Ammonia.

6.87 In relation to Salisbury Plain SPA and SAC, the PECs at all receptors were above the relevant critical levels (1µg/m^3 or 3µg/m^3, which was applied to both European sites and is based on data provided by APIS[66]). As a result, a scaled distance study was undertaken, which found the following:

- A30 - There is a risk of significant effects due to NH_3 concentrations up to 40m from the roadside, assuming a critical load of 1µg/m^3.
- A30 – There is a risk of significant effects due to NH_3 concentrations up to 11m from the roadside, assuming a critical load of 3µg/m^3.
- A303 - There is a risk of significant effects due to NH_3 concentrations up to 93m from the roadside, assuming a critical load of 1µg/m^3.
- A303 - There is a risk of significant effects due to NH_3 concentrations up to 32m from the roadside, assuming a critical load of 3µg/m^3.

6.88 Following this, an assessment of those habitats located within the SPA and SAC Site was completed using aerial imagery and available habitat data from sources, such as Magic Maps, at each of these ecological receptor locations where thresholds were exceeded. The details of which are presented in **Table 6.4** below.

Table 6.4: Habitat features at Ecological Receptor Locations

Ecological Receptor Location ID	European Site	Road	Approximate distance of European site from roadside (m)	Approximate distance within European Site (m) where the process contribution and PEC thresholds are exceeded	Critical Level Applied	Habitats present between the roadside and European site where the process contribution and environmental deposition thresholds are exceeded	Habitats present within the European Site
SP SAC1-6	Salisbury Plain SPA and SAC	A303	8m	85m	1µg/m^3	Deciduous woodland	Deciduous woodland Calcareous grassland Scrub
				24m	3µg/m^3	Deciduous woodland	Deciduous woodland
SP SAC7-12	Salisbury Plain SAC	A30	4m	36m	1µg/m^3	Deciduous woodland	Deciduous woodland
				7m	3µg/m^3	Deciduous woodland	Deciduous woodland
SP SAC14-19	Salisbury Plain SPA and SAC	A303	12m	81m *This distance extends beyond the European site at approximately 70m.	1µg/m^3	Non-priority grassland adjacent to roadside Scrub	Lowland calcareous grassland Scrub

[66] Available at: Air Pollution Information System | Air Pollution Information System (apis.ac.uk)Air Pollution Information System | Air Pollution Information System (apis.ac.uk)

Ecological Receptor Location ID	European Site	Road	Approximate distance of European site from roadside (m)	Approximate distance within European Site (m) where the process contribution and PEC thresholds are exceeded	Critical Level Applied	Habitats present between the roadside and European site where the process contribution and environmental deposition thresholds are exceeded	Habitats present within the European Site
				20m	3µg/m^3	Non-priority grassland adjacent to roadside Scrub	Lowland calcareous grassland Scrub

6.89 The assessment above was completed for areas within the SPA and SAC where thresholds were exceeded. Although detail has been presented on the habitats present within the buffer zone between the road and the European site, this has been provided for context and this intervening habitat is not itself considered important in maintaining the qualifying features of the European site.

6.90 SP SAC7-12 were located within the SAC only (in the area that is also designated as Porton Down SPA and so are not linked to the Salisbury Plain SPA).

6.91 The habitats within receptor locations SP SAC7-12 primarily comprised deciduous woodland. The SAC is designated for its semi-natural dry calcareous grasslands and scrubland and juniper formations. Therefore, as these habitats are not present, no impacts to the SAC are predicted in relation to air quality at these ecological receptor locations.

6.92 In relation to ecological receptor locations SP SAC1 – SP SAC6 and SP SAC14 – SP SAC19, the habitats present within the European Site include lowland calcareous grassland and scrub, both of which are qualifying features of the SAC and habitats which the qualifying features of the SPA rely upon, and woodland. In relation to SP SAC1 – SP SAC6, the presence of the woodland belt between the road and calcareous grassland may act as a physical barrier to ammonia by creating a physical distance between the road and sensitive habitats[67], thereby lessening the impact to these areas. In relation to qualifying bird species of the SPA site, no impacts are predicted due to the small extent of the habitat affected and because air quality changes would not alter the quality and condition of these habitats to a degree that would affect these species ability to survive or reproduce.

6.93 In relation to qualifying features of the SAC, juniper has been identified within the SSSI units 138 and 171[68], where the PECs for these ecological receptors are above the threshold. Therefore, there is potential for significant impacts on the integrity of the SAC as a result of NH_3 deposition at these ecological receptor locations.

6.94 At this stage, Wiltshire Council and LUC are in consultation with Natural England to determine the requirements for mitigation in relation to Salisbury Plain SAC along the A303 from ammonia as a result of increased traffic within the Local Plan. Further consideration of this provided in the 'Mitigation' section below.

Nutrient Nitrogen

6.95 For nutrient nitrogen, the AQA identified 18 out of 19 receptor locations to exceed the process contribution of 1% of the relevant critical level for Salisbury Plain SAC, 12 out of 12 receptor locations for Salisbury Plain SPA and 6 out of 7 receptor locations for Porton Down SPA. This comprised a total area of 2.1ha (0.01%) of the Salisbury Plain SPA, 8.1ha (0.04%) of the Salisbury Plain SAC and 0.3ha (0.02%) of Porton Down SPA. Therefore, further assessment was required to determine the PEC.

6.96 The PEC for nutrient nitrogen at all receptors, excluding SP SAC13, were above the relevant critical loads at Salisbury Plain SPA and SAC and Porton Down SPA (10kg/ha/yr or 5kg/ha/yr, which was applied to all European sites and is based on data provided by APIS[69]). A scaled distance study was undertaken, which found the following:

[67] Natural England (2016). Potential risk of impacts of nitrogen oxides from road traffic on designated nature conservation sites. Natural England Commissioned Report NECR200

[68] Natural England (December 2016). Salisbury Plain SSSI Integrated Site Assessment 2014-15. Wiltshire Conservation Team. Section C Juniper, page 21

[69] Available at: Air Pollution Information System | Air Pollution Information System (apis.ac.uk)Air Pollution Information System | Air Pollution Information System (apis.ac.uk)

- A30 – There is a risk of significant effects due to nutrient nitrogen deposition up to 22m from the roadside assuming a critical level of 10kg/ha/yr.
- A303 – There is a risk of significant effects due to nutrient nitrogen deposition up to 108m from the roadside assuming a critical level of 5kg/ha/yr.
- A303 – There is a risk of significant effects due to nutrient nitrogen deposition up to 55m from the roadside assuming a critical level of 10kg/ha/yr.

6.97 Following this, an assessment of those habitats located within the SAC and SPA sites was completed using aerial imagery and available habitat data from sources, such as Magic Maps, at each of these ecological receptor locations where thresholds were exceeded. The details of which are presented in **Table 6.5** below.

Table 6.5: Habitat features at Ecological Receptor Locations

Ecological Receptor Location ID	European Site	Road	Approximate distance of European site from roadside (m)	Approximate distance within European Site (m) where the process contribution and PEC thresholds are exceeded	Critical Level Applied	Habitats present between the roadside and European site where the process contribution and environmental deposition thresholds are exceeded	Habitats present within the European Site
SP SAC1-6	Salisbury Plain SPA and SAC	A303	8m	100m	5kg/ha/yr	Woodland	Deciduous woodland Lowland calcareous grassland Scrub
				47m	10kg/ha/yr	Woodland	Deciduous woodland Lowland calcareous grassland Scrub *Predominantly comprised of deciduous woodland with a small area of lowland calcareous grassland and scrub.
SP SAC7-12	Salisbury Plain SAC and Porton Down SPA	A30	4m	18m	10kg/ha/yr	Woodland	Deciduous woodland
SP SAC14-19	Salisbury Plain SPA and SAC	A303	12m	94m *This distance extends beyond the European site at approximately 70m.	5kg/ha/yr	Non-priority grassland adjacent to roadside Scrub	Lowland calcareous grassland Scrub

Ecological Receptor Location ID	European Site	Road	Approximate distance of European site from roadside (m)	Approximate distance within European Site (m) where the process contribution and PEC thresholds are exceeded	Critical Level Applied	Habitats present between the roadside and European site where the process contribution and environmental deposition thresholds are exceeded	Habitats present within the European Site
				43m	10kg/ha/yr	Non-priority grassland adjacent to roadside Scrub	Lowland calcareous grassland Scrub

6.98 The assessment above was completed for areas within the SAC and SPA sites where thresholds were exceeded. Although detail has been presented on the habitats present within the buffer zone between the road and the European site, this has been provided for context and is not itself considered important in maintaining the qualifying features of the European site.

6.99 As discussed above (see **para 6.90**), the habitats within ecological receptor locations SP SAC7 – SP SAC12 primarily comprised deciduous woodland and these receptors relate to the Salisbury Plain SAC and Porton Down SPA only. The SAC is designated for its semi-natural dry calcareous grasslands and scrubland and juniper formations. The qualifying bird species of the SPA (stone-curlew) rely upon open grassland, bare ground and arable fields. Therefore, as these habitats are not present, no impacts to the Salisbury Plain SAC and Porton Down SPA are predicted in relation to air quality at these ecological receptor locations.

6.100 As discussed above (see **para 6.91), i**n relation to ecological receptor locations SP SAC1 – SP SAC6 and SP SAC14 – SP SAC19, the habitats present within the European Site include lowland calcareous grassland and scrub, both of which are qualifying features of the SAC and habitats which the qualifying features of the SPA rely upon, and woodland. The extent of exceedance in relation to the SPA is greater than when considering NH_3 above (ranges from 43-100m for nutrient nitrogen compared to 20-85m for NH_3). This is considered to be a minor increase in distance. However, it is still considered unlikely that air quality changes would alter the quality and condition of these habitats to a degree that would affect these qualifying species to forage, reproduce and nest.

6.101 As established above, juniper is present at the receptor locations where thresholds are exceeded and although the extent of exceedances for nutrient nitrogen are smaller than for ammonia, given the habitat's sensitivity to changes in air pollution, there may be impacts on the integrity of the SAC. In relation to SP SAC1 – SP SAC6, the presence of the woodland belt between the road and calcareous grassland may act as a physical barrier to nitrogen dioxide by creating a physical distance between the road and sensitive habitats[65], thereby lessening the impact to these areas.

6.102 At this stage, Wiltshire Council and LUC are in consultation with Natural England to determine the requirements for mitigation in relation to Salisbury Plain SAC along the A303 from nutrient nitrogen as a result of increased traffic within the Local Plan. Further consideration of this provided in the 'Mitigation' section below.

Acid Nitrogen

6.103 For acid nitrogen, the AQA identified 0 out of 19 receptor locations to exceed the process contribution of 1% of the relevant critical level for Salisbury Plain SAC, 12 out of 12 receptor locations for Salisbury Plain SPA and 0 out of 7 receptor locations for Porton Down SPA. This comprised a total area of 1.0ha (0.00%) of the Salisbury Plain SPA. Therefore, further assessment was required in relation to PEC at Salisbury Plain SPA only.

6.104 The PEC for acid nitrogen at receptor locations SP SAC1 – SP SAC3 and SP SAC14 - SP SAC16 are above the relevant critical loads at Salisbury Plain SPA only. A scaled distance study was undertaken, which found the following:

- A303 – There is a risk of significant effects due to acid nitrogen deposition up to 20m from the roadside assuming a critical level of 1.792keq/ha/yr.

6.105 Following this, an assessment of those habitats located within the SPA Site was completed using aerial imagery and available habitat data from sources, such as Magic Maps, at each of these ecological receptor locations where thresholds were exceeded. The details of which are presented in **Table 6.6** below.

Table 6.6: Habitat Features at Ecological Receptor Locations

Ecological Receptor Location ID	European Site	Road	Approximate distance of European site from roadside (m)	Approximate distance within European Site (m) where the process contribution and PEC thresholds are exceeded	Critical Level Applied	Habitats present between the roadside and European site where the process contribution and environmental deposition thresholds are exceeded	Habitats present within the European Site
SP SAC1-6	Salisbury Plain SPA	A303	8m	12m	1.792keq/ha/yr	Woodland	Deciduous woodland
SP SAC14-19	Salisbury Plain SPA	A303	12m	8m	1.792keq/ha/yr	Non-priority grassland adjacent to roadside Scrub	Lowland calcareous grassland Scrub

6.106 The assessment above was completed for areas within the SPA where thresholds were exceeded. Although detail has been presented on the habitats present within the buffer zone between the road and the European site, this has been provided for context and is not itself considered important in maintaining the qualifying features of the European site.

6.107 Exceedances were only identified in relation to the SPA. The habitats present within the European Site include lowland calcareous grassland, scrub and woodland. Habitats upon which the qualifying bird species rely upon are outlined below:

- Stone curlew - Farmland, Heathland, Grassland
- Quail - Farmland, Grassland
- Hen Harrier - Upland, Marine and Intertidal, Farmland, Wetland, Grassland
- Hobby - Woodland, Urban and Suburban, Farmland, Heathland, Wetland, Grassland

6.108 Therefore, qualifying bird species may use habitats within the area of the European site where thresholds are exceeded. However, no impacts are predicted due to the small extent of the habitat affected (8m – 12m) and because air quality changes would not alter the quality and condition of these habitats to a degree that would affect these species. Therefore, no impacts on integrity to the SPA are predicted as a result of increased acid nitrogen deposition as part of the Local Plan.

Mitigation

6.109 Following consultation with Natural England in September 2024, it was advised that further assessment was required to verify the habitats and plant species present, and the habitat management currently being implemented within areas of exceedances noted in relation to the A303 located within the Salisbury Plain SAC. This site verification will confirm the requirements for mitigation to be delivered as part of the Local Plan to ensure no adverse effect on integrity.

6.110 Depending on the habitats and plant species present and the current habitat management of the site, Natural England stated that it may be feasible to rule out no adverse effect on integrity without requirement for additional mitigation measures to be implemented. However, in the event that mitigation is required, this would likely comprise habitat management through grazing and/or scraping to ensure that increased nutrients are removed from habitats impacted and/or monitoring measures to ensure that habitat management is continuing to be implemented successfully. It is understood that this will be feasible to implement by Wiltshire Council and/or landowners through agreement with the council should this be required.

Conclusion

6.111 Therefore, should mitigation be required, provided this is implemented successfully, adverse effects on the integrity of the Salisbury Plain SAC as a result of impacts from air pollution will be avoided.

6.112 No adverse effects can be concluded in relation to Salisbury Plain SPA and Porton Down SPA without requirement for further assessment or mitigation in relation to air pollution.

River Avon SAC

6.113 The River Avon SAC extends from the south to the centre of Wiltshire. The SAC is one of the richest chalk rivers in Europe. It is important for its fish population, invertebrates, which include populations of Desmoulins Whorl Snail and its in-river plant community habitat as well as bankside habitats. This qualifying habitat is susceptible to atmospheric deposition of nitrogen associated with vehicular emissions.

6.114 The SAC is located within 200m of the A30, A3028, A3094, A350, A36, A31, A338, A360, A303 and A345.

6.115 Corresponding SSSI units, which overlap the SAC are identified within the Screening Assessment (see **Table 5.2**).

6.116 A review of the SSSI site condition assessments was undertaken to confirm the current condition of the component SSSI units of the SAC in areas susceptible to the effects of air quality. This approach confirmed that in terms of current condition, all units are in unfavourable condition, with units 51, 154, 1 and 2 classified as 'unfavourable recovering', units 49 and 45 'unfavourable declining' and all other units 'unfavourable no change'.

6.117 It is recognised that Common Standards Monitoring, which is used to monitor the condition of the component SSSIs, was not designed to recognise adverse effects associated with deposition of pollutants, and often habitats are slow to display visible signs of the effects of changes in air quality. Therefore, the absence of apparent adverse factors does not necessarily indicate an absence of effects associated with nutrient enrichment and airborne pollutants.

6.118 To determine the impacts of air pollution in relation to proposed development within the Local Plan in relation to the SAC, an Air Quality Assessment was undertaken. The findings of the assessment are presented below.

Nitrogen Oxides (NOx)

6.119 There are no exceedances of the 1% screening threshold at the River Avon SAC receptors and therefore further assessment is not required.

6.120 Therefore, no adverse effects on the integrity of River Avon SAC is predicted as a result of the Local Plan review in relation to NOx.

Ammonia (NH_3)

6.121 For ammonia, the AQA identified 11 out of 26 receptor locations to exceed the process contribution of 1% of the relevant critical level for the SAC. Therefore, further assessment was required in relation to PEC at SAC.

6.122 No distance study was undertaken for River Avon SAC as the receptors are at the edge of the SAC boundary adjacent to the river which is a narrow stretch of water. The critical level is the atmospheric concentration of ammonia, which would only affect vegetation exposed to the concentration of ammonia in the air. Therefore, vegetation within the water (and therefore further from the road) would not be affected by the increases in NH_3.

6.123 An assessment of those habitats located within the SAC Site was completed using aerial imagery and available habitat data from sources, such as Magic Maps, at each of these ecological receptor locations where thresholds were exceeded. The details of which are presented in **Table 6.7** below.

Table 6.7: Habitat features at Ecological Receptor Locations

Ecological Receptor Location ID	European Site	Road	Approximate distance of European site from roadside (m)	Habitats present between the roadside and European site where the process contribution and environmental deposition thresholds are exceeded	Habitats present within the European Site
RA SAC9	River Avon SAC	A345	18m	Deciduous Woodland	River
RA SAC13	River Avon SAC	A303	5m	N/A – the SAC overlaps the A303	River Hard standing
RA SAC14	River Avon SAC	A303	8m	N/A – the SAC overlaps the A303	River Hard standing
RA SAC15	River Avon SAC	A303	43m	Deciduous Woodland	River

Ecological Receptor Location ID	European Site	Road	Approximate distance of European site from roadside (m)	Habitats present between the roadside and European site where the process contribution and environmental deposition thresholds are exceeded	Habitats present within the European Site
RA SAC21	River Avon SAC	A30	5m	N/A – the SAC overlaps the A303	River
RA SAC22	River Avon SAC	A30	7m	N/A – the SAC overlaps the A303	River
RA SAC 23	River Avon SAC	A30	9m	N/A – the SAC overlaps the A303	River
RA SAC24	River Avon SAC	A30	11m	N/A – the SAC overlaps the A303	River
RA SAC25	River Avon SAC	A30	13m	N/A – the SAC overlaps the A303	River

6.124 The assessment above was completed for areas within the SAC where thresholds were exceeded. Although detail has been presented on the habitats present within the buffer zone between the road and the European site, this has been provided for context and is not itself considered important in maintaining the qualifying features of the European site.

6.125 As outlined above, the exceedances relate to airborne pollutants only and therefore vegetation within river habitats will not be impacted. Therefore, impacts to the River Avon SAC are considered unlikely given that the only habitat within the European site at these ecological receptor locations is river habitat, which will not be impacted by airborne pollutants.

Nutrient Nitrogen

6.126 There are no specific critical levels or loads identified for the River Avon SAC in relation to nutrient nitrogen and as such no specific AQA assessment was undertaken for this European site.

Acid Nitrogen

6.127 There are no specific critical levels or loads identified for the River Avon SAC in relation to acid nitrogen and as such no specific AQA assessment was undertaken for this European site.

Conclusion

6.128 <u>No adverse effects on the integrity of the River Avon SAC as a result of air pollution are predicted.</u>

Recreational Pressure

Avon Valley SPA and Ramsar

6.129 The Avon Valley SPA and Ramsar lies along the border of Hampshire and Dorset, between the New Forest and the heath and woodland areas north of Bournemouth. It encompasses the lower reaches of the River Avon and its floodplain between Bickton and Christchurch. Key threats from recreation to this SPA and Ramsar include wildfowling and game shooting with associated activities, fishing and related activities and access by people and dogs within and outside of PRoWs. The Ramsar is particularly subject to considerable levels of game shooting and fishing.

6.130 As outlined in the screening assessment, in the absence of site-specific evidence the ZOI of the Avon Valley SPA and Ramsar was determined to be 16.0km.

6.131 A review of site allocations proposed as part of the Plan identified approximately 530 new dwellings within 16.0km of the SPA and Ramsar. These are as a result of the following policies:

- Policy 26: Land North of Downton Road – 220 dwellings
- Policy 27: Land south of Harnham – 265 dwellings
- Policy 28: Land west of Coombe Road, Harnham, Salisbury – 45 dwellings

6.132 In light of the above information, it is recommended that mitigation measures as detailed below and which are designed to address the cumulative impacts of increased recreation on the SPA and Ramsar as a result of the plan are implemented to ensure a sufficient level of certainty in

concluding that the plan will not result in adverse effects on the integrity of the SPA and Ramsar.

Mitigation

Provision of open spaces

6.133 The provision of alternative natural green space and green infrastructure (GI) represents an important aspect of mitigation for European sites. Therefore, the strategic approach to incorporating protective measures specified in the plan is considered likely to provide an effective contribution in mitigating significant effects associated with recreation. This mitigation is provided in the plan through Policy 84: Public Open Space and Play Facilities, which outlines:

> "All major new development must make provision for public open space and, where appropriate, play facilities. In addition, all development must protect and improve the quantity, quality, and accessibility of and to public open space"
>
> All major new development which will have an adverse impact upon the existing quantity, quality and accessibility of and to public open space will need to submit an open space assessment with the planning application. This must be produced according to: the latest standards set out in the Wiltshire Open Space Assessment; other council strategies/studies covering different types of public open space including green and blue infrastructure and play areas; and relevant supplementary planning documents (or successor documents).
>
> The open space assessment must ensure development will:
>
> - provide new, replace or improve existing open space;
> - identify and quantify the effects of development on the quantity, quality and accessibility of open space affected within Wiltshire and any neighbouring local authority's area if the public open space also serves it. Include impact on the amenity, character of the area and current and future needs;
> - include how the developer will secure the management and maintenance of any new and/ or improved public open space. This will be secured by planning condition or legal agreement;
> - provide new or replacement public open space on-site. If this is not possible, then provide off-site;
> - show how locating new public open space or improving the quality of existing provides multifunctional benefits to help meet other relevant policies within the Plan e.g. relating to biodiversity, green and blue infrastructure, climate change, cultural heritage etc."

6.134 To maximise the effectiveness of its role in mitigating recreational impacts on European sites, the design and management of open space and green infrastructure will need to be focused towards attracting those groups of visitors who regularly visit the European sites, such as fishermen, walkers and dog walkers.

6.135 Policy 93 also provides mitigation, which outlines:

> "Development shall make provision for the retention and enhancement of Wiltshire's green and blue infrastructure network and shall ensure that suitable links to the network are provided and maintained.."

Project level HRA

6.136 Site specific planning applications outside of the allocations within the plan, especially larger ones in proximity to the Avon Valley SPA and Ramsar, will need to consider the requirement to undertake project level HRA, and where appropriate would be expected to incorporate necessary safeguards in line with the policy safeguards included within the plan and detailed above.

Policy-specific mitigation

6.137 Specific mitigation is provided through the following policies:

- Policy 26: Land North of Downton Road
- Policy 27: Land south of Harnham
- Policy 28: Land west of Coombe Road, Harnham

6.138 Policy 26 specifies:

> "Provision of off-site Suitable Alternative Greenspace (SANG) in accordance with Policy 29 Suitable Alternative Natural Greenspace, South Salisbury"

6.139 Policy 27 specifies:

> "provision of Suitable Alternative Natural Greenspace on adjacent land to the east in accordance with Policy 29 (Suitable alternative natural greenspace, South Salisbury), connected with walking routes through the site."

6.140 Policy 28 specifies:

> "Improvements to cycling and walking routes through and around the site, including to Salisbury District Hospital and into the city centre, and to connect with the nearby Suitable Alternative Natural Greenspace Allocation"

"Provision of Suitable Alternative Greenspace on nearby land to the east of the site in accordance with Policy 29 (Suitable Alternative Natural Greenspace, South Salisbury), connected with walking routes through the site"

Conclusion

6.141 Provided that the policy wording incorporated into the plan and site-specific mitigation strategies are implemented successfully, adverse effects on the integrity of the Avon Valley SPA and Ramsar as a result of impacts from recreational pressures will be avoided.

Bath and Bradford on Avon Bats SAC

6.142 The SAC comprises four component sites: Brown's Folly, Box Mine, Winsley Mines, and Combe Down and Bathampton Down Mines. These are distributed over a wide geographical area to the south and east of Bath and have different known bat usages, which over the whole of the SAC include breeding, hibernation, swarming and dispersal. Additionally, the TBMS[30] and the Wiltshire Bat SAC Planning Guidance document[31] identified core areas which represent areas where habitat has been shown to be of importance, or is highly likely to be of importance, for qualifying bat species. This includes woodlands to the east and southeast of Trowbridge, which are known to support a large and internationally significant breeding meta-population of Bechstein's bat that is linked to the Bath and Bradford-on-Avon Bats SAC, including significant maternity colonies in Biss Wood, Green Lane Wood and Picket and Clanger Woods.

6.143 Key threats to the SAC from recreation include use of aerosol spray paints underground, use of fuel of any type underground and bonfires at the mine entrances. Despite continuous long-term disturbance by visitors, the sites are managed in such a way that it does not present a significant pressure unless volume and frequency of visitors were to increase. Key threats to the functionally linked land include walkers and dog walkers in the woodlands.

6.144 6.55 As detailed in the Screening Assessment, targeted visitor surveys identified a maximum ZOI of 3.36km for core roosts that are functionally linked to the SAC (the 3.36km pertains specifically to Picket and Clanger Wood). A review of site allocations proposed as part of the Plan identified a minimum of 1,360 dwellings within 3.36km of the SAC and within the core areas identified in the TBMS, Wiltshire Bat SAC Planning Guidance document and illustrated on the Wiltshire Planning Explorer. These dwellings are related to the following policies:

- Policy 7: Land South of Chippenham and East of Showell Farm;
- Policy 13: Land south of Dicketts Road, Corsham – 105 dwellings
- Policy 53: Land North of Trowbridge – 600 dwellings
- Policy 55: Land at Innox Mills, Trowbridge – 175 dwellings
- Policy 61: Land to the west of Mane Way – 220 dwellings
- Policy 62: Land at Bratton Road, Westbury – 260 dwellings

6.145 Given the potential for policies 7, 13, 53, 55, 61 and 62 to result in increases in visitors at the SAC and core areas, which support core roosts that are functionally linked to the SAC, it is recommended that mitigation measures as detailed below are implemented to ensure a sufficient level of certainty in concluding that the plan will not result in adverse effects on the integrity of the SAC.

Mitigation

6.146 As discussed above (see **para 6.79 – 6.81**) Policy 84 and Policy 93 provide mitigation within the plan by specifying the requirement for the provision of open spaces and retention and enhancement of green and blue infrastructure.

6.147 Suitable Alternative Natural Greenspaces (SANGs) are provided for within the Trowbridge Bat Mitigation Strategy (TBMS) and the Local Plan Review in the following policies:

- Policy 54: North Trowbridge Country Park allocates land to the North of Trowbridge for the provision of a Country Park which will function as a SANG. The proposed land for the Country Park is already publicly accessible with an existing Public Right of Way and lies adjacent to Land North of Trowbridge which is allocated for 600 dwellings. In accordance with Natural England's SANG guidelines[70], which will include a circular walk of at least 2.5km and a car park will be provided. The Country Park will also be enhanced to provide good habitat for bats. Including provision of woodland and suitable grassland.
- Policy 63: Westbury Country Park specifies:

""Major development in Westbury should make provision for a Country Park, approximately 27 ha in size, functioning as Suitable Alternative Natural Greenspace (SANG). It will be available in perpetuity for the public to access for informal recreation prior to the occupation of the first dwelling at either the allocation in Policy 61 Land

[70] Natural England (2021). Guidelines for Creation of Suitable Alternative Natural Greenspace (SANG). August 2021

to the West of Mane Way, Westbury or the allocation in Policy 62 Land at Bratton Road, Westbury.”"

6.148 The provision of SANGs will address the predicted increase in recreational pressure on the woodlands on the eastern and south-eastern outskirts of Trowbridge that support Bechstein's bat maternity roosts (see **para 6.88**), as a result of policies 53, 55, 61 and 62.

6.149 Further to this, there are site specific policy requirements, which provide mitigation in relation to recreational pressure, such as Policy 13, which requires:

"habitat creation throughout the site layout to provide connectivity to adjacent or nearby habitats, to support protected bat species and the condition of the Bath and Bradford Bats Special Area of Conservation. Design and layout will be informed by appropriate surveys, impact assessments and the Corsham Batscape Strategy. Appropriate mitigation to protect bats, including financial contributions towards management, monitoring, and any off-site measures as necessary;"

6.150 In relation to Policy 7, which states:

“Infrastructure and mitigation requirements include:…

- an extension to the River Avon Country Park;
- improved green and blue infrastructure corridors alongside the River Avon and habitat creation throughout the site layout to provide connectivity to adjacent or nearby habitats;…”

6.151 The TBMS also specifies requirements for developments within each of the key areas identified with bat sensitivity. This includes, development in the grey 'Medium Risk Bat Sensitivity Zone' (settlements of Trowbridge and Westbury) being required to make a payment for recreational mitigation.

Conclusion

6.152 <u>Provided that the policy wording incorporated into the plan are implemented successfully, adverse effects on the integrity of the Bath and Bradford on Avon Bats SAC as a result of impacts from recreational pressures will be avoided.</u>

Mells Valley SAC

6.153 The Mells Valley SAC lies at the eastern end of the Mendip Hills in the County of Somerset and has three component sites: The Old Ironstone Works Mills, St Dunstan's Well Catchment and Vallis Vale. The Old Ironstone Works Mills are regularly accessed by the public and disturbance of the maternity roost of Greater Horseshoe Bats and associated hibernaculum is a current threat.

6.154 As detailed in the Screening Assessment, a ZOI of 16.0km was established based on a precautionary approach and findings of the MENE survey[42]. A review of site allocations proposed as part of the Plan identified 1,255 new dwellings within 16.0km of the SAC. These dwellings are related to the following policies:

- Policy 53: Land north of Trowbridge – 600 dwellings
- Policy 55: Innox Mills, Trowbridge – 175 dwellings
- Policy 61: Land west of Mane Way, Westbury – 220 dwellings
- Policy 62: Land at Bratton Road, Westbury – 260 dwellings

6.155 In light of the above information, it is recommended that mitigation measures as detailed below and which are designed to address the cumulative impacts of increased recreation on the SAC as a result of the Plan are implemented to ensure a sufficient level of certainty in concluding that the Plan will not result in adverse effects on the integrity of the SAC.

Mitigation

6.156 As outlined in **para 6.93**, mitigation for predicted increases in recreational pressure as a result of allocations within policies 53, 55, 61 and 62, is provided within the Local Plan and in accordance with the TBMS through the provision of SANGs at North Trowbridge Country Park (Policy 54) and Westbury Country Park (Policy 63).

6.157 Additionally, as discussed above (see **para 6.79 – 6.81**) Policy 84 and Policy 93 provide mitigation within the plan by specifying the requirement for the provision of open spaces and retention and enhancement of green and blue infrastructure.

Conclusion

6.158 <u>Provided that the policy wording incorporated into the plan are implemented successfully, adverse effects on the integrity of the Mells Valley SAC as a result of impacts from recreational pressures will be avoided.</u>

River Avon SAC

6.159 The River Avon SAC is located in the south of Wiltshire, flowing through Salisbury and is one of the richest chalk rivers in Europe. It is important for its fish and invertebrate populations and its in-river plant community habitat as well as bankside habitats. Key threats from recreation relate to dog walkers disturbing wildfowl outside PRoW.

6.160 As detailed in the Screening Assessment, a ZOI of 16.0km was established.

6.161 A review of site allocations proposed as part of the Plan identified approximately 3,790 new dwellings, 2.5ha of employment land and the re-development of existing residential and employment land (Policy 2). These dwellings and employment land are related to the following policies:

- Policy 15: Land at the Devizes Wharf, Assize Court and Wadworth Brewery, Devizes – 100 dwellings
- Policy 23: Land north-east of Old Sarum, Salisbury – 350 dwellings
- Policy 24: Land at Netherhampton Road Garden Centre, Salisbury – 60 dwellings
- Policy 25: Land north of the Beehive Park and Ride, Old Sarum, Salisbury – 100 dwellings
- Policy 26: Land North of Downton Road – 220 dwellings
- Policy 27: Land south of Harnham- 265 dwellings
- Policy 28: Land west of Coombe Road, Harnham, Salisbury – 45 dwellings
- Policy 30: Land East of Church Road, Laverstock – 50 dwellings
- Policy 33: The Maltings and Central Car Park – re-development of existing residential and employment land
- Policy 40: Land south east of Empress Way, Ludgershall – 1,220 dwellings and 0.7ha employment land
- Policy 41: Land at Bulbridge Estate – 45 dwellings
- Policy 45: Land at Chopping Knife Lane, Marlborough – 50 dwellings
- Policy 46: Land off Barton Dene – 30 dwellings and 1.8ha employment land
- Policy 53: Land north of Trowbridge – 600 dwellings
- Policy 55: Innox Mills, Trowbridge – 175 dwellings
- Policy 61: Land west of Mane Way, Westbury – 220 dwellings
- Policy 62: Land at Bratton Road, Westbury – 260 dwellings

6.162 In light of the above information, it is recommended that mitigation measures as detailed below and which are designed to address the cumulative impacts of increased recreation on the SAC as a result of the Plan are implemented to ensure a sufficient level of certainty in concluding that the plan will not result in adverse effects on the integrity of the SAC.

Mitigation

6.163 As outlined in **para 6.93**, mitigation for predicted increases in recreational pressure as a result of allocations within policies 53, 55, 61 and 62, is provided within the Local Plan through the provision of SANGs at North Trowbridge Country Park (Policy 54) and Westbury Country Park (Policy 63).

6.164 Policy 84 and Policy 93 provide mitigation within the plan by specifying the requirement for the provision of open spaces and retention and enhancement of green and blue infrastructure (see **para 6.79 – 6.81**).

6.165 Additionally, Policy 94: Wiltshire's Canals and the Boating Community outlines opportunities for restoring, reconstructing and creating a new link between the Kennet & Avon Canal and River Avon to facilitate the re-opening of the Wilts and Berks and Thames and Severn Canals as navigable waterways. The policy states:

> "Proposals will be permitted that are designed to develop Wiltshire's canals recreational and nature conservation potential, in particular, the use of canals for walking and cycling."

6.166 Providing additional opportunities for recreation along waterways other than the River Avon SAC may help address the potential increases in recreational pressure on the River Avon SAC as a result of the above policies.

Conclusion

6.167 Provided that the policy wording incorporated into the plan and site-specific mitigation strategies are implemented successfully, adverse effects on the integrity of the River Avon SAC as a result of impacts from recreational pressures will be avoided.

Salisbury Plain SPA and SAC

6.168 Salisbury Plain SAC, which includes Porton Down and Parsonage Down, represents the largest surviving semi-natural dry grassland area within north-west Europe which hosts the priority habitat type 'orchid-rich sites' and supports extensive areas of varied grasslands. Salisbury Plain SPA is located in central Wiltshire and supports important breeding populations of Stone-curlew, Quail, Hobby and over-wintering Hen harrier. Given the qualifying habitats and species present, there is potential for impacts from increased recreational pressure to arise from impacts such as disturbance from dog walkers.

6.169 As detailed in the Screening Assessment, targeted visitor surveys identified a ZOI of 6.4km for the SPA and SAC.

6.170 A review of site allocations proposed as part of the Plan identified approximately 1,700 new dwellings within 6.4km of the SPA and SAC, as well as 0.7ha of employment land. The dwellings and employment land are related to the following policies:

- Policy 40: Land south east of Empress Way, Ludgershall – 1,220 dwellings and 0.7ha employment land
- Policy 61: Land to the west of Mane Way – 220 dwellings
- Policy 62: Land at Bratton Road, Westbury - 260 dwellings

6.171 Development within the Local Plan is only anticipated to impact the stone-curlew as this is a ground nesting species which are particularly sensitive to disturbance by and people and their dogs.

6.172 In light of the above and providing the mitigation measures detailed below are delivered successfully, there is a high level of confidence that the existing mitigation strategy will provide the appropriate mechanisms required to ensure no adverse effects on integrity in relation to the SPA.

Mitigation

6.173 A recognised mitigation strategy for Salisbury Plain SPA has been developed by Wiltshire Council and endorsed by Natural England[71]. This outlines how proposals within the ZOI for the SPA are mitigated through a project[72],[73] funded by the Community Infrastructure Levy (CIL) which records where stone-curlews breed and works with farm managers to maximise breeding success. The 2019 stone curlew monitoring report observed an exceptionally good year for breeding success and shows there is considerable headroom in terms of numbers of breeding pairs and productivity. There was a decline in breeding success in 2021, however this was attributed to sub-optimal weather conditions and success increased in 2022. It is recognised that the pressures at Salisbury Plain are changing and in the future further mitigation for this species may be necessary, however landowners are willing to take up conservation measures and intervention can be effective at sustaining the population.

6.174 As discussed above (see **para 6.79 – 6.81**), mitigation for increases in recreational pressure is provided within the plan through Policy 84 and Policy 93 which specify the requirement for the provision of open spaces and retention and enhancement of green and blue infrastructure.

Conclusion

6.175 Provided that the recognised mitigation strategy for Salisbury Plain SPA and policy wording is implemented successfully, adverse effects on the integrity of the Salisbury Plain SPA and SAC as a result of impacts from recreational pressures will be avoided.

New Forest SPA SAC and Ramsar

6.176 The New Forest SPA SAC and Ramsar is one of the largest remaining relatively wild areas in the South of England attracting enormous numbers of visitors each year. The SPA, SAC and Ramsar supports an extensive and complex mosaic of habitats which support an exceptional variety of flora and fauna. There is an assumption that disturbance from large numbers of visitors affects the breeding success of SPA birds and quality of SAC habitats through erosion, compaction and damage to vegetation and water bodies. Nightjar, woodlark and Dartford warbler densities are notably low. The shoreline of Hatchet pond has been eroded by high numbers of visitors and sediment has been introduced into the water. This, together with feeding of birds and fishing activities has polluted the water and put the habitat at risk. Camping activities have also impoverished vegetation due to trampling and infrastructure.

6.177 As detailed in the Screening Assessment, targeted visitor surveys identified a ZOI of 13.8km for the SPA SAC and Ramsar.

6.178 A review of site allocations proposed as part of the Plan identified approximately 640 new dwellings, as well as redevelopment of existing residential and employment land (Policy 33). These new dwellings relate to the following policies:

- Policy 24: Land at Netherhampton Road Garden Centre, Salisbury – 60 dwellings
- Policy 27: Land south of Harnham – 265 dwellings
- Policy 28: Land west of Coombe Road, Harnham, Salisbury – 45 dwellings
- Policy 26: Land north of Downton Road, Salisbury – 220 dwellings
- Policy 33: The Maltings and Central Car Park - re-development of existing residential and employment land
- Policy 30: Land East of Church Road, Laverstock – 50 dwellings

6.179 In light of the above, it is recommended that mitigation measures as detailed below and which are designed to address the cumulative impacts of increased recreation on the SPA SAC and Ramsar as a result of the Plan are implemented to ensure a sufficient level of certainty in concluding that the Plan will not result in adverse effects on the integrity of the SPA, SAC and Ramsar.

[71] Wiltshire Council (2023). Appropriate Assessment of Development Sites Falling Under Salisbury Plain SPA Mitigation Strategy
[72] HRA and Mitigation Strategy for Salisbury Plain SPA (in relation to recreational pressure from redevelopment), Wiltshire Council, 30 March 2012
[73] HRA and Mitigation Strategy for Salisbury Plain SPA (in relation to recreational pressure from residential development), Wiltshire Council, reviewed in May 2018

Mitigation

6.180 An interim strategy for mitigating impacts of recreation on New Forest SPA SAC and Ramsar site has been established by Wiltshire Council[74] and endorsed by Natural England and was updated on 21st March 2023 following the annual review by Natural England to confirm validity. The interim strategy was intended to apply until a co-ordinated strategic approach had been agreed with neighbouring planning authorities. Therefore, a revised longer-term strategic approach has been developed alongside the Local Plan and on 7th May 2024, a report setting out the revised strategic approach to mitigating recreational pressure on the New Forest SAC, SPA and Ramsar site was approved by Cabinet[75]. As such, the strategy document is being updated and requirements strengthened to support the Local Plan, as approved by Cabinet. The allocations in the draft Local Plan and any windfall development coming forward for new residential and tourism development over the next plan period that lie within the ZOI will need to adhere to the revised requirements in respect of Suitable Alternative Greenspace (SANG) / Green Infrastructure (GI) and a contribution to Strategic Access Management and Monitoring (SAMM) measures. Furthermore, a SAMM Strategy is being jointly prepared by all the local planning authorities whose authority areas lie wholly or partially within the 13.8km ZOI; and this strategy is nearing completion.

6.181 Key requirements of the revised strategic approach comprise:

- All residential and tourism development, whether that be smaller scale (1-49 dwellings) or large scale (50+ dwellings), within the 13.8km zone of influence will need to contribute towards the funding of the package of mitigation measures set out in the New Forest SAMM report produced by Footprint Ecology at the rate of £600 per new dwelling/unit.
- All allocations and applications for development of 50 or more dwellings within the 13.8km zone will be expected to provide SANGs / GI, ideally on site.

6.182 A strategic SANG will be provided in the south of Salisbury to provide mitigation for Policy 24, 26, 27 and 28. The SANG is allocated by means of Policy 29: Suitable Alternative Natural Greenspace, South Salisbury which states:

> "Development on land allocated by Policies 24, 26, 27 and 28 (Land at Netherhampton Road Garden Centre, Land North of Downton Road, Land South of Harnham, and Land West of Coombe Road, Harnham) will provide for additional Suitable Alternative Natural Greenspace (SANG) to mitigate the adverse effects of recreation on New Forest designated sites where provision on sites will be insufficient to avoid adverse effects.
>
> The additional SANG will be available in perpetuity for the public to access for informal recreation prior to the occupation of the first dwelling for which the policy is triggered.
>
> Provision should be made for accessing the SANG by public transport as well as safe routes from and to the city centre."

6.183 The mitigation strategy in respect of the other site allocations in Salisbury and Laverstock in the Local Plan that lie within the ZOI is that sufficient and suitably enhanced SANG / alternative greenspace will be provided on each site in line with Natural England's guidelines on SANG creation.

6.184 Collectively, these measures will ensure appropriate mitigation for the New Forest designated sites.

6.185 The new revised strategic approach, which is currently being implemented, entails the securing of developer contributions, which will be used to deliver a package of SAMM measures to be implemented at the New Forest SAC, SPA and Ramsar site. Under the interim recreation mitigation strategy, a ring-fenced CIL fund of £750,000, was allocated and approved by Cabinat in September 2021 for mitigation to ensure there is no adverse impact on the New Forest designated sites from recreational pressure arising from new development.

6.186 Wiltshire Council are engaged in ongoing discussion with NFNPA, the RSPB and Natural England in order to identify suitable habitat mitigation and SANG / greenspace provision schemes to fund using the allocated CIL.

6.187 The following monitoring will be implemented as part of the mitigation plan:

- Compliance checks of SANGs at development sites
- The Council will work with the NFNPA and other authorities / statutory agencies to agree a programme of monitoring for the effectiveness of access and management works within the New Forest; and
- Once SANGs have been operating for a number of years, visitor surveys will be undertaken to understand their use and effectiveness at deflecting people from visiting the New Forest protected sites.

6.188 On site mitigation is provided within the plan in the following policies:

- Policy 30: Land East of Church Road, Laverstock

6.189 Policy 30 specifies the following mitigation:

[74] Wiltshire Council (2023). Interim Recreation Mitigation Strategy For the New Forest Internationally Protected Sites.

[75] Supporting documents can be found here: https://cms.wiltshire.gov.uk/mgAi.aspx?ID=114360

"Provision of Suitable Alternative Natural Greenspace"

6.190 Additionally, as discussed above (see **para 6.79 – 6.81**) Policy 84 and Policy 93 provide mitigation within the plan by specifying the requirement for the provision of open spaces and retention and enhancement of green and blue infrastructure.

Conclusion

6.191 Provided that the policy wording incorporated into the plan and site-specific mitigation requirements are implemented successfully and there is adherence to the council's revised strategic approach to mitigation, adverse effects on the integrity of the New Forest SPA SAC and Ramsar as a result of impacts from recreational pressures will be avoided.

North Meadow and Clattinger Farm SAC

6.192 The North Meadow and Clattinger Farm SAC is a series of traditionally managed unimproved grasslands within the floodplain of the Upper Thames which continue to be managed as pasture and as hay-meadow. It contains a rich variety of species-rich grassland type as well as a number of notable plant species. The site is sensitive to disturbance from public access, especially during the flowering time of Snake's-head Fritillary when visitor pressures increase, leading to localised damage on sites in the SAC.

6.193 As detailed in the screening assessment, no site allocations are within the 9.4km ZOI for the North Meadow and Clattinger Farm SAC (North Meadow component only), however there is potential for development to come forward as part of Policy 2: Delivery Strategy, Policy 69: Tourism and Related Development and Policy 77: Rural Exception Sites.

6.194 In light of the above, it is recommended that mitigation measures as detailed below and which are designed to address the cumulative impacts of increased recreation on the SAC as a result of the Plan are implemented to ensure a sufficient level of certainty in concluding that the Plan will not result in adverse effects on the integrity of the SAC.

Mitigation

6.195 Mitigation and safeguarding measures will be provided within the plan through Policy 88: Biodiversity and Geodiversity, which provides overarching requirements for development proposals to demonstrate the application of mitigation hierarch and that no adverse effects will occur as a result of development.

6.196 As discussed above (see **para 6.79 – 6.81**), mitigation for increases in recreational pressure is provided within the plan through Policy 84 and Policy 93 which specify the requirement for the provision of open spaces and retention and enhancement of green and blue infrastructure

Conclusion

6.197 Provided that the policy wording incorporated into the plan are implemented successfully, adverse effects on the integrity of the North Meadow and Clattinger Farm SAC as a result of impacts from recreational pressures will be avoided.

Water Quantity

River Avon SAC / Avon Valley SPA and Ramsar site / Kennet and Lambourn Floodplain SAC

6.198 The majority of Wiltshire is located in the Wessex Water Resource Zone, with exception of the north-east and some areas close to the boundary of the plan area. These areas are located within the WRZ supplied by Thames Water in the north-east, South-West Water in the south, Bristol Water in the north-west, Southern Water along the south-east boundary and Veolia Water in the east. Further detail of this is presented in the Wiltshire Water Cycle Study[76] (WCS).

6.199 In 2021, the region was classed as seriously water stressed by the Secretary of State and Environment Agency[77]. This identified all of the water companies detailed above excluding Bristol Water to be affected by this. It is predicted that climate change will increase pressure on water resources and as such it is necessary that increased demand for water through new development as part of the Local Plan is be delivered sustainably to ensure that adverse effects to European sites are avoided.

6.200 In relation to Wessex Water, 75% of water within the Wessex Water WRZ is abstracted from groundwater sources, with one of their important aquifers located under the Salisbury Plain. The other important aquifers include the Cotswolds and Dorset Downs with the remaining 25% of water supply coming from impounding reservoirs located in Somerset.

6.201 In relation to Thames Water, Wiltshire is supplied by Swindon and Oxfordshire WRZ with a small area covered by the Kennet Valley WRZ. In terms of supply, 60% of groundwater sources within the Swindon and Oxfordshire WRZ come from the Upper Kennet Valley and the Cotswolds through river abstraction and a reservoir sited near Oxford. The Kennet Valley WRZ is largely reliant on groundwater

[76] JBA Consulting (2024), Wiltshire Water Cycle Study – Stage 1 and 2 reports

[77] Wessex Water (2022), Wessex Water Resource Management Plan – Non-technical Summary

abstraction although there is abstraction directly from local rivers, notably the River Kennet.

6.202 As established in the Screening Assessment, the River Avon SAC, the Avon Valley SPA and Ramsar site, and the Kennet and Lambourn Floodplain SAC are sources of water abstraction and therefore are susceptible to changes in water quantity as a result of proposed development within the Local Plan Review.

6.203 The River Avon SAC, the Avon Valley SPA and Ramsar site, and the Kennet and Lambourn Floodplain SAC are at threat from water abstraction. Water abstraction causes lower than natural river flows that affects a range of habitat factors. The maintenance of both flushing flows and base flows, based on natural hydrological processes, is vital to sustaining the SACs chalk stream habitat as a whole, which qualifying species of these European sites rely on and to fish species at low flows in particular.

Catchment Abstraction Licencing Strategy (CALS)

6.204 The Environment Agency is responsible for managing water resources in England. The Environment Agency controls how much water is abstracted with a permitting system, regulating existing licences and granting new ones. It uses the CALS process and abstraction licensing strategies to do this. The CALS process aims to aid the meeting of the environmental objectives of the Water Framework Directive by:

- Providing a water resource assessment of rivers, lakes, reservoirs, estuaries and groundwater referred to as water bodies under the Water Framework Directive (WFD).
- Identifying water bodies that fail flow conditions expected to support good ecological status.
- Preventing deterioration of water body status due to new abstractions.
- Providing results which inform River Basin Management Plans (RBMPs).

6.205 Wiltshire is located within seven different water catchments, including the three primary catchments, which cover the majority of the County:

- Hampshire Avon[78]
- Kennet and Vale of White Horse[79]
- Bristol Avon, Little Avon, Axe and North Somerset Streams[80]

6.206 For the Bristol Avon, Little Avon, Axe and North Somerset Streams the latest strategy was prepared in 2012 and as such is referred as Catchment Abstraction Management Strategies (CAMS).

6.207 The River Avon SAC and the Avon Valley SPA and Ramsar site were located within the Hampshire Avon catchment and the Kennet and Lambourn Floodplain SAC is located within the Kennet and Vale of White Horse catchment and therefore the CALS relating to these catchments have been considered further in this assessment.

6.208 The remaining CAMS associated with Bristol Avon, Little Avon, Axe and North Somerset Streams was not considered further as changes in water abstraction in this catchment were not considered to result in impacts to the River Avon SAC, Avon Valley SPA and Ramsar site and Kennet and Lambourn Floodplain SAC.

6.209 The CALS process has developed a classification system in order to inform the abstraction process. This classification provides an indication of:

- The relative balance between the environmental requirements for water and how much is licensed for abstraction.
- Whether water is available for further abstraction.
- Areas where abstraction may need to be reduced.

6.210 In terms of surface water resource availability, this has been calculated at four different flows with Q30 being higher flows and Q90 being lower flows. The findings are presented below for each flow rate and each catchment area:

Hampshire Avon Catchment

- Q30 (higher flows) - This identified restricted water availability in relation to the Nine Mile River and a mixture of restricted and no water availability for the Wylye. Water was available in the remaining waterbodies.
- Q50 (moderate flows) - This identified no water availability in relation to the Nadder, Wylye, Nine Mile River and Hampshire Avon West. The remaining waterbodies were identified as having restricted water available.
- Q70 (below moderate flows) – This identified no water availability in any of the catchments in the Hampshire Avon catchment area.
- Q95 (low flows) - This identified no water availability in any of the catchments in the Hampshire Avon catchment area.

6.211 A review of water resource reliability found that in an average year resource there was consumptive abstraction

[78] Environment Agency (2020), Hampshire Avon Abstraction Licensing Strategy
[79] Environment Agency (2019), Kennet and Vale of White Horse Abstraction Licensing Strategy
[80] Environment Agency (2012), Bristol Avon, Little Avon, Axe and North Somerset Streams Abstraction Licensing Strategy -

available at least 50% of the time for the majority of the catchment with smaller areas found to have either consumptive abstraction available at least 30% of the time or less than 30% of the time.

6.212 In terms of groundwater resource availability, the CALS identified this to have restricted water available for abstraction across the whole catchment.

Kennet and Vale of White Horse Catchment

- Q30 (higher flows) – This identified restricted water available across the whole of the catchment.
- Q50 (moderate flows) – This identified no water availability in any of the catchments in the Kennet and Vale of White Horse catchment area.
- Q70 (below moderate flows) – This identified no water availability in any of the catchments in the Kennet and Vale of White Horse catchment area.
- Q95 (low flows) - This identified no water availability in any of the catchments in the Kennet and Vale of White Horse catchment area.

6.213 A review of water resource reliability found that in an average year resource there was consumptive abstraction available less than 30% of the time for the whole catchment.

6.214 As detailed in the CALS, a bespoke strategy has been developed and will apply to specific applications, including consumptive surface water abstractions and groundwater abstractions in direct hydraulic continuity with a river or water dependent habitat features. This application of this bespoke strategy ensures the following:

- Q30 (higher flows) – This identified water availability across the whole of the catchment.
- Q50 (moderate flows) – This identified restricted water available across the majority of the catchment with exception to three smaller areas where there was no water available.
- Q70 (below moderate flows) – This identified no water availability in any of the catchments in the Kennet and Vale of White Horse catchment area.
- Q95 (low flows) - This identified no water availability in any of the catchments in the Kennet and Vale of White Horse catchment area.

6.215 The application of this bespoke strategy also altered the water resource reliability, which found that there was consumptive abstraction available consumptive abstraction available at least 50% of the time.

Mitigation

6.216 Wessex Water have prepared a draft Water Resource Management Plan (WRMP), which will ensure that a sufficient supply of water can be secured, and that the environment will be protected over at least a 25-year planning period. The WRMP are updated every five years and reviewed by regulators, such as Environment Agency. This takes into account growth within the supply area, including growth within Wiltshire County as part of the Local Plan Review.

6.217 The draft WRMP provides detail on abstraction within the Hampshire Avon catchment within which the River Avon SAC and Avon Valley SPA and Ramsar site lie. As part of this, there has been engagement with the Environment Agency and Natural England through the WINEP process, which has identified the requirement that new growth in the catchment must not be met through additional abstraction and that abstraction will be reduced as soon as is practicable. The draft WRMP states that due to licence changes implemented in 2018, there is no proposed headroom in the existing licence available to meet new growth within the catchment and as such alternative measures will be required to supply new growth over the plan period.

6.218 The preferred plan in the draft WRMP, includes a water resources strategy[81] and a demand management strategy[82] to reduce leakage and demand through water efficiency visits and smart metering, with a particular focus on the Hampshire Avon catchment to ensure new growth in the catchment can be met through existing abstraction. This is considered the most likely option to be taken forward as part of the WRMP.

6.219 An HRA[83] of the WRMP 2024 was undertaken, which included consideration of the potential impacts of the preferred options put forward as part of the draft WRMP. The HRA concluded if published as currently drafted, will have no adverse effects on any European sites, alone or in combination.

6.220 In addition, Thames Water have also prepared a draft WRMP, which has outlined the following measures in its preferred plan:

- Installation and upgrade of household meters.
- Reduction of leakage.
- Promotion of water efficiency and metering to improve water use.

6.221 An HRA of the draft WRMP concluded that provided that appropriate mitigation measures are implemented, adverse effects on integrity can be ruled out for all of the Best Value Plan options and in relation to alternative options,

[81] Wessex Water (2023), WRMP24 Upper Hampshire Avon Water Resources Strategy
[82] Wessex Water (2023), WRMP24: Demand Management Strategy
[83] WSP (2023), Wessex Water Habitats Regulations Assessment of the Water Resource Management Plan 2024

including Least Cost Plan and Best Environment and Societal Plan.

Policy Mitigation

6.222 The following measures outlined in the Local Plan Review will provide safeguarding and mitigation and such will need to be adhered to and implemented successfully. Specifically, Policy 88: Biodiversity and Geodiversity will ensure the requirement for development proposals to demonstrate the application of mitigation hierarchy and that no adverse effects will occur as a result of development. Further to this, Policy 96: Water Resources will ensure the application of stringent water efficiency measures and water resource management to significantly reduce pressure on water resources. This includes the following measures:

> "Accordingly, the council requires that:
>
> - New residential development should have a predicted mains water consumption of no more than 85 litres per person per day.
> - Non-household development should achieve a score of three credits within the water (Wat 01 Water Consumption) issue category for the BREEAM New Construction Standard, achieving 40% reduction compared to baseline standards.
> - All new development should incorporate water saving opportunities into their design, such as grey water recycling and rainwater harvesting. Developers will be expected to demonstrate how water efficiency has been taken into account during the design of their proposals.
>
> Development proposals within a Source Protection Zone, Safeguard Zone or Water Protection Zone must assess any risk to groundwater resources and groundwater quality and demonstrate that these would be protected throughout the construction and operational phases of development.
>
> Development will only be permitted where adequate foul drainage, sewerage and sewage treatment facilities are available or where suitable arrangements are made for their provision. Development should not be permitted in areas within buffer zones or safeguarded areas, set out by utility companies unless impacts can be satisfactorily mitigated."

6.223 This is supported within the supplementary text, which outlines that to ensure that water quantity of water resources is maintained and improved throughout Wiltshire that appropriate management is required. This includes continuous review of the Three River Basin Management Plans, Catchment Management Plans and Wiltshire's Climate Change Adaption Plan, the latter which sets out risks and actions in relation to reduced water availability.

6.224 Further to this, the supplementary text outlines that developers will need to consider water efficiency features and implement innovative features and fixtures, such as rainwater harvesting, grey water recycling and water efficient appliances. The council will also maintain dialogue with infrastructure providers and neighbouring planning authorities to ensure improvement to critical water resources.

6.225 Policy 4: Addressing Climate Change also specifies the following safeguarding and mitigation measures:

> "Providing comprehensive and multi-functional sustainable drainage systems (i.e. incorporating the four pillars of SuDS design) to serve all new development, including grey water harvesting and use (in accordance with Policy 95 - Flood risk)"
>
> and
>
> "Incorporating appropriate water efficiency and water recycling measures to help reduce energy demand, reduce abstraction and contribute towards reducing the impact of nutrients on the catchment of the River Avon SAC (in accordance with Policy 96 - Water resources)"

6.226 Policy 94: Wiltshire's Canals and the Boating Community also provides safeguarding measures to ensure that any development proposals relating to this policy demonstrate no adverse effect in relation to water resources (abstraction).

Conclusion

6.227 In light of the above, provided that the options published by the respective WRMP for Wessex Water and Thames Water are taken forward and that the safeguard measures provided within the Local Plan are implemented successfully, it can be concluded that adverse effects on the integrity of the River Avon SAC, Avon Valley SPA and Ramsar site and Kennet and Lambourn Floodplain SAC as a result of impacts from water quantity will be avoided.

Water Quality

6.228 Proposed development as part of the plan for Wiltshire has the potential to contribute to increased levels of nitrogen and phosphorus entering the Solent (including Solent Maritime SAC, Solent and Isle of Wight Lagoons SAC, Solent and Southampton Water SPA and Ramsar site and Solent, Dorset Coast SPA Portsmouth Harbour SPA and Ramsar site and Chichester and Langstone Harbours SPA and Ramsar site), River Avon SAC and Kennet and Lambourn Floodplain SAC causing eutrophication of the European sites.

Solent European Sites

6.229 A review of Natural England's catchment map of the Solent identified the following site allocations within the catchment area:

- Policy 40: Land South East of Empress Way – 1,220 dwellings and 0.7ha employment land

6.230 Natural England has advised that any new development proposed that uses Wastewater Treatment Works (WwTW) that discharge into the any of these European sites and/or waterbodies that subsequently discharge into these designated sites will need to demonstrate no adverse effects on integrity by achieving nutrient neutrality. This should be calculated using the Natural England methodology[84] and may require appropriate mitigation to achieve this.

6.231 In response to this Wiltshire Council has prepared a Nitrogen Mitigation Strategy for the Solent Internationally Protected Sites[85], which has been produced as evidence for the Local Plan Review to support the Council's strategic approach to achieve nutrient neutrality. Within Wiltshire there are two areas, which fall within the River Test catchment, including an area to the north near Ludgershall, which drains into the Ludgershall Wastewater Treatment Works (WwTW), and an to the south and east of Salisbury, which drains into WwTW at Grimstead, Whiteparish and Redlynch.

6.232 The Local Plan Review proposes the delivery of 1,220 dwellings at Land at Empress Way, Ludgershall, which is expected to drain into the Ludgershall WwTW. Further to this, Wiltshire Council have predicted that a further 125 dwellings as part of windfall development will come forward within the River Test Catchment. The Nitrogen Mitigation Strategy has outlined that this site allocation plus windfall development will result in a nitrogen burden of 2,353.75kg/TN/yr. To provide certainty that nutrient neutrality can be achieved and therefore will not result in an adverse effect on the integrity of the Solent European sites, mitigation as detailed below will be required.

Mitigation

6.233 Sites that will result in a net increase in nutrient levels will be required to achieve nutrient neutrality and to ensure no adverse effect on the integrity of the Solent European Sites. This must be demonstrated through the provision of a project-level HRA and where there is an increase in nutrient levels, appropriate mitigation measures will be implemented to ensure the scheme achieves nutrient neutrality. As recommended by Natural England, this should include consideration of the following measures. This has been considered in more detail in the Nitrogen Mitigation Strategy for the Solent European sites.

- Nature-based solutions:
  - Interceptor Wetlands – wetlands can be effective at uptake of nutrients through natural processes. They include storm interceptor wetlands and interceptor wetlands to take effluent from WwTWs before discharge into watercourses. Wetlands need to be appropriately designed and located to be effective and this would need to be assessed on a case by case basis.
  - Off-setting – through change in land use in the catchment area from land uses with high nutrient loads to conversion of less nutrient intensive land uses, for example converting agricultural land with high phosphorus and nitrogen inputs to woodland or semi-natural grassland such as chalk grassland with no additional nutrient inputs and low natural discharge.
- Upgrade existing WwTWs:
  - To increase nutrient removal capacity and therefore reduce the effluent nutrient loading.

6.234 Within the Nitrogen Mitigation Strategy, Roundbarrow Farm, a dairy farm within the River Test catchment, has been identified as an opportunity to provide mitigation through offsetting by converting it to a nature reserve. Calculations have been undertaken to understand the capacity of mitigation land and concluded there is significant capacity at Roundbarrow Farm for planning applications related to future growth up to 2026. However, for planned growth up to 2038, based on precautionary calculations, there would not be sufficient capacity at Roundbarrow Farm to mitigate for all known anticipated development to the end of the plan period. However, all development coming forward within the Test catchment would be required to run a detailed calculation using accurate data and the implementation of SuDS would further reduce the total budget required for each development. Additionally, upgrading WwTWs, including the WwTW at Ludgershall, would reduce the nitrogen burden per house which in turn will reduce the overall nitrogen budget for developments that use this WwTW after 2030, thereby increasing the residual capacity at Roundbarrow Farm.

6.235 Should the Levelling Up and Regeneration Bill 2022 not receive Royal Assent or the Ludgershall WwTW not be covered by this requirement, alternative mitigation schemes will be sought in the Solent region to cover the small amount of shortfall.

Conclusion

6.236 Provided that the Nitrogen Mitigation Strategy is implemented successfully, adverse effects on the

[84] Natural England (2022), Nutrient Neutrality Generic Methodology

[85] Wiltshire Council (2023), Nitrogen Mitigation Strategy for the Solent Internationally Protected Sites

integrity of Solent European sites as a result of impacts from water quality will be avoided.

River Avon SAC

6.237 The River Avon SAC is sensitive to threats from siltation and water pollution. Excessive sediment supply can lead to the smothering of coarse substrates and the loss of flora and fauna dependent on them, including *Ranunculus* plants, and egg an larval survival in salmon, lampreys and bullhead. Elevated levels of phosphate (P) lead to dominance by algae and a loss of characteristic plant species, resulting in poorer feeding conditions. Changes in water quality can also affect the habitat quality necessary to support Desmoulin's whorl snail. Diffuse pollution from agriculture, small point discharges and sewage treatment works (STW) discharges are contributing to elevated levels of nutrients and reduced dissolved oxygen levels in part of the SAC.

6.238 A review of Natural England's catchment map of the River Avon SAC identified the following site allocations within the catchment area:

- Policy 23: Land North East of Old Sarum, Salisbury – 350 dwellings
- Policy 24: Land at Netherhampton Road Garden Centre - 60 dwellings
- Policy 25: Land North of the Beehive Park & Ride, Old Sarum – 100 dwellings
- Policy 26: Land North of Downton Road – 220 dwellings
- Policy 27: Land south of Harnham – 265 dwellings
- Policy 30: Land east of Church Road, Laverstock – 50 dwellings
- Policy 33: The Maltings and Central Car Park – missed used re-development
- Policy 35: Salisbury District Hospital Campus

6.239 These sites are in addition to existing planned growth and a further amount of housing growth, such as from small sites and windfall development, that result from the Plan's policies (policy 2).

6.240 To provide certainty that nutrient neutrality can be achieved and therefore will not result in an adverse effect on the integrity of the River Avon SAC, mitigation as detailed below will be required.

Mitigation

6.241 Sites that will result in a net increase in nutrient levels will be required to achieve nutrient neutrality and to ensure no adverse effect on the integrity of the River Avon SAC. This must be demonstrated through the provision of a project-level HRA and where there is an increase in nutrient levels, appropriate mitigation measures will be implemented to ensure the scheme achieves nutrient neutrality. As recommended by Natural England, this should include consideration of the following measures. This is being considered in more detail as part of an ongoing update to the River Avon SAC Strategy[86],[87] and which Natural England are in support of.

- Upgrade existing wastewater treatment works (WwTWs):
  - The Levelling Up and Regeneration Bill 2022 seeks to ensure the upgrade of all WwTWs in sensitive areas at risk of nitrogen pollution to increase nutrient removal capacity and therefore reduce the effluent nutrient loading.
- Cover crops
  - Cover fields with crops to stabilise the soil, reduce sediment run-off and assimilate nutrients
- Package Treatment Plant (PTP) upgrades and retrofits
  - Installing additional tertiary filters onto PTPs before discharge into watercourses and act as a final polishing stage. Study found a 65% average reduction of Total Phosphorus in the resulting effluent. Wiltshire Council are also piloting an innovative piece of technology using electrocoagulation which could be used in place of aggregate bed retrofits.
- Water efficiency
  - Pilot options for water efficiency measures at LPA owner properties, facilities and registered providers in the catchment.
- Nature-based solutions:
  - Constructed wetlands on WwTWs – wetlands can be effective at uptake of nutrients through natural processes.
  - Wetlands and enhancement on council owned land – council owned land identified with potential for wetland creation for phosphorus removal and flood storage, installation of a floating wetland on existing balancing pond and retrofitting additional Sustainable Urban Drainage treatment trains on urban industrial land to remove additional phosphorus from surface water. The Local Plan identified 'Land at Brook Street' (Policy 59) as a potential area to create wetland areas for mitigation.
  - Offsetting – through change in land use in the catchment area from land uses with high nutrient

[86] Wiltshire Council (2023), Local Nutrient Mitigation Fund – Spring 2023 Big Round. Hampshire Avon – Expression of Interest

[87] Wiltshire Council (2023). Hampshire Avon Sub-catchment, Supporting Information

loads to conversion of less nutrient intensive land uses, for example converting agricultural land with high phosphorous and nitrogen inputs to woodland or semi-natural grassland such as chalk grassland with no additional nutrient inputs and low natural discharge.

- Woodland / riparian buffers – inceptor woodlands and riparian buffer strip can intercept phosphorus from surface water run-off from agricultural land
- River restoration in headwaters – Natural England has commissioned a methodology to quantify phosphorus removal from river restoration and this is expected shortly. However, this method has several limitations.

6.242 Further to this, it is understood that the Council will be submitting a bid to the Local Nutrient Fund to help forward fund mitigation in line with development growth.

6.243 In addition, the Council will also continue to deliver mitigation through the existing ringed-fence pot from CiL, as well as monies from the local nutrient mitigation fund and private mitigation operators.

6.244 Following discussions with Wiltshire Council, it is understood that the following will be required:

- All applications as detailed in Policy 88 and outlined below should submit a nutrient calculation with their planning application and a statement confirming how SuDS and other measures have been adopted on site to avoid and mitigate phosphorus burdens.
- The Council must notify Natural England should there be any predicted short fall in phosphorus mitigation, or unforeseen delays in mitigation delivery as soon as possible. Mitigation will need to be delivered across the Hampshire Avon catchment to meet planned growth coming forward. Should mitigation be delayed in some parts of the Hampshire Avon catchment then additional permissions will be delayed until such time as appropriate additional or alternative measures have been secured.

6.245 Further to this and in line with a precautionary approach, it is understood that development that comes forward within the River Avon catchment as part of the Local Plan Review will be phased to a reasonable level until such that nutrient neutrality can be assured. This is realised by the strategy in place for the Salisbury Area as outlined in Policy 2: Delivery Strategy. Its effectiveness will be monitored and kept under review.

Mitigation within the plan

6.246 Mitigation and safeguards from changes in water quality are provided by policies in the plan through measures aimed at neutralising levels of phosphates flowing into the River Avon SAC. These include:

- Policy 23: Land North East of Old Sarum, Salisbury
- Policy 24: Land Netherhampton Road Garden Centre
- Policy 25: Land north of the Beehive Park and Ride Old Sarum
- Policy 26: Land North of Downton Road
- Policy 27: Land South of Harnham
- Policy 28: Land West of Coombe Road, Harnham
- Policy 30: Land East of Church Road, Laverstock

6.247 Further protection has also been provided as part of Policy 88: Biodiversity and Geodiversity and which makes reference to the River Avon Phosphorus Mitigation Strategy and River Avon Planning Guidance and Solent Nitrogen Mitigation Strategy. Specifically, supporting text to the policy outlines:

> "Currently phosphorus concentrations exceed the appropriate targets required in the conservation objectives for the River Avon SAC over a number of reaches. Development must not (alone or in combination) result in non-compliance with SAC water quality targets or compound existing problems of target exceedance and must comply with the mitigation strategy and Wiltshire Council guidance. New development must not prejudice achievement of conservation objectives for the SAC over the long term with all new development within the catchment of the Hampshire Avon needing to be phosphorus neutral. Where applicable, development must include incorporation of Sustainable Drainage Systems (SuDS) within the scheme layout, informed by, and in accordance with, the CIRIA guidance the council recently commissioned49, and provision of a completed phosphorous budget using the most recent calculator released by Natural England. Where a proposed development / project does not fall within scope of the council's phosphorus mitigation strategy, a bespoke mitigation strategy must be put forward to demonstrate that the project could achieve nutrient neutrality"

Conclusion

6.248 Provided that the policy wording incorporated into the plan and mitigation strategy is implemented successfully, adverse effects on the integrity of the River Avon SAC, as a result of impacts from water quality will be avoided.

Kennet and Lambourn Floodplain SAC

6.249 The Kennet and Lambourn Floodplain SAC is sensitive to siltation and water pollution from sediment and nutrient

input. Diffuse pollution has the potential to affect aquatic habitats and species as well as habitat quality in areas of riverside habitat supporting *Vertigo moulinsiana*. Diffuse pollution is arising from highway runoff as well as from farmland. Pollution also results from overflowing sewers (a result of high groundwater levels infiltrating sewers) with ongoing/recurring incidents at numerous locations on the River Lambourn.

6.250 Marlborough sewage treatment works (STW) is directly upstream of the Kennet and Lambourn Floodplain SAC and the STW has a high spilling record[68]. The area of Marlborough is a Groundwater Impacted System Management Plan area (GISMP)[88]. GISMP areas are where it has been identified that groundwater entering the sewer network can cause problems such as sewer flooding and large volumes of flow passing forward to the STW. Therefore proposed growth in Marlborough has the potential to result in likely significant effects in terms of water quality on this European site.

6.251 A review of Natural England's catchment map of the Kennet identified the following site allocations within the catchment area:

- Policy 45: Land at Chopping Knife Lane, Marlborough – 50 dwellings
- Policy 46: Land off Barton Dene – 30 dwellings and 1.8ha employment land

6.252 Further to the above development, Wiltshire Council have predicted that a total of 600 homes and 1.8ha of employment land will be provided at Marlborough as part of the Local Plan which are expected to drain into the Marlborough STW.

6.253 To provide certainty that nutrient neutrality can be achieved and therefore will not result in an adverse effect on the integrity of the Kennet and Lambourn Floodplain SAC, mitigation as detailed below will be required.

Mitigation

6.254 Sites that will result in a net increase in nutrient levels will be required to achieve nutrient neutrality and to ensure no adverse effect on the integrity of the Kennet and Lambourn SAC. This must be demonstrated through the provision of a project-level HRA and where there is an increase in nutrient levels, appropriate mitigation measures will be implemented to ensure the scheme achieves nutrient neutrality. As recommended by Natural England, this should include consideration of the following measures:

- Upgrade existing wastewater treatment works (WwTWs):
  - The Levelling Up and Regeneration Bill 2022 seeks to ensure the upgrade of all WwTWs in sensitive areas at risk of nitrogen pollution to increase nutrient removal capacity and therefore reduce the effluent nutrient loading.

6.255 Marlborough STW has also been identified as a Go 2 Green (G2G) site[88], whereby there are opportunities to offset the need to upsize the treatment process with a big capital scheme by optimising the effluent stream and utilising redundant assets that might be on site.

6.256 The following measures outlined in the Local Plan Review will provide safeguarding and mitigation and such will need to be adhered to and implemented successfully. Specifically, Policy 88: Biodiversity and Geodiversity will ensure the requirement for development proposals to demonstrate the application of mitigation hierarchy and that no adverse effects will occur as a result of development. Further to this, Policy 96: Water Resources will ensure development will only be permitted where solutions for waste water have been adequately provided. This includes the following measures:

> "Development will only be permitted where adequate foul drainage, sewerage and sewage treatment facilities are available or where suitable arrangements are made for their provision. Development should not be permitted in areas within buffer zones or safeguarded areas, set out by utility companies unless impacts can be satisfactorily mitigated."

Conclusion

6.257 <u>Provided that the policy wording incorporated into the plan and infrastructure upgrades are implemented successfully, adverse effects on the integrity of the Kennet and Lambourn SAC, as a result of impacts from water quality will be avoided.</u>

River Itchen SAC

6.258 As detailed in the Screening Assessment, there is potential for likely significant effects in relation to the River Itchen SAC to arise from proposed development in the Local Plan Review as a result of changes in water quality, specifically from increased phosphorous inputs to compensatory habitats being delivered within the River Test catchment area. A review of site allocations identified Policy 41: Land at Empress Way, Ludgershall to be located within the catchment area of the River Test. Therefore, in the event that compensatory measures are delivered within this catchment, and that this results in a likely significant effect from new growth in Wiltshire, it will be necessary for this development and any development that comes forwards as windfall development to demonstrate that there will be no adverse effect on integrity in line with any changes to Natural

[88] Email correspondence with Thames Water (3rd April 2023)

England's advice for this catchment. Mitigation could be delivered by Southern Water directly, or via project-level HRA securing nutrient neutrality.

Mitigation

6.259 To provide certainty that water quality will not adversely affect the integrity of the River Itchen SAC, the following measures outlined below will need to be adhered to and implemented successfully. This will require site-specific assessments to be undertaken at the project-level.

Policy Wording

6.260 It is recommended that the Local Plan Review includes policy wording, which specifically addresses the potential for water quality impacts to arise in relation to compensatory habitats of the River Itchen SAC and therefore should any compensation projects come forward within the River Test catchment, that proposed development will be required to undertake a project-level HRA as detailed below and to demonstrate nutrient neutrality can be achieved. If no adverse effect cannot be concluded, then proposed development will not be permitted. Further to this and until further clarity is provided on this issue, it is advised that any development proposed within this catchment is consulted with Natural England.

Project-level HRA

6.261 Should compensatory projects be delivered within the River Test catchment area, any development proposed, including Policy 41: Land at Empress Way, Ludgershall, within the catchment of the River Test will be required to ensure no advserse effect on the integrity of the River Itchen SAC. Mitigation could either be delivered by Southern Water directly or by new development achieving nutrient neutrality. This must be demonstrated through the provision of a project-level HRA and where there is an increase nutrient levels, appropriate mitigation measures implemented to ensure the scheme achieves nutrient neutrality. Reference to specific mitigation measures as detailed in **para 6.171** should be referred to.

Conclusion

6.262 Provided that the mitigation measures above are incorporated into the plan and implemented successfully, adverse effects on the integrity of the River Itchen SAC, as a result of impacts from water quality will be avoided.

Summary of Appropriate Assessment

6.263 The conclusions of the Appropriate Assessment are summarised in **Table 6.4:**

- The European sites that are shown as screened out with no colour indicate sites that were considered to have no likely significant effect at the screening stage.
- The European sites highlighted in grey were found to have no adverse effect on integrity (AEoI) provided the mitigation measures detailed in Chapter 6 are implemented.
- The European sites highlighted in orange were found to have a potential AEoI.

Table 6.8: Summary of Appropriate Assessment

European Site	Physical damage and loss	Non-physical disturbance	Non-toxic contamination	Air Pollution	Recreational Pressure	Water Quantity	Water Quality
Avon Valley Ramsar	No LSE	No LSE	No LSE	No LSE	No AEoI	No AEoI	No LSE
Avon Valley SPA	No LSE	No LSE	No LSE	No LSE	No AEoI	No AEoI	No LSE
Bath and Bradford on Avon Bats SAC	No AEoI	No AEoI	No LSE	No LSE	No AEoI	No LSE	No LSE
Chichester and Langstone Harbours SPA	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No AEoI
Chichester and Langstone	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No AEoI

European Site	Physical damage and loss	Non-physical disturbance	Non-toxic contamination	Air Pollution	Recreational Pressure	Water Quantity	Water Quality
Harbours Ramsar							
Chilmark Quarries SAC	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE
Cotswolds Beechwoods SAC	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE
Dorset Heathlands Ramsar	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE
Dorset Heaths SAC	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE
Emer Bog SAC	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE
Fontmell and Melbury Downs SAC	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE
Great Yews SAC	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE
Hackpen Hill SAC	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE
Kennet and Lambourn Floodplain SAC	No LSE	No LSE	No LSE	No LSE	No LSE	No AEoI	No AEoI
Kennet Valley Alderwoods SAC	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE
Mells Valley SAC	No LSE	No LSE	No LSE	No LSE	No AEoI	No LSE	No LSE
Mendip Woodlands SAC	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE
Mottisfont Bats SAC	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE
North Meadow & Clattinger Farm SAC	No LSE	No LSE	No LSE	No LSE	No AEoI	No LSE	No LSE
Pewsey Downs SAC	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE

European Site	Physical damage and loss	Non-physical disturbance	Non-toxic contamination	Air Pollution	Recreational Pressure	Water Quantity	Water Quality
Porton Down SPA	No LSE	No LSE	No LSE	No AEoI	No LSE	No LSE	No LSE
Portsmouth Harbour SPA	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No AEoI
Portsmouth Harbour Ramsar	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No AEoI
Prescombe Down SAC	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE
River Avon SAC	No AEoI	No AEoI	No AEoI	No AEoI	No AEoI	No AEoI	No AEoI
River Itchen SAC	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No AEoI
River Lambourn SAC	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE
Rodborough Common SAC	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE
Salisbury Plain SAC	No LSE	No LSE	No LSE	No AEoI	No AEoI	No LSE	No LSE
Salisbury Plain SPA	No AEoI	No LSE	No LSE	No AEoI	No AEoI	No LSE	No LSE
Severn Estuary SAC	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE
Severn Estuary SPA	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE
Severn Estuary Ramsar	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE
Solent and Dorset Coast SPA	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No AEoI
Solent and Isle of Wight Lagoons SAC	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No AEoI
Solent and Southampton Water SPA	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No AEoI
Solent and Southampton Water Ramsar	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No AEoI

European Site	Physical damage and loss	Non-physical disturbance	Non-toxic contamination	Air Pollution	Recreational Pressure	Water Quantity	Water Quality
Solent Maritime SAC	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No AEoI
Somerset Levels and Moors SPA	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE	No LSE
The New Forest Ramsar	No LSE	No LSE	No LSE	No LSE	No AEoI	No LSE	No LSE
The New Forest SAC	No LSE	No LSE	No LSE	No LSE	No AEoI	No LSE	No LSE
The New Forest SPA	No LSE	No LSE	No LSE	No LSE	No AEoI	No LSE	No LSE

Chapter 7
Conclusions and Next Steps

7.1 At the Screening stage, likely significant effects on European sites, either alone or in combination with other policies and proposals, were identified for plan policies:

- Policy 2: Delivery Strategy
- Policy 6: Chippenham Principal Settlement
- Policy 7: Land South of Chippenham and East of Showell Farm
- Policy 8: Chippenham Town Centre
- Policy 9: Calne Market Town
- Policy 10: Land off Spitfire Road, Calne
- Policy 11: Land to the north of Spitfire Road, Calne
- Policy 12: Corsham Market Town
- Policy 13: Land south of Dicketts Road, Corsham
- Policy 14: Devizes Market Town
- Policy 15: Land at the Devizes Wharf, Assize Court and Wadworth Brewery, Devizes
- Policy 16: Malmesbury Market Town
- Policy 17: Melksham Market Town
- Policy 22: Salisbury Principal Settlement
- Policy 23: Land North East of Old Sarum, Salisbury
- Policy 24: Land at Netherhampton Road Garden Centre
- Policy 25: Land north of the Beehive Park and Ride, Old Sarum
- Policy 26: Land North of Downton Road
- Policy 27: Land south of Harnham
- Policy 28: Land west of Coombe Road, Harnham
- Policy 30: Land east of Church Road, Laverstock
- Policy 33: The Maltings and Central Car Park
- Policy 35: Salisbury District Hospital Campus
- Policy 36: Amesbury Market Town
- Policy 39: Tidworth and Ludgershall Market Town
- Policy 40: Land South East of Empress Way
- Policy 41: Land at Bulbridge Estate, Wilton

- Policy 42: Land at Dead Maid Quarry Employment Area, Mere
- Policy 44: Marlborough Market Town
- Policy 45: Land at Chopping Knife Lane, Marlborough
- Policy 46: Land off Barton Dene
- Policy 47: Royal Wootton Bassett Market Town
- Policy 52: Trowbridge Principal Settlement
- Policy 53: Land north of Trowbridge
- Policy 55: Land at Innox Mills, Trowbridge
- Policy 57: Bradford on Avon Market Town
- Policy 58: Warminster Market Town
- Policy 60: Westbury Market Town
- Policy 61: Land West of Mane Way, Westbury
- Policy 62: Land at Bratton Road, Westbury
- Policy 64: Additional Employment Land
- Policy 66: Military Establishments
- Policy 69: Tourism and Related Development
- Policy 75: Strategic Transport Network
- Policy 77: Rural Exception Sites
- Policy 79: First Homes Exception Sites
- Policy 86: Renewable Energy
- Policy 94: Wiltshire's Canals and the Boating Community

7.2 The findings of the HRA screening determined that impacts from physical damage and loss, non-physical disturbance, non-toxic contamination, air pollution, recreation and water quantity and quality could result in a likely significant effect in relation to:

- **Physical damage and loss** – in relation to Bath and Bradford on Avon Bats SAC (offsite only), Salisbury Plain SPA (offsite only) and River Avon SAC (on and offsite).
- **Non-physical disturbance** – in relation to River Avon SAC (on and offsite) and Bath and Bradford on Avon Bats SAC (offsite only).
- **Non-toxic contamination** – in relation to River Avon SAC (on and offsite).
- **Air pollution** – in relation to Salisbury Plain SPA and SAC, Porton Down SPA and River Avon SAC.
- **Impacts of recreation** – in relation to Avon Valley SPA and Ramsar, Bath and Bradford on Avon Bats SAC, Mells Valley SAC, River Avon SAC, Salisbury Plain SAC, Salisbury Plain SPA, New Forest SPA SAC and Ramsar and North Meadow and Clattinger Farm SAC.
- **Water quantity –** in relation to Avon Valley SPA and Ramsar, River Avon SAC and Kennet and Lambourn Floodplain SAC.
- **Water quality** – in relation to River Avon SAC, Kennet and Lambourn Floodplain SAC, River Itchen SAC and the Solent (including Solent Maritime SAC, Solent and Isle of Wight Lagoons SAC, Solent and Southampton Water SPA and Ramsar site and Solent, Dorset Coast SPA Portsmouth Harbour SPA and Ramsar site, Chichester and Langstone Harbours SPA and Ramsar site).

7.3 The Appropriate Assessment stage identified whether the above likely significant effects will, in light of mitigation and avoidance measures, result in adverse effects on integrity of the European sites either alone or in-combination with other plans or projects. The findings of the Appropriate Assessment are detailed below.

7.4 It can be concluded that no adverse effect on integrity will occur for the following European sites subject to the provision of safeguarding and mitigation measures as detailed in Chapter 6.

- **Physical Damage and Loss (onsite) –** the Appropriate Assessment concluded no adverse effect on integrity as a result of physical damage and loss in relation to River Avon SAC. Sufficient mitigation is provided in the plan through Policy 88: Biodiversity and Geodiversity.
- **Physical Damage and Loss (offsite)** – the Appropriate Assessment concluded no adverse effect on integrity as a result of physical damage and loss in relation to Bath and Bradford on Avon Bats SAC (offsite only), Salisbury Plain SPA (offsite only) and River Avon SAC providing the safeguards and mitigation measures outlined within the Plan are implemented, in addition to the below:
  - Mitigation is provided through Local Plan Review policies, including Policy 88: Biodiversity and Geodiversity, Policy 90: Woodland, Hedgerows and Trees and Policy 86: Renewable Energy.
  - A 20m buffer will be required and a Construction Method Statement implemented to ensure sensitive habitats, including the River Avon SAC are protected.
  - Bat surveys will be required for any development coming forward within 4km of the Bath and Bradford on Avon Bats SAC and/or within core areas identified in the Trowbridge Bat Mitigation Strategy and Wiltshire Bat SAC Planning Guidance document and illustrated as impact zones for bats on the Wiltshire Planning Explorer, in order to determine the individual and cumulative importance of the

habitats for these species and inform mitigation proposals.

- A commitment to mitigation is required within the plan dependent on the findings of bat surveys. If required, mitigation will need to ensure the protection of key bat habitat and creation and enhancement of habitats suitable for these species.
- Habitat creation throughout the site layout to provide connectivity to adjacent or nearby habitats to support protected bat species and the condition of the Bath and Bradford Bats Special Area of Conservation.
- The core bat habitat to be protected and enhanced. Design and layout will be informed by appropriate surveys, impact assessments, and development proposals will need to accord with the Corsham Batscape Strategy, Trowbridge Bat Mitigation Strategy and Wiltshire Bat SAC Planning Guidance.
- Appropriate mitigation to protect bats, including financial contributions towards management, monitoring, and any off-site measures as necessary, as informed by the Corsham Batscape Strategy.

- **Non-physical disturbance** – the Appropriate Assessment concluded no adverse effect on integrity as a result of non-physical disturbance in relation to River Avon SAC (on and offsite), Bath and Bradford Avon Bats SAC. Sufficient mitigation is provided in the plan through policies, including Policy 88: Biodiversity and Geodiversity, Policy 92: Conserving and Enhancing Dark Skies and Policy 91: Conserving and Enhancing Wiltshire's Landscapes, and site-specific policies, including policies 7, 13, 14, 52, 53 and 55.
- **Non-toxic contamination** – the Appropriate Assessment concluded no adverse effect on integrity as a result of non-toxic contamination in relation to River Avon SAC. Sufficient mitigation is provided in the plan through Policy 88: Biodiversity and Geodiversity.

  Specifically, Policy 88 outlines that at the project level, any proposals within 20m of River Avon SAC and its tributaries will require a project level construction and environmental management plans, or equivalent, to be implemented to avoid non-toxic contamination.
- **Air pollution –** the Appropriate Assessment concluded no adverse effect on integrity in relation to Salisbury Plain SAC and SPA, Porton Down SPA and River Avon SAC. Further work is currently being undertaken with Natural England to determine the requirement for mitigation. However, in spite of this it can be concluded that no adverse effects will arise as should mitigation be required, this can be delivered and implemented by WC and/or respective landowners in collaboration with WC and would likely constitute through habitat management measures.

  No adverse effects can be concluded in relation to Salisbury Plain SPA and Porton Down SPA without requirement for further assessment or mitigation in relation to air pollution.
- **Recreation** – the Appropriate Assessment concluded no adverse effect on integrity as a result of increased recreational pressure in relation to Avon Valley SPA and Ramsar (on and offsite), Bath and Bradford on Avon Bats SAC, Mells Valley SAC, River Avon SAC (on and offsite), Salisbury Plain SAC, Salisbury Plain SPA (on and offsite), New Forest SPA, SAC and Ramsar (on and offsite) and North Meadow and Clattinger Farm SAC provided that the following safeguards and mitigation measures required by the plan are successfully implemented. This includes:
  - Provision of Open Spaces (policy 84 and 93)
  - Provision of Strategic SANGs, including in Trowbridge and Westbury as outlined in the Trowbridge Bat Mitigation Strategy.
  - Project level HRA, where site allocations are proposed within established ZOIs of European sites
  - Specific policy wording in policies 7, 13, 23, 24, 25, 26, 27, 28, 30, 54 and 63
  - Mitigation strategy for Salisbury Plain SPA
  - Mitigation strategy for New Forest SPA SAC and Ramsar
- **Water Quantity** – the Appropriate Assessment concluded no adverse effect on integrity as a result of changes in water quantity in relation to the River Avon SAC, the Avon Valley SPA and Ramsar and the Kennet and Lambourn Floodplain SAC. This is provided that the options outlined within the draft WRMP for Wessex Water and Thames Water are taken forwards and that the mitigation measures outlined in the relevant policies of the Local Plan Review are implemented successfully.
- **Water Quality** – the Appropriate Assessment concluded no adverse effect on integrity as a result of water quality issues from the plan in relation to River Avon SAC and the Solent (including Solent Maritime SAC, Solent and Isle of Wight Lagoons SAC, Solent and Southampton Water SPA and Ramsar site and Solent, Dorset Coast SPA Portsmouth Harbour SPA and Ramsar site and Chichester and Langstone Harbours SPA and Ramsar site), Kennet and Lambourn Floodplain SAC and River Itchen SAC. Sufficient mitigation is provided within the plan through policies, including site-specific policies 23, 24, 25, 26, 27, 28, 30 and policy 88 and 97, which stipulates the requirement for development to

demonstrate nutrient neutrality and for adequate sewerage and sewage treatment facilities to be required. The assessment recognised that the River Avon SAC mitigation strategy is an interim approach. A precautionary approach supports a stepped housing requirement that reflects its limitations. Further to this, there is the Wiltshire Nitrogen Mitigation Strategy for the Solent European sites in place and an updated Nutrient Management Plan being developed, which will replace an Interim Delivery Strategy and address Local Plan Reviews proposed scale of growth.

Next steps

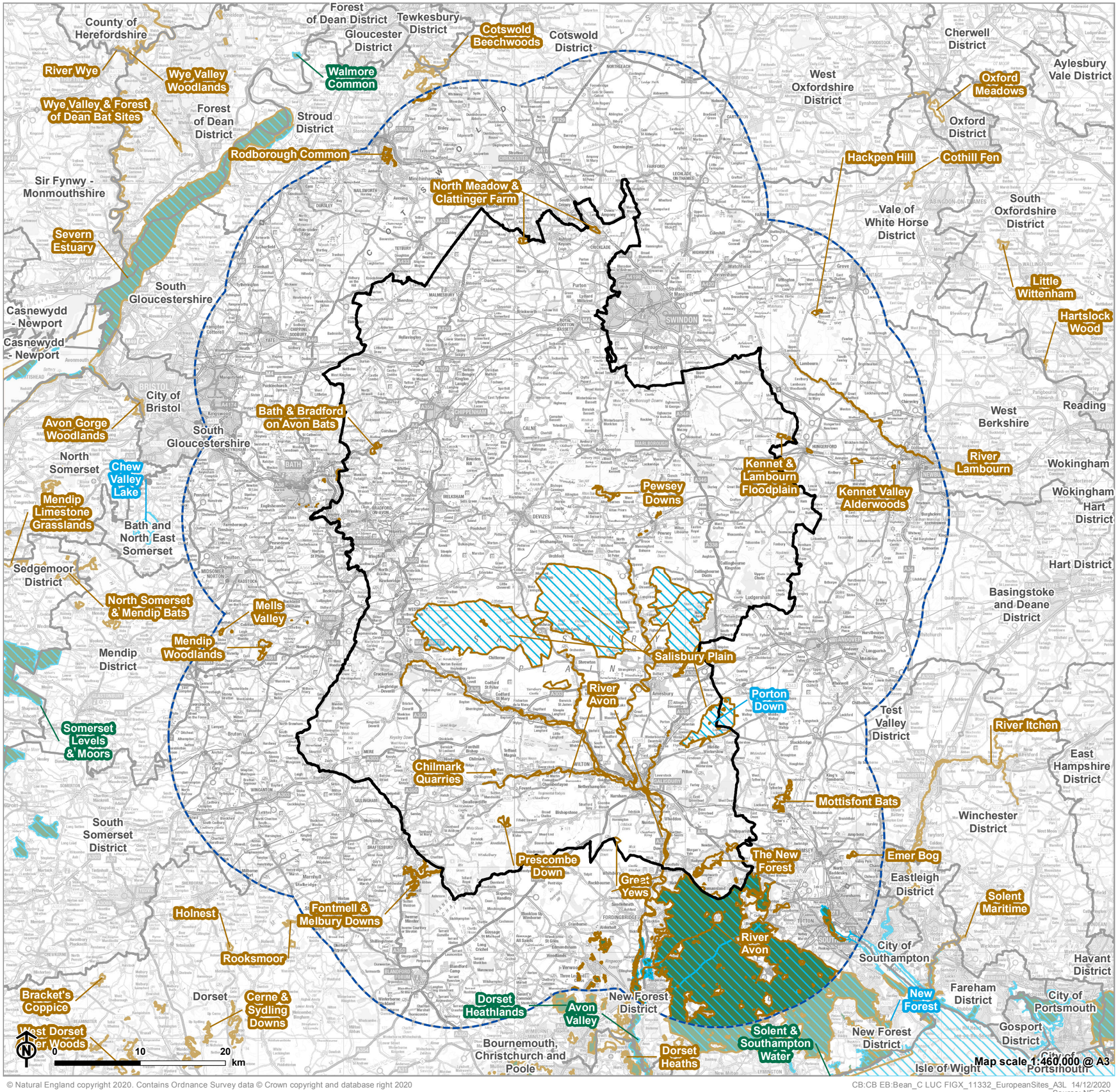
7.5 HRA is an iterative process and as such is expected to be updated in light of newly available evidence, including additional work relating to the air quality assessment or equivalent, and comments from key consultees. It is recommended that this report is subject to consultation with Natural England and the Environment Agency to confirm that the conclusions of the assessment are considered appropriate at this stage of plan-making.

Appendix A

Map of European sites within 15km of Wiltshire

LUC

Figure A-1: Map of European Sites within 15km of Wiltshire



- Wiltshire County boundary
- Wiltshire County 15km buffer
- Local Authority boundary
- Ramsar
- Special Area of Conservation
- Special Protection Area

CB:CB EB:Bean_C LUC FIGX_11332_EuropeanSites_A3L 14/12/2020
Source: NE, OS

Wiltshire Council

Appendix B

Attributes of European sites within 15km of Wiltshire County

Bath and Bradford on Avon Bats SAC	
Site Description	
The SAC as a whole supports 15% of the UK population of Greater Horseshoe bats *Rhinolophus ferrumequinum*, internationally-significant populations of Lesser Horseshoe *Rhinolophus hipposideros* and Bechstein's bats *Myotis bechsteinii*. The SAC comprises four component sites: Brown's Folly, Box Mine, Winsley Mines, and Combe Down and Bathampton Down Mines. These are distributed over a wide geographical area to the south and east of Bath and have different known bat usages, which over the whole of the SAC include breeding, hibernation, swarming and dispersal. The sites are all abandoned limestone mines and some include areas of supporting habitat: broadleaved woodland and species rich calcareous grassland. The surrounding landscape provides feeding and commuting opportunities between the component SSSIs, other SAC sites and other undesignated roosts which is vital in supporting the bats throughout their life cycle. Features of significance within the wider landscape are watercourses, woodland, grazed pasture, hay meadows, hedgerows, linear trees and scrub.	
Qualifying Features	
Annex II species that are a primary reason for selection of this site	
1304	Greater horseshoe bat *Rhinolophus ferrumequinum*
1323	Bechstein's bat *Myotis bechsteinii*
Annex II species present as a qualifying feature, but not a primary reason for site selection	
1303	Lesser horseshoe bat *Rhinolophus hipposideros*
Special Area of Conservation objectives	
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; ■ The extent and distribution of the habitats of qualifying species; ■ The structure and function of the habitats of qualifying species; ■ 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.	
Site Improvement Plan[89]: pressures, threats and related development	
The main current threats to the site include: 1. **Planning permission** - There is currently no formal way of assessing the cumulative impacts of "high disturbance" level surveys (e.g. mist netting, harp trapping, radiotracking) being carried out outside the SAC boundary which may have cumulative impacts on the features of the SAC. Similarly, there is no formal way of assessing cumulative impacts on the SAC from permissions granted by the different competent authorities. 2. **Change in land management** - Land ownership is fragmented and management has lapsed, particularly around the urban fringe of Bath. 3. **Direct impact from third parties** - One-off acts of vandalism or impacts of recreational pursuits could have a devastating effect if done in close proximity to roosting bats. 4. **Feature location/extent/condition unknown** - There is a lack of knowledge about the population of Bechstein's bat within the SAC and lack of data for their relationship to roosts, foraging and commuting within the wider landscape. This is a risk because it is difficult to determine the impacts of plans and projects on Bechstein's bat. 5. **Offsite habitat availability/management** - There is a lack of knowledge as to usage of the wider landscape by the SAC species. Lack of knowledge compromises the ability to respond appropriately to threats such as development pressure and opportunities such as the use of agri-environment schemes in locations that will most greatly benefit bats. 6. **Public access/disturbance** – There is continuous long-term disturbance by visitors, however the sites are managed in such a way that it does not present a significant pressure unless the volume and frequency of visitors were to increase. The threat to the sites come from one-off events such as: fire juggling near to the maternity colony; use of aerosol spray paints underground; use of fuel of any type underground, and bonfires at the mine entrances.	

[89] Natural England - Site Improvement Plan: Bath and Bradford on Avon Bats (SIP011)
http://publications.naturalengland.org.uk/publication/4564119772463104

Bath and Bradford on Avon Bats SAC
7. **Change to site condition** - Mine instability is particularly relevant at entrances where a collapse could make it unusable by bats. A collapse is likely to alter the entrance dimensions thereby affecting ventilation, temperature and humidity within the mines, and/or may cause bats to be killed or become entrapped. Due to mine instability it is also difficult to monitor bats effectively. 8. **Inappropriate designation boundary** - Several undesignated sites support important populations of SAC bats. Some of these are under threat, and others are located in areas/landscapes where they could be offered greater protection and enhanced management of surrounding habitats if they were known to be special sites.

Chilmark Quarries SAC	
Site Description	
Chilmark Quarries SAC in Wiltshire comprises a series of disused mines, quarries and man-made follies which are used as hibernation roosts by an important assemblage of bat species, most notably Greater horseshoe *Rhinolophus ferrumequinum*, Lesser horseshoe *Rhinolophus hipposideros*, Bechstein's *Myotis bechsteinii* and Barbastelle *Barbastella barbastellus*. The surrounding woodland, grassland and open water habitats also provide a valuable roosting, breeding and feeding area for bats.	
Qualifying Features	
Annex II species that are a primary reason for selection of this site	
1304	Greater horseshoe bat *Rhinolophus ferrumequinum*
1308	Barbastelle *Barbastella barbastellus*
1323	Bechstein's bat *Myotis bechsteinii*
Annex II species present as a qualifying feature, but not a primary reason for site selection	
1303	Lesser horseshoe bat *Rhinolophus hipposideros*
Special Area of Conservation objectives	
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; ■ The extent and distribution of the habitats of qualifying species; ■ The structure and function of the habitats of qualifying species; ■ 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.	
Site Improvement Plan[90]: pressures, threats and related development	
The main current threats to the site include: 9. **Public Access/Disturbance** - Unprotected mine entrances on the site are vulnerable to unauthorised access which has the potential to cause direct/indirect harm to bats. Damage to/removal of bat grilles on entrances to follies at Fonthill Grottoes and resultant unauthorised access has potential for direct/indirect harm to bats. 10. **Natural changes to site conditions** - Some of the mine structures are very unstable and subject to occasional rock falls. These could directly injure or trap bats, or indirectly affect them by blocking access or changing the conditions inside the mine. 11. **Offsite habitat availability/management** - Lack of knowledge regarding usage of the wider landscape by SAC species. Lack of knowledge compromises the ability to respond appropriately to threats (such as development pressure) and opportunities (such as the use of agri-environment schemes in locations that will most benefit bats). 12. **Planning Permission** - There is difficulty in determining the cumulative impacts of development, including operations carried out under a European Protected Species licence. There is currently no formal way of assessing the cumulative impacts of "high disturbance" level	

[90] Natural England - Site Improvement Plan: Chilmark Quarries (SIP044)
http://publications.naturalengland.org.uk/publication/5962539112333312

Chilmark Quarries SAC

surveys (e.g. mist netting, radiotracking) being carried out inside or outside the SAC boundary which may have cumulative impacts on the target species.

13. **Air Pollution** - **Impact of atmospheric nitrogen deposition** - Nitrogen deposition exceeds site relevant critical loads.

Great Yews SAC

Site Description

Great Yews SAC is situated on gently sloping ground on the upper Chalk south of Salisbury, Wiltshire and comprises an extensive area of almost pure yew woodland with around 300 old trees, including many large and impressive individuals. The site has a long history as yew woodland and demonstrates the full structural and functional range expected of yew stands.

Qualifying Features

Annex I habitats that are a primary reason for selection of this site

91J0	*Taxus baccata* woods of the British Isles

Special Area of Conservation objectives

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;

- The extent and distribution of qualifying natural habitats;
- The structure and function (including typical species) of qualifying natural habitats; and
- The supporting processes on which qualifying natural habitats rely.

Site Improvement Plan[91]: pressures, threats and related development

The main current threats to the site include:

1. **Deer** - Deer browsing is limiting the natural regeneration of yew via seedlings and layering. Protection of selected layering shoots/seedlings by fencing has been agreed.
2. **Natural changes to site conditions** - Some of the mine structures are very unstable and subject to occasional rock falls. These could directly injure or trap bats, or indirectly affect them by blocking access or changing the conditions inside the mine.
3. **Air Pollution** - **risk of atmospheric nitrogen deposition** - Nitrogen deposition exceeds the site-relevant critical load for ecosystem protection and hence there is a risk of harmful effects, but the sensitive features are currently considered to be in favourable condition on the site.

Kennet and Lambourn Floodplain SAC

Site Description

The River Lambourn is an example of a classic chalk stream with a seasonally dry winterbourne section. It is relatively unmodified and has near-natural flow characteristics. The river supports a characteristic range of aquatic plant communities of the *Ranunculion fluitantis* and *Callitricho-Batrachion* types. As well as being classified as SAC for its river type, the Lambourn is also of importance in supporting self-sustaining populations of Bullhead. An additional qualifying feature present is Brook lamprey.

The Kennet and Lambourn Floodplain SAC consists of a cluster of sites in the Kennet and Lambourn river valleys. These areas represent locations where the terrestrial snail *Vertigo moulinsiana* is particularly abundant.

Qualifying Features

Annex II species that are a primary reason for selection of this site

1016	Desmoulin's whorl snail *Vertigo moulinsiana*

[91] Natural England - Site Improvement Plan: Great Yews (SIP094)
http://publications.naturalengland.org.uk/publication/6012398850801664

Kennet and Lambourn Floodplain SAC
Special Area of Conservation objectives
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; ■ The extent and distribution of the habitats of qualifying species; ■ The structure and function of the habitats of qualifying species; ■ 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.
Site Improvement Plan[92]: pressures, threats and related development
The main current threats to the site include: 1. **Siltation** - An issue in several stretches of the river, mostly related to past modification of river morphology and flow rates. The river morphology is currently unfavourable, but being addressed by a river restoration plan. Sediment arising from highway runoff as well as from farmland continues to be of concern and there is a diffuse water pollution plan in place to address this. 2. **Water Pollution** - Both sediment and nutrient input are of concern. Diffuse pollution has the potential to affect aquatic habitats and species as well as habitat quality in areas of riverside habitat supporting *Vertigo moulinsiana*. Diffuse pollution is arising from highway runoff as well as from farmland. Pollution also results from overflowing sewers (a result of high groundwater levels infiltrating sewers) with ongoing/recurring incidents at numerous locations on the River Lambourn. 3. **Invasive species** - Signal crayfish have been abundant in most stretches of the river for almost 20 years and they are thought to be having significant adverse impacts on native species through predation (of fish fry and invertebrates), competition for breeding sites and cover (with bullhead and lamprey), and destruction of river banks. Azolla is also a recurring problem in parts, It forms floating mats where flow is impeded resulting in impoverishment of species diversity. 4. **Hydrological changes** - An increase in unseasonably high groundwater levels, prolonged periods of high rainfall, and prolonged periods of drought are all likely to be exerting stress and adverse impacts on the river and associated flora and fauna. There is concern that *Vertigo moulinsiana* populations have undergone significant decline, which may be related to increased prevalence of prolonged periods of drought and prolonged summer flooding. 5. **Inland flood defence works** - There is currently increased pressure from domestic property owners to reduce flood risk. This highlights the need for a revised flood defence strategy for the river which takes changes in rainfall patterns into account and considers action at a catchment level. 6. **Inappropriate cutting/mowing** - As a result of increased fear of flood risk there is pressure to increase removal of in-channel vegetation over. This has the potential to significantly change the character of the ecology of the river. Additionally, there is risk associated with the fact that a single individual undertakes weed cutting management over a large proportion of the river. 7. **Change in land management** - Part of the complex (Boxford Water Meadow) has suffered from management neglect and loss of riparian structure. Although infrastructure is now in place to facilitate restoration of grazing the land-owner is dependent upon third parties for grazing. 8. **Inappropriate water levels** - Water supply to parts of the complex is vulnerable to changes in control structures by third parties (Speen Moor, Rack Marsh). Greater control of these structures is desirable. 9. **Hydrological changes** - Parts of the floodplains are becoming less suitable for *Vertigo moulinsiana*. The reason for this is not clear and needs investigation. 10. **Water Pollution** - It is currently unclear whether molluscicides derived from farmland in river water are affecting *Vertigo moulinsiana* populations in the catchment. It is possible that this is contributing to local declines or losses of populations and needs investigation. Advice on molluscicide use is delivered via CSF but unclear whether this is effective.

North Meadow & Clattinger Farm SAC
Site Description

[92] Natural England - Site Improvement Plan: River Lambourn and Kennet-Lambourn Floodplain (SIP112) http://publications.naturalengland.org.uk/publication/4738329056641024

North Meadow & Clattinger Farm SAC

North Meadow & Clattinger Farm Meadows SAC consists of a series of traditionally managed unimproved grasslands within the floodplain of the Upper Thames which continue to be managed as pasture and as hay-meadow.

It contains a rich variety of species-rich grassland types including the rare MG4 community for which the SAC is designated as well as a number of notable plant species. These grasslands represent rare and scattered remnants of a much more widespread unimproved grassland habitat before agricultural intensification and extensive gravel quarrying locally were responsible for widespread losses of this habitat and its subsequent fragmentation.

Qualifying Features

Annex I habitats that are a primary reason for selection of this site

6510	Lowland hay meadows (*Alopecurus pratensis*, *Sanguisorba officinalis*)

Special Area of Conservation objectives

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;

- The extent and distribution of qualifying natural habitats;
- The structure and function (including typical species) of qualifying natural habitats; and
- The supporting processes on which qualifying natural habitats rely.

Site Improvement Plan[93]: pressures, threats and related development

The main current threats to the site include:

1. **Inappropriate water levels** - An effective WLMP needs to be in place in order to protect the integrity of the site. There have been several unseasonal floods over the last six years which are beginning to cause changes and losses in the vegetation communities on the site.
2. **Water Pollution** - Both sediment and nutrient input are of concern. A diffuse pollution plan is in place and catchment sensitive farming initiative covers the catchment. Diffuse pollution has the potential to affect aquatic habitats and species as well as habitat quality in areas of riverside habitat supporting *Vertigo moulinsiana*. Diffuse pollution is arising from highway runoff as well as from farmland. Pollution also results from overflowing sewers (a result of high groundwater levels infiltrating sewers) with ongoing/recurring incidents at numerous locations on the River Lambourn.
3. **Habitat fragmentation** - The two component SSSIs are located 8km apart. Inclusion and restoration of a number of intervening sites locally would increase the habitat, thereby making it more resilient to fluctuating water levels in the face of climate change. The NNR team at North Meadow has, over a number of years, been working to achieve this aim. Also, one option is that additional land should be included within the North Meadow SSSI for this purpose. This would help buffer the site, possibly provide space for adaptation in anticipation of the effects of climate change, and better manage visitor impacts. Clattinger forms part of a more extensive site which provides good opportunities for on-site management.
4. **Commons management** - Fencing is required to keep livestock from straying off site. North Meadow NNR is common land and it is the responsibility of neighbouring landowners to erect fences. There are a number of problems involved in achieving this.
5. **Public Access/Disturbance** - There is increasing visitor pressure especially during the flowering time of Snake's-head Fritillary leading to localised damage on sites in the SAC.
6. **Water Pollution** - The SAC's hay meadow vegetation communities are sensitive to elevated nutrient levels. With increasing flooding there is an increased risk of flood water carrying diffuse pollution onto the site and causing soil enrichment with negative consequences for the species richness of the meadows.

Pewsey Downs SAC

Site Description

Pewsey Downs SAC lies on the southern edge of the Marlborough Downs and consists of species-rich chalk grassland rich in orchids such as Burnt-tip orchid *Neotinea ustulata*, Frog orchid *Coeloglossum viride*, and Autumn's lady's tresses *Spiranthes spiralis*.

[93] Natural England - Site Improvement Plan: North Meadow & Clattinger Farm (SIP152)
http://publications.naturalengland.org.uk/publication/4565167836758016

Pewsey Downs SAC	
Pewsey Downs is also designated for its significant population of early gentian *Gentianella anglica*, an endemic species which is confined to chalk grasslands in southern England. Other important species include: Devil's-bit scabious *Succisa pratensis* (the preferred food plant of the Marsh fritillary butterfly, a Site of Special Scientific Interest (SSSI) feature) as well as round-headed rampion *Phyteuma orbiculare*; saw-wort *Serratula tinctoria*, chalk milkwort *Polygala calcarea* and bastard toadflax *Thesium humifusum*.	
Qualifying Features	
Annex I habitats that are a primary reason for selection of this site	
6210	Semi-natural dry grasslands and scrubland facies on calcareous substrates (*Festuco-Brometalia*) (* important orchid sites)
Annex II species that are a primary reason for selection of this site	
1654	Early gentian *Gentianella anglica*
Special Area of Conservation objectives	
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; ■ The extent and distribution of qualifying natural habitats and habitats of qualifying species; ■ The structure and function (including typical species) of qualifying natural habitats; ■ The structure and function of the habitats of qualifying species; ■ The supporting processes on which qualifying natural habitats and habitats of qualifying species rely; ■ The populations of qualifying species; and ■ The distribution of qualifying species within the site.	
Site Improvement Plan[94]: pressures, threats and related development	
The main current threats to the site include: 1. **Habitat fragmentation** - The creation and restoration of additional species-rich chalk grassland adjacent to the site is required to help sustain viable grazing management and increase the resilience of the SAC calcareous grassland habitat to climate change. 2. **Inappropriate grazing** - Farmers wish to use sheep grazing to control ragwort. In the past this has led to overgrazing in winter/ spring. Sheep grazing in spring would threaten early gentian and would be detrimental to the semi-natural dry grassland orchid site. 3. **Air Pollution**: I**mpact of atmospheric nitrogen deposition** - Nitrogen deposition exceeds site-relevant critical loads. Increased nitrogen deposition could cause the increasing dominance of tall, coarse grasses (such as upright brome or Tor-grass) and a decrease in overall botanical diversity. Consequently, it would impact upon the sward structure required by associated butterfly and gentian species.	

Prescombe Down SAC	
Site Description	
Prescombe Down SAC is a botanically rich downland site comprising a deep forking coombe system situated on the upper chalk in south Wiltshire. It has a characteristic species-rich chalk grassland flora, with good numbers of Early gentian *Gentianella anglica* being found in warm, sheltered locations. The site supports a rich butterfly community including scarce species such as Marsh fritillary *Euphydryas aurini*. Scattered scrub with a variety of species and structure adds to the value of the site.	
Qualifying Features	
Annex I habitats that are a primary reason for selection of this site	
6210	Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia) (* important orchid sites)
Annex II species that are a primary reason for selection of this site	
1654	Early gentian *Gentianella anglica*

[94] Natural England - Site Improvement Plan: Pewsey Downs (SIP172)
http://publications.naturalengland.org.uk/publication/5126262490136576

Prescombe Down SAC	
Annex II species present as a qualifying feature, but not a primary reason for site selection	
1065	Marsh fritillary butterfly *Euphydryas (Eurodryas, Hypodryas) aurinia*

Special Area of Conservation objectives

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;

- The extent and distribution of qualifying natural habitats and habitats of qualifying species;
- The structure and function (including typical species) of qualifying natural habitats;
- The structure and function of the habitats of qualifying species;
- The supporting processes on which qualifying natural habitats and habitats of qualifying species rely;
- The populations of qualifying species; and
- The distribution of qualifying species within the site.

Site Improvement Plan[95]: pressures, threats and related development

The main current threats to the site include:

1. **Changes in species distributions** - It is not known if Marsh fritillary is still present on the site or was ever breeding there. Past records have been sporadic with numbers variable and the most recent confirmed record is from 1996. In recent years an NNR volunteer warden has visited and informally provided records of butterflies seen (not including Marsh fritillary) but there has been no formal survey. Currently the habitat is not ideal for Marsh fritillary.
2. **Air Pollution: risk of atmospheric nitrogen deposition** - Nitrogen deposition exceeds the site-relevant critical load for ecosystem protection and hence there is a risk of harmful effects, but the sensitive features are currently considered to be in favourable condition on the site.

River Avon SAC	

Site Description

The River Avon SAC is one of the richest chalk rivers in Europe. It is important for its fish population, invertebrate, which include populations of Desmoulins Whorl Snail and its in-river plant community habitat as well as bankside habitats.

The Avon Valley SPA is a wide river valley comprising mostly unimproved wet grassland and has importance for wintering wildfowl with Bewick's Swan and Gadwall as the notified features. The population of Bewick's Swan in the Avon Valley have decreased in line with a national trend of decrease, which is felt to be due to decreased breeding success. At the moment the SPA does not meet the threshold for them.

Qualifying Features

Annex I habitats that are a primary reason for selection of this site	
3260	Water courses of plain to montane levels with the *Ranunculion fluitantis* and *Callitricho-Batrachion* vegetation
Annex II species that are a primary reason for selection of this site	
1016	Desmoulin's whorl snail *Vertigo moulinsiana*
1095	Sea lamprey *Petromyzon marinus*
1096	Brook lamprey *Lampetra planeri*
1106	Atlantic salmon *Salmo salar*
1163	Bullhead *Cottus gobio*

Special Area of Conservation objectives

[95] Natural England - Site Improvement Plan: Prescombe Down (SIP180)
http://publications.naturalengland.org.uk/publication/5787487116984320

River Avon SAC

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;

- The extent and distribution of qualifying natural habitats and habitats of qualifying species;
- The structure and function (including typical species) of qualifying natural habitats;
- The structure and function of the habitats of qualifying species;
- The supporting processes on which qualifying natural habitats and habitats of qualifying species rely;
- The populations of qualifying species; and
- The distribution of qualifying species within the site.

Site Improvement Plan[96]: pressures, threats and related development

The main current threats to the site include:

1. **Physical modification** - The Strategic Framework for the Restoration of the River Avon (Halcrow and GeoData 2009) found 59% of the length of the River Avon, 36% Nadder, 33% Wylye, 23% Till, 6% Dockens and 2% Bourne to be partially, significantly or severely modified. Physical habitat modifications have caused simplification of the biotope mosaics (substrate types, variations in flow, channel width and depth, in-channel and side-channel sedimentation features, bank profiles, erosion features, in-channel and bankside vegetation cover and woody debris) and impact both on the SAC chalk stream habitat feature itself and also the levels of populations of the SAC species it supports.
2. **Siltation** - Excessive fine sediment supply can lead to the smothering of coarse substrates and the loss of flora and fauna dependent on them. Siltation reduces the air spaces within gravels and reduces water flow through the substrate leading to poor quality of the water in the gravels. This effects the establishment of *Ranunculus* plants, and egg and larval survival in salmon, lampreys and bullhead. Sources of silt include run-off from agricultural land, roads, sewage and fish farm discharges.
3. **Water Pollution** - Elevated levels of phosphate (P) lead to dominance by algae and a loss of characteristic plant species. Within Blashford Lakes high P levels could switch the system from a macrophyte dominated system to an algal dominated one resulting in a poorer feeding conditions for gadwall. Organic pollution reducing dissolved oxygen levels effects biota. Water quality can also affect the habitat quality necessary to support Desmoulin's whorl snail and the SPA species. Diffuse pollution from agriculture, small point discharges and sewage treatment work (STW) discharges are contributing to elevated levels of nutrients and reduced dissolved oxygen levels in parts of the SAC.
4. **Water abstraction** - Water abstraction causes lower than natural river flows that affects a range of habitat factors including current velocity, water depth, wetted area, substrate quality, dissolved oxygen levels and water temperature. The maintenance of both flushing flows and base flows, based on natural hydrological processes, is vital to the sustaining the SAC chalk stream habitat as a whole and to fish species at low flows in particular.
5. **Changes in species distributions** - Salmon are declining and the population level is below the critical conservation level. The reason for the decline is not fully understood and may relate to external factors and climate change however in-channel habitat, flows, siltation and temperature may also be significant contributing factors (refer to the EA River Avon Salmon and Sea Trout Site Action Plan). In addition, Bewick's Swans are choosing to winter elsewhere even though the habitat in the SPA remains good for them. Desmoulin's whorl snail habitat is fragmented throughout the catchment and of varying quality. The main issue affecting the habitat being site dryness or scrub cover and where hydrologically feasible this is being addressed through agri-environment and Conservation Enhancement Schemes.
6. **Invasive species** - Invasive plants cause progressive deterioration of bankside habitats by impoverishing the botanical diversity and causing winter instability due to lack of year round plant cover. This can increase the risk of erosion and siltation and thereby affect fish spawning habitat and gravel habitat supporting characteristic submerged plant communities. The principle plant species of concern are Orange Balsam, Japanese Knotweed, Giant Hogweed, Creeping Water Primrose, Skunk Cabbage, Water Fern (*azolla*) and Himalayan Balsam. Invasive animal species such as Signal crayfish are known to impact on riverine species such as Salmon, but in the Avon their population size, distribution and potential impact is not quantitively known.
7. **Public Access/Disturbance** - Dog walkers disturbing wildfowl in areas outside public rights of way is a concern.
8. **Hydrological changes** - Desmoulin's whorl snail is an annual species and requires localities that are stable hydrologically. Changes in the hydrology that may affect the species include flooding or drying out due to low ground water levels which may be linked to either changing climate conditions or over-abstraction.
9. **Inappropriate weed control** - Insensitive weed cutting may impact on the chalk stream habitat and the fish species it supports. Weed cutting appears to favour a dominance by *Ranunculus* species and this can lead to a loss in other plant species diversity and

[96] Natural England - Site Improvement Plan: Avon River and Valley (SIP185)
http://publications.naturalengland.org.uk/publication/6133502894407680

River Avon SAC

abundance. As well as the potential for direct damage to fish species it may also result in a loss of food source, shelter and wildlife associated with the river plants - in particular for invertebrates, and their eggs, fish and fish fry. It may also cause the lowering of water levels on the adjacent floodplain effecting wetland habitats and the fauna they support.

10. **Change in land management** - Areas of wet grassland may become wetter due to higher river levels in summer. This may increase the difficulty of managing some areas of the floodplain by grazing and cutting in some years potentially impacting on the grazing quality for Bewick swans.
11. **Habitat fragmentation** - SAC/SPA boundaries may not adequately cover the extent of all Annex 1 and Annex 2 features and/or their supporting habitats. Several of the headwaters and the tributaries that are not included within the boundary of the SAC (or underpinning SSSI) are integral to and important to the natural functioning of the whole river system and also support the habitats and species for which the site is selected and/or notified. The headwaters are also particularly sensitive to abstraction pressures.

Salisbury Plain SAC

Site Description

Salisbury Plain SAC, which includes Porton Down and Parsonage Down, represents the largest surviving semi-natural dry grassland area within north-west Europe. It hosts the priority habitat type 'orchid-rich sites' and supports extensive areas of CG3 *Bromus erectus* grassland, which is the most widespread and abundant calcareous grassland found in the UK. Other grassland types, like the rare CG7 *Festuca ovina - Hieracium Pilosella-Thymus praecox* grassland, are present. In addition, the site features the best remaining example in the UK of lowland Juniper scrub on chalk and a cluster of large Marsh fritillary *Euphydryas aurinia*, sub-populations where the species breeds on dry calcareous grassland.

Porton Down SPA and Salisbury Plain SPA support important breeding populations of Stone-curlew *Burhinus oedicnemus*, Quail *Coturnix coturnix*, Hobby *Falco subbuteo*, and over-wintering Hen harrier *Circus cyaneus*.

Qualifying Features

Annex I habitats that are a primary reason for selection of this site	
5130	*Juniperus communis* formations on heaths or calcareous grasslands
6210	Semi-natural dry grasslands and scrubland facies on calcareous substrates (*Festuco-Brometalia*) (* important orchid sites)
Annex II species that are a primary reason for selection of this site	
1065	Marsh fritillary butterfly *Euphydryas (Eurodryas, Hypodryas) aurinia*

Special Area of Conservation objectives

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;

- The extent and distribution of qualifying natural habitats and habitats of qualifying species;
- The structure and function (including typical species) of qualifying natural habitats;
- The structure and function of the habitats of qualifying species;
- The supporting processes on which qualifying natural habitats and habitats of qualifying species rely;
- The populations of qualifying species; and
- The distribution of qualifying species within the site.

Site Improvement Plan[97]: pressures, threats and related development

The main current threats to the site include:

1. **Changes in species distributions** - On Porton Down, the juniper population is judged to be in Unfavourable Condition due to a decline in the population level. A new cohort of seedlings is developing at various locations across the site, some of which will be protected by rabbit enclosure. *Phytophthora austrocedri* has caused dieback and mortality of juniper at a National Nature Reserve in the north Pennines; therefore, any plan to import juniper plant material onto the SAC, should consider the bio-security risk.

[97] Natural England - Site Improvement Plan: Salisbury Plain (SIP209)
http://publications.naturalengland.org.uk/publication/5384236060114944

Salisbury Plan SAC
2. **Air Pollution**: **risk of atmospheric nitrogen deposition** - Nitrogen deposition exceeds the critical load for juniper *Juniperus communis subsp. communis*. There is a risk that this could contribute towards coarse grass dominance, decline in lichens, changes in plant biochemistry and an increased sensitivity to abiotic stress. Nitrogen deposition also exceeds the critical load for the Marsh fritillary population.

The New Forest SAC	
Site Description	
The New Forest is a large and complex ecosystem and one of the largest remaining relatively wild areas in the South of England attracting enormous numbers of visitors each year. The New Forest SAC and SPA supports an extensive and complex mosaic of habitats including wet and dry heaths and associated bogs and mires, wet and dry grasslands, ancient pasture woodlands, frequent permanent and temporary ponds and a network of streams and rivers. These habitats support an exceptional variety of flora and fauna including internationally important populations of breeding and over-wintering birds and other notable species such as southern damselfly, stag beetle and great crested newt. The New Forest is one of the most important sites for wildlife in the UK and recognised as being of exceptional importance for nature conservation throughout the European Union. Over 90% of the SAC comprises the unenclosed land of the Crown Lands and adjacent commons, the remainder is managed by private owners and occupiers. Of fundamental importance to sustaining the exceptional quality on the open forest is the persistence of commoning, the commoners stock roam freely maintaining the structural diversity and richness of the habitats complemented by annual heathland cutting and burning programmes.	
Qualifying Features	
Annex I habitats that are a primary reason for selection of this site	
3110	Oligotrophic waters containing very few minerals of sandy plains (*Littorelletalia uniflorae*)
3130	Oligotrophic to mesotrophic standing waters with vegetation of the *Littorelletea uniflorae* and/or of the *Isoëto-Nanojuncetea*
4010	Northern Atlantic wet heaths with *Erica tetralix*
4030	European dry heaths
6410	Molinia meadows on calcareous, peaty or clayey-silt-laden soils (*Molinion caeruleae*)
7150	Depressions on peat substrates of the *Rhynchosporion*
9120	Atlantic acidophilous beech forests with *Ilex* and sometimes also *Taxus* in the shrublayer (*Quercion robori-petraeae or Ilici-Fagenion*)
9130	*Asperulo-Fagetum* beech forests
9190	Old acidophilous oak woods with *Quercus robur* on sandy plains
91D0	Bog woodland *Priority feature
91E0	Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-Padion, Alnion incanae, Salicion albae*) *Priority feature
Annex I habitats present as a qualifying feature, but not a primary reason for selection of this site	
7140	Transition mires and quaking bogs
7230	Alkaline fens
Annex II species that are a primary reason for selection of this site	
1044	Southern damselfly *Coenagrion mercuriale*
1083	Stag beetle *Lucanus cervus*
Annex II species present as a qualifying feature, but not a primary reason for site selection	

The New Forest SAC	
1166	Great crested newt *Triturus cristatus*

Special Area of Conservation objectives

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;

- The extent and distribution of qualifying natural habitats and habitats of qualifying species;
- The structure and function (including typical species) of qualifying natural habitats;
- The structure and function of the habitats of qualifying species;
- The supporting processes on which qualifying natural habitats and habitats of qualifying species rely;
- The populations of qualifying species; and
- The distribution of qualifying species within the site.

Site Improvement Plan[98]: pressures, threats and related development

The main current threats to the site include:

1. **Drainage** - A legacy of 150 years of drainage of mires, wet heathlands, wet grasslands and streams to improve grazing has led to a loss of peat, reduction of habitat condition, bracken and scrub encroachment.
2. **Inappropriate scrub control** - Lack of management and grazing, and inappropriate drainage has led to the loss of open habitats through encroachment of scrub and secondary woodland. Restoration becomes more costly and difficult to achieve the more established the scrub and secondary woodland becomes.
3. **Fish stocking** - Hatchet Pond, whilst not actively stocked, is managed as a coarse fishery including carp and bream. The common practice of ground baiting, which is popular with carp fisherman, can introduce nutrients and there may also be deliberate extra feeding to encourage growth of specimen sized fish. In addition, *benthivorous* fish contribute nutrient through their feeding habits. This has contributed to high turbidity and algal biomass putting the submerged flora at risk.
4. **Deer** - High levels of browsing prevent regeneration and cause a decline in the shrub and field layer of woodlands.
5. **Air Pollution: impact of atmospheric nitrogen deposition** - Air pollution impacts on vegetation diversity. Aerial deposits of nitrogen may exceed the threshold limits above which the quality and character of vegetation begins to be altered and adversely impacted. **Public Access/Disturbance** - The New Forest attracts high numbers of visitors annually and there is an assumption that disturbance affects the breeding success of SPA birds and SAC habitats through erosion, compaction and damage to vegetation and water bodies. The pressures are not fully understood but a recent study concluded that nightjar, woodlark and Dartford warbler densities are notably low. Hatchet pond attracts high numbers of visitors, walkers along the shoreline have eroded the banks and introduced sediment into the water, this together with feeding of birds and fishing activities has polluted the water and put the habitat at risk. Many campsites are located in sensitive areas and have impoverished vegetation due to trampling and infrastructure. Sites in or adjacent to pasture woodland in particular are likely to progressively decline due to the impact on tree regeneration, levels of dead wood, lichens and ground flora.
6. **Change in land management** - Restoration of conifer plantation to heathland and grassland habitats is taking place throughout the New Forest on private land, on the adjacent commons and on the Crown Lands where the Verderers Enclosures are being returned to open forest. Following initial felling there is often extensive regeneration of conifer which requires management. Lack of funds for follow-up management could lead to a failure of the restoration.
7. **Changes in species distributions** - The New Forest is one of four major sites for the Southern damselfly *Coenagrion mercuriale* with populations estimated to be in the hundreds or thousands of individuals. No surveys have been undertaken to assess populations at known sites within the New Forest or to identify new populations and as such there is no evidence as to whether the population is increasing, decreasing or stable. Many of the stream and mire habitats preferred by the species have been altered in the past in an attempt at drainage. Without knowledge of the population trends it is difficult to assess whether the drainage is impacting on the population and to inform potential restoration work.
8. **Water Pollution** - Many villages have properties that are not on mains sewerage and have domestic treatment units which discharge into ditches and streams that are either within or flow into the SAC. The ditches and streams have seasonal flow and this in combination with a number of properties all discharging into the same channel could lead to an increase in nutrient levels impacting on the habitats they flow through, reducing species richness and diversity.

[98] Natural England - Site Improvement Plan: New Forest (SIP147)
http://publications.naturalengland.org.uk/publication/5174614971908096

The New Forest SAC
9. **Forestry and woodland management** - Lack of management of woodlands in private ownership has led to loss of characteristic ground flora and shrubs and threat from non-natives such as scots pine, turkey oak and rhododendron. Artificial drainage can impact on wetter habitats leading to loss of sphagnum and bryophytes. 10. **Inappropriate ditch management** - Ditches alongside tracks, roads, private property and for forestry practices can impact on wet habitats which causes a loss or conversion of habitat. Drainage into streams and bogs can carry silt adding nutrients and negatively impacting on species relying on the low nutrient status of the habitats. 11. **Invasive species** - A wide range of non-native invasive species such as *Crassula helmslii*, parrots feather, pitcher plant, rhododendron, turkey oak and Himalayan balsam can be found within the Natura 2000 habitats of the New Forest. Many non-native species invade and out compete native species. *Crassula helmsii* in particular spreads quickly and can form dense mats of vegetation particularly in ungrazed areas. Turkey Oak is an aggressive coloniser on sandy, acid soils such as the New Forest and in some locations large numbers have displaced dry heathland and grassland and need to be removed. 12. **Vehicles** - Much of the SAC is unfenced with open access and numerous roads crisscrossing the site. Although the area is well served by car parks, parking on the verges is common, this is a particular problem in villages with parking on verges outside properties, village greens and Manorial wastes. This leads to a loss of vegetation, compaction of the soil and pollution. 13. **Inappropriate cutting/mowing** - Loss of traditional hay cutting, grazing and scrub management in privately owned meadows and heathlands leading to a loss or conversion of habitat. 14. **Direct impact from 3rd party** - Private property owners modify verges which are SAC habitats outside of their ownership. Issues include: creating new drives; re-turfing; planting hedges; encroachment by moving boundaries, and storage of material and equipment.

Fontmell and Melbury Downs SAC	
Site Description	
Fontmell and Melbury Downs SAC is a large site, comprising of the edge of the north-east Dorset chalk escarpment. It supports a variety of scrub communities and dry calcareous grasslands. The variety of slope, soil and aspect provide habitats for a range of notable plant species such as Early gentian, Bastard toadflax and species of Orchids including Frog orchid, Fragrant orchid and Lesser butterfly orchid. Mosaics of grassland and scrub and a herb-rich sward provide the ideal conditions for rare and declining butterflies including; Duke of Burgundy, Silver Spotted Skipper, Adonis Blue and Marsh Fritillary.	
Qualifying Features	
Annex I habitats present as a qualifying feature, but not a primary reason for selection of this site	
6210	Semi-natural dry grasslands and scrubland facies on calcareous substrates (*Festuco-Brometalia*) (* important orchid sites)
Annex II species that are a primary reason for selection of this site	
1654	Early gentian *Gentianella anglica*
Special Area of Conservation objectives	
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; ■ The extent and distribution of qualifying natural habitats and habitats of qualifying species; ■ The structure and function (including typical species) of qualifying natural habitats; ■ The structure and function of the habitats of qualifying species; ■ The supporting processes on which qualifying natural habitats and habitats of qualifying species rely; ■ The populations of qualifying species; and ■ The distribution of qualifying species within the site.	
Site Improvement Plan[99]: pressures, threats and related development	
The main current threats to the site include:	

[99] Natural England - Site Improvement Plan: Fontmell & Melbury Downs (SIP089)
http://publications.naturalengland.org.uk/publication/4927257646727168

Fontmell and Melbury Downs SAC

1. **Air Pollution: impact of atmospheric nitrogen deposition** - Nitrogen deposition exceeds site-relevant critical loads which require further investigation. Whilst the north facing slopes were identified as being herb-rich at notification, the balance between herbs and vigorous grasses (such as upright brome and false oat grass) in some areas appear to be shifting.
2. **Inappropriate scrub control** - Areas are progressing towards secondary woodland rather than being managed effectively as scrub.
3. **Agriculture: agricultural operations** - Field parcels adjacent to the site with arable operations are subject to nutrient enrichment from fertilisers and spray-drift of herbicides, therefore leading to species-poor areas dominated by nettles and loss of priority habitat.
4. **Change in land management** - The high incidence of bovine tuberculosis (bTB) in grazing stock may lead to movement restrictions which could limit the ability of graziers to graze at suitable times of the year. Winter livestock housing is required to offset the consequences of bTB and make the site more resilient to bTB through increasing the flexibility and resilience of grazing management.

Mottisfont Bats SAC

Site Description

The Mottisfont woodland, which is near Romsey in Hampshire, supports an important population of the rare Barbastelle bat *Barbastella barbastellus*. Mottisfont contains a mix of woodland types including hazel *Corylus avellana* coppice with standards, broadleaved plantation and coniferous plantation which the bats use for breeding, roosting, commuting and feeding.

Qualifying Features

Annex II species that are a primary reason for selection of this site

1308	Barbastelle *Barbastella barbastellus*

Special Area of Conservation objectives

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;

- The extent and distribution of the habitats of qualifying species;
- The structure and function of the habitats of qualifying species;
- 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.

Site Improvement Plan[100]: pressures, threats and related development

The main current threats to the site include:

1. **Feature location/ extent/ condition unknown** - Barbastelle bats use a number of sites for roosts through the breeding season. The last full survey which involved radio-tracking to identify the distribution of bats around the site was carried out in 2002. The current annual Bat Conservation Trust survey contract provides basic presence information on an annual basis in two thirds of the designated site through bat detector surveys. Annual knowledge and detailed knowledge of the presence and distribution of the bats over the remaining one third of the site are both needed.
2. **Forestry and woodland management** - There are existing felling licences and England Woodland Grant Scheme agreements which do not take account of the designation and are not managing the habitat with the Barbastelle bat population in the woodland in mind.
3. **Offsite habitat availability/ management** - The SAC does not include areas which we think are important for the bats, therefore those areas do not have effective management secured.

River Lambourn SAC

Site Description

The River Lambourn is an example of a classic chalk stream with a seasonally dry winterbourne section. It is relatively unmodified and has near-natural flow characteristics. The river supports a characteristic range of aquatic plant communities of the *Ranunculion fluitantis* and

[100] Natural England - Site Improvement Plan: Mottisfont Bats (SIP144)
http://publications.naturalengland.org.uk/publication/4592740763435008

River Lambourn SAC

Callitricho-Batrachion types. As well as being classified as SAC for its river type, the Lambourn is also of importance in supporting self-sustaining populations of Bullhead. An additional qualifying feature present is Brook lamprey.

The Kennet and Lambourn Floodplain SAC consists of a cluster of sites in the Kennet and Lambourn river valleys. These areas represent locations where the terrestrial snail *Vertigo moulinsiana* is particularly abundant.

Qualifying Features

Annex I habitats that are a primary reason for selection of this site	
3260	Water courses of plain to montane levels with the *Ranunculion fluitantis* and *Callitricho-Batrachion* vegetation
Annex II species that are a primary reason for selection of this site	
1163	Bullhead *Cottus gobio*
Annex II species present as a qualifying feature, but not a primary reason for site selection	
1096	Brook lamprey *Lampetra planeri*

Special Area of Conservation objectives

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;

- The extent and distribution of qualifying natural habitats and habitats of qualifying species;
- The structure and function (including typical species) of qualifying natural habitats;
- The structure and function of the habitats of qualifying species;
- The supporting processes on which qualifying natural habitats and habitats of qualifying species rely;
- The populations of qualifying species; and
- The distribution of qualifying species within the site.

Site Improvement Plan[101]: pressures, threats and related development

The main current threats to the site include:

1. **Siltation** - Siltation is an issue in several stretches of the river, mostly related to past modification of river morphology and flow rates. The river morphology is currently unfavourable - sediment arising from highway runoff as well as from farmland continues to be of concern and there is a diffuse water pollution plan in place to address this.
2. **Water Pollution** - Both sediment and nutrient input are of concern. Diffuse pollution affects aquatic habitats and species as well as habitat quality in areas of riverside habitat supporting *Vertigo moulinsiana*. Diffuse pollution is arising from highway runoff as well as from farmland. Pollution also results from overflowing sewers (a result of high groundwater levels infiltrating sewers) with ongoing/recurring incidents at numerous locations on the River Lambourn.
3. **Invasive species** - Signal crayfish have been abundant in most stretches of the river for almost 20 years and they are thought to be having significant adverse impacts on native species through predation (of fish fry and invertebrates), competition for breeding sites and cover (with bullhead and lamprey), and destruction of river banks. *Azolla* is also a recurring problem in parts. It forms floating mats where flow is impeded resulting in impoverishment of species diversity.
4. **Hydrological changes** - An increase in unseasonably high groundwater levels, prolonged periods of high rainfall, and prolonged periods of drought are all likely to be exerting stress and adverse impacts on the river and associated flora and fauna. There is concern that *Vertigo moulinsiana* populations have undergone significant decline, which may be related to increased prevalence of prolonged periods of drought and prolonged summer flooding.
5. **Inland flood defence works** - There is currently increased pressure from domestic property owners to reduce flood risk. This highlights the need for a revised flood defence strategy for the river which takes changes in rainfall patterns into account and considers action at a catchment level.
6. **Inappropriate cutting/mowing** - As a result of increased fear of flood risk there is pressure to increase removal of in-channel vegetation over and above that which would traditionally be cut for fisheries management. This has the potential to significantly change the character of the ecology of the river.

[101] Natural England - Site Improvement Plan: River Lambourn and Kennet-Lambourn Floodplain (SIP112)
http://publications.naturalengland.org.uk/publication/4738329056641024

River Lambourn SAC

7. **Change in land management** - Part of the complex (Boxford Water Meadow) has suffered from management neglect and loss of riparian structure. Although infrastructure is now in place to facilitate restoration of grazing the land-owner is dependent upon third parties for grazing.
8. **Inappropriate water levels** - Water supply to parts of the complex is vulnerable to changes in control structures by third parties (Speen Moor, Rack Marsh).
9. **Hydrological changes** - Parts of the floodplains are becoming less suitable for *Vertigo moulinsiana*. The reason for this is not clear and needs investigation.

Kennet Valley Alderwoods SAC

Site Description

The site comprises Alluvial forests with alder *Alnus glutinosa* and ash *Fraxinus excelsior.*

These, the two largest fragments of alder-ash woodland on the Kennet floodplain, lie on alluvium overlain by a shallow layer of moderately calcareous peat. The wettest areas are dominated by alder *Alnus glutinosa* over tall herbs, sedges and reeds, but dryer patches include a base-rich woodland flora with much dog's mercury *Mercurialis perennis* and also herb-Paris *Paris quadrifolia*. The occurrence of the latter is unusual, as it is more typically associated with ancient woodland, whereas the evidence suggests that these stands have largely developed over the past century.

Qualifying Features

Annex I habitats that are a primary reason for selection of this site

91E0	Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-Padion, Alnion incanae, Salicion albae*) *Priority feature

Special Area of Conservation objectives

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;

- The extent and distribution of the qualifying natural habitats;
- The structure and function (including typical species) of the qualifying natural habitats; and
- The supporting processes on which the qualifying natural habitats rely.

Site Improvement Plan[102]: pressures, threats and related development

The main current threats to the site include:

1. **Inappropriate water levels** - The wet woodlands have various river channels and carriers flowing through them. Some failed structures and breached channels have caused changes in flows through the site in recent years.
2. **Game management: other** - There is a threat to the site from inappropriate game management practices. Management is needed to ensure that any planting, feeding or other game/duck shooting management is not impacting the woodland feature.

Mells Valley SAC

Site Description

The Mells Valley SAC lies at the eastern end of the Mendip Hills in the County of Somerset. The site has three component sites: The Old Ironstone Works Mells, St. Dunstan's Well Catchment and Vallis Vale. The primary interest of the site is the maternity roost of Greater Horseshoe Bats *Rhinolophus ferrumequinum* originally located in the Old Ironstone Works Mells site. Subsidiary interests are caves not open to the public located on the other two sites and an area of limestone grassland on the St Dunstan's Well Catchment site. The caves are used as a hibernacula by some of the bats from the maternity roost.

Qualifying Features

Annex I habitats present as a qualifying feature, but not a primary reason for selection of this site

[102] Natural England - Site Improvement Plan: Kennet Valley Alderwoods (SIP113)
http://publications.naturalengland.org.uk/publication/5578853737037824

Mells Valley SAC	
6210	Semi-natural dry grasslands and scrubland facies on calcareous substrates (*Festuco-Brometalia*) (*important orchid sites)
8310	Caves not open to the public
Annex II species that are a primary reason for selection of this site	
1304	Greater horseshoe bat *Rhinolophus ferrumequinum*

Special Area of Conservation objectives

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;

- The extent and distribution of qualifying natural habitats and habitats of qualifying species;
- The structure and function (including typical species) of qualifying natural habitats;
- The structure and function of the habitats of qualifying species;
- The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely;
- The populations of qualifying species; and
- The distribution of qualifying species within the site.

Site Improvement Plan[103]: pressures, threats and related development

The main current threats to the site include:

1. **Public Access/Disturbance** - The Old Ironstone Works Mills are regularly accessed by the public and disturbance of the hibernaculum is a real threat. Access to the hibernaculum is relatively easy to achieve.
2. **Wildfire/arson** - Fires on the Old Ironstone Works site are a potential threat to hibernating bats in a derelict flume structure (a brick lined tunnel). This is a particular threat beneath the access point to the hibernaculum.
3. **Direct impact from third party** - There is a significant problem with trespass vandalism and associated disturbance. There is a risk that bats occupying a cave on the site will be disturbed by unauthorised access.
4. **Undergrazing** - The very small area of limestone grassland that exists on the St. Dunstans Well Catchment (<.5ha) is ungrazed and could remain so.
5. **Inappropriate designation boundary** - The bats used to occupy an old building on the site as a maternity roost at the time of notification. This building was burnt out in 1988 and the bat colony moved off the SAC. Planning permission was subsequently refused for the rebuilding of the roost building; therefore the maternity roost has relocated to alternative habitat outside of the SAC.
6. **Air Pollution: impact of atmospheric nitrogen deposition** - Nitrogen deposition exceeds site relevant critical loads.

Hackpen Hill SAC	

Site Description

Hackpen Hill SAC is an extensive area of unimproved chalk grassland in the North Wessex Downs, and is considered to be one of the most important areas in the UK for the rare early gentian.

The site has a variety of aspect and gradients, with the grassland dominated by red fescue and upright brome. The herb flora includes a significant population of early gentian, as well as autumn gentian, fragrant orchid, frog orchid, horseshoe vetch, common rock-rose and dwarf thistle.

Qualifying Features

Annex I habitats present as a qualifying feature, but not a primary reason for selection of this site	
6210	Semi-natural dry grasslands and scrubland facies on calcareous substrates (*Festuco-Brometalia*) (* important orchid sites)
Annex II species that are a primary reason for selection of this site	
1654	Early gentian *Gentianella anglica*

[103] Natural England - Site Improvement Plan: Mells Valley (SIP135)
http://publications.naturalengland.org.uk/publication/4665580590202880

Hackpen Hill SAC
Special Area of Conservation objectives
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; ■ The extent and distribution of qualifying natural habitats and habitats of qualifying species; ■ The structure and function (including typical species) of qualifying natural habitats; ■ The structure and function of the habitats of qualifying species; ■ The supporting processes on which qualifying natural habitats and habitats of qualifying species rely; ■ The populations of qualifying species; and ■ The distribution of qualifying species within the site.
Site Improvement Plan[104]: pressures, threats and related development
There are no issues affecting the site.

Dorset Heaths SAC	
Site Description	
The Dorset heathlands is an extensive lowland heathland area in southern England. Formerly a single tract divided only by river valleys it is now fragmented. The heathlands comprise a wide range of different habitat types related to variation in soils, hydrology, water chemistry and land use history.	
Qualifying Features	
Annex I habitats that are a primary reason for selection of this site	
4010	Northern Atlantic wet heaths with *Erica tetralix*
4030	European dry heaths
7150	Depressions on peat substrates of the *Rhynchosporion*
Annex I habitats present as a qualifying feature, but not a primary reason for selection of this site	
6410	*Molinia* meadows on calcareous, peaty or clayey-silt-laden soils (*Molinion caeruleae*)
7210	Calcareous fens with *Cladium mariscus* and species of the *Caricion davallianae* *Priority feature
7230	Alkaline fens
9190	Old acidophilous oak woods with *Quercus robur* on sandy plains
Annex II species that are a primary reason for selection of this site	
1044	Southern damselfly *Coenagrion mercuriale*
Annex II species present as a qualifying feature, but not a primary reason for site selection	
1166	Great crested newt *Triturus cristatus*
Special Area of Conservation objectives	
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; ■ The extent and distribution of qualifying natural habitats and habitats of qualifying species; ■ The structure and function (including typical species) of qualifying natural habitats;	

[104] Natural England - Site Improvement Plan: Hackpen Hill (SIP096)
http://publications.naturalengland.org.uk/publication/5938642669273088

Dorset Heaths SAC

- The structure and function of the habitats of qualifying species;
- The supporting processes on which qualifying natural habitats and habitats of qualifying species rely;
- The populations of qualifying species; and
- The distribution of qualifying species within the site.

Site Improvement Plan[105]: pressures, threats and related development

The main current threats to the site include:

1. **Inappropriate scrub control** - Invasion of heath by trees and scrub results, in the long term, loss of heathland vegetation. The process is at different stages on different sites but scrub control is necessary on the majority of these sites.
2. **Public Access/Disturbance** - Disturbance of breeding SPA birds, mostly by dogs, can affect their breeding success, with implications for population level effects e.g. nightjar and woodlark. Other effects include predation by domestic cats and urban foxes, habitat change from nutrients in dog faeces, and dumping of garden rubbish. On a number of sites the illicit use of heaths for motorcycle scrambling is resulting in disturbance and erosion.
3. **Undergrazing** - Generally grazing has now been successfully introduced on most of the larger heathland sites but there remain some ungrazed areas which would benefit from the introduction of an extensive grazing regime.
4. **Forestry and woodland management** - Several of the heathlands have conifer plantations on former heathland or mature conifers (or sometimes birch) that have invaded heathland. Favourable condition requires removal of these plantations for heathland restoration or, at least, management to increase the heath component within the woodland.
5. **Drainage** - Drainage is generally the result of ditches made within the site to endeavour to drain wet heath or mire. These drains invariably result in adverse changes to wet heath and mire communities in the vicinity.
6. **Water Pollution** - It comprises of pollution from adjacent agricultural land (run-off causing nutrient enrichment); leaching from adjacent landfill sites (3 sites); pollution from foul drainage (septic tanks, sewage discharge); urban run-off. Poor water quality from the sources listed can also impede the ability to restore the sites' natural hydrology. Silt/sand run-off from adjacent sand/gravel workings and now capped landfill have smothered part of a mire system at Upton Heath.
7. **Invasive species** - Various invasive species are present including rhododendron and *gaultheria*, and these have the potential to impact negatively on the site's features. A population of carp has recently become established in Little Sea lake (previously there were no fish) and has virtually eliminated what was previously an abundant and diverse assemblage of macrophytes. It is also affected by Australian swamp stonecrop and Canadian pondweed. Invasion of bracken on unmanaged sites is a concern although ongoing bracken management is required on most sites.
8. **Habitat fragmentation** - Dorset's lowland heathland is a fragmented remnant of a once extensive landscape. This curtails the genetic and physical interchange of a number of species and leads to edge effects on smaller sites. Moreover, species populations that are dependent on the wider habitat network of heath and forest beyond the designated site boundaries are vulnerable to changes within that wider network.
9. **Conflicting conservation objectives** - Heathland management aimed at maintaining open heathland does not cater for a number of rare species that require more specific management measures.
10. **Wildfire/arson** - Fire predominantly affects the urban heaths (about a third of the heathland area in and around Poole and Bournemouth) which are subject to arson. The result is that some heaths are burned too frequently and in spring and summer.
11. **Air Pollution: impact of atmospheric nitrogen deposition** - Air pollution impacts on the site's vegetation diversity. As with most lowland heathlands and mires in England nitrogen deposition is close to, and in some cases exceeds critical loads.
12. **Deer** - High deer numbers have affected heathland and mire on Arne Heath, Holton Heath and Stokeford Heath.

Mendip Woodlands SAC

Site Description

The Mendip Woodlands SAC comprises four individual woods all located on the southern slope of the Mendip Hills in the county of Somerset. Three of the woods, Cheddar Wood, Ebbor Gorge and Rodney Stoke lie in the west of Mendip while Asham Wood lies in the east. Asham Wood and Ebbor Gorge are both associated with limestone gorges while Cheddar Wood and Rodney Stoke lie on the steep southern slope of the hills. Only one of the woods, Asham, has permanent streams running through it. All four woods are dominated by ash while both Cheddar Wood and Rodney Stoke have a high population of small-leaved lime. Notable species present include Purple gromwell

[105] Natural England - Site Improvement Plan: Dorset Heaths (SIP062)
http://publications.naturalengland.org.uk/publication/5181909839642624

Mendip Woodlands SAC	
Lithospermum purpurocaeruleum, Lily of the valley *Convallaria majalis* and Wild daffodil *Narcissus pseudonarcissus*. All the woodlands were managed by coppicing and are gradually reverting to high forest.	
Qualifying Features	
Annex I habitats that are a primary reason for selection of this site	
9180	*Tilio-Acerion* forests of slopes, screes and ravines *Priority feature
Special Area of Conservation objectives	
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; ■ The extent and distribution of qualifying natural habitats; ■ The structure and function (including typical species) of qualifying natural habitats; and ■ The supporting processes on which qualifying natural habitats rely.	
Site Improvement Plan[106]: pressures, threats and related development	
The main current threats to the site include: 1. **Vehicles: illicit** - Asham Wood has a history of trespass by off road vehicles. This has resulted in serious damage to parts of the ride network and also to the woodland proper. 2. **Deer** - Deer are having an adverse impact on almost all of the component woodlands through unsustainable grazing pressure, making silvicultural management difficult unless regrowth from coppicing or regeneration is protected. 3. **Disease** - All of the Mendip woodlands component sites are dominated by ash and are seriously threatened by the spread of *Chalara fraxinea* disease from eastern England. Some stands in these woodlands are as much as 80% ash. 4. **Air Pollution: impact of atmospheric nitrogen deposition** - Nitrogen deposition exceeds site relevant critical loads. Impacts of exceedance could be manifested in changes in ground vegetation.	

Solent Maritime SAC	
Site Description	
The Solent is a complex site encompassing a major estuarine system on the south coast of England. The Solent and its inlets are unique in Britain and Europe for their hydrographic regime with double tides, as well as for the complexity of the marine and estuarine habitats present within the area. Sediment habitats within the estuaries include extensive areas of intertidal mudflats, often supporting eelgrass Zostera spp. and green algae, saltmarshes and natural shoreline transitions, such as drift line vegetation. All four species of cordgrass found within the UK are present within the Solent and it is one of only two UK sites with significant amounts of the native small cordgrass Spartina maritima. The rich intertidal mudflats, saltmarsh, shingle beaches and adjacent coastal habitats, including grazing marsh, reedbeds and damp woodland, support nationally and internationally important numbers of migratory and over-wintering waders and waterfowl as well as important breeding gull and tern populations.	
Qualifying Features	
Annex I habitats that are a primary reason for selection of this site	
1130	Estuaries
1320	Spartina swards (*Spartinion maritimae*)
1330	Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*)
Annex I habitats present as a qualifying feature, but not a primary reason for selection of this site	
1110	Sandbanks which are slightly covered by sea water all the time

[106] Natural England - Site Improvement Plan: Mendip Woodlands (SIP137)
http://publications.naturalengland.org.uk/publication/6568821745778688

Solent Maritime SAC	
1140	Mudflats and sandflats not covered by seawater at low tide
1150	Coastal lagoons *Priority feature
1210	Annual vegetation of drift lines
1220	Perennial vegetation of stony banks
1310	Salicornia and other annuals colonizing mud and sand
2120	"Shifting dunes along the shoreline with Ammophila arenaria (""white dunes"")"
Annex II species present as a qualifying feature, but not a primary reason for site selection	
1016	Desmoulin's whorl snail *Vertigo moulinsiana*

Special Area of Conservation objectives

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;

- The extent and distribution of qualifying natural habitats and habitats of the qualifying species;
- The structure and function (including typical species) of qualifying natural habitats;
- The structure and function of the habitats of the qualifying species;
- The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely;
- The populations of each of the qualifying species; and
- The distribution of qualifying species within the site.

Site Improvement Plan[107]: pressures, threats and related development

The main current threats to the site include:

1. **Public Access/Disturbance** - Activities such as walking; dog walking; bird watching; boating; kayaking; kite surfing; hang gliding; paramotors; jet skis; wildfowling; model helicopters/aircraft; boat mooring, and Hovercraft – all disturb the birds. Recreational activities can also affect annual vegetation of drift lines (H1210) and the vegetation of stony banks (H1220).
2. **Coastal squeeze** - Habitats are being lost as they are squeezed between rising sea levels and hard coastal defences that are maintained. There is loss of the SAC habitats such as saltmarsh, loss of habitat for feeding, roosting and breeding birds. In some areas rising sea levels will result in coastal grasslands being lost to more saline grasslands, thus losing habitat for some breeding waders of the waterbird assemblage.
3. **Fisheries: Commercial marine and estuarine** - Dredges (incl. hydraulic), benthic trawls and seines and shore-based activities are categorised as 'Red' for these interest features (and specifically the sub-features: Intertidal muddy sand communities; Subtidal eelgrass Zostera marina beds). Commercial fishing activities categorised as 'amber or green'. Towed gear, hand gathering of shellfish, bait digging and aquaculture are the main fishery activities in this site.
4. **Water Pollution** - **eutrophication and toxicity** -Sources include both point source discharges (including flood alleviation / storm discharges) and diffuse water pollution from agriculture / road runoff, as well as historic contamination of marine sediments, primarily from copper and Tributyltin (TBT). There is a threat of spillage from Oil Transportation and Transfer and by the usage by Ships & Pilotage.
5. **Changes in species distributions** - Many waders and wildfowl are decreasing in the Solent probably as they move north and east under national trends. Some fish, such as Sand eels, may be moving their breeding grounds resulting in less food availability for breeding terns. Invertebrate populations in the intertidal muds are changing and this may disadvantage some wintering wader species. Desmoulin's Whorl Snail has decreased dramatically. Areas of salt-marsh are eroding and decreasing resulting in decreasing breeding gulls and terns as their habitat decreases and decreasing plant species of salt-marshes.
6. **Climate change** - Climate change has impacts upon coastal species, in that gull and tern colonies are more frequently washed out with rising sea levels when storm surges cause flooding to habitats.
7. **Change to site conditions** - There is an increasing loss of salt-marsh in much of the Solent for reasons unknown.

[107] Natural England - Site Improvement Plan: Solent (SIP043)
http://publications.naturalengland.org.uk/publication/4692013588938752

Solent Maritime SAC
8. **Invasive species** - The highest risk pathways through which marine INNS are introduced and then spread have been identified as: commercial shipping (through release of ballast water, and biofouling on hulls); recreational boating (through biofouling on hulls); aquaculture (through contamination of imported or moved stock - or escaped stock in the case of the pacific oyster), and natural dispersal.
9. **Direct land take from development** - Private sea defences are causing disruption to the natural processes of allowing erosion to move sediments around the SAC.
10. **Biological Resource Use** - Gull egg collecting occurs in some places, and wildfowling occurs in several places. These activities are likely to be disturbing to breeding and wintering birds even though they are licenced/consented at the moment.
11. **Change in land management** - Changes to land management are likely to occur in areas where tidal flaps/sluices are altered and this results in changes to water levels or salinity of that land. Some sluices are failing, which may also result in changes to water levels or salinity of land. Some ditches and drains are neglected and this can cause difficulties in land management, resulting in changes.
12. **Inappropriate pest control** - Predator control is decreasing, resulting in increased predation by foxes etc. and this is the likely cause of decrease in successful breeding of gulls and terns.
13. **Air Pollution**: **impact of atmospheric nitrogen deposition** - Nitrogen deposition exceeds site relevant critical loads.
14. **Hydrological changes** - Titchfield Haven has a high level of water abstraction licences - if all were used then water levels would be too low in the SAC/SPA . Percolation of sea water through sea walls is causing saline intrusion into non-saline grassland habitats and changing them.
15. **Direct impact from 3rd party** - Off-roading is causing damage to some areas of grassland. Private sea defences are causing disruption to the natural movement processes of natural materials along the coast. Military helicopters cause disturbance to wintering birds. House boats are unlicensed and have the potential to cause damage to intertidal habitats. Fly grazing is causing issues affecting large areas of Chichester Harbour.
16. **Extraction: non-living resources** - Shingle extraction for aggregates may have an adverse impact upon intertidal fauna and flora, and may affect the movement of coastal sediments that would in turn have an impact upon intertidal habitats.
17. **Other** - SAC/SPA boundaries may not cover the extent of all Annex 1 and Annex 2 features and/or supporting habitats.

Emer Bog SAC	
Site Description	
The site comprises an extensive valley bog which has been described as unparalled in lowland England as an example of a young oligotrophic / mesotrophic basin mire, together with associated damp acidic grassland, heathland and developing woodland over Bracklesham Beds in the Hampshire Basin. The bog grades downstream into mature alder carr and upstream into heathland. To the south and west of Emer Bog, the site includes remnants of former common land, now acidic grassland. The invertebrate fauna of the bog and heath is of considerable interest and very large numbers of moths have been recorded.	
Qualifying Features	
Annex I habitats that are a primary reason for selection of this site	
7140	Transition mires and quaking bogs
Special Area of Conservation objectives	
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; ■ The extent and distribution of qualifying natural habitat; ■ The structure and function (including typical species) of qualifying natural habitat; and ■ The supporting processes on which qualifying natural habitat rely.	
Site Improvement Plan[108]: pressures, threats and related development	
The main current threats to the site include:	

[108] Natural England - Site Improvement Plan: Emer Bog (SIP074)
http://publications.naturalengland.org.uk/publication/6367668705689600

Emer Bog SAC

1. **Public Access/Disturbance** - The adoption of the site for informal recreation compounds the difficulties in managing the site, particularly through grazing.
2. **Hydrological changes** - There has been a reduction in the area of Sphagnum-rich vegetation and it is thought that this is due to substantial nutrient enrichment encouraging the growth of *Typha*.
3. **Air Pollution: impact of atmospheric nitrogen deposition** - Nitrogen deposition exceeds site relevant critical loads. With respect to transition mire excess nitrogen may negatively alter the vegetation community by detrimentally affecting bryophytes and increasing the abundance of sedges and vascular plants.

Rodborough Common SAC

Site Description

Rodborough Common is the most extensive area of semi-natural dry grasslands surviving in the Cotswolds of central southern England, and represents CG5 *Bromus erectus – Brachypodium pinnatum* grassland, which is more or less confined to the Cotswolds.

The site contains a wide range of structural types, ranging from short turf through to scrub margins, although short-turf vegetation is mainly confined to areas of shallower soils.

Qualifying Features

Annex I habitats that are a primary reason for selection of this site

6210	Semi-natural dry grasslands and scrubland facies on calcareous substrates (*Festuco-Brometalia*) (* important orchid sites)

Special Area of Conservation objectives

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;

- The extent and distribution of qualifying natural habitat;
- The structure and function (including typical species) of qualifying natural habitat; and
- The supporting processes on which qualifying natural habitat rely.

Site Improvement Plan[109]: pressures, threats and related development

The main current threats to the site include:

1. **Undergrazing** - Undergrazing is an issue due to the reliance on the rights of commoners to turn out cattle. The number of stock have dropped over the years to the point that additional cattle now need to be electric fenced on to the most species-rich areas on the slopes. It is the lower slopes that are the most species-rich and are suffering from a lack of grazing.
2. **Public Access/Disturbance** - The common is very close to Stroud and recreational use has greatly increased over the past few decades. This has created many new paths and parking areas which cause soil compaction to the detriment of the surrounding sward. Dog faeces is a particular issue which also damages the sward . New and proposed housing continues to add to the problem.
3. **Air Pollution: risk of atmospheric nitrogen deposition** - Nitrogen deposition exceeds the site-relevant critical load for ecosystem protection and hence there is a risk of harmful effects, but the sensitive features are currently considered to be in favourable condition on the site.

Cotswold Beechwoods SAC

Site Description

The Cotswold Beechwoods represent the most westerly extensive blocks of *Asperulo-Fagetum* beech forests in the UK.

The woods are floristically richer than the Chilterns, and rare plants include red helleborine *Cephalanthera rubra*, stinking hellebore *Helleborus foetidus*, narrow-lipped helleborine *Epipactis leptochila* and wood barley *Hordelymus europaeus*. There is a rich mollusc fauna. The woods are structurally varied, including blocks of high forest and some areas of remnant beech coppice.

[109] Natural England - Site Improvement Plan: Rodborough Common (SIP202)
http://publications.naturalengland.org.uk/publication/5525408413908992

Cotswold Beechwoods SAC	
Qualifying Features	
Annex I habitats that are a primary reason for selection of this site	
9130	*Asperulo-Fagetum* beech forests
Annex I habitats present as a qualifying feature, but not a primary reason for selection of this site	
6210	Semi-natural dry grasslands and scrubland facies on calcareous substrates (*Festuco-Brometalia*) (* important orchid sites)

Special Area of Conservation objectives

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;

- The extent and distribution of qualifying natural habitats;
- The structure and function (including typical species) of qualifying natural habitats; and
- The supporting processes on which qualifying natural habitats rely.

Site Improvement Plan[110]: pressures, threats and related development

The main current threats to the site include:

1. **Invasive species** - The dumping of garden waste and the consequent spread of invasive plants is an on-going threat. The spread of the non-native sycamore provides a challenge and has made particular use of canopy gaps created by storm damage. Although sycamore is considered an acceptable component of woodlands, including beechwoods, on the continent, in the Cotswolds it tends to dominate understorey and canopy to the detriment of other (native) tree species.
2. **Deer** - Deer browsing of regenerating trees (and possibly ground flora) remains a major threat to favourable condition throughout the beechwoods.
3. **Invasive species** - Grey squirrel numbers have increased sharply over the past decade or so and now cause significant damage to tree species, in particular beech. In places, this can lead to pole stage beech being systematically ring barked and killed.
4. **Disease** - Although not known to be present in the Cotswolds as yet, *Chalara* (ash disease) is a major future threat to the beechwoods.
5. **Public Access/Disturbance** - . A particular increase has been the use of mountain bikes and horse-riding which use the woods far beyond the limited network of bridleways. This has created numerous additional trackways and so increasing the erosion of the ground flora and potentially opportunities for water erosion. Although the routes away from bridleways are not usually permitted, much of the SAC woodland is NNR or has public access by foot. Additionally, dog walking has increased within the SAC especially at Coopers Hill where car parking is available. This has become a particular issue where professional dog walkers release large numbers of dogs (up to 12) to run uncontrolled through the woods. This causes disturbance to wildlife as well as local nutrification through dog faeces.
6. **Changes in species distributions** - There is a risk that global warming will increase the risk of drought to beech trees (which are shallow rooted).
7. **Air Pollution: impact of atmospheric nitrogen deposition** - Nitrogen deposition exceeds site relevant critical loads. High atmospheric nitrogen levels could affect the SAC features through: changes in ground vegetation and mycorrhiza; nutrient imbalance; changes to soil fauna; increase in tall grasses; decline in diversity; increased mineralization; N leaching; or surface acidification.

Severn Estuary SAC

Site Description

The Severn Estuary is located between Wales and England in south-west Britain. It is a large estuary with extensive intertidal mud-flats and sand-flats, rocky platforms and islands. Saltmarsh fringes the coast backed by grazing marsh with freshwater ditches and occasional brackish ditches. The subtidal seabed is rock and gravel with subtidal sandbanks. The site also supports reefs of the tube forming worm *Sabellaria alveolata*.

The estuary's classic funnel shape, unique in the UK, is a factor causing the Severn to have one of the highest tidal ranges in the world. A consequence of the large tidal range is an extensive intertidal zone, one of the largest in the UK. The tidal regime results in plant and animal communities typical of the extreme physical conditions of liquid mud and tide-swept sand and rock. The species-poor intertidal invertebrate

[110] Natural England - Site Improvement Plan: Cotswold Beechwoods (SIP048)
http://publications.naturalengland.org.uk/publication/6276086220455936

Severn Estuary SAC	
community includes high densities of ragworms, lugworms and other invertebrates forming an important food source for passage and wintering waders and fish. The site is of importance during the spring and autumn migration periods for waders, as well as in winter for large numbers of waterbirds, especially swans, ducks and waders. The fish fauna is very diverse with more than 110 species identified. The site is of particular importance for migratory fish.	
Qualifying Features	
Annex I habitats that are a primary reason for selection of this site	
1130	Estuaries
1140	Mudflats and sandflats not covered by seawater at low tide
1330	Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*)
Annex I habitats present as a qualifying feature, but not a primary reason for selection of this site	
1110	Sandbanks which are slightly covered by sea water all the time
1170	Reefs
Annex II species that are a primary reason for selection of this site	
1095	Sea lamprey *Petromyzon marinus*
1099	River lamprey *Lampetra fluviatilis*
1103	Twaite shad *Alosa fallax*
Special Area of Conservation objectives	
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; ■ The extent and distribution of qualifying natural habitats and habitats of qualifying species; ■ The structure and function (including typical species) of qualifying natural habitats; ■ The structure and function of the habitats of qualifying species; ■ The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely; ■ The populations of qualifying species; and ■ The distribution of qualifying species within the site.	
Site Improvement Plan[111]: pressures, threats and related development	
The main current threats to the site include: 1. **Public Access/Disturbance** - Public access and recreation (including third party activities) may have an impact on bird species sensitive to disturbance, causing displacement from feeding, roosting and moulting areas, and if severe could affect long term survival and population numbers and distributions within the Estuary. 2. **Physical Modification** - Modification to water courses and barriers to Annex II migratory fish (and those included in the fish assemblage) in the tributary rivers are preventing completion of the life cycle and potentially altering the hydrodynamics of the site. 3. **Impacts of Development** - Strategic planning issue. More rigorous assessment of cumulative, in-combination and offsite impacts (drainage, disturbance, runoff, impacts on managed realignment etc) on sensitive bird species and other habitats and species may be required, given the range of planned development within and adjacent to the Estuary (including residential, transport, energy and other industrial developments). 4. **Coastal Squeeze** - As sea levels rise, man-made defences are constraining the natural roll back of estuarine habitats, causing squeeze and loss of habitat and having impacts on species dependent upon those habitats (birds: feeding/ roosting, and fish: feeding/ nursery and shelter areas).	

[111] Natural England - Site Improvement Plan: Severn Estuary Mor Hafren (SIP213)
http://publications.naturalengland.org.uk/publication/4590676519944192

Severn Estuary SAC

5. **Change in Land Management** - Changes in management and use of grassland and saltmarsh habitat within and bordering the estuary. Changes in ownership and other land practices can result in changes in management and use of land (e.g. changes in grazing practice) which affects species composition, habitat availability, and quality of saltmarsh habitats and use of land for other activities that may cause damage or disturbance.
6. **Changes in Species Distributions** - There is a risk of significant changes in estuarine populations (including declines in some SPA bird populations) in parts of the Estuary resulting from climate change and other man-made and natural modifications to on and offsite environments. In many cases the causes of the changes to species distribution are unknown.
7. **Water Pollution** - There is uncertainty over water quality in the Estuary due to diffuse (including agricultural) or direct pollution (e.g. industrial, sewage treatment works, thermal, radioactive).
8. **Air Pollution: impact of atmospheric nitrogen deposition** - Activities around the Estuary include fertiliser application, potentially dairy and poultry production, road traffic, industry (including power stations), and shipping which are all sources of nitrogen pollution. Nitrogen deposition exceeds site relevant critical loads, with potential impacts on vegetation structure and diversity.
9. **Marine Consents and Permits: minerals and waste** - The cumulative impacts of aggregate extraction, maintenance dredging and disposal can have adverse impacts on features. While most activity is regulated under marine licences, cumulative effects are not always fully considered.
10. **Fisheries: Recreational marine and estuarine** - Further information is required on the levels and location of activity and potential impact of recreational bait digging and recreational fishing/angling. There are unknown impacts in the vicinity of potentially sensitive roosting and feeding areas, and on intertidal reef habitats.
11. **Fisheries: Commercial marine and estuarine** - Dredges (inc. hydraulic), benthic trawls and seines are categorised as 'red' for the reef features (specifically the sub-feature Sabellaria spp. reef) as part of Defra's revised approach to commercial fisheries management in European Marine Sites (EMS).
12. **Invasive Species** - There are recent reports of marine invasive non-native species (the Australian barnacle Austrominius modestus, Mitten crab Eriocheir sinensis, and the Pacific Oyster Crassostrea gigas) in the Estuary (or the Bristol Channel). These could have an impact on native species and habitats but the abundance and impact in the Severn Estuary of these species is unclear.
13. **Marine Litter** - The marine environment is a sink for man-made litter which often originates from rivers. Impacts are not fully understood.
14. **Marine Pollution Incidents** - Marine pollution incidents and responses to such incidents have the potential for significant negative impacts on the site and its features.

Porton Down SPA

Site Description

Porton Down is located north-east of Salisbury, in Wiltshire. It lies within the Salisbury Plain and West Wiltshire Downs National Character Area (NCA), on a gently undulating plateau of Upper Chalk with shallow dry valleys.

The soils are mostly Rendzinas with chalk grassland, and acid Brown Earths and intergrades between the two, with localised acidophilous scrub and grassland communities on Roche Court Down, Easton Down and Battery Hill.

The designated site is important for chalk grassland and heath, with scrub, ancient and plantation woodland, a large juniper population, lichens, rare flowering plants, butterflies and other invertebrates, and breeding birds, including stone-curlew.

Qualifying Features

A133	*Burhinus oedicnemus*; Stone-curlew (Breeding)

Special Protected Area Objectives

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.

Porton Down SPA
Site Improvement Plan[97]: pressures, threats and related development
Salisbury Plain Site Improvement Plan covers Porton Down SPA, Salisbury Plain SAC and Salisbury Plain SPA. See Salisbury Plain SAC for further information.

Salisbury Plain SPA	
Site Description	
Salisbury Plain SPA is located in central Wiltshire, within the Salisbury Plain and West Wiltshire Downs National Character Area, in southern England. Salisbury Plain is an extensive and open rolling chalk plateau cut by the Hampshire Avon and tributaries. The soils are generally alkaline and free-draining, apart from places with overlying clay-with flints and long-term rainwater leaching and lessivage, which are more acidic. The main broad habitat type is chalk grassland, with some plantation and ancient woodland being present. Juniper scrub is significant at the eastern end of Salisbury Plain. Salisbury Plain is part of a wider military training area ('SPTA'). Of particular note is the breeding population of stone-curlew dependent upon the extensive areas of open grassland. Sizeable populations of raptors also overwinter, feeding on small birds and mammals	
Qualifying Features	
A082	*Circus cyaneus;* Hen harrier (Non-breeding)
A099	*Falco subbuteo;* Eurasian hobby (Breeding)
A113	*Coturnix coturnix;* Common quail (Breeding)
A133	*Burhinus oedicnemus*; Stone-curlew (Breeding)
Special Protected Area Objectives	
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.	
Site Improvement Plan[97]: pressures, threats and related development	
Salisbury Plain Site Improvement Plan covers Salisbury Plain SAC, Porton Down SPA and Salisbury Plain SPA. See Salisbury Plain SAC for further information.	

New Forest SPA
Site Description
The New Forest SPA falls within the New Forest National Character Area (NCA Profile 131) and the New Forest National Park. It comprises the largest area of 'unsown' vegetation in lowland England and includes the representation on a large scale of habitats formerly common but now fragmented and rare in lowland western Europe. The intimate mosaic of habitats owes much to the local geology and traditional commoning grazing system, a situation which is uncommon in lowland England. The New Forest sits in the centre of a dip in the surrounding chalk known as the Hampshire Basin and comprises a series of eroded terraces of soft sedimentary clays and sands capped with flint gravel, brick earth and other superficial deposits. The Soils are mainly acid, poor in nutrients, susceptible to leaching and only slowly permeable with locally enriched areas. This great variation in its soils is reflected in the New Forest's distinctive vegetation. The habitats include lowland heath, valley and seepage step mire, or fen, ancient pasture woodland, including riparian and bog woodland and a range of acid to neutral grasslands. Nowhere else do these habitats occur in combination and on so large a scale.

New Forest SPA	
The site supports an exceptionally rich bird fauna including internationally important breeding populations and wintering populations of bird species associated with these habitats.	
Qualifying Features	
A072	*Pernis apivorus;* European honey-buzzard (Breeding)
A082	*Circus cyaneus;* Hen harrier (Non-breeding)
A099	*Falco subbuteo;* Eurasian hobby (Breeding)
A224	*Caprimulgus europaeus;* European nightjar (Breeding)
A246	*Lullula arborea;* Woodlark (Breeding)
A302	*Sylvia undata;* Dartford warbler (Breeding)
A314	*Phylloscopus sibilatrix;* Wood warbler (Breeding)
Special Protected Area Objectives	
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.	
Site Improvement Plan[98]: pressures, threats and related development	
New Forest Site Improvement Plan covers both the New Forest SPA and The New Forest SAC. See The New Forest SAC for further information.	

Avon Valley SPA	
Site Description	
The Avon Valley – Bickton to Christchurch Special Protection Area lies along the border of Hampshire and Dorset, between the new Forest and the heath and woodland areas north of Bournemouth. It encompasses the lower reaches of the River Avon and its floodplain between Bickton and Christchurch. The Avon Valley SPA sits within the New Forest National Character Area (NCA). The NCA encompasses the New Forest National Park, which accounts for 75% of the NCA, as well as the lower Hampshire Avon Valley in the west and the urbanised waterside from Totton to Fawley in the east, with major oil-energy and port-related industry along Southampton Water. The majority of the area is a plateau of Palaeogenic deposits overlain by Quaternary gravels in river terraces, averaging around 80-100 m above sea level. The Avon Valley is distinctly different, with a wide, flat valley bottom of mostly derelict water meadows and pasture and arable land around a braided river, linked with the Forest through grazing tradition. The Avon Valley sits on the western edge of the New Forest NCA, and is bordered by the Dorset Heaths NCA to the west. The majority of the catchment for the River Avon lies to the north in northern Hampshire and Wiltshire, including the Salisbury Plain and West Wiltshire Downs NCA. The valley is predominantly on alluvial soils, but there are deposits of sand which give rise to a more sand dune or heath-like flora in places. Much of the valley is open grassland fields with ditches on their boundaries. There are small woodland and fen areas and the SPA includes a series of old gravel pits that are now flooded and add to the sites importance. The site qualifies for 2 species of over wintering wildfowl Bewick's Swan and Gadwall The site also supports a nationally important assemblage of breeding wetland birds and is especially important for breeding waders associated with lowland wet grassland. The floodplain grassland and the gravel pits provide feeding and roosting areas for nationally or internationally important populations of five species of wintering wildfowl.	
Qualifying Features	
A307	*Cygnus columbianus bewickii;* Bewick's swan (Non-breeding)
A051	*Anas strepera;* Gadwall (Non-breeding)
Special Protected Area Objectives	

Avon Valley SPA

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.

Site Improvement Plan[96,98]: pressures, threats and related development

Avon River and Valley Improvement Plan covers both the Avon Valley SPA and The River Avon SAC. See The River Avon SAC for further information.

Solent and Southampton Water SPA

Site Description

The Solent and Southampton Water SPA site comprises a series of estuaries and adjacent coastal habitats important for breeding gulls and terns and wintering waterfowl.

Qualifying Features

A046a	*Branta bernicla bernicla;* Dark-bellied brent goose (Non-breeding)
A052	*Anas crecca;* Eurasian teal (Non-breeding)
A137	*Charadrius hiaticula;* Ringed plover (Non-breeding)
A156	*Limosa limosa islandica;* Black-tailed godwit (Non-breeding)
A176	*Larus melanocephalus;* Mediterranean gull (Breeding)
A191	*Sterna sandvicensis;* Sandwich tern (Breeding)
A192	*Sterna dougallii;* Roseate tern (Breeding)
A193	*Sterna hirundo;* Common tern (Breeding)
A195	*Sterna albifrons;* Little tern (Breeding)
-	Waterbird assemblage

Special Protected Area Objectives

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.

Site Improvement Plan[10798]: pressures, threats and related development

Solent Improvement Plan covers both the Solent and Southampton Water SPA and Solent Maritime SAC. See Solent Maritime SAC for further information.

Solent and Dorset Coast SPA	
Site Description	
The site comprises the drowned estuary of the rivers Stour and Avon and the peninsula of Hengistbury Head. The varied habitats include saltmarsh, wet meadows, drier grassland, heath, sand dune, woodland and scrub and the site is of great ornithological interest.	
Qualifying Features	
A191	*Sterna sandvicensis;* Sandwich tern (Breeding)
A193	*Sterna hirundo;* Common tern (Breeding)
A195	*Sterna albifrons;* Little tern (Breeding)
Special Protected Area Objectives	
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.	
Site Improvement Plan[98]: pressures, threats and related development	
None identified to date. Site only designated in 2020.	

Severn Estuary SPA	
Site Description	
See Severn Estuary SAC for further information.	
Qualifying Features	
A037	*Cygnus columbianus bewickii*; Bewick's swan (Non-breeding)
A048	*Tadorna tadorna*; Common shelduck (Non-breeding)
A051	*Anas strepera*; Gadwall (Non-breeding)
A149	*Calidris alpina alpina*; Dunlin (Non-breeding)
A162	*Tringa totanus*; Common redshank (Non-breeding)
Waterbird assemblage	
Special Protected Area Objectives	
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.	
Site Improvement Plan[11198]: pressures, threats and related development	

Severn Estuary SPA
Severn Estuary Site Improvement Plan covers both the Severn Estuary SPA and Severn Estuary SAC. See Severn Estuary SAC for further information.

Somerset Levels and Moors SPA	
Site Description	
The Ramsar site consists of a series of Sites of Special Scientific Interest (SSSI) within the largest area of lowland wet grassland and associated wetland habitat remaining in Britain. It covers about 35,000 ha in the flood plains of the Rivers Axe, Brue, Parrett, Tone and their tributaries. The majority of the site is only a few metres above mean sea level and drains through a large network of ditches, rhynes, drains and rivers. Flooding may affect large areas in winter depending on rainfall and tidal conditions. Parts of the site in the Brue Valley include areas of former raised peat bog which have now been substantially modified by agricultural improvement and peat extraction which has created areas of open water, fen and reedbed. The site attracts internationally important numbers of wildfowl in winter and is one of the most important sites in southern Britain for breeding waders. The network of rhynes and ditches support an outstanding assemblage of aquatic invertebrates, particularly beetles.	
Qualifying Features	
A037	*Cygnus columbianus bewickii*; Bewick's swan (Non-breeding)
A052	*Anas crecca*; Eurasian teal (Non-breeding)
A140	*Pluvialis apricaria*; European golden plover (Non-breeding)
A142	*Vanellus vanellus*; Northern lapwing (Non-breeding)
Waterbird assemblage	
Special Protected Area Objectives	
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.	
Site Improvement Plan[112]: pressures, threats and related development	
The main current threats to the site include: 1. **Drainage** - Excess drainage can result in the problem of low water levels in winter time. This reduces the extent of feeding and roosting sites for SPA birds. Drier soils are detrimental to wetland birds as they rely on the invertebrate assemblages of wet soils for their food. As the soils dry, the invertebrates move deeper into the soil and the soils become too hard for them to probe. 2. **Inappropriate water levels** - Summer flooding and prolonged and deep winter flooding has been a major problem on the Somerset Levels . These events can reduce the extent of feeding and roosting sites for SPA birds. Over areas where the water is too deep, probing birds are unable to reach food sources. 3. **Maintain and upgrade water management structures** - Old Raised Water Level Area (RWLA) management structures do not hold water, or they are designed to drain the sites. Raised water level areas are key habitats managed specifically for wintering birds. 4. **Change in land management** - Most of the SPA is covered by Higher Level Stewardship agreements and this is important in supporting appropriate habitat management including appropriate livestock levels. Landowners may decide to come out of agreements	

[112] Natural England - Site Improvement Plan: Somerset Levels & Moors (SIP221)
http://publications.naturalengland.org.uk/publication/6561001356918784

Somerset Levels and Moors SPA

at the 5 year break point, especially for land that is within the Raised Water Level Area (RWLA) and this is a risk. This could reduce the extent of appropriately managed wet areas important for SPA birds.

5. **Agricultural management practices** - The ability of the land manager to access the site due to loss of, or poor condition of the 'drove' network is a concern.
6. **Peat extraction** - Ongoing extraction of peat occurs in two areas within the site. Extraction damages the site by direct removal of peat and drainage of surrounding land.
7. **Public Access/Disturbance** - Dog walking and other activities can cause appreciable disturbance to SPA birds. Priority sites include Raised Water level Areas, droves not designated as access routes, and specific NNRs.
8. **Offsite habitat availability/ management** - There is a limited understanding of how the SPA bird assemblage functionally uses the wider ecological network regionally such as Bridgewater Bay and other parts of the Severn Estuary. There is for example limited knowledge regarding the feeding areas of Golden plover which mainly use the SPA as a roost.

New Forest Ramsar

Site Description

The New Forest is an area of semi-natural vegetation including valley mires, fens and wet heath within catchments whose uncultivated and undeveloped state buffer the mires against adverse ecological change. The habitats present are of high ecological quality and diversity with undisturbed transition zones.

The suite of mires is regarded as the *locus classicus* of this type of mire in Britain. Other wetland habitats include numerous ponds of varying size and water chemistry including several ephemeral ponds and a network of small streams mainly acidic in character which have no lowland equivalent in the UK. The plant communities in the numerous valleys and seepage step mires show considerable variation, being affected especially by the nutrient content of groundwater. In the most nutrient-poor zones, *Sphagnum* bog-mosses, cross-leaved heath, bog asphodel, common cottongrass and similar species predominate. In more enriched conditions the communities are more fen-like.

Ramsar Criteria

1	Valley mires and wet heaths are found throughout the site and are of outstanding scientific interest. The mires and heaths are within catchments whose uncultivated and undeveloped state buffer the mires against adverse ecological change. This is the largest concentration of intact valley mires of their type in Britain.
2	The site supports a diverse assemblage of wetland plants and animals including several nationally rare species. Seven species of nationally rare plant are found on the site, as are at least 65 British Red Data Book species of invertebrate.
3	The mire habitats are of high ecological quality and diversity and have undisturbed transition zones. The invertebrate fauna of the site is important due to the concentration of rare and scarce wetland species. The whole site complex, with its examples of semi-natural habitats is essential to the genetic and ecological diversity of southern England.

Ramsar Information Sheet (RIS)[113]: Factors (past, present or potential) adversely affecting the site's ecological character, including changes in land (including water) use and development projects:

- Commercial-scale forest exploitation
- Drainage/land-claim
- Introduction/invasion of non-native plant species
- Recreational/tourism disturbance

Avon Valley Ramsar

Site Description

The site encompasses the lower reaches of the River Avon and its floodplain between Bickton and Christchurch. The River Avon displays wide fluctuations in water level and parts of the valley are regularly flooded in winter. The Avon valley has a greater range of habitats and a

[113] Ramsar Information Sheet (RIS): The New Forest (622)
https://jncc.gov.uk/jncc-assets/RIS/UK11047.pdf

Avon Valley Ramsar		
more diverse flora and fauna than any other chalk river in Britain. The valley includes one of the largest expanses of unimproved floodplain grassland in Britain, including extensive areas managed as hay meadow.		
Ramsar Criteria		
1	The site shows a greater range of habitats than any other chalk river in Britain, including fen, mire, lowland wet grassland and small areas of woodland.	
2	The site supports a diverse assemblage of wetland flora and fauna including several nationally-rare species.	
6	Species/populations occurring at levels of international importance. Qualifying Species/populations (as identified at designation):	
	Species with peak counts in winter:	Gadwall, *Anas strepera strepera*, NW Europe
	Species/populations identified subsequent to designation for possible future consideration under criterion 6:	
	Species with peak counts in winter:	Northern pintail, *Anas acuta*, NW Europe
		Black-tailed godwit, *Limosa limosa islandica*, Iceland/W Europe
Ramsar Information Sheet (RIS)[114]: Factors (past, present or potential) adversely affecting the site's ecological character, including changes in land (including water) use and development projects:		
■ Disturbance to vegetation through cutting / clearing ■ Vegetation succession - Major issue arising from decline in traditional pastoral agriculture and lack of maintenance of ditch network. ■ Drainage/land-claim for agriculture - Management of water levels driven partly by agriculture but also urban flood risk management continues to have adverse effect on habitats. ■ Sedimentation/siltation - High levels of silt in river continue to degrade its interest, especially aquatic species but also contribute to silting-up ditches and deterioration of grasslands after flood events. ■ Introduction/invasion of non-native plant species - *Crassula helmsii* is increasing problem in Blashford Lakes following restoration of gravel pits, not controlled adequately through planning consents and technically difficult to control following withdrawal of herbicide approval. ■ Pollution – domestic sewage ■ Pollution – agricultural fertilisers ■ Recreational/tourism disturbance - Site is subject to wildfowling and game shooting, and associated activities (e.g. shooting hides, game cover management, pheasant release pens, etc); full extent/intensity unknown but known to be considerable. Likewise fishing and related activities (e.g. fish stocking, vehicular and pedestrian access, fencing of river banks, vegetation management etc.). Access by people and dogs both on and off public rights of way is also a significant cause of disturbance in some areas. ■ Reservoir/barrage/dam impact: flow regime		

Dorset Heathlands Ramsar	
Site Description	
Extensive and fragmented, these heathland areas are centred around the estuary of Poole Harbour and are adjacent to the urban conurbation of Bournemouth and Poole. The heathland contains numerous examples of wet heath and acid valley mire, habitats that are restricted to the Atlantic fringe of Europe. These heath wetlands are among the best of their type in lowland Britain. There are also transitions to coastal wetland and fen habitat types. The wetland flora and fauna includes a large assemblage of nationally rare and scarce species, especially invertebrates.	
Ramsar Criteria	
1	Contains particularly good examples of (i) northern Atlantic wet heaths with cross-leaved heath *Erica tetralix* and (ii) acid mire with *Rhynchosporion*. Contains largest example in Britain of southern Atlantic wet heaths with Dorset heath *Erica ciliaris* and cross-leaved heath *Erica tetralix*.

[114] Ramsar Information Sheet (RIS): Avon Valley (926)
https://jncc.gov.uk/jncc-assets/RIS/UK11005.pdf

Dorset Heathlands Ramsar	
2	Supports 1 nationally rare and 13 nationally scarce wetland plant species, and at least 28 nationally rare wetland invertebrate species
3	Has a high species richness and high ecological diversity of wetland habitat types and transitions, and lies in one of the most biologically-rich wetland areas of lowland Britain, being continuous with three other Ramsar sites: Poole Harbour, Avon Valley and The New Forest.
Ramsar Information Sheet (RIS)[115]: Factors (past, present or potential) adversely affecting the site's ecological character, including changes in land (including water) use and development projects:	
■ Acid rain - Modelling by the relevant air quality authority indicates that the average or minimum deposition from airborne SOx and NOx exceed the maximum critical load for acidity on at least part of the site. ■ Pollution – unspecified	

Solent and Southampton Water Ramsar		
Site Description		
The area covered extends from Hurst Spit to Gilkicker Point along the south coast of Hampshire and along the north coast of the Isle of Wight. The site comprises of estuaries and adjacent coastal habitats including intertidal flats, saline lagoons, shingle beaches, saltmarsh, reedbeds, damp woodland, and grazing marsh. The diversity of habitats support internationally important numbers of wintering waterfowl, important breeding gull and tern populations and an important assemblage of rare invertebrates and plants.		
Ramsar Criteria		
1	The site is one of the few major sheltered channels between a substantial island and mainland in European waters, exhibiting an unusual strong double tidal flow and has long periods of slack water at high and low tide. It includes many wetland habitats characteristic of the biogeographic region: saline lagoons, saltmarshes, estuaries, intertidal flats, shallow coastal waters, grazing marshes, reedbeds, coastal woodland and rocky boulder reefs.	
2	The site supports an important assemblage of rare plants and invertebrates. At least 33 British Red Data Book invertebrates and at least eight British Red Data Book plants are represented on site.	
5	Assemblages of international importance:	
	Species with peak counts in winter:	51343 waterfowl (5 year peak mean 1998/99-2002/2003)
6	Species/populations occurring at levels of international importance. Qualifying Species/populations (as identified at designation):	
	Species with peak counts in spring/autumn:	Ringed plover, *Charadrius hiaticula*, Europe/Northwest Africa
	Species with peak counts in winter:	Dark-bellied brent goose, *Branta bernicla bernicla*
		Eurasian teal, *Anas crecca*, NW Europe
		Black-tailed godwit, Limosa limosa islandica, Iceland/W Europe
Ramsar Information Sheet (RIS)[116]: Factors (past, present or potential) adversely affecting the site's ecological character, including changes in land (including water) use and development projects:		
■ Erosion		

Severn Estuary Ramsar
Site Description

[115] Ramsar Information Sheet (RIS): Dorset Heathlands (964)
https://jncc.gov.uk/jncc-assets/RIS/UK11021.pdf
[116] Ramsar Information Sheet (RIS): Solent and Southampton Water (965)
https://jncc.gov.uk/jncc-assets/RIS/UK11063.pdf

Severn Estuary Ramsar		
The estuary's classic funnel shape, unique in Britain, is a factor causing the Severn to have the second-largest tidal range in the world (after the Bay of Fundy, Canada). This tidal regime results in plant and animal communities typical of the extreme physical conditions of liquid mud and tide swept sand and rock. The species-poor invertebrate community includes high densities of ragworms, lugworms and other invertebrates forming an important food source for passage and wintering waders. A further consequence of the large tidal range is the extensive intertidal zone, one of the largest in the UK, comprising mudflats, sand banks, shingle, and rocky platforms. Glassworts and annual sea-blite colonise the open mud, with beds of all three species of eelgrass Zostera occurring on more sheltered mud and sandbanks. Large expanses of common cord-grass also occur on the outer marshes. Heavily grazed saltmarsh fringes the estuary with a range of saltmarsh types present. The middle marsh sward is dominated by common saltmarsh-grass with typical associated species. In the upper marsh, red fescue and saltmarsh rush become more prominent.		
Ramsar Criteria		
1	Due to immense tidal range (second-largest in world), this affects both the physical environment and biological communities. Habitats Directive Annex I features present on the SAC include: ■ **H1110** - Sandbanks which are slightly covered by sea water all the time ■ **H1130** - Estuaries ■ **H1140** - Mudflats and sandflats not covered by seawater at low tide ■ **H1330** - Atlantic salt meadows (Glauco-Puccinellietalia maritimae)	
3	Due to unusual estuarine communities, reduced diversity and high productivity.	
4	This site is important for the run of migratory fish between sea and river via estuary. Species include Salmon *Salmo salar*, sea trout *S. trutta*, sea lamprey *Petromyzon marinus*, river lamprey *Lampetra fluviatilis*, allis shad *Alosa alosa*, twaite shad *A. fallax*, and eel *Anguilla anguilla*. It is also of particular importance for migratory birds during spring and autumn.	
5	Assemblages of international importance:	
	Species with peak counts in winter:	70919 waterfowl (5 year peak mean 1998/99-2002/2003)
6	Species/populations occurring at levels of international importance. Qualifying Species/populations (as identified at designation):	
	Species with peak counts in winter:	Tundra swan, *Cygnus columbianus bewickii*, NW Europe
		Greater white-fronted goose, *Anser albifrons albifrons*, NW Europe
		Common shelduck, *Tadorna tadorna*, NW Europe
		Gadwall, *Anas strepera strepera*, NW Europe
		Dunlin, *Calidris alpina alpina*, W Siberia/W Europe
		Common redshank, *Tringa totanus totanus*
	Species/populations identified subsequent to designation for possible future consideration under criterion 6.	
	Species regularly supported during the breeding season:	Lesser black-backed gull, *Larus fuscus graellsii*, W Europe/Mediterranean/W Africa
	Species with peak counts in spring/autumn:	Ringed plover, *Charadrius hiaticula*, Europe/Northwest Africa
	Species with peak counts in winter:	Eurasian teal, *Anas crecca*, NW Europe
		Northern pintail, *Anas acuta*, NW Europe
8	The fish of the whole estuarine and river system is one of the most diverse in Britain, with over 110 species recorded. Salmon *Salmo salar*, sea trout *S. trutta*, sea lamprey *Petromyzon marinus*, river lamprey *Lampetra fluviatilis*, allis shad *Alosa alosa*, twaite shad *A. fallax*, and eel *Anguilla Anguilla* use the Severn Estuary as a key migration route to their spawning grounds in the many tributaries that flow into the estuary. The site is important as a feeding and nursery ground for many fish species particularly allis shad *Alosa alosa* and twaite shad *A. fallax* which feed on mysid shrimps in the salt wedge.	

Severn Estuary Ramsar
Ramsar Information Sheet (RIS)[117][111]: Factors (past, present or potential) adversely affecting the site's ecological character, including changes in land (including water) use and development projects:
■ Dredging ■ Erosion ■ Recreational/tourism disturbance (unspecified)

Somerset Levels and Moors Ramsar		
Site Description		
See Somerset Levels and Moors SPA for further information.		
Ramsar Criteria		
2	Supports 17 species of Red Data Book invertebrates. The vascular plants *Wolffia arrhiza*, *Hydrocharis morsus-ranae* and *Peucedanum palustre* are considered vulnerable by the GB Red Book.	
5	Assemblages of international importance:	
	Species with peak counts in winter:	97,155 waterfowl (5 year peak mean 1998/99-2002/2003)
6	Species/populations occurring at levels of international importance. Qualifying Species/populations (as identified at designation):	
	Species with peak counts in winter:	Eurasian teal, *Anas crecca*, NW Europe
		Northern lapwing, *Vanellus vanellus*, Europe - breeding
	Species/populations identified subsequent to designation for possible future consideration under criterion 6.	
	Species with peak counts in winter:	Eurasian wigeon, *Anas penelope*, NW Europe
		Mute swan, *Cygnus olor*, Britain
		Northern pintail, *Anas acuta*, NW Europe
		Northern shoveler, *Anas clypeata*, NW & C Europe
Ramsar Information Sheet (RIS)[118][111]: Factors (past, present or potential) adversely affecting the site's ecological character, including changes in land (including water) use and development projects:		
■ No factors reported. However, irrigation, mining and urban settlements on the site could have a (potential) adverse impact.		

B.1 The table below shows which types of impacts on European sites could potentially result from each of the policies and site allocations in the Wiltshire Local Plan. Where a policy or site allocation is not expected to have a particular type of impact, the relevant cell is shaded green. Where a policy or site allocation could potentially have a certain type of impact, this is shown in orange. The final column sets out the nature of potential significant effects if they were to arise. Where uncertain or likely significant effects are identified, these are required to be considered further via Appropriate Assessment.

[117] Ramsar Information Sheet (RIS): Severn Estuary (67)
https://jncc.gov.uk/jncc-assets/RIS/UK11081.pdf
[118] Ramsar Information Sheet (RIS): Somerset Levels and Moors (914)
https://rsis.ramsar.org/RISapp/files/RISrep/GB914RIS.pdf

Appendix C

Screening matrix

C.1 The table below shows which types of impacts on European sites could potentially result from each of the policies and site allocations in the Wiltshire Local Plan. Where a policy or site allocation is not expected to have a particular type of impact, the relevant cell is shaded green. Where a policy or site allocation could potentially have a certain type of impact, this is shown in orange. The final column sets out the nature of potential significant effects if they were to arise. Where uncertain or likely significant effects are identified, these are required to be considered further via Appropriate Assessment

Table C.1: Screening matrix

Policy	Likely activities (operation) to result as a consequence of the proposal	Potential effects if proposal implemented	Is the policy likely to have significant effects and therefore need to be scoped into the Appropriate Assessment?
Policy 1 – Settlement Strategy	None – This policy identifies settlements where sustainable development will take place.	N/A	No
Policy 2 – Delivery Strategy	Yes – This policy outlines the delivery of 160ha of employment land and 36,740 new homes within the plan period.	Physical damage and loss Non-physical disturbance Non-toxic contamination Air pollution Recreational pressure Water quantity Water quality	Yes. This policy makes provision for 160ha of new employment land and at least 36,740 homes and therefore may contribute to effects, including physical damage and loss, non-physical disturbance, non-toxic contamination, air pollution, recreational pressure, water quantity and water quality.
Policy 3 – Reserve Sites for Housing and Broad Locations of Growth	None – This policy sets out broad criteria for planning permission to be supported for reserve sites identified in other policies and identifies settlements as broad locations for future housing growth.	N/A	No
Policy 4 – Addressing climate change	None – This policies outlines how development must support a move to carbon neutrality and seek to address climate change.	N/A	No
Policy 5 – Securing infrastructure provision from new development	None – This policy outlines the requirement for new development to provide for necessary on-site and off-site infrastructure requirements.	N/A	No
Policy 6 – Chippenham Principal Settlement	Yes – This policies outlines the planned development of 5,850 new homes and 42ha of employment land at Chippenham, including developing the Bath Road Car Park / Bridge Centre site as a mixed-use scheme.	Air pollution Recreational pressure Change in water quantity and water quality	Yes. This policy makes provision for housing and employment in Chippenham and therefore may contribute to effects, including air pollution, recreational pressure, water quantity and water quality.
Policy 7 – Land south of Chippenham and East of Showell Farm	Yes – This policy makes provision for 2,525 new housing and 15ha employment at land at South Chippenham.	Physical damage and loss, including functionally linked habitat Non-physical disturbance , including functionally linked habitat Air pollution Recreational pressure Change in water quantity and increased water quality	Yes. This policy makes provision for housing and employment at land at South Chippenham and therefore may contribute to effects, including air pollution; and, change in water quantity and quality.

Policy	Likely activities (operation) to result as a consequence of the proposal	Potential effects if proposal implemented	Is the policy likely to have significant effects and therefore need to be scoped into the Appropriate Assessment?
Policy 8 – Chippenham Town Centre	Yes – This policy makes provision for development within Chippenham Town Centre, including at Bath Road and Bridge Centre Site and Emery Gate Shopping Centre.	Air pollution Water quantity Water quality	Yes. This policy makes provision for housing, employment and leisure land at Chippenham Town Centre and therefore may contribute to effects, including air pollution, water quantity and water quality.
Policy 9 – Calne Market Town	Yes – This policy makes provision for the development of 1,230 homes and 5.1ha of employment land at Calne.	Physical damage and loss Non-physical disturbance Non-toxic contamination Air pollution Recreational pressure Water quantity Water quality	Yes. This policy makes provision for housing and employment land at Calne and therefore may contribute to effects, including physical damage and loss, non-physical disturbance, non-toxic contamination, air pollution, recreational pressure, water quantity and water quality.
Policy 10 – Land off Spitfire Road, Calne	Yes – This policy makes provision for 2.7 ha of employment at land off Spitfire Road, Calne.	Air pollution	Yes. This policy makes provision for employment at land off Spitfire Road, Calne and therefore may contribute to effects, including air pollution.
Policy 11 – Land to the north of Spitfire Road, Calne	Yes – This policy makes provision for the development of 570 dwellings and 0.5ha employment land with greenspace.	Air pollution	Yes. This policy makes provision for housing and employment land to the north of Spitfire Road, Calne and therefore may contribute to effects, including air pollution.
Policy 12 – Corsham Market Town	Yes – This policy makes provision for 360 homes in Corsham and makes provision for a reserve site for 200 homes on Land East of Leafields Trading Estate to be brought forward in accordance with Policy 3.	Physical damage and loss Non-physical disturbance Non-toxic contamination Air pollution Recreational pressure Water quantity Water quality	Yes. This policy makes provision for housing in Corsham and therefore may contribute to effects, including physical damage and loss, non-physical disturbance, non-toxic contamination, air pollution, recreational pressure, water quantity and water quality.
Policy 13 – Land south of Dicketts Road, Corsham	Yes – This policy makes provision for housing at land West of B3533 of approximately 105 dwellings.	Physical damage and loss Non-physical disturbance Non-toxic contamination Air pollution Recreational pressure Water quantity Water quality	Yes. This policy makes provision for housing at land West of B3533 and therefore may contribute to effects, including physical damage and loss, non-physical disturbance, non-toxic contamination, air pollution, recreational pressure, water quantity and water quality.
Policy 14 –– Devizes Market Town	Yes – This policy makes provision for 980 homes and 9.9ha of employment	Physical damage and loss	Yes. This policy makes provision for housing and

Policy	Likely activities (operation) to result as a consequence of the proposal	Potential effects if proposal implemented	Is the policy likely to have significant effects and therefore need to be scoped into the Appropriate Assessment?
	land at Devizes and outlines criteria for development.	Non-physical disturbance Non-toxic contamination Air pollution Recreational pressure Water quantity Water quality	employment at Devizes and therefore may contribute to effects, including physical damage and loss, non-physical disturbance, non-toxic contamination, air pollution, recreational pressure, water quantity and water quality.
Policy 15 – Land at the Devizes Wharf, Assize Court and Wadworth Brewery, Devizes	Yes – This policy supports regeneration and redevelopment on land at the Devizes Wharf, Assize Court and Wadworth Brewery to include commercial mixed use, residential, recreation and cultural use.	Physical damage and loss Non-physical disturbance Non-toxic contamination Air pollution Recreational pressure Water quantity Water quality	Yes. This policy supports regeneration and redevelopment on land at the Devizes Wharf, Assize Court and Wadworth Brewery to include commercial mixed use, residential, recreation and cultural use and therefore may contribute to effects, including physical damage and loss, non-physical disturbance, non-toxic contamination, air pollution, recreational pressure, water quantity and water quality.
Policy 16 – Malmesbury Market Town	Yes – This policy makes provision for 600 homes and 3.3ha of employment land at Malmesbury, and makes provision for a reserve site for 55 homes on Land off Park Lane and Sherston Close to be brought forward in accordance with Policy 3.	Physical damage and loss (off-site only) Recreational pressure Air pollution Water quantity Water quality	Yes. This policy makes provision for housing and employment land within Malmesbury and so may contribute to loss of off site functionally linked habitat, increased recreational pressure, increases in traffic resulting in air pollution and increased water abstraction and pollution.
Policy 17 – Melksham Market Town	Yes – This policy makes provision for 2,160 homes and 5ha of employment land at Melksham	Physical damage and loss (off-site only) Air pollution Water quantity Water quality	Yes. This policy makes provision for housing and employment land within Melksham and so may contribute to loss off off site functionally linked habitat, increases in traffic and increased water abstraction and pollution.
Policy 18 – Land east of Melksham	Yes – This policy makes provision for 425 new housing and 5ha employment at land east of Melksham.	N/A	No. This policy makes provision for housing and employment at land east of Melksham. However, given the distance of the site from any European Sites and the lack of Hydrological connectivity, no effects are expected.
Policy 19 – Land off Bath Road, Melksham	Yes – This policy makes provision for 135 new housing dwellings and 2ha of employment land at land off Bath Road.	Air pollution	No. This policy makes provision for housing and employment land at land off Bath Road. However, given the distance of the site from

Policy	Likely activities (operation) to result as a consequence of the proposal	Potential effects if proposal implemented	Is the policy likely to have significant effects and therefore need to be scoped into the Appropriate Assessment?
			any European Sites and the lack of Hydrological connectivity, no effects are expected.
Policy 20 – Land North of the A3102	Yes – This policy makes provision for 285 new housing and 0.4ha for a nursery at land north of the A3102.	Air pollution	No. This policy makes provision for housing at land north of the A3102. However, given the distance of the site from any European Sites and the lack of Hydrological connectivity, no effects are expected.
Policy 21 – New Community Area of Search	None – this policy identifies opportunities for new community north of Salisbury but does not result in development itself.	N/A	No.
Policy 22 – Salisbury Principal Settlement	Yes – This policy makes provision for 4,500 new housing and 12.3ha of employment land at Salisbury.	Physical damage and loss Non-physical disturbance Non-toxic contamination Air pollution Recreational pressure Water quantity Water quality	Yes. This policy makes provision for housing and employment land. Given the presence of River Avon SAC within Salisbury and Salisbury Plain SPA and SAC and Porton Down SPA just north, development in this area has potential to result in on site damage and loss, non-physical disturbance, non-toxic contamination, air pollution, recreational pressure and increase water abstraction and pollution.
Policy 23 – Land North East of Old Sarum, Salisbury	Yes – This policy makes provision for 350 new housing at land north-east of Old Sarum.	Physical damage/loss of habitat functionally linked habitat only Non-physical disturbance functionally linked habitat only Recreational pressure	Yes. This policy makes provision for housing at land north-east of Old Sarum and therefore may contribute to effects, physical damage/loss of habitat functionally linked habitat only; non-physical disturbance functionally linked habitat only; and, recreational pressure.
Policy 24 – Land at Netherhampton Road Garden Centre, Salisbury	Yes – This policy makes provision for 60 new housing at land at Netherhampton Road Garden Centre.	Physical damage/loss of habitat functionally linked habitat only Non-physical disturbance functionally linked habitat only Air pollution Recreational pressure	Yes. This policy makes provision for housing at land at Netherhampton Road Garden Centre and therefore may contribute to effects, physical damage/loss of habitat functionally linked habitat only; non-physical disturbance functionally linked habitat only; air pollution; and, recreational pressure.
Policy 25 – Land north of the Beehive Park and Ride, Old Sarum	Yes – This policy makes provision for 100 new housing at land north of the Beehive Park and Ride Old Sarum.	Physical damage/loss of habitat including functionally linked habitat	Yes. This policy makes provision for housing at land north of the Beehive Park and Ride Old Sarum and therefore

Policy	Likely activities (operation) to result as a consequence of the proposal	Potential effects if proposal implemented	Is the policy likely to have significant effects and therefore need to be scoped into the Appropriate Assessment?
		Non-physical disturbance including functionally linked habitat Air pollution Recreational pressure	may contribute to effects, physical damage/loss of habitat functionally linked habitat only; non-physical disturbance functionally linked habitat only; air pollution; and, recreational pressure.
Policy 26 – Land north of Downton Road	Yes – This policy makes provision for 220 new housing at land north of Downton Road.	Physical damage/loss of habitat including functionally linked habitat Non-physical disturbance including functionally linked habitat Non-toxic contamination including functionally linked habitat Air pollution Recreational pressure Change in water quantity and quality	Yes. This policy makes provision for housing at land north of Downton Road and therefore may contribute to effects, physical damage/loss of habitat functionally linked habitat only; non-physical disturbance functionally linked habitat only; non-toxic contamination including functionally linked; air pollution; recreational pressure; and, changes in water quantity and increased water pollution.
Policy 27– Land south of Harnham	Yes – This policy makes provision for 265 new housing and 0.3ha of land for a new nursery at land south of Harnham.	Physical damage/loss of habitat functionally linked habitat only Non-physical disturbance functionally linked habitat only Air pollution Recreational pressure	Yes. This policy makes provision for housing and a new nursery at land south of Harnham and therefore may contribute to effects, physical damage/loss of habitat functionally linked habitat only; non-physical disturbance functionally linked habitat only; air pollution; and, recreational pressure.
Policy 28 – Land west of Coombe Road, Harnham	Yes – This policy makes provision for 45 new housing at land west of Coombe Road, Harnham.	Physical damage/loss of habitat functionally linked habitat only Non-physical disturbance functionally linked habitat only Air pollution Recreational pressure	Yes. This policy makes provision for housing at land west of Coombe Road, Harnham and therefore may contribute to effects, physical damage/loss of habitat functionally linked habitat only; non-physical disturbance functionally linked habitat only; air pollution; and, recreational pressure.
Policy 29: Suitable Alternative Natural Greenspace, South Salisbury	None – This policy outlines the provision for SANGs to mitigate the adverse effects of recreation on the New Forest designated sites.	N/A	No
Policy 30 – Land east of Church Road, Laverstock	Yes – This policy makes provision for 50 new housing at land east of Church Road, Laverstock.	Physical damage/loss of habitat including functionally linked habitat Non-physical disturbance including functionally linked habitat	Yes. This policy makes provision for housing at land east of Church Road, Laverstock and therefore may contribute to effects, physical damage/loss of habitat functionally linked habitat only; non-physical disturbance

Policy	Likely activities (operation) to result as a consequence of the proposal	Potential effects if proposal implemented	Is the policy likely to have significant effects and therefore need to be scoped into the Appropriate Assessment?
		Air pollution Recreational pressure	functionally linked habitat only; air pollution; and, recreational pressure.
Policy 31 – Salisbury Central Area	None – This policy outlines the plans for repositioning Salisbury as a central area for visitors and residents.	N/A	No
Policy 32: Salisbury Skyline	None – This policy outlines the height and architectural restrictions for new developments.	N/A	No
Policy 33 – The Maltings and Central Car Park	Yes - This policy makes provision for mixed-use development at The Maltings and Central Car Park.	Physical damage/loss of habitat including functionally linked habitat Non-physical disturbance including functionally linked habitat Non-toxic contamination including functionally linked habitat Recreational pressure Change in water quantity and water quality.	Yes. This policy makes provision for housing at Maltings-Central Car Park and therefore may contribute to effects, physical damage/loss of habitat functionally linked habitat only; non-physical disturbance functionally linked habitat only; non-toxic contamination including functionally linked; air pollution; recreational pressure; and, changes in water quantity and increased water pollution.
Policy 34 – Churchfields Employment Area	None – This policy supports the renewal and intensification of a large, existing employment site.	N/A	No
Policy 35 – Salisbury District Hospital Campus	Yes – This policy makes provision for 7ha eastward extension and redevelopment of buildings in the existing built footprint. However, does not directly result in development itself.	Physical damage/loss of habitat including functionally linked habitat Non-physical disturbance including functionally linked habitat Non-toxic contamination including functionally linked habitat Change in water quantity and water quality.	Yes. This policy makes provision a 7ha eastward extension of the hospital campus and therefore may contribute to effects, physical damage/loss of habitat functionally linked habitat only; non-physical disturbance functionally linked habitat only; non-toxic contamination including functionally linked; and, changes in water quantity and increased water pollution.
Policy 36 – Amesbury Market Town	Yes – This policy makes provision for 530 new housing development in Amesbury	Physical damage/loss of habitat including functionally linked habitat Non-physical disturbance including functionally linked habitat Non-toxic contamination including functionally linked habitat Recreational pressure	Yes. This policy makes provision for housing in Amesbury and given the close proximity to River Avon SAC, Salisbury Plain SAC and SPA and Porton Down SPA, there is potential for development to contribute to physical damage/loss, non-physical disturbance, non-toxic contamination, recreational pressure and changes in water quantity and quality.

Policy	Likely activities (operation) to result as a consequence of the proposal	Potential effects if proposal implemented	Is the policy likely to have significant effects and therefore need to be scoped into the Appropriate Assessment?
		Change in water quantity and water quality.	
Policy 37 – Boscombe Down	None – This policy outlines criteria for development within and around the airfield.	N/A	No
Policy 38 – Porton Down	None – This policy outlines support the continued development of the Proton Down Science Park.	N/A	No
Policy 39 – Tidworth and Ludgershall Market Town	Yes – This policy makes provision for 2,080 new housing and 10.7ha of employment land in Tidworth and Ludgershall	Physical loss and damage (off-site only) Recreational pressure Air pollution Water quantity Water quality	Yes. This policy makes provision for housing and employment land in Tidworth and Ludgershall and given their proximity to Salisbury Plain SPA and SAC, they have potential to contribute to loss and damage of off-site functionally linked land, recreational pressure, air pollution, water quantity and water quality.
Policy 40 - Land South East of Empress Way	Yes - This policy makes provision for approximately 1,220 new housing, 0.7ha of employment and for two 0.3ha for two new nurseries at land to the south east of Empress Way.	Recreational pressure	Yes. This policy makes provision for housing and employment land at land to the south east of Empress Way and therefore may contribute to effect on recreational pressure.
Policy 41 – Land at Bulbridge Estate, Wilton	Yes – This policy makes provision for 45 dwellings at the Bulbridge Estate, Wilton.	Recreational pressure Air pollution Water quantity Water quality	Yes. This policy makes provision for new dwellings and so may contrivute to increased recreational pressure, air pollution and changes to water quantity and quality.
Policy 42 – Land at Dead Maid Quarry Employment Area, Mere	Yes – This policy makes provision for 1.5ha of business development at the existing employment area.	Air pollution	Yes. This policy makes provision for employment land and so may contribute to air pollution due to increased traffic.
Policy 43 – Land safeguarded for education at Tanner's Lane, Shrewton	None – This policy safeguards land at Tanner's Lane.	N/A	No
Policy 44 – Marlborough Market Town	Yes – This policy makes provision for 600 new housing and 1.8ha of employment land at Marlborough.	Physical damage and loss (of-site only) Recreational pressure Air pollution Water quantity Water quality	Yes. This policy makes provision for housing and employment land in Marlborough and so may contribute to physical damage and loss at off-site functionally linked land, recreational pressure, air pollution, water quality and water quality.

Policy	Likely activities (operation) to result as a consequence of the proposal	Potential effects if proposal implemented	Is the policy likely to have significant effects and therefore need to be scoped into the Appropriate Assessment?
Policy 45 – Land at Chopping Knife Lane, Marlborough	Yes – This policy makes provision for 50 new housing at land at Chopping Knife Lane, Marlborough.	Air pollution	Yes. This policy makes provision for housing at land at Chopping Knife Lane, Marlborough and therefore may contribute to effects, including to air pollution.
Policy 46– Land off Barton Dene	Yes – This policy makes provision for 30 new housing and 1.8ha of employment at land off Barton Dene, Marlborough.	Air pollution	Yes. This policy makes provision for housing and employment at land off Barton Dene, Marlborough and therefore may contribute to effects, including to air pollution.
Policy 47 - Royal Wootton Bassett Market Town	Yes – This policy makes provision for mixed-use development at Royal Wootton Bassett. This will comprise of 1230new housing and 6.9ha of employment land.	Water quantity	Yes. This policy makes provision for mixed-use development at Royal Wootton Bassett which lies within the catchment of Kennet and therefore may contribute to effects, including water quantity.
Policy 48 – Land at Marsh Farm	Yes – This policy makes provision for 150 dwellings.	N/A	No. Although this policy makes provision for housing, given the distance of the site from any European site and lack of hydrological connectivity, no likely significant effects are predicted.
Policy 49 – Land at Midge Hall Farm	Yes – This policy makes provision for 415 new dwellings and 1.8ha of employment land at Land at Midge Hall Farm.	N/A	No. Although this policy makes provision for housing, given the distance of the site from any European site and lack of hydrological connectivity, no likely significant effects are predicted.
Policy 50 – Land West of Maple Drive	Yes – This policy makes provision for 70 new dwellings at Land West of Maple Drive.	N/A	No. Although this policy makes provision for housing, given the distance of the site from any European site and lack of hydrological connectivity, no likely significant effects are predicted.
Policy 51 – Land at Woodshaw	Yes – This policy makes provision for 445 new housing and 0.4ha for a new nursery at Woodshaw.	N/A	No. Although this policy makes provision for housing and a new nursery, given the distance of the site from any European site and lack of hydrological connectivity, no likely significant effects are predicted.
Policy 52 – Trowbridge Principal Settlement	Yes – This policy makes provision for 4,420 new dwellings and 27.4ha of employment land in Trowbridge.	Physical damage and loss (off-site only)	Yes. This policy makes provision for 4,420 homes within Trowbridge and so may contribute to physical damage

Policy	Likely activities (operation) to result as a consequence of the proposal	Potential effects if proposal implemented	Is the policy likely to have significant effects and therefore need to be scoped into the Appropriate Assessment?
		Recreational pressure Air pollution Water quality Water quantity	and loss of off-site functionally linked land, increased air pollution and increased water abstraction and pollution.
Policy 53 – Land north of Trowbridge	Yes – This policy makes provision for 600 new housing, 2ha of land for a primary school, convenience store and 0.3ha for an early years learning facility at land adjoining Whaddon Lane.	Physical habitat damage and loss (off-site only) Recreational pressure Air pollution Water quantity Water quality	Yes. This policy makes provision for 600 dwellings at land adjoining Whaddon Lane, a primary school, convenience store and and early learning facility and so may contribute to loss of off-site functionally linked land, recreational pressure, air pollution, water quantity and water quality.
Policy 54 – North Trowbridge Country Park	None – This policy makes provision for a Country Park, functioning as a SANG	N/A	No
Policy 55 – Land at Innox Mills, Trowbridge	Yes – This policy makes provision for 175 new housing at land at Innox Mills, Trowbridge.	Recreational pressure	Yes. This policy makes provision for 175 dwellings and so may contribute to increased recreational pressure at European sites.
Policy 56 – Trowbridge Central Area	None – This policy outlines criteria and objectives for development proposals within Trowbridge Central Area	N/A	No
Policy 57 – Bradford on Avon Market Town	Yes - This policy makes provision for 140 new housing development at Bradford on Avon, although no land has been allocated for this development. Policy makes provision for a reserve site for 120 homes on Land at the former Golf Course to be brought forward in accordance with Policy 3.	Physical damage and loss (off-site only) Recreational pressure Air pollution Water quantity Water quality	Yes. This policy makes provision for 140 homes and so may contribute to physical damage and loss of off-site functionally linked land, recreational pressure, air pollution, water quantity and water quality.
Policy 58 – Warminster Market Town	Yes – This policy makes provision for 1,780 new housing and 5.6ha of employment land at Warminster.	Physical damage and loss (off-site only) Non-physical disturbance (off-site only) Non-toxic contamination (off-site only) Recreational pressure Air pollution Water quantity Water quality	Yes. This policy makes provision for 1,780 homes and 5.6ha of employment land and so may contribute to damage/loss, non-physical disturbance and non-toxic contamination at off-site functionally linked land, recreational pressure, air pollution and changes to water quantity and quality.
Policy 59 – Land at Brook Street	None – This policy makes provision for Land at Brook Street as mitigation for	N/A	No

Policy	Likely activities (operation) to result as a consequence of the proposal	Potential effects if proposal implemented	Is the policy likely to have significant effects and therefore need to be scoped into the Appropriate Assessment?
	adverse effects on the River Avon SAC		
Policy 60 – Westbury Market Town	Yes – This policy makes provision for 1,400 new housing and 16.7ha employment developments at Westbury.	Physical damage and loss (off-site only) Non-physical disturbance (off-site only) Non-toxic contamination (off-site only) Air pollution Recreational pressure Water Quantity Water Quality	Yes. This policy makes provision for 1,400 homes and 16.7ha of employment land in Westbury and so may contribute to physical damage and loss, non-physical disturbance and non-toxic contamination at off-site functionally linked land and air pollution, recreational pressure, water quantity and water quality.
Policy 61 – Land west of Mane Way, Westbury	Yes – This policy makes provision for 220 new housing at land west of Mane Way, Westbury.	Physical damage/loss of habitat functionally linked habitat only Non-physical disturbance including functionally linked habitat Recreational pressure	Yes. This policy makes provision for housing at land west of Mane Way, Westbury and therefore may contribute to effects, including recreational pressure.
Policy 62 – Land at Bratton Road, Westbury	Yes – This policy makes provision for 260 new housing and 0.3ha for a new nursery at land at Bratton Road, Westbury	Physical damage/loss of habitat functionally linked habitat only Non-toxic contamination functionally linked habitat only Recreational pressure	Yes. This policy makes provision for housing and a new nursery at land at Bratton Road, Westbury and therefore may contribute to effects, including physical damage/loss of habitat functionally linked habitat only; recreational pressure; and, non-toxic contamination functionally linked habitat only.
Policy 63 – Westbury Country Park	None – This policy makes provision for a Country Park.	N/A	No
Policy 64: Additional Employment Land	Yes – This policy supports proposals for employment development on unallocated sites within or adjacent to defined settlements where appropriate to their role and function; and elsewhere in certain circumstances. .	Physical damage/loss of habitat including functionally linked habitat Non-physical disturbance including functionally linked habitat Non-toxic contamination including functionally linked habitat Air pollution Change in water quantity and water quality	Yes. This policy permits employment development and therefore may contribute to effects,
Policy 65: Existing Employment Land	None – This policy ensures that land in employment use and at Principal Employment Areas is safeguarded,	N/A	No

Policy	Likely activities (operation) to result as a consequence of the proposal	Potential effects if proposal implemented	Is the policy likely to have significant effects and therefore need to be scoped into the Appropriate Assessment?
	and supports renewal and intensification of employment uses..		
Policy 66: Military Establishments	Yes – This policy supports new development within or adjoining operational military establishments that are required for operational defence and security purposes. The policy also supports the change of use, conversion, or redevelopment of redundant military establishments outside settlement boundaries to employment uses,	Physical damage/loss of habitat including functionally linked habitat Non-physical disturbance including functionally linked habitat Non-toxic contamination including functionally linked habitat Air pollution	Yes. This policy permits development within military establishments which could be at Buckley Barracks and / or Balford Camp. Development could include employment land or military related development. The development of housing is unlikely but has not been excluded within this policy. Depending on the location this may contribute to physical damage/loss of habitat within Salisbury Plans SAC and SPA.
Policy 67: Sequential Test and Retail Impact Assessment	None – This policy requires that a Sequential Test is required for proposals for Main Town Centre Uses on sites which lie outside of the defined Town Centres.	N/A	No
Policy 68: Managing Town Centres	None – This policy states the type of proposals that will be permitted within town centre boundaries and sets criteria for proposals within Primary Shopping Areas to meet.	N/A	No
Policy 69: Tourism and Related Development	None – This policy supports tourism and related development subject to criteria.	N/A	No
Policy 70: Sustainable Transport	None – This policy states that the council will limit the need to travel in order to reduce transport carbon emissions, whilst recognising the need to keep the economy moving, and supporting the safe and efficient movement of people and goods in Wiltshire.	N/A	No
Policy 71: Transport and New Development	None – This policy sets criteria for new development in that it should be located and designed to promote and encourage the use of sustainable transport modes.	N/A	No
Policy 72: Development Impacts on the Primary and Major Road Networks	None – This policy requires that new development should not be accessed directly from the national primary route network, or major road network, outside built-up areas, unless an over-riding need can be demonstrated.	N/A	No
Policy 73: Transport: Demand Management	None – This policy states that demand management measures will be utilised	N/A	No

Policy	Likely activities (operation) to result as a consequence of the proposal	Potential effects if proposal implemented	Is the policy likely to have significant effects and therefore need to be scoped into the Appropriate Assessment?
	where appropriate to encourage the use of sustainable transport modes.		
Policy 74: Movement of Goods	None – This policy will ensure that development allows for efficient movement of goods but will not result in development.	N/A	No
Policy 75: Strategic Transport Network	Yes – This policy will result in the improvement and development of the strategic transport network within Wiltshire. The strategic transport network along the A350,A36 and A303 corridors will be maintained, managed and improved to support growth. The development and/or improvement of the following railway stations is being promoted through this policy: ▪ Corsham railway station. ▪ Devizes railway station ▪ Melksham railway station. ▪ Royal Wootton Bassett railway station. ▪ Westbury railway station	Physical damage/loss of habitat including functionally linked habitat Non-physical disturbance including functionally linked habitat Air pollution Recreational pressure	Yes. This policy supports improvements to strategic transport network and improvement to railway stations and therefore may contribute to effects, physical damage/loss of habitat including functionally linked habitat; non-physical disturbance including functionally linked habitat; air pollution; and recreational pressure.
Policy 76: Providing Affordable Homes	None – This policy sets the requirement for affordable housing and tenure split when the development is of a certain scale.	N/A	No
Policy 77: Rural Exceptions Sites	Yes – This policy allows for the allocation and development of small sites compromising of affordable housing only at settlements defined as Local Service Centres, Large and Small Villages, and those not identified within the settlement strategy.	Physical damage/loss of habitat including functionally linked habitat Non-physical disturbance including functionally linked habitat Non-toxic contamination including functionally linked habitat Air pollution Recreational pressure Change in water quantity and increased water quality	Yes. This policy support small scale affordable housing in Local Service Centres, Large and Small Villages, and those not identified within the settlement strategy. Therefore, contributes to effects, including Physical damage/loss of habitat including functionally linked habitat; non-physical disturbance including functionally linked habitat; non-toxic contamination including functionally linked habitat; air pollution; recreation; and, water abstraction/treatment.
Policy 78: Meeting Wiltshire's Housing Needs	None – This policy sets requirements for new housing within Wiltshire and requirement for new housing to meet Nationally Described Space Standards.	N/A	No

Policy	Likely activities (operation) to result as a consequence of the proposal	Potential effects if proposal implemented	Is the policy likely to have significant effects and therefore need to be scoped into the Appropriate Assessment?
Policy 79: First Homes Exceptions Sites	Yes – This policy supports development proposal for First Homes Exception Schemes.	Physical damage/loss of habitat including functionally linked habitat Non-physical disturbance including functionally linked habitat Non-toxic contamination including functionally linked habitat Air pollution Recreational pressure Change in water quantity and increased water quality	Yes. This policy supports First Home Exception site schemes. Therefore, contributes to effects, including Physical damage/loss of habitat including functionally linked habitat; non-physical disturbance including functionally linked habitat; non-toxic contamination including functionally linked habitat; air pollution; recreation; and, water abstraction/treatment.
Policy 80: Self and Custom Build Housing	None – This policy sets a requirement in relation to housing sites over 20 or more dwellings to allow for self and custom build.	N/A	No
Policy 81: Community Facilities	Yes – This policy supports the development of community facilities within and adjoining settlement boundaries and small villages with criteria for the redevelopment of community facilities.	N/A	No
Policy 82: Housing in the Countryside	None – This policy outlines that proposals for housing development outside of the defined settlement boundaries and outside of the built areas of Small Villages, on land that is not allocated in the development plan or subject to an exceptions policy will not be supported, unless it meets one specific criteria, as specified in the policy.	N/A	No
Policy 83: Health & Wellbeing	None – This policy should demonstrate that development will contribute positively to health and wellbeing by enabling and promoting healthy lifestyles and minimising any negative health and wellbeing impacts.	N/A	No
Policy 84: Public Open Space and Play Facilities	None – This policy ensures the protection and improvement of quantity, quality, and accessibility of and to open space.	N/A	No
Policy 85: Sustainable Construction and Low Carbon Energy	None – This policy sets requirements that new build residential and commercial development should meet in relation to achieving net-zero. All non-residential development will be required to achieve the relevant BREEAM “Excellent” standard. In	N/A	No

Policy	Likely activities (operation) to result as a consequence of the proposal	Potential effects if proposal implemented	Is the policy likely to have significant effects and therefore need to be scoped into the Appropriate Assessment?
	addition, retrofitting measures that require planning permission should aim to improve energy efficiency.		
Policy 86: Renewable Energy	Yes – This policy supports stand-alone renewable energy schemes and integrated renewable and low-carbon technologies.	Physical damage/loss of habitat including functionally linked habitat Non-physical disturbance including functionally linked habitat Non-toxic contamination including functionally linked habitat Air pollution Change in water quantity and increased water quality	Yes. This policy permits renewables development. This will contribute to effects, including physical damage/loss of habitat, non-physical disturbance, air pollution and water abstraction/treatment. However, some of the development through this policy may be small scale that will not result in likely significant effects on European Sites.
Policy 87: Embodied Carbon	None – This policy requires major residential and/or non-residential development to be supported by an Embodied Carbon Assessment.	N/A	No
Policy 88: Biodiversity and Geodiversity	None – This policy sets the requirement for biodiversity net gain for new development. the policy also directs development to land with the least ecological and geological value.	N/A	No
Policy 89: Biodiversity Net Gain	None – This policy requires development to achieve a minimum of 20% biodiversity net gain..	N/A	No
Policy 90: Woodland, Hedgerows and Trees	None – This policy requires development to make provision for the retention and enhancement of Wiltshire's woodlands, hedgerows and trees.	N/A	No
Policy 91: Conserving and enhancing Wiltshire's landscapes	None – This policy requires development to conserve and where possible enhance landscape character.	N/A	No
Policy 92: Conserving and Enhancing Dark Skies	None – This policy outlines the requirement for developments to conserve and enhance dark skies.	N/A	No
Policy 93: Green and Blue Infrastructure	None – This policy requires development to make provision for the retention and enhancement of green and blue infrastructure network, and ensure that suitable links to the network are provided and maintained.	N/A	No
Policy 94: Wiltshire's Canals and the Boating Community	Yes – This policy supports, in principle the restoration, reconstruction and, as necessary, creation of a new link	Physical damage/loss of habitat including functionally linked habitat	Yes. This policy proposes restoration and reconstruction and potentially the creation of

Policy	Likely activities (operation) to result as a consequence of the proposal	Potential effects if proposal implemented	Is the policy likely to have significant effects and therefore need to be scoped into the Appropriate Assessment?
	between the Kennet & Avon Canal (at Semington) and River Avon (at Melksham) to facilitate the re-opening of the Wilts and Berks and Thames and Severn canals.	Non-physical disturbance including functionally linked habitat Recreational pressure Change in water quality and water quality	a new link on Wiltshire's canals and therefore may contribute to effects, physical damage/loss of habitat including functionally linked habitat; non-physical disturbance including functionally linked habitat; recreational pressure; and, water quantity and quality.
Policy 95: Flood Risk	None – This policy requires new development, including retrofitting proposals, will include measures to reduce the rate of rainwater run-off and incorporate SuDS. All major development should achieve a 20% betterment on greenfield runoff rates whereby runoff is managed as close to the source as possible.	N/A	No
Policy 96: Water Resources	None – This policy sets requirements for development that it must not prejudice the delivery of the actions and targets within relevant River Basin or Catchment Flood Management Plans and should contribute towards their delivery where possible. In addition, development proposals within a Source Protection Zone, Safeguard Zone or Water Protection Zone must assess any risk to groundwater resources, groundwater quality and demonstrate that these would be protected.	N/A	No
Policy 97: Contaminated Land	None – This policy sets requirements for development proposals on or adjacent to contaminated land.	N/A	No
Policy 98: Ensuring High Quality Design and Place Shaping	None – This policy requires a high standard of design in all new developments.	N/A	No
Policy 99: Ensuring the Conservation and Enhancement of the Historic Environment	None – This policy states that development proposals should conserve and enhance the history environment but will not result in development.	N/A	No
Policy 100: The Stonehenge, Avebury and Associated Sites World Heritage Site	None – This policy sets out that the Outstanding Universal Value of the World Heritage Site of Stonehenge, Avebury, associated sites and respective landscape settings will be protected and sustained. Development proposals that have the potential to impact on the OUV of the WHS and its setting will incorporate a Heritage Impact Assessment.	N/A	No

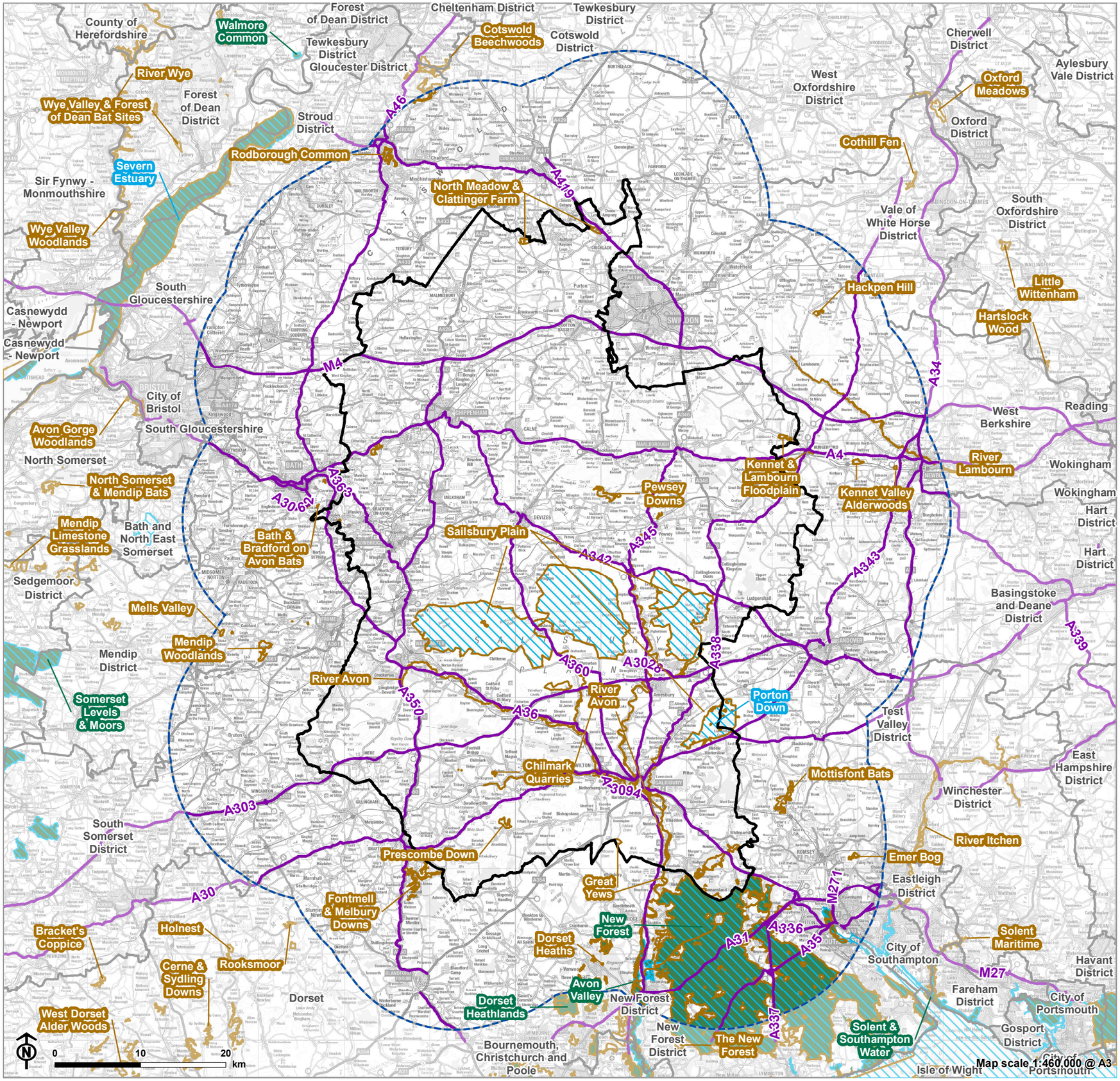
Policy	Likely activities (operation) to result as a consequence of the proposal	Potential effects if proposal implemented	Is the policy likely to have significant effects and therefore need to be scoped into the Appropriate Assessment?
Policy 101: Air Quality	None – This policy seeks to maintain and improve air quality with Wiltshire. The policy also states that development which could potentially impact upon Natura 2000 sites through contributions to aerial deposition within 10km of a SAC, will require an assessment of the likely impacts.	N/A	No

Appendix D

Map of Strategic Roads within Wiltshire County

LUC

Figure D-1: Map of Strategic Roads within Wiltshire County



CB:CB EB:Bean_C LUC FIGX_11332_Strategic_roads_A3L 14/12/2020
Source: NE, OS

Wiltshire Council

Appendix E

Map of Site Allocations

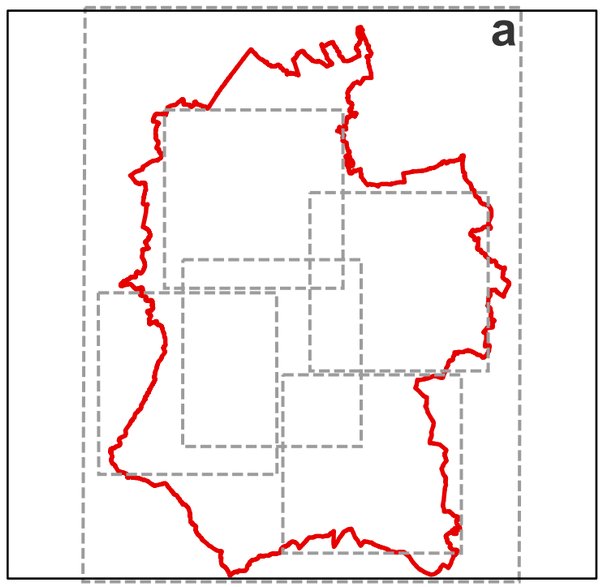
LUC

Figure E-1a: Site Allocations Proposed as part of the Wiltshire Local Plan Review

- Wiltshire County
- Neighbouring Local Authority

Use

- Ecological mitigation allocation
- Education allocation
- Employment allocation
- Housing allocation
- Mixed Use allocation



Map scale 1:320,000 @ A3

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Wiltshire Screening and Assessment under Habitats Regulations
Wiltshire Council

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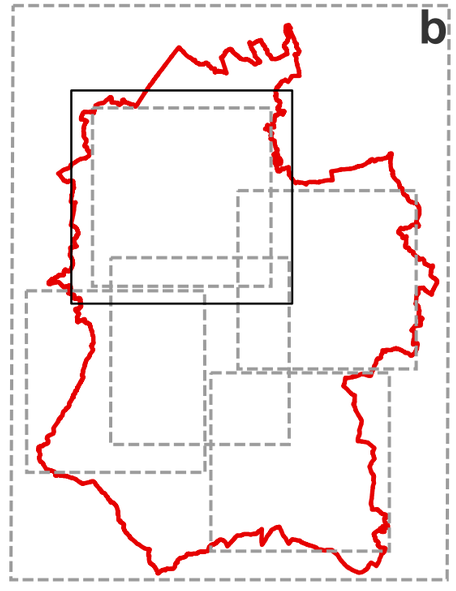
Figure E-1b: Site Allocations Proposed as part of the Wiltshire Local Plan Review

- Wiltshire County
- Neighbouring Local Authority

Use

- Employment allocation
- Housing allocation
- Mixed Use allocation



Wiltshire Council

Map scale 1:120,000 @ A3

CB: EB:holmes_g LUC 11332 - Wiltshire Screening and Assessment under Habitats Regulations 22/08/2023
Source:LUC, OS, Wiltshire Council

Wiltshire Screening and Assessment under Habitats Regulations
Wiltshire Council

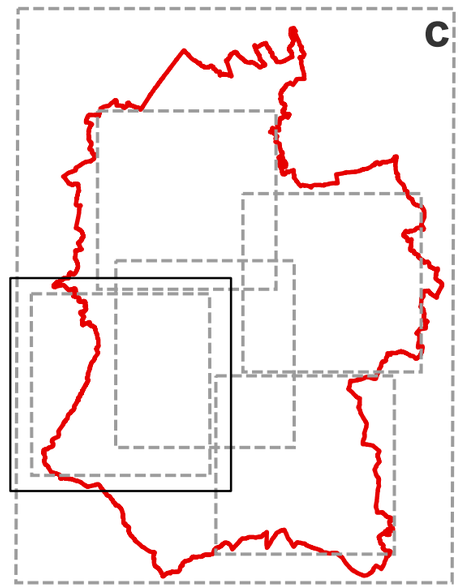
LUC

Figure E-1c: Site Allocations Proposed as part of the Wiltshire Local Plan Review

- Wiltshire County
- Neighbouring Local Authority

Use

- Ecological mitigation allocation
- Employment allocation
- Housing allocation
- Mixed Use allocation



Wiltshire Council

Map scale 1:120,000 @ A3

CB: EB:holmes_g LUC 11332 - Wiltshire Screening and Assessment under Habitats Regulations 22/08/2023
Source:LUC, OS, Wiltshire Council

Wiltshire Screening and Assessment under Habitats Regulations
Wiltshire Council

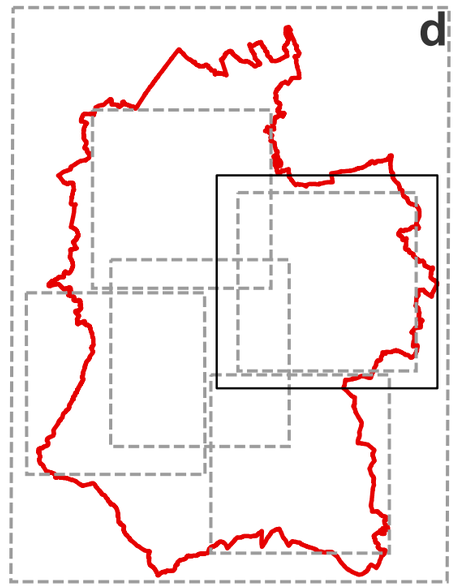
LUC

Figure E-1d: Site Allocations Proposed as part of the Wiltshire Local Plan Review

- Wiltshire County
- Neighbouring Local Authority

Use

- Housing allocation
- Mixed Use allocation



Wiltshire Council

Map scale 1:120,000 @ A3

CB: EB:holmes_g LUC 11332 - Wiltshire Screening and Assessment under Habitats Regulations 22/08/2023
Source:LUC, OS, Wiltshire Council

Wiltshire Screening and Assessment under Habitats Regulations
Wiltshire Council

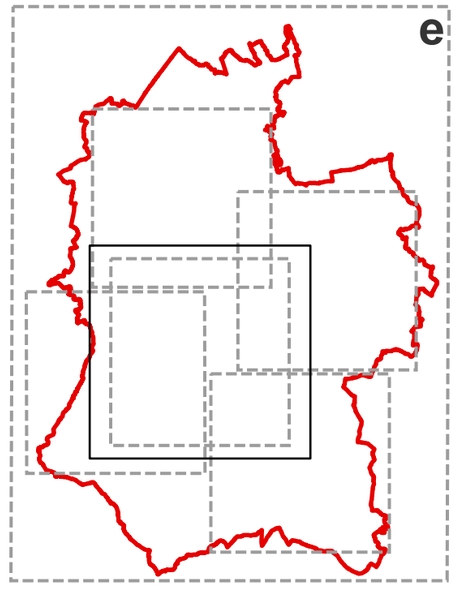
LUC

Figure E-1e: Site Allocations Proposed as part of the Wiltshire Local Plan Review

- Wiltshire County
- Neighbouring Local Authority

Use

- Ecological mitigation allocation
- Education allocation
- Housing allocation
- Mixed Use allocation



Wiltshire Council

Map scale 1:120,000 @ A3

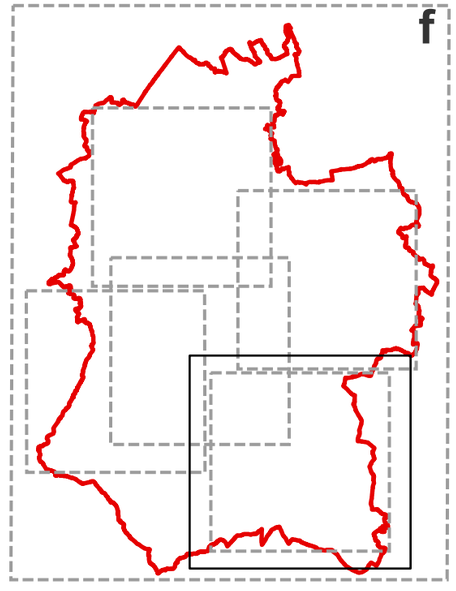
CB: EB:holmes_g LUC 11332 - Wiltshire Screening and Assessment under Habitats Regulations 22/08/2023
Source:LUC, OS, Wiltshire Council

Figure E-1f: Site Allocations Proposed as part of the Wiltshire Local Plan Review

- Wiltshire County
- Neighbouring Local Authority

Use

- Education allocation
- Housing allocation
- Mixed Use allocation



Map scale 1:120,000 @ A3

Appendix F

Air Quality Assessment

Wiltshire Council

Wiltshire Local Plan Review:
Air Quality Assessment

Final report
Prepared by Air Quality Assessment Ltd on behalf of LUC
September 2024

Wiltshire Council

Wiltshire Local Plan Review:
Air Quality Assessment

Version	Status	Prepared	Checked	Approved	Date
1.	Issue 1	B. Thomas	R. Turner	D. Green	30.06.2023
2.	Issue 2	B. Thomas	R. Turner	D. Green	17.07.2024
3.	Issue 3	B. Thomas	R. Turner	D. Green	12.09.2024

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Landscape Design
Strategic Planning & Assessment
Development Planning
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Chapter 1
Introduction

Background

1.1 LUC and Air Quality Assessments Ltd (AQA) have been commissioned by Wiltshire Council to assess the air quality effects of the Wiltshire Local Plan Review (referred to as the "Local Plan" from now on) on the UK National Site Network. An initial screening has identified roads where the Local Plan could increase traffic by more than 1,000 annual average daily trips and UK National Site Network sites within 200m of these roads may be affected, as advised in Natural England's Approach to Advising Competent Authorities on the Assessment of Road Traffic Emissions under the Habitats Regulations (Natural England, 2018). The following UK National Site Network sites have been identified:

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

1.2 The increase in emissions due to the additional traffic may have an adverse effect on the sensitive habitats within the SACs and SPAs.

Scope of the Assessment

1.3 This report describes the existing air quality conditions at the SACs and SPAs and assesses the likely impact that traffic generated by the Local Plan will have on air quality. The main air pollutants of concern related to road traffic are ammonia (NH_3), nitrogen oxides (NOx), nutrient nitrogen deposition and acid nitrogen deposition.

1.4 The assessment has been prepared taking into account all relevant local and national guidance and regulations.

1.5 The references and a glossary of common air quality terminology used in this assessment are shown in **Appendix A** and **Appendix B** respectively.

Chapter 2
Air Quality Legislation and Policy

Air Quality Legislation

2.1 European Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora (the "Habitats Directive") requires member states to introduce a range of measures for the protection habitats and species. The Conservation of Habitats and Species Regulations 2017 (as amended) (The Conservation of Habitats and Species Regulations 2017 (No. 1012), 2017) transposes the Directive into law in England and Wales.

2.2 The United Kingdom left the European Union on 31st January 2020 and amendments to the Habitats Regulations have transferred functions from the European Commission to the appropriate authorities in England and Wales and SACs and SPAs now form part of the UK National Site Network.

2.3 The Habitats Regulations require the competent authority, which in this case will be the planning authority, to firstly evaluate whether plans are likely to give rise to a significant effect on Habitats Regulations sites. Where this is the case, it has to carry out an 'appropriate assessment' in order to determine whether the plans will adversely affect the integrity of the site.

2.4 The Air Quality Standards Regulations 2010 (as amended) set legally binding limit values for concentrations of major air pollutants in outdoor air that impact public health and vegetation, including NOx (The Stationary Office, 2010). The critical level for NOx is an annual mean concentration of 30 $\mu g/m^3$. Achievement of the critical levels is a national obligation rather than a local one. The critical levels only apply at sites more than 20 km from agglomerations, or more than 5 km away from other built up areas, industrial installations or motorways or major roads with traffic counts of more than 50,000 vehicles a day.

2.5 Part IV of The Environment Act 1995, as amended by the Environment Act 2021, requires the UK Government to prepare a national Air Quality Strategy. A new Air Quality Strategy for England was published in April 2023 (Defra, 2023a). The Air Quality Strategy sets out the actions that Defra expects local authorities to take in support of long-term air quality goals and provides a framework to enable local authorities to make the best use of their powers and make improvements for their communities.

2.6 The strategy sets out air quality standards and objectives intended to protect human health and the environment. Standards are the concentrations of pollutants in the atmosphere, below which there is a minimum risk of health effects or ecosystem damage; they are set with regard to scientific and medical evidence. Objectives are the policy targets set by the Government, taking account of economic efficiency, practicability, technical feasibility and timescale, where the standards are expected to be achieved by a certain date. The Government has also published a Clean Air Strategy, which provides an overview of the actions that the government will take to improve air quality (Defra, 2019). The actions in the Clean Air Strategy focus on emissions from transport, the home, farming, and industry.

2.7 The national objective for NOx is an annual mean of 30 $\mu g/m^3$ and is the same as the critical level; however, the compliance date by which the objective must be achieved, and maintained thereafter, is 31st December 2000.

2.8 The national objective only strictly applies away from urban areas and heavily trafficked roads; however, Natural England has adopted a precautionary approach, and applies the objective across all Habitats Regulations sites.

Planning Policy

National Policies

2.9 The National Planning Policy Framework (NPPF) sets out the Government's planning policies for England and how these should be applied (Ministry of Housing, Communities & Local Government, 2023). It provides a framework within which locally prepared plans for development can be produced. At Paragraph 8c, the NPPF states that the purpose of the planning system is to contribute to the achievement of sustainable development and includes an overarching environmental objective:

> "To protect and enhance our natural, built and historic environment; including making effective use of land, improving biodiversity, using natural resources prudently, minimising waste and pollution, and mitigating and adapting to climate change, including moving to a low carbon economy."

2.10 With regard to environmental impacts from traffic, at Paragraph 108 the NPPF states that:

> "Transport issues should be considered from the earliest stages of plan-making and development proposals, so that: …
>
> d) the environmental impacts of traffic and transport infrastructure can be identified, assessed and taken into account – including appropriate opportunities for avoiding and mitigating any adverse effects, and for net environmental gains; …"

2.11 The NPPF also states at Paragraph 180 that:

> "Planning policies and decisions should contribute to and enhance the natural and local environment by: …
>
> e) preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability. Development should, wherever possible, help to improve local environmental conditions such as air and water quality, taking into account relevant information such as river basin management plans; …"

2.12 The NPPF goes on to state at Paragraph 191:

> "Planning policies and decisions should also ensure that new development is appropriate for its location taking into account the likely effects (including cumulative effects) of pollution on health, living conditions and the natural environment, as well as the potential sensitivity of the site or the wider area to impacts that could arise from the development."

2.13 With specific reference to air quality, the NPPF states at Paragraph 192 that:

> "Planning policies and decisions should sustain and contribute towards compliance with relevant limit values or national objectives for pollutants, taking into account the presence of Air Quality Management Areas and Clean Air Zones, and the cumulative impacts from individual sites in local areas. Opportunities to improve air quality or mitigate impacts should be identified, such as through traffic and travel management, and green infrastructure provision and enhancement. So far as possible these opportunities should be considered at the plan-making stage, to ensure a strategic approach and limit the need for issues to be reconsidered when determining individual applications. Planning decisions should ensure that any new development in Air Quality Management Areas and Clean Air Zones is consistent with the local air quality action plan."

2.14 The NPPF also includes the following statement at Paragraph 194:

> "The focus of planning policies and decisions should be on whether proposed development is an acceptable use

of land, rather than the control of processes or emissions (where these are subject to separate pollution control regimes). Planning decisions should assume that these regimes will operate effectively. Equally, where a planning decision has been made on a particular development, the planning issues should not be revisited through the permitting regimes operated by pollution control authorities."

2.15 The NPPF is supported by Planning Practice Guidance (PPG) (DCLG, 2019). The PPG states that:

"The Department for Environment, Food and Rural Affairs carries out an annual national assessment of air quality using modelling and monitoring to determine compliance with relevant Limit Values. It is important that the potential impact of new development on air quality is taken into account where the national assessment indicates that relevant limits have been exceeded or are near the limit, or where the need for emissions reductions has been identified."

2.16 The PPG also states:

"Air quality considerations may also be relevant to obligations and policies relating to the conservation of nationally and internationally important habitats and species."

2.17 With regard to development plans, the PPG states that:

"It is important to take into account air quality management areas, Clean Air Zones and other areas including sensitive habitats or designated sites of importance for biodiversity where there could be specific requirements or limitations on new development because of air quality. Air quality is also an important consideration in habitats assessment, strategic environmental assessment and sustainability appraisal which can be used to shape an appropriate strategy, including through establishing the 'baseline', appropriate objectives for the assessment of impacts and proposed monitoring."

2.18 The PPG goes on to state that:

"Whether air quality is relevant to a planning decision will depend on the proposed development and its location. Concerns could arise if the development is likely to have an adverse effect on air quality in areas where it is already known to be poor, particularly if it could affect the implementation of air quality strategies and action plans and/or breach legal obligations (including those relating to the conservation of habitats and species). Air quality may also be a material consideration if the proposed development would be particularly sensitive to poor air quality in its vicinity."

2.19 The PPG also sets out the information that may be required in an air quality assessment, stating that:

"Assessments need to be proportionate to the nature and scale of development proposed and the potential impacts (taking into account existing air quality conditions), and because of this are likely to be locationally specific."

2.20 It also provides guidance on options for mitigating air quality impacts, and makes clear that:

"Mitigation options will need to be locationally specific, will depend on the proposed development and need to be proportionate to the likely impact."

Chapter 3
Methodology

Existing Conditions

3.1 Information on existing air quality within the study area has been collated from the following sources:

- Background pollutant concentration maps published by Defra (Defra, 2024b). These cover the whole country on a 1 x 1 km grid; and
- Background ammonia concentrations and nitrogen deposition fluxes published by the Air Pollution Information System (APIS) (APIS, 2024).

Road Traffic Impacts

Sensitive Locations

- Concentrations have been modelled at receptors within the Habitats Regulations sites closest to the roads where the Local Plan is predicted to increase traffic flows by more than 1,000 Annual Average Daily Traffic (AADT) flows. The receptors are described in **Table 3.1** and an overview of the locations shown in **Figure 3.1**. Additional figures showing more detail are provided in **Appendix C**.
- Where there is a risk of effects beyond the spatial extent of the receptors, gridded model outputs have been provided.

Table 3.1: Description of Receptors

Receptor	Location	OS Grid Reference		Z (m)
		X	Y	
RA SAC1	River Avon SAC	413371.5	153790.4	0
RA SAC2	River Avon SAC	413373.4	153791.1	0
RA SAC3	River Avon SAC	413373.4	153791.9	0
RA SAC4	River Avon SAC	413377.1	153792.7	0
RA SAC5	River Avon SAC	413648.1	153238.6	0
RA SAC6	River Avon SAC	413319.7	152275.9	0

Receptor	Location	OS Grid Reference		Z (m)
		X	Y	
RA SAC7	River Avon SAC	413384.1	152129.3	0
RA SAC8	River Avon SAC	413818.9	151862.4	0
RA SAC9	River Avon SAC	413970.4	150954.0	0
RA SAC10	River Avon SAC	414947.4	147172.3	0
RA SAC11	River Avon SAC	415405.2	145161.7	0
RA SAC12	River Avon SAC	415280.7	143308.6	0
RA SAC13	River Avon SAC	415871.2	142191.9	0
RA SAC14	River Avon SAC	415872.8	142157.7	0
RA SAC15	River Avon SAC	415097.3	141974.1	0
RA SAC16	River Avon SAC	416444.5	132124.5	0
RA SAC17	River Avon SAC	416427.4	132133.6	0
RA SAC18	River Avon SAC	416419.5	132141.0	0
RA SAC19	River Avon SAC	416418.0	132149.6	0
RA SAC20	River Avon SAC	416413.9	132158.7	0
RA SAC21	River Avon SAC	416458.1	132107.8	0
RA SAC22	River Avon SAC	416457.1	132104.8	0
RA SAC23	River Avon SAC	416456.5	132101.8	0
RA SAC24	River Avon SAC	416456.3	132098.8	0
RA SAC25	River Avon SAC	416456.3	132096.2	0
RA SAC26	River Avon SAC	415778.4	131549.9	0
SP SAC1	Salisbury Plain SAC & Salisbury Plain SPA	418696.1	142411.8	0
SP SAC2	Salisbury Plain SAC & Salisbury Plain SPA	418696.0	142413.9	0
SP SAC3	Salisbury Plain SAC & Salisbury Plain SPA	418695.8	142415.9	0

Receptor	Location	OS Grid Reference		Z (m)
		X	Y	
SP SAC4	Salisbury Plain SAC & Salisbury Plain SPA	418695.7	142417.8	0
SP SAC5	Salisbury Plain SAC & Salisbury Plain SPA	418695.5	142420.0	0
SP SAC6	Salisbury Plain SAC & Salisbury Plain SPA	418695.3	142422.0	0
SP SAC7	Salisbury Plain SAC & Porton Down SPA	421788.0	134190.4	0
SP SAC8	Salisbury Plain SAC & Porton Down SPA	421787.2	134192.2	0
SP SAC9	Salisbury Plain SAC & Porton Down SPA	421786.5	134194.1	0
SP SAC10	Salisbury Plain SAC & Porton Down SPA	421785.9	134195.9	0
SP SAC11	Salisbury Plain SAC & Porton Down SPA	421785.1	134197.8	0
SP SAC12	Salisbury Plain SAC & Porton Down SPA	421784.4	134199.7	0
SP SAC13	Salisbury Plain SAC & Porton Down SPA	422947.0	134741.3	0
SP SAC14	Salisbury Plain SAC & Salisbury Plain SPA	419004.1	142425.5	0
SP SAC15	Salisbury Plain SAC & Salisbury Plain SPA	419004.2	142423.4	0
SP SAC16	Salisbury Plain SAC & Salisbury Plain SPA	419004.3	142421.4	0
SP SAC17	Salisbury Plain SAC & Salisbury Plain SPA	419004.4	142419.5	0
SP SAC18	Salisbury Plain SAC & Salisbury Plain SPA	419004.5	142417.5	0
SP SAC19	Salisbury Plain SAC & Salisbury Plain SPA	419004.6	142415.5	0

Assessment Scenarios

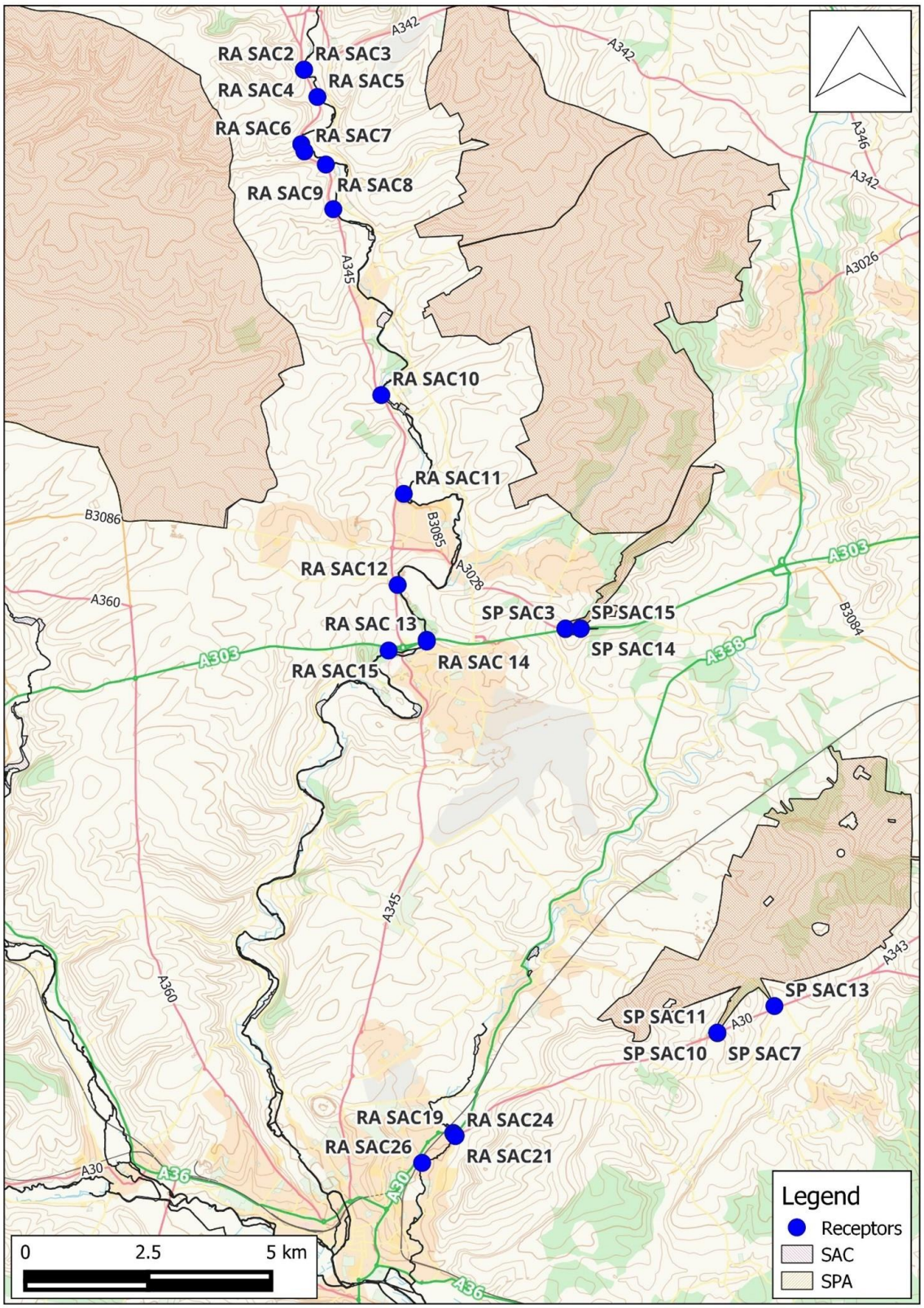
3.2 Concentrations of NOx and NH_3 have been predicted for the following scenarios:

- Model verification year (2019);
- 2036 without the Local Plan; and
- 2036 with the Local Plan.

Modelling Methodology

Concentrations have been predicted using the ADMS Roads (v5.0.1.3) dispersion model (CERC, 2024). The model requires the input of a range of data, details of which are provided in **Appendix C**, along with details of the model verification calculations

Figure 3.1: Overview of Receptor Locations



Uncertainty

3.3 There are many factors that contribute to uncertainty when predicting pollutant concentrations. The emission factors utilised in the air quality model are dependent on traffic data, which have inherent uncertainties associated with them. There are also uncertainties associated with the model itself, which simplifies real world conditions into a series of algorithms. The model verification process, as described in **Appendix C**, minimises the uncertainties; however, future year predictions use projected traffic data, emissions data, and background concentrations. The most recent emission factors and background data published by Defra and APIS have been used in this assessment.

Assessment Criteria

3.4 Critical levels are defined as concentrations of pollutants in the atmosphere above which direct adverse effects on plants or ecosystems may occur according to present knowledge. A critical level is the gaseous concentration of a pollutant in the air. Critical levels are not habitat specific, but have been set to cover broad vegetation types, with an ammonia annual mean critical level of 3 µg/m^3 set for higher plants, and 1 µg/m^3 set where sensitive lichens and bryophytes are an important part of the ecosystem integrity. The critical level for NOx is the 30 µg/m^3 annual mean national objective.

3.5 Environment Agency online guidance also sets out a critical level for 24-hour NOx, which is a non-statutory level derived from the World Health Organisation (WHO) Air Quality Guidelines for Europe (WHO, 2000; Defra & EA, 2016). The WHO Guidelines state that:

> "A strong case can be made for the provision of critical levels for short-term exposures. There are insufficient data to provide these levels with confidence at present, but current evidence suggests values of about 75 µg/m^3 for NOx … as 24-hour means."

3.6 Given the uncertainty associated with the short-term critical level for NOx and its non-statutory status, greater emphasis should be placed on the achievement of the annual mean NOx objective and an assessment of the impact on 24-hour NOx has not been included in this assessment.

3.7 Critical loads for nitrogen deposition onto sensitive ecosystems have been specified by the United Nations Economic Commission for Europe (UNECE). They are defined as a quantitative estimate of exposure to one or more pollutants below which significant harmful effects on specified sensitive elements of the environment do not occur, according to present knowledge. The critical load relates to the quantity of pollutant deposited from air to ground, whereas the critical level is the gaseous concentration of a pollutant in the air. It must be emphasised that exceedance of the critical load does not provide a quantitative estimate of damage to an ecosystem, but only the potential for damage to occur. The critical loads for the ecosystems under consideration in this assessment, as defined in APIS (APIS, 2024), are provided in **Table 3.2**.

3.8 Critical levels and loads have been assigned to each receptor location based on advice from an ecologist at LUC and these values have been used as the assessment criteria, as shown in **Table 3.3**.

3.9 It must be emphasised that an exceedance of the critical level/load does not provide a quantitative estimate of damage to an ecosystem, but only the potential for damage to occur.

Table 3.2: Critical loads

Site	Feature of Interest	Nitrogen Critical Load Class	Acidity Critical Load Class	Critical Level		Critical Load			
				NOx	NH_3	Nutrient N (kg / ha / yr)		Acid N (keq / ha / yr)	
						min	max	min	max
River Avon SAC	Alkaline fens	Rich fens	n/a	30	1	15	25	n/a	n/a
	Water courses of plain to montane levels with the *Ranunculion*	No comparable habitat with established critical load	Freshwater	30	1 or 3	n/a	n/a	n/a	n/a

Site	Feature of Interest	Nitrogen Critical Load Class	Acidity Critical Load Class	Critical Level		Critical Load			
				NOx	NH_3	Nutrient N (kg / ha / yr)		Acid N (keq / ha / yr)	
						min	max	min	max
	fluitantis and *Callitricho-Batrachion* vegetation	estimate available							
	Cottus gobio	No comparable habitat with established critical load estimate available	Freshwater	30	3	n/a	n/a	n/a	n/a
	Lampetra planeri	No comparable habitat with established critical load estimate available	Freshwater	30	3	n/a	n/a	n/a	n/a
	Lutra lutra	No comparable habitat with established critical load estimate available	Freshwater	30	3	n/a	n/a	n/a	n/a
	Petromyzon marinus	No comparable habitat with established critical load estimate available	Freshwater	30	3	n/a	n/a	n/a	n/a
	Salmo salar	No comparable habitat with established critical load estimate available	Freshwater	30	3	n/a	n/a	n/a	n/a
	Vertigo moulinsiana	No comparable habitat with established critical load estimate available	Freshwater	30	3	n/a	n/a	n/a	n/a
	Alluvial forests with *Alnus*	Designated feature/feature habitat not	n/a	30	1	n/a	n/a	n/a	n/a

Site	Feature of Interest	Nitrogen Critical Load Class	Acidity Critical Load Class	Critical Level		Critical Load			
				NOx	NH_3	Nutrient N (kg / ha / yr)		Acid N (keq / ha / yr)	
						min	max	min	max
	glutinosa and *Fraxinus excelsior* (*Alno-Padion, Alnion incanae, Salicion albae)*	sensitive to eutrophication							
Salisbury Plain SAC	European dry heaths	Dry heaths	Dwarf shrub heath	1	30	5	15	1.792	5.052
	Juniperus communis formations on heaths or calcareous grasslands	Dry heaths	Dwarf shrub heath	1 or 3	30	5	15	1.792	5.052
	Euphydryas (Eurodryas, Hypodryas) aurinia	Non-mediterranean dry acid and neutral closed grassland	Calcareous grassland (using base cation)	3	30	6	10	4.856	4.856
	Juniperus communis formations on heaths or calcareous grasslands	Semi-dry Perennial calcareous grassland (basic meadow steppe).	Calcareous grassland (using base cation)	1 or 3	30	10	20	4.856	4.856
	Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia) (* important orchid sites)	Semi-dry Perennial calcareous grassland (basic meadow steppe).	Calcareous grassland (using base cation)	1	30	10	20	4.856	4.856
	Euphydryas (Eurodryas, Hypodryas) aurinia	Semi-dry Perennial calcareous grassland (basic meadow steppe).	n/a	3	30	10	20	n/a	n/a

Site	Feature of Interest	Nitrogen Critical Load Class	Acidity Critical Load Class	Critical Level		Critical Load			
				NOx	NH_3	Nutrient N (kg / ha / yr)		Acid N (keq / ha / yr)	
						min	max	min	max
	Euphydryas (Eurodryas, Hypodryas) aurinia	Moist or wet mesotrophic to eutrophic hay meadow	n/a	3	30	15	25	n/a	n/a
	Triturus cristatus	No comparable habitat with established critical load estimate available	Freshwater	3	30	n/a	n/a	n/a	n/a
Salisbury Plain SPA	Circus cyaneus	Northern wet heath: Callunadominated wet heath (upland)	Dwarf shrub heath	3	30	5	15	1.792	5.052
	Falco subbuteo	Dry heaths	Dwarf shrub heath	3	30	5	15	1.792	5.052
	Burhinus oedicnemus (Western Europe - breeding)	Low and medium altitude hay meadows	Calcareous grassland (using base cation)	3	30	10	20	4.856	4.856
	Circus cyaneus	Atlantic upper-mid & mid-low salt marshes	n/a	3	30	10	20	n/a	n/a
	Falco subbuteo	Broadleaved deciduous woodland	Unmanaged Broadleafed/Coniferous Woodland	3	30	10	15	11.04	2.713
	Circus cyaneus	Rich fens	n/a	3	30	15	25	n/a	n/a
	Burhinus oedicnemus (Western Europe - breeding)	Species' broad habitat not sensitive to eutrophication	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	Coturnix coturnix	Species' broad habitat not sensitive to eutrophication	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Porton Down SPA	Burhinus oedicnemus (Western	Low and medium altitude hay meadows	Calcareous grassland (using base cation)	3	30	10	20	4.856	4.856

Site	Feature of Interest	Nitrogen Critical Load Class	Acidity Critical Load Class	Critical Level		Critical Load			
				NOx	NH_3	Nutrient N (kg / ha / yr)		Acid N (keq / ha / yr)	
						min	max	min	max
	Europe - breeding)								

Table 3.3: Assessment Criteria

Receptor	Site	Annual Mean **NH_3 ($\mu g/m^3$)**	Annual Mean Nox (µg/m3)	Nutrient N (kg/ha/yr)	Acid N (keq/ha/yr)
RA SAC1	River Avon SAC	3	30	n/a	n/a
RA SAC2	River Avon SAC	3	30	n/a	n/a
RA SAC3	River Avon SAC	3	30	n/a	n/a
RA SAC4	River Avon SAC	3	30	n/a	n/a
RA SAC5	River Avon SAC	3	30	n/a	n/a
RA SAC6	River Avon SAC	1	30	n/a	n/a
RA SAC7	River Avon SAC	1	30	n/a	n/a
RA SAC8	River Avon SAC	3	30	n/a	n/a
RA SAC9	River Avon SAC	1	30	n/a	n/a
RA SAC10	River Avon SAC	1	30	n/a	n/a
RA SAC11	River Avon SAC	3	30	n/a	n/a
RA SAC12	River Avon SAC	1	30	n/a	n/a
RA SAC13	River Avon SAC	1	30	n/a	n/a
RA SAC14	River Avon SAC	1	30	n/a	n/a
RA SAC15	River Avon SAC	1	30	n/a	n/a
RA SAC16	River Avon SAC	3	30	n/a	n/a
RA SAC17	River Avon SAC	3	30	n/a	n/a
RA SAC18	River Avon SAC	3	30	n/a	n/a
RA SAC19	River Avon SAC	3	30	n/a	n/a
RA SAC20	River Avon SAC	3	30	n/a	n/a
RA SAC21	River Avon SAC	1	30	n/a	n/a
RA SAC22	River Avon SAC	1	30	n/a	n/a
RA SAC23	River Avon SAC	1	30	n/a	n/a

Receptor	Site	Annual Mean **NH_3 ($\mu g/m^3$)**	Annual Mean Nox (µg/m3)	Nutrient N (kg/ha/yr)	Acid N (keq/ha/yr)
RA SAC24	River Avon SAC	1	30	n/a	n/a
RA SAC25	River Avon SAC	1	30	n/a	n/a
RA SAC26	River Avon SAC	3	30	n/a	n/a
SP SAC1	Salisbury Plain SAC	1	30	10	4.856
SP SAC2	Salisbury Plain SAC	1	30	10	4.856
SP SAC3	Salisbury Plain SAC	1	30	10	4.856
SP SAC4	Salisbury Plain SAC	1	30	10	4.856
SP SAC5	Salisbury Plain SAC	1	30	10	4.856
SP SAC6	Salisbury Plain SAC	1	30	10	4.856
SP SAC7	Salisbury Plain SAC	1	30	10	4.856
SP SAC8	Salisbury Plain SAC	1	30	10	4.856
SP SAC9	Salisbury Plain SAC	1	30	10	4.856
SP SAC10	Salisbury Plain SAC	1	30	10	4.856
SP SAC11	Salisbury Plain SAC	1	30	10	4.856
SP SAC12	Salisbury Plain SAC	1	30	10	4.856
SP SAC13	Salisbury Plain SAC	1	30	10	4.856
SP SAC14	Salisbury Plain SAC	1	30	10	4.856
SP SAC15	Salisbury Plain SAC	1	30	10	4.856
SP SAC16	Salisbury Plain SAC	1	30	10	4.856
SP SAC17	Salisbury Plain SAC	1	30	10	4.856
SP SAC18	Salisbury Plain SAC	1	30	10	4.856

Receptor	Site	Annual Mean **NH_3 ($\mu g/m^3$)**	Annual Mean Nox (µg/m3)	Nutrient N (kg/ha/yr)	Acid N (keq/ha/yr)
SP SAC19	Salisbury Plain SAC	1	30	10	4.856
SP SAC1	Salisbury Plain SPA	3	30	5	1.792
SP SAC2	Salisbury Plain SPA	3	30	5	1.792
SP SAC3	Salisbury Plain SPA	3	30	5	1.792
SP SAC4	Salisbury Plain SPA	3	30	5	1.792
SP SAC5	Salisbury Plain SPA	3	30	5	1.792
SP SAC6	Salisbury Plain SPA	3	30	5	1.792
SP SAC7	Porton Down SPA	3	30	10	4.856
SP SAC8	Porton Down SPA	3	30	10	4.856
SP SAC9	Porton Down SPA	3	30	10	4.856
SP SAC10	Porton Down SPA	3	30	10	4.856
SP SAC11	Porton Down SPA	3	30	10	4.856
SP SAC12	Porton Down SPA	3	30	10	4.856
SP SAC13	Porton Down SPA	3	30	10	4.856
SP SAC14	Salisbury Plain SPA	3	30	5	1.792
SP SAC15	Salisbury Plain SPA	3	30	5	1.792
SP SAC16	Salisbury Plain SPA	3	30	5	1.792
SP SAC17	Salisbury Plain SPA	3	30	5	1.792
SP SAC18	Salisbury Plain SPA	3	30	5	1.792
SP SAC19	Salisbury Plain SPA	3	30	5	1.792

3.10 The Habitats Regulations require a competent authority to undertake a Habitats Regulations Assessment (HRA) for development schemes that may harm Habitats Regulations sites. The HRA process includes screening and appropriate assessment stages. The screening stage of the HRA identifies whether there is a risk of significant adverse effects on a Habitats Regulations site, which would then require further detailed examination through an appropriate assessment. If risks that might undermine a site's conservation objectives can clearly be ruled out at the screening stage, a development scheme will have no likely significant effect, and no appropriate assessment will be needed.

3.11 An HRA screening assessment has been undertaken in the first instance to determine whether an appropriate assessment required with regards air quality. A process contribution (PC) greater than 1% of the relevant critical level or load would trigger a likely significant effect (LSE), and an appropriate assessment would be required.

3.12 Where the initial screening cannot rule out a likely significant effect, the predicted environmental concentration (PEC) has been provided, which is the PC plus the concentration/deposition rate of the pollutant already present in the environment (the baseline concentration). This information is then used in the appropriate assessment to determine whether the impact of the scheme would have an adverse effect on site integrity at the designated sites. The integrity of a designated site is the coherence of its ecological structure and function, across its whole area that enables it to sustain the habitat, complex of habitats and/or the levels of populations of the species for which it was designated.

3.13 The Institute of Air Quality Management, the professional body for air quality professionals, has set out the following opinion with regard to the use of the 1% screening threshold (IAQM, 2020):

> "In the IAQM's opinion, the 1% and 10% screening criteria should not be used rigidly and, not to a numerical precision greater than the expression of the criteria themselves. Whilst it is straightforward to generate model results for the PC to any level of precision required, the accuracy of the result is much less certain and it is unwise to place too much emphasis on whether the PC is 0.9% or 1.1%, for example. In practice, because the magnitude of impacts attributable to new sources is often around 1% of the threshold, a regulator may require the results to be presented at greater resolution, i.e. having one (or more) decimal places. The distinction here is between the presentation of the model results and the weight given to fine differences around the threshold itself in making a judgement."

3.14 An increase above the screening threshold of 0.1-0.4% of the critical load/level, i.e. 1.1% to 1.4%, would round to 1% of the screening threshold. Changes at this level of magnitude would be difficult to distinguish from normal fluctuations, such as those due to weather and emissions variations, and there would be a high level of uncertainty associated with the predicted change. Percentages have been presented to one decimal place and PECs provided at receptors where the process contribution is greater than 1.0% of the screening threshold; however, the competent authority would need to judge whether a process contribution of 1.1-1.4% of the screening threshold should trigger an appropriate assessment.

Chapter 4
Baseline Conditions

Background Concentrations and Fluxes

4.1 Estimated background annual mean NOx concentrations from the Defra background maps and estimated 2020-2022 grid average short vegetation background NH_3 concentrations and nitrogen deposition rates from the APIS database, are shown in **Table 4.1**. The background annual mean NOx concentrations are well below the critical level. Background annual mean NH_3 concentrations are above the 1µg/m^3 critical level, but below the 3µg/m^3 critical level. The background deposition fluxes of nutrient nitrogen are above the critical loads. The background deposition fluxes of acid nitrogen are below the critical loads.

Table 4.1: Estimated Annual Mean Background Concentrations in 2019 and 2036 (µg/m^3)[1]

Receptor	Annual Mean NOx **(µg/m^3)**		**Annual Mean NH_3 (µg/m^3)**	**Nutrient Nitrogen Deposition (kg/ha/yr)**	**Acid Nitrogen Deposition (keq/ha/yr)**
	2019	**2036**	**Ave. 2020-2022**		
RA SAC1	8.4	6.2	1.9	14.9	1.063
RA SAC2	8.4	6.2	1.9	14.9	1.063
RA SAC3	8.4	6.2	1.9	14.9	1.063
RA SAC4	8.4	6.2	1.9	14.9	1.063
RA SAC5	8.4	6.2	1.9	14.9	1.063
RA SAC6	8.4	6.3	1.9	14.7	1.055
RA SAC7	8.4	6.3	1.9	14.7	1.055
RA SAC8	8.6	6.4	2.0	14.8	1.058
RA SAC9	8.2	6.2	2.0	14.8	1.060
RA SAC10	8.7	6.5	2.1	14.8	1.067

[1] Future predicted background concentrations of NOx from the Defra background maps are only available up to 2030; therefore, 2036 concentrations have been assumed to be the same as in 2030. Future predicted background concentrations of NH_3 and nitrogen deposition are not available from APIS.

Receptor	Annual Mean NOx **(µg/m^3)**		**Annual Mean NH_3 (µg/m^3)**	**Nutrient Nitrogen Deposition (kg/ha/yr)**	**Acid Nitrogen Deposition (keq/ha/yr)**
	2019	**2036**	**Ave. 2020-2022**		
RA SAC11	9.5	7.0	2.2	14.9	1.069
RA SAC12	10.5	7.5	2.0	14.9	1.073
RA SAC13	13.0	8.6	2.0	15.0	1.075
RA SAC14	13.0	8.6	2.0	15.0	1.075
RA SAC15	12.1	8.6	2.0	15.0	1.082
RA SAC16	12.3	8.8	2.1	15.7	1.140
RA SAC17	12.3	8.8	2.1	15.7	1.140
RA SAC18	12.3	8.8	2.1	15.7	1.140
RA SAC19	12.3	8.8	2.1	15.7	1.140
RA SAC20	12.3	8.8	2.1	15.7	1.140
RA SAC21	12.3	8.8	2.1	15.7	1.140
RA SAC22	12.3	8.8	2.1	15.7	1.140
RA SAC23	12.3	8.8	2.1	15.7	1.140
RA SAC24	12.3	8.8	2.1	15.7	1.140
RA SAC25	12.3	8.8	2.1	15.7	1.140
RA SAC26	13.9	9.8	2.2	15.6	1.138
SP SAC1	12.1	8.3	1.9	15.1	1.082
SP SAC2	12.1	8.3	1.9	15.1	1.082
SP SAC3	12.1	8.3	1.9	15.1	1.082
SP SAC4	12.1	8.3	1.9	15.1	1.082
SP SAC5	12.1	8.3	1.9	15.1	1.082
SP SAC6	12.1	8.3	1.9	15.1	1.082
SP SAC7	10.2	7.6	1.9	15.1	1.083
SP SAC8	10.2	7.6	1.9	15.1	1.083
SP SAC9	10.2	7.6	1.9	15.1	1.083
SP SAC10	10.2	7.6	1.9	15.1	1.083
SP SAC11	10.2	7.6	1.9	15.1	1.083

Receptor	Annual Mean NOx **(µg/m^3)**		**Annual Mean NH_3 (µg/m^3)**	**Nutrient Nitrogen Deposition (kg/ha/yr)**	**Acid Nitrogen Deposition (keq/ha/yr)**
	2019	**2036**	**Ave. 2020-2022**		
SP SAC12	10.2	7.6	1.9	15.1	1.083
SP SAC13	10.3	7.6	1.9	15.0	1.075
SP SAC14	11.9	8.1	1.9	15.1	1.082
SP SAC15	11.9	8.1	1.9	15.1	1.082
SP SAC16	11.9	8.1	1.9	15.1	1.082
SP SAC17	11.9	8.1	1.9	15.1	1.082
SP SAC18	11.9	8.1	1.9	15.1	1.082
SP SAC19	11.9	8.1	1.9	15.1	1.082
Critical Level/Load	**30**		**1-3**	**5-10**	**1.792-4.856**

Predicted Baseline Concentrations

4.2 Baseline concentrations and deposition fluxes at the receptors are set out in **Table 4.2**.

4.3 Annual mean NOx concentrations are predicted to be above the NOx critical level at some receptors located close to roads in 2019; however, by 2036 the critical level is predicted to be achieved at all receptors.

4.4 Some exceedances of the ammonia critical level are predicted at the River Avon SAC and at the Salisbury Plain SAC and SPA.

4.5 Nutrient nitrogen deposition is predicted to exceed the critical loads in 2019 and 2036 at all receptors located in the Salisbury Plain SAC and SPA and Porton Down SPA.

4.6 Acid nitrogen deposition is predicted to be above the critical load at some receptors located in the Salisbury Plain SAC and SPA; however, there are no exceedances at the Porton Down SPA.

Table 4.2: Predicted Baseline Concentrations and Deposition Fluxes in 2019 and 2036

Receptor	**NOx (µg/m^3)**		**NH_3 (µg/m^3)**		**Nutrient Nitrogen (kg/ha/yr)**		**Acid Nitrogen (keq/ha/yr)**	
	2019	**2036**	**2019**	**2036**	**2019**	**2036**	**2019**	**2036**
RA SAC1	10.6	6.7	2.0	2.0	n/a	n/a	n/a	n/a
RA SAC2	10.7	6.7	2.0	2.0	n/a	n/a	n/a	n/a
RA SAC3	10.7	6.7	2.0	2.0	n/a	n/a	n/a	n/a
RA SAC4	10.8	6.7	2.0	2.1	n/a	n/a	n/a	n/a
RA SAC5	11.7	6.9	2.0	2.1	n/a	n/a	n/a	n/a

Receptor	NOx (µg/m^3)		NH_3 (µg/m^3)		Nutrient Nitrogen (kg/ha/yr)		Acid Nitrogen (keq/ha/yr)	
	2019	2036	2019	2036	2019	2036	2019	2036
RA SAC6	9.8	6.5	2.0	2.0	n/a	n/a	n/a	n/a
RA SAC7	9.9	6.5	2.0	2.0	n/a	n/a	n/a	n/a
RA SAC8	9.8	6.6	2.0	2.0	n/a	n/a	n/a	n/a
RA SAC9	10.6	6.6	2.1	2.1	n/a	n/a	n/a	n/a
RA SAC10	9.1	6.5	2.2	2.2	n/a	n/a	n/a	n/a
RA SAC11	9.9	7.1	2.2	2.2	n/a	n/a	n/a	n/a
RA SAC12	11.1	7.6	2.0	2.1	n/a	n/a	n/a	n/a
RA SAC13	36.3	11.8	2.5	2.6	n/a	n/a	n/a	n/a
RA SAC14	35.8	11.8	2.5	2.6	n/a	n/a	n/a	n/a
RA SAC15	19.4	10.0	2.1	2.2	n/a	n/a	n/a	n/a
RA SAC16	32.0	11.6	2.7	2.7	n/a	n/a	n/a	n/a
RA SAC17	31.1	11.4	2.7	2.7	n/a	n/a	n/a	n/a
RA SAC18	29.1	11.1	2.6	2.7	n/a	n/a	n/a	n/a
RA SAC19	25.5	10.6	2.5	2.5	n/a	n/a	n/a	n/a
RA SAC20	22.8	10.2	2.4	2.5	n/a	n/a	n/a	n/a
RA SAC21	30.0	11.3	2.6	2.6	n/a	n/a	n/a	n/a
RA SAC22	28.1	11.0	2.5	2.6	n/a	n/a	n/a	n/a
RA SAC23	26.4	10.8	2.5	2.5	n/a	n/a	n/a	n/a
RA SAC24	24.9	10.6	2.4	2.5	n/a	n/a	n/a	n/a
RA SAC25	23.8	10.4	2.4	2.4	n/a	n/a	n/a	n/a
RA SAC26	15.1	10.0	2.3	2.3	n/a	n/a	n/a	n/a
SP SAC1	67.1	18.2	3.2	3.8	25.5	25.8	1.826	1.844
SP SAC2	59.9	16.9	3.0	3.6	24.2	24.3	1.733	1.744
SP SAC3	54.6	16.0	2.9	3.4	23.2	23.3	1.663	1.670
SP SAC4	50.6	15.2	2.8	3.3	22.5	22.5	1.610	1.613
SP SAC5	46.9	14.6	2.7	3.1	21.8	21.8	1.561	1.562
SP SAC6	44.1	14.0	2.7	3.0	21.2	21.2	1.522	1.522
SP SAC7	35.9	11.6	2.5	2.7	20.5	19.7	1.471	1.413

Receptor	NOx (µg/m^3)		NH_3 (µg/m^3)		Nutrient Nitrogen (kg/ha/yr)		Acid Nitrogen (keq/ha/yr)	
	2019	2036	2019	2036	2019	2036	2019	2036
SP SAC8	30.1	10.7	2.4	2.5	19.3	18.7	1.385	1.339
SP SAC9	26.7	10.1	2.3	2.4	18.6	18.1	1.333	1.294
SP SAC10	24.3	9.7	2.2	2.3	18.1	17.6	1.297	1.264
SP SAC11	22.4	9.5	2.2	2.3	17.7	17.3	1.270	1.240
SP SAC12	21.0	9.2	2.2	2.2	17.4	17.0	1.249	1.222
SP SAC13	14.6	8.2	2.0	2.0	15.9	15.7	1.137	1.125
SP SAC14	73.1	19.2	3.3	4.0	26.6	26.9	1.903	1.928
SP SAC15	63.1	17.4	3.1	3.7	24.8	25.0	1.774	1.789
SP SAC16	56.4	16.1	2.9	3.5	23.5	23.7	1.686	1.694
SP SAC17	51.4	15.2	2.8	3.3	22.6	22.7	1.621	1.625
SP SAC18	47.4	14.5	2.7	3.2	21.9	21.9	1.568	1.569
SP SAC19	44.1	13.9	2.7	3.0	21.3	21.3	1.524	1.524
Assessment Criteria	**30**		**1-3**		**5-10**		**1.792-4.856**	

Chapter 5
Impact Assessment

Screening

NOx

5.1 The effects on annual mean NOx concentrations at the receptors are set out in **Table 5.1**. There are no exceedances of the 1% screening threshold at the River Avon SAC receptors and further assessment is not required.

5.2 Exceedances of the 1% screening threshold are predicted at the Salisbury Plain SAC and SPA and Porton Down SPA receptors, and PECs are provided.

Table 5.1: Predicted Contribution of NOx in 2036

Receptor	Site	Predicted Road Contribution of Annual Mean NOx (µg/m^3)			Screening		
		Without the Local Plan	With the Local Plan	Increase due to the Local Plan	Critical Level	Increase as % of Critical Level	Further Assessment Required?
RA SAC1	River Avon SAC	0.4	0.5	0.0	30	0.2	No
RA SAC2	River Avon SAC	0.4	0.5	0.1	30	0.2	No
RA SAC3	River Avon SAC	0.4	0.5	0.1	30	0.2	No
RA SAC4	River Avon SAC	0.5	0.5	0.1	30	0.2	No
RA SAC5	River Avon SAC	0.6	0.7	0.1	30	0.2	No
RA SAC6	River Avon SAC	0.3	0.3	0.0	30	0.1	No
RA SAC7	River Avon SAC	0.3	0.3	0.0	30	0.1	No
RA SAC8	River Avon SAC	0.2	0.3	0.0	30	0.1	No
RA SAC9	River Avon SAC	0.5	0.5	0.1	30	0.2	No

Receptor	Site	Predicted Road Contribution of Annual Mean NOx (µg/m^3)			Screening		
		Without the Local Plan	With the Local Plan	Increase due to the Local Plan	Critical Level	Increase as % of Critical Level	Further Assessment Required?
RA SAC10	River Avon SAC	0.1	0.1	0.0	30	0.0	No
RA SAC11	River Avon SAC	0.1	0.1	0.0	30	0.0	No
RA SAC12	River Avon SAC	0.1	0.1	0.0	30	0.0	No
RA SAC13	River Avon SAC	3.2	3.4	0.2	30	0.6	No
RA SAC14	River Avon SAC	3.1	3.3	0.2	30	0.6	No
RA SAC15	River Avon SAC	1.3	1.4	0.1	30	0.3	No
RA SAC16	River Avon SAC	2.8	3.0	0.2	30	0.7	No
RA SAC17	River Avon SAC	2.6	2.8	0.2	30	0.6	No
RA SAC18	River Avon SAC	2.3	2.5	0.2	30	0.5	No
RA SAC19	River Avon SAC	1.8	2.0	0.1	30	0.4	No
RA SAC20	River Avon SAC	1.5	1.6	0.1	30	0.3	No
RA SAC21	River Avon SAC	2.5	2.7	0.2	30	0.6	No
RA SAC22	River Avon SAC	2.3	2.4	0.2	30	0.5	No
RA SAC23	River Avon SAC	2.0	2.1	0.1	30	0.5	No
RA SAC24	River Avon SAC	1.8	1.9	0.1	30	0.4	No
RA SAC25	River Avon SAC	1.6	1.7	0.1	30	0.4	No
RA SAC26	River Avon SAC	0.2	0.2	0.0	30	0.0	No
SP SAC1	Salisbury Plain SAC	10.0	10.5	0.6	30	2.0	Yes

Receptor	Site	Predicted Road Contribution of Annual Mean NOx (µg/m^3)			Screening		
		Without the Local Plan	With the Local Plan	Increase due to the Local Plan	Critical Level	Increase as % of Critical Level	Further Assessment Required?
SP SAC2	Salisbury Plain SAC	8.6	9.2	0.5	30	1.7	Yes
SP SAC3	Salisbury Plain SAC	7.7	8.1	0.5	30	1.5	Yes
SP SAC4	Salisbury Plain SAC	6.9	7.4	0.4	30	1.4	Yes
SP SAC5	Salisbury Plain SAC	6.3	6.6	0.4	30	1.3	Yes
SP SAC6	Salisbury Plain SAC	5.7	6.1	0.3	30	1.2	Yes
SP SAC7	Salisbury Plain SAC	4.0	4.5	0.5	30	1.6	Yes
SP SAC8	Salisbury Plain SAC	3.1	3.5	0.4	30	1.2	Yes
SP SAC9	Salisbury Plain SAC	2.6	2.9	0.3	30	1.0	No
SP SAC10	Salisbury Plain SAC	2.2	2.4	0.3	30	0.9	No
SP SAC11	Salisbury Plain SAC	1.9	2.1	0.2	30	0.8	No
SP SAC12	Salisbury Plain SAC	1.7	1.9	0.2	30	0.7	No
SP SAC13	Salisbury Plain SAC	0.7	0.7	0.1	30	0.3	No
SP SAC14	Salisbury Plain SAC	11.1	11.8	0.7	30	2.3	Yes
SP SAC15	Salisbury Plain SAC	9.3	9.9	0.6	30	1.9	Yes
SP SAC16	Salisbury Plain SAC	8.0	8.5	0.5	30	1.7	Yes
SP SAC17	Salisbury Plain SAC	7.1	7.6	0.4	30	1.5	Yes
SP SAC18	Salisbury Plain SAC	6.4	6.8	0.4	30	1.3	Yes
SP SAC19	Salisbury Plain SAC	5.8	6.2	0.4	30	1.2	Yes

Receptor	Site	Predicted Road Contribution of Annual Mean NOx (µg/m^3)			Screening		
		Without the Local Plan	With the Local Plan	Increase due to the Local Plan	Critical Level	Increase as % of Critical Level	Further Assessment Required?
SP SAC1	Salisbury Plain SPA	10.0	10.5	0.6	30	2.0	Yes
SP SAC2	Salisbury Plain SPA	8.6	9.2	0.5	30	1.7	Yes
SP SAC3	Salisbury Plain SPA	7.7	8.1	0.5	30	1.5	Yes
SP SAC4	Salisbury Plain SPA	6.9	7.4	0.4	30	1.4	Yes
SP SAC5	Salisbury Plain SPA	6.3	6.6	0.4	30	1.3	Yes
SP SAC6	Salisbury Plain SPA	5.7	6.1	0.3	30	1.2	Yes
SP SAC7	Porton Down SPA	4.0	4.5	0.5	30	1.6	Yes
SP SAC8	Porton Down SPA	3.1	3.5	0.4	30	1.2	Yes
SP SAC9	Porton Down SPA	2.6	2.9	0.3	30	1.0	No
SP SAC10	Porton Down SPA	2.2	2.4	0.3	30	0.9	No
SP SAC11	Porton Down SPA	1.9	2.1	0.2	30	0.8	No
SP SAC12	Porton Down SPA	1.7	1.9	0.2	30	0.7	No
SP SAC13	Porton Down SPA	0.7	0.7	0.1	30	0.3	No
SP SAC14	Salisbury Plain SPA	11.1	11.8	0.7	30	2.3	Yes
SP SAC15	Salisbury Plain SPA	9.3	9.9	0.6	30	1.9	Yes
SP SAC16	Salisbury Plain SPA	8.0	8.5	0.5	30	1.7	Yes
SP SAC17	Salisbury Plain SPA	7.1	7.6	0.4	30	1.5	Yes
SP SAC18	Salisbury Plain SPA	6.4	6.8	0.4	30	1.3	Yes

Receptor	Site	Predicted Road Contribution of Annual Mean NOx (µg/m^3)			Screening		
		Without the Local Plan	With the Local Plan	Increase due to the Local Plan	Critical Level	Increase as % of Critical Level	Further Assessment Required?
SP SAC19	Salisbury Plain SPA	5.8	6.2	0.4	30	1.2	Yes
Screening Threshold		**-**			**1%**		

NH_3

5.3 The effects on annual mean NH_3 concentrations at the receptors are set out in **Table 5.2**. There are exceedances of the 1% screening threshold at the River Avon SAC, the Salisbury Plain SAC and SPA and Porton Down SPA receptors, and PECs are provided.

Table 5.2: Predicted Contribution of NH3 in 2036

Receptor	Site	Predicted Road Contribution of Annual Mean NH_3 (µg/m^3)			Screening		
		Without the Local Plan	With the Local Plan	Increase due to the Local Plan	Critical Level	Increase as % of Critical Level	Further Assessment Required?
RA SAC1	River Avon SAC	0.08	0.09	0.01	3	0.3	No
RA SAC2	River Avon SAC	0.09	0.10	0.01	3	0.3	No
RA SAC3	River Avon SAC	0.09	0.10	0.01	3	0.3	No
RA SAC4	River Avon SAC	0.09	0.10	0.01	3	0.4	No
RA SAC5	River Avon SAC	0.12	0.14	0.01	3	0.5	No
RA SAC6	River Avon SAC	0.05	0.06	0.01	1	0.6	No
RA SAC7	River Avon SAC	0.06	0.06	0.01	1	0.6	No
RA SAC8	River Avon SAC	0.04	0.05	0.01	3	0.2	No
RA SAC9	River Avon SAC	0.09	0.10	0.01	1	1.1	Yes
RA SAC10	River Avon SAC	0.01	0.02	0.00	1	0.2	No
RA SAC11	River Avon SAC	0.01	0.02	0.00	3	0.0	No

Receptor	Site	Predicted Road Contribution of Annual Mean NH_3 (µg/m^3)			Screening		
		Without the Local Plan	With the Local Plan	Increase due to the Local Plan	Critical Level	Increase as % of Critical Level	Further Assessment Required?
RA SAC12	River Avon SAC	0.02	0.02	0.00	1	0.1	No
RA SAC13	River Avon SAC	0.52	0.55	0.03	1	3.1	Yes
RA SAC14	River Avon SAC	0.50	0.53	0.03	1	2.9	Yes
RA SAC15	River Avon SAC	0.19	0.20	0.01	1	1.1	Yes
RA SAC16	River Avon SAC	0.52	0.55	0.04	3	1.2	Yes
RA SAC17	River Avon SAC	0.50	0.54	0.04	3	1.2	Yes
RA SAC18	River Avon SAC	0.45	0.48	0.03	3	1.0	No
RA SAC19	River Avon SAC	0.34	0.36	0.02	3	0.8	No
RA SAC20	River Avon SAC	0.26	0.28	0.02	3	0.6	No
RA SAC21	River Avon SAC	0.42	0.45	0.03	1	3.0	Yes
RA SAC22	River Avon SAC	0.37	0.39	0.03	1	2.6	Yes
RA SAC23	River Avon SAC	0.32	0.34	0.02	1	2.3	Yes
RA SAC24	River Avon SAC	0.28	0.30	0.02	1	2.0	Yes
RA SAC25	River Avon SAC	0.25	0.27	0.02	1	1.8	Yes
RA SAC26	River Avon SAC	0.03	0.03	0.00	3	0.0	No
SP SAC1	Salisbury Plain SAC	1.46	1.55	0.09	3	8.7	Yes
SP SAC2	Salisbury Plain SAC	1.25	1.33	0.07	3	7.5	Yes
SP SAC3	Salisbury Plain SAC	1.10	1.17	0.07	3	6.6	Yes

Receptor	Site	Predicted Road Contribution of Annual Mean NH_3 (µg/m^3)			Screening		
		Without the Local Plan	With the Local Plan	Increase due to the Local Plan	Critical Level	Increase as % of Critical Level	Further Assessment Required?
SP SAC4	Salisbury Plain SAC	0.98	1.04	0.06	3	5.9	Yes
SP SAC5	Salisbury Plain SAC	0.88	0.93	0.05	3	5.3	Yes
SP SAC6	Salisbury Plain SAC	0.80	0.85	0.05	3	4.8	Yes
SP SAC7	Salisbury Plain SAC	0.67	0.75	0.08	3	7.9	Yes
SP SAC8	Salisbury Plain SAC	0.51	0.57	0.06	3	6.0	Yes
SP SAC9	Salisbury Plain SAC	0.41	0.46	0.05	3	4.9	Yes
SP SAC10	Salisbury Plain SAC	0.35	0.39	0.04	3	4.1	Yes
SP SAC11	Salisbury Plain SAC	0.30	0.33	0.04	3	3.5	Yes
SP SAC12	Salisbury Plain SAC	0.26	0.29	0.03	3	3.1	Yes
SP SAC13	Salisbury Plain SAC	0.08	0.09	0.01	3	1.0	No
SP SAC14	Salisbury Plain SAC	1.62	1.72	0.10	3	10.2	Yes
SP SAC15	Salisbury Plain SAC	1.33	1.41	0.08	3	8.3	Yes
SP SAC16	Salisbury Plain SAC	1.13	1.20	0.07	3	7.1	Yes
SP SAC17	Salisbury Plain SAC	0.99	1.05	0.06	3	6.2	Yes
SP SAC18	Salisbury Plain SAC	0.88	0.94	0.05	3	5.5	Yes
SP SAC19	Salisbury Plain SAC	0.79	0.84	0.05	3	4.9	Yes
SP SAC1	Salisbury Plain SPA	1.46	1.55	0.09	3	2.9	Yes
SP SAC2	Salisbury Plain SPA	1.25	1.33	0.07	3	2.5	Yes

Receptor	Site	Predicted Road Contribution of Annual Mean NH_3 (µg/m^3)			Screening		
		Without the Local Plan	With the Local Plan	Increase due to the Local Plan	Critical Level	Increase as % of Critical Level	Further Assessment Required?
SP SAC3	Salisbury Plain SPA	1.10	1.17	0.07	3	2.2	Yes
SP SAC4	Salisbury Plain SPA	0.98	1.04	0.06	3	2.0	Yes
SP SAC5	Salisbury Plain SPA	0.88	0.93	0.05	3	1.8	Yes
SP SAC6	Salisbury Plain SPA	0.80	0.85	0.05	3	1.6	Yes
SP SAC7	Porton Down SPA	0.67	0.75	0.08	3	2.6	Yes
SP SAC8	Porton Down SPA	0.51	0.57	0.06	3	2.0	Yes
SP SAC9	Porton Down SPA	0.41	0.46	0.05	3	1.6	Yes
SP SAC10	Porton Down SPA	0.35	0.39	0.04	3	1.4	Yes
SP SAC11	Porton Down SPA	0.30	0.33	0.04	3	1.2	Yes
SP SAC12	Porton Down SPA	0.26	0.29	0.03	3	1.0	No
SP SAC13	Porton Down SPA	0.08	0.09	0.01	3	0.3	No
SP SAC14	Salisbury Plain SPA	1.62	1.72	0.10	3	3.4	Yes
SP SAC15	Salisbury Plain SPA	1.33	1.41	0.08	3	2.8	Yes
SP SAC16	Salisbury Plain SPA	1.13	1.20	0.07	3	2.4	Yes
SP SAC17	Salisbury Plain SPA	0.99	1.05	0.06	3	2.1	Yes
SP SAC18	Salisbury Plain SPA	0.88	0.94	0.05	3	1.8	Yes
SP SAC19	Salisbury Plain SPA	0.79	0.84	0.05	3	1.6	Yes
Screening Threshold		**-**			**1%**		

Nitrogen Deposition

5.4 The predicted contributions to nutrient and acid nitrogen deposition fluxes at the receptors are set out in **Table 5.3** and **Table 5.4** respectively. The predicted contributions exceed the screening threshold for nutrient nitrogen deposition at the Salisbury Plain SAC and SPA and the Porton Down SPA and PECs are provided.

5.5 The predicted contributions exceed the screening threshold for acid nitrogen deposition at the Salisbury Plain SPA and PECs are provided. Predicted contributions to acid nitrogen deposition are below the screening threshold at the Salisbury Plain SAC and Porton Down SPA and impacts will not be significant with regards acid nitrogen deposition.

Table 5.3: Predicted Road Contribution to Nutrient Nitrogen Deposition in 2036

Receptor	Site	Predicted Road Contribution of Nutrient N Deposition(kg/ha/yr)			Screening		
		Without the Local Plan	With the Local Plan	Increase due to the Local Plan	Critical Load	Increase as % of Critical Load	Further Assessment Required?
SP SAC1	Salisbury Plain SAC	8.371	8.866	0.495	10	5.0	Yes
SP SAC2	Salisbury Plain SAC	7.180	7.607	0.427	10	4.3	Yes
SP SAC3	Salisbury Plain SAC	6.309	6.687	0.378	10	3.8	Yes
SP SAC4	Salisbury Plain SAC	5.654	5.993	0.339	10	3.4	Yes
SP SAC5	Salisbury Plain SAC	5.065	5.371	0.306	10	3.1	Yes
SP SAC6	Salisbury Plain SAC	4.610	4.889	0.278	10	2.8	Yes
SP SAC7	Salisbury Plain SAC	3.787	4.237	0.450	10	4.5	Yes
SP SAC8	Salisbury Plain SAC	2.883	3.226	0.343	10	3.4	Yes
SP SAC9	Salisbury Plain SAC	2.339	2.617	0.279	10	2.8	Yes
SP SAC10	Salisbury Plain SAC	1.972	2.207	0.234	10	2.3	Yes
SP SAC11	Salisbury Plain SAC	1.692	1.894	0.202	10	2.0	Yes
SP SAC12	Salisbury Plain SAC	1.484	1.659	0.175	10	1.7	Yes
SP SAC13	Salisbury Plain SAC	0.480	0.538	0.058	10	0.6	No
SP SAC14	Salisbury Plain SAC	9.286	9.868	0.582	10	5.8	Yes

Receptor	Site	Predicted Road Contribution of Nutrient N Deposition(kg/ha/yr)			Screening		
		Without the Local Plan	With the Local Plan	Increase due to the Local Plan	Critical Load	Increase as % of Critical Load	Further Assessment Required?
SP SAC15	Salisbury Plain SAC	7.621	8.099	0.477	10	4.8	Yes
SP SAC16	Salisbury Plain SAC	6.511	6.918	0.407	10	4.1	Yes
SP SAC17	Salisbury Plain SAC	5.713	6.070	0.357	10	3.6	Yes
SP SAC18	Salisbury Plain SAC	5.075	5.391	0.316	10	3.2	Yes
SP SAC19	Salisbury Plain SAC	4.560	4.843	0.283	10	2.8	Yes
SP SAC1	Salisbury Plain SPA	8.371	8.866	0.495	5	9.9	Yes
SP SAC2	Salisbury Plain SPA	7.180	7.607	0.427	5	8.5	Yes
SP SAC3	Salisbury Plain SPA	6.309	6.687	0.378	5	7.6	Yes
SP SAC4	Salisbury Plain SPA	5.654	5.993	0.339	5	6.8	Yes
SP SAC5	Salisbury Plain SPA	5.065	5.371	0.306	5	6.1	Yes
SP SAC6	Salisbury Plain SPA	4.610	4.889	0.278	5	5.6	Yes
SP SAC7	Porton Down SPA	3.787	4.237	0.450	10	4.5	Yes
SP SAC8	Porton Down SPA	2.883	3.226	0.343	10	3.4	Yes
SP SAC9	Porton Down SPA	2.339	2.617	0.279	10	2.8	Yes
SP SAC10	Porton Down SPA	1.972	2.207	0.234	10	2.3	Yes
SP SAC11	Porton Down SPA	1.692	1.894	0.202	10	2.0	Yes
SP SAC12	Porton Down SPA	1.484	1.659	0.175	10	1.7	Yes
SP SAC13	Porton Down SPA	0.480	0.538	0.058	10	0.6	No

Receptor	Site	Predicted Road Contribution of Nutrient N Deposition(kg/ha/yr)			Screening		
		Without the Local Plan	With the Local Plan	Increase due to the Local Plan	Critical Load	Increase as % of Critical Load	Further Assessment Required?
SP SAC14	Salisbury Plain SPA	9.286	9.868	0.582	5	11.6	Yes
SP SAC15	Salisbury Plain SPA	7.621	8.099	0.477	5	9.5	Yes
SP SAC16	Salisbury Plain SPA	6.511	6.918	0.407	5	8.1	Yes
SP SAC17	Salisbury Plain SPA	5.713	6.070	0.357	5	7.1	Yes
SP SAC18	Salisbury Plain SPA	5.075	5.391	0.316	5	6.3	Yes
SP SAC19	Salisbury Plain SPA	4.560	4.843	0.283	5	5.7	Yes
Screening Threshold		**-**			**1%**		

Table 5.4: Predicted Road Contribution to Acid Nitrogen Deposition in 2036

Receptor	Site	Predicted Road Contribution of Acid N Deposition(keq/ha/yr)			Screening		
		Without the Local Plan	With the Local Plan	Increase due to the Local Plan	Critical Load	Increase as % of Critical Load	Further Assessment Required?
SP SAC1	Salisbury Plain SAC	0.598	0.633	0.035	4.856	0.7	No
SP SAC2	Salisbury Plain SAC	0.513	0.543	0.030	4.856	0.6	No
SP SAC3	Salisbury Plain SAC	0.451	0.478	0.027	4.856	0.6	No
SP SAC4	Salisbury Plain SAC	0.404	0.428	0.024	4.856	0.5	No
SP SAC5	Salisbury Plain SAC	0.362	0.384	0.022	4.856	0.4	No
SP SAC6	Salisbury Plain SAC	0.329	0.349	0.020	4.856	0.4	No
SP SAC7	Salisbury Plain SAC	0.270	0.303	0.032	4.856	0.7	No
SP SAC8	Salisbury Plain SAC	0.206	0.230	0.024	4.856	0.5	No

Receptor	Site	Predicted Road Contribution of Acid N Deposition(keq/ha/yr)			Screening		
		Without the Local Plan	With the Local Plan	Increase due to the Local Plan	Critical Load	Increase as % of Critical Load	Further Assessment Required?
SP SAC9	Salisbury Plain SAC	0.167	0.187	0.020	4.856	0.4	No
SP SAC10	Salisbury Plain SAC	0.141	0.158	0.017	4.856	0.3	No
SP SAC11	Salisbury Plain SAC	0.121	0.135	0.014	4.856	0.3	No
SP SAC12	Salisbury Plain SAC	0.106	0.118	0.012	4.856	0.3	No
SP SAC13	Salisbury Plain SAC	0.034	0.038	0.004	4.856	0.1	No
SP SAC14	Salisbury Plain SAC	0.663	0.705	0.042	4.856	0.9	No
SP SAC15	Salisbury Plain SAC	0.544	0.578	0.034	4.856	0.7	No
SP SAC16	Salisbury Plain SAC	0.465	0.494	0.029	4.856	0.6	No
SP SAC17	Salisbury Plain SAC	0.408	0.434	0.025	4.856	0.5	No
SP SAC18	Salisbury Plain SAC	0.363	0.385	0.023	4.856	0.5	No
SP SAC19	Salisbury Plain SAC	0.326	0.346	0.020	4.856	0.4	No
SP SAC1	Salisbury Plain SPA	0.598	0.633	0.035	1.792	2.0	Yes
SP SAC2	Salisbury Plain SPA	0.513	0.543	0.030	1.792	1.7	Yes
SP SAC3	Salisbury Plain SPA	0.451	0.478	0.027	1.792	1.5	Yes
SP SAC4	Salisbury Plain SPA	0.404	0.428	0.024	1.792	1.4	Yes
SP SAC5	Salisbury Plain SPA	0.362	0.384	0.022	1.792	1.2	Yes
SP SAC6	Salisbury Plain SPA	0.329	0.349	0.020	1.792	1.1	Yes
SP SAC7	Porton Down SPA	0.270	0.303	0.032	4.856	0.7	No

Receptor	Site	Predicted Road Contribution of Acid N Deposition(keq/ha/yr)			Screening		
		Without the Local Plan	With the Local Plan	Increase due to the Local Plan	Critical Load	Increase as % of Critical Load	Further Assessment Required?
SP SAC8	Porton Down SPA	0.206	0.230	0.024	4.856	0.5	No
SP SAC9	Porton Down SPA	0.167	0.187	0.020	4.856	0.4	No
SP SAC10	Porton Down SPA	0.141	0.158	0.017	4.856	0.3	No
SP SAC11	Porton Down SPA	0.121	0.135	0.014	4.856	0.3	No
SP SAC12	Porton Down SPA	0.106	0.118	0.012	4.856	0.3	No
SP SAC13	Porton Down SPA	0.034	0.038	0.004	4.856	0.1	No
SP SAC14	Salisbury Plain SPA	0.663	0.705	0.042	1.792	2.3	Yes
SP SAC15	Salisbury Plain SPA	0.544	0.578	0.034	1.792	1.9	Yes
SP SAC16	Salisbury Plain SPA	0.465	0.494	0.029	1.792	1.6	Yes
SP SAC17	Salisbury Plain SPA	0.408	0.434	0.025	1.792	1.4	Yes
SP SAC18	Salisbury Plain SPA	0.363	0.385	0.023	1.792	1.3	Yes
SP SAC19	Salisbury Plain SPA	0.326	0.346	0.020	1.792	1.1	Yes
Screening Threshold		-			**1%**		

Predicted Environmental Concentration (PEC)

NOx

5.6 Annual mean NOx PECs at protected areas where the screening threshold has been exceeded due to the Local Plan are set out in **Table 5.5**. The NOx PECs are below the 30µg/m^3 critical level both without and with the Local Plan at all receptors.

Table 5.5: Predicted 2036 NOx PEC

Receptor	Site	PEC NOx (µg/m^3)			Impact		
		Without the Local Plan	With the Local Plan	Increase due to the Local Plan	Critical Level	Increase as Percentage of Critical Level (%)	PEC with Local Plan as Percentage of Critical Level (%)
SP SAC1	Salisbury Plain SAC	18.2	18.8	0.6	30	2.0	62.8
SP SAC2	Salisbury Plain SAC	16.9	17.5	0.5	30	1.7	58.2
SP SAC3	Salisbury Plain SAC	16.0	16.4	0.5	30	1.5	54.8
SP SAC4	Salisbury Plain SAC	15.2	15.6	0.4	30	1.4	52.2
SP SAC5	Salisbury Plain SAC	14.6	14.9	0.4	30	1.3	49.8
SP SAC6	Salisbury Plain SAC	14.0	14.4	0.3	30	1.2	48.0
SP SAC7	Salisbury Plain SAC	11.6	12.0	0.5	30	1.6	40.1
SP SAC8	Salisbury Plain SAC	10.7	11.0	0.4	30	1.2	36.8
SP SAC9	Salisbury Plain SAC	10.1	10.4	0.3	30	1.0	34.7
SP SAC10	Salisbury Plain SAC	9.7	10.0	0.3	30	0.9	33.4
SP SAC11	Salisbury Plain SAC	9.5	9.7	0.2	30	0.8	32.3
SP SAC12	Salisbury Plain SAC	9.2	9.4	0.2	30	0.7	31.5
SP SAC13	Salisbury Plain SAC	8.2	8.3	0.1	30	0.3	27.7
SP SAC14	Salisbury Plain SAC	19.2	19.9	0.7	30	2.3	66.3
SP SAC15	Salisbury Plain SAC	17.4	17.9	0.6	30	1.9	59.8
SP SAC16	Salisbury Plain SAC	16.1	16.6	0.5	30	1.7	55.4
SP SAC17	Salisbury Plain SAC	15.2	15.6	0.4	30	1.5	52.2

Receptor	Site	PEC NOx (µg/m^3)			Impact		
		Without the Local Plan	With the Local Plan	Increase due to the Local Plan	Critical Level	Increase as Percentage of Critical Level (%)	PEC with Local Plan as Percentage of Critical Level (%)
SP SAC18	Salisbury Plain SAC	14.5	14.9	0.4	30	1.3	49.6
SP SAC19	Salisbury Plain SAC	13.9	14.2	0.4	30	1.2	47.5
SP SAC1	Salisbury Plain SPA	18.2	18.8	0.6	30	2.0	62.8
SP SAC2	Salisbury Plain SPA	16.9	17.5	0.5	30	1.7	58.2
SP SAC3	Salisbury Plain SPA	16.0	16.4	0.5	30	1.5	54.8
SP SAC4	Salisbury Plain SPA	15.2	15.6	0.4	30	1.4	52.2
SP SAC5	Salisbury Plain SPA	14.6	14.9	0.4	30	1.3	49.8
SP SAC6	Salisbury Plain SPA	14.0	14.4	0.3	30	1.2	48.0
SP SAC7	Porton Down SPA	11.6	12.0	0.5	30	1.6	40.1
SP SAC8	Porton Down SPA	10.7	11.0	0.4	30	1.2	36.8
SP SAC9	Porton Down SPA	10.1	10.4	0.3	30	1.0	34.7
SP SAC10	Porton Down SPA	9.7	10.0	0.3	30	0.9	33.4
SP SAC11	Porton Down SPA	9.5	9.7	0.2	30	0.8	32.3
SP SAC12	Porton Down SPA	9.2	9.4	0.2	30	0.7	31.5
SP SAC13	Porton Down SPA	8.2	8.3	0.1	30	0.3	27.7
SP SAC14	Salisbury Plain SPA	19.2	19.9	0.7	30	2.3	66.3
SP SAC15	Salisbury Plain SPA	17.4	17.9	0.6	30	1.9	59.8

Receptor	Site	PEC NOx (µg/m^3)			Impact		
		Without the Local Plan	With the Local Plan	Increase due to the Local Plan	Critical Level	Increase as Percentage of Critical Level (%)	PEC with Local Plan as Percentage of Critical Level (%)
SP SAC16	Salisbury Plain SPA	16.1	16.6	0.5	30	1.7	55.4
SP SAC17	Salisbury Plain SPA	15.2	15.6	0.4	30	1.5	52.2
SP SAC18	Salisbury Plain SPA	14.5	14.9	0.4	30	1.3	49.6
SP SAC19	Salisbury Plain SPA	13.9	14.2	0.4	30	1.2	47.5

NH_3

5.7 Annual mean NH_3 PECs are set out in **Table 5.6**. The NH_3 PECs are above the relevant critical levels at receptors where the 1% screening threshold is exceeded at the River Avon SAC and the Salisbury Plain SAC and SPA. Predicted NH_3 PECs are below the 3µg/m^3 critical level both without and with the Local Plan at the Porton Down SPA.

5.8 The extent of the area of exceedance of the 1% screening thresholds for the 1µg/m^3 and 3µg/m^3 critical levels close to the A30 and A303 are shown in **Figure 5.1** and **Figure 5.2** respectively.

5.9 There is a risk of significant effects due to NH_3 concentrations up to 40m from the kerb of the A30, assuming a critical load of 1µg/m^3, or up to 11m from the kerb of the A30 assuming a critical load of 3µg/m^3.

5.10 There is a risk of significant effects due to NH_3 concentrations up to 93m from the kerb of the A303, assuming a critical load of 1µg/m^3, or up to 32m from the kerb of the A303 assuming a critical load of 3µg/m^3.

5.11 The area of exceedance of the screening threshold is 7.6ha at the Salisbury Plain SAC, 2.1ha at the Salisbury Plain SPA and 0.1ha the Porton Down SPA.

Table 5.6: Predicted 2036 NH_3 PEC

Exceedances of the both the 1% screening threshold and critical level at a receptor are shown in bold.

Receptor	Site	PEC NH_3 (µg/m^3)			Impact		
		Without the Local Plan	With the Local Plan	Increase due to the Local Plan	Critical Level	Increase as Percentage of Critical Level (%)	PEC with Local Plan as Percentage of Critical Level (%)
RA SAC1	River Avon SAC	2.03	2.03	0.01	3	0.3	67.8
RA SAC2	River Avon SAC	2.03	2.04	0.01	3	0.3	67.9
RA SAC3	River Avon SAC	2.03	2.04	0.01	3	0.3	68.0
RA SAC4	River Avon SAC	2.03	2.04	0.01	3	0.4	68.1
RA SAC5	River Avon SAC	2.06	2.08	0.01	3	0.5	69.2
RA SAC6	River Avon SAC	1.99	1.99	0.01	1	0.6	199.4
RA SAC7	River Avon SAC	1.99	2.00	0.01	1	0.6	199.8
RA SAC8	River Avon SAC	2.02	2.03	0.01	3	0.2	67.6
RA SAC9	River Avon SAC	2.11	2.12	0.01	1	1.1	211.8
RA SAC10	River Avon SAC	2.15	2.16	0.00	1	0.2	215.5
RA SAC11	River Avon SAC	2.17	2.17	0.00	3	0.0	72.3
RA SAC12	River Avon SAC	2.05	2.05	0.00	1	0.1	204.7
RA SAC13	River Avon SAC	2.53	2.56	0.03	1	3.1	256.1
RA SAC14	River Avon SAC	2.51	2.54	0.03	1	2.9	254.0
RA SAC15	River Avon SAC	2.18	2.19	0.01	1	1.1	218.6
RA SAC16	River Avon SAC	2.64	2.68	0.04	3	1.2	89.4

Receptor	Site	PEC NH_3 (µg/m^3)			Impact		
		Without the Local Plan	With the Local Plan	Increase due to the Local Plan	Critical Level	Increase as Percentage of Critical Level (%)	PEC with Local Plan as Percentage of Critical Level (%)
RA SAC17	River Avon SAC	2.63	2.67	0.04	3	1.2	88.8
RA SAC18	River Avon SAC	2.57	2.60	0.03	3	1.0	86.8
RA SAC19	River Avon SAC	2.47	2.49	0.02	3	0.8	83.0
RA SAC20	River Avon SAC	2.39	2.41	0.02	3	0.6	80.3
RA SAC21	River Avon SAC	2.55	2.58	0.03	1	3.0	257.7
RA SAC22	River Avon SAC	2.50	2.52	0.03	1	2.6	252.2
RA SAC23	River Avon SAC	2.45	2.47	0.02	1	2.3	247.1
RA SAC24	River Avon SAC	2.41	2.43	0.02	1	2.0	242.8
RA SAC25	River Avon SAC	2.38	2.40	0.02	1	1.8	239.8
RA SAC26	River Avon SAC	2.25	2.25	0.00	3	0.0	75.0
SP SAC1	Salisbury Plain SAC	3.40	3.48	0.09	1	8.7	348.4
SP SAC2	Salisbury Plain SAC	3.19	3.26	0.07	1	7.5	326.2
SP SAC3	Salisbury Plain SAC	3.03	3.10	0.07	1	6.6	310.0
SP SAC4	Salisbury Plain SAC	2.92	2.98	0.06	1	5.9	297.8
SP SAC5	Salisbury Plain SAC	2.81	2.87	0.05	1	5.3	286.8
SP SAC6	Salisbury Plain SAC	2.74	2.78	0.05	1	4.8	278.3
SP SAC7	Salisbury Plain SAC	2.55	2.63	0.08	1	7.9	263.2

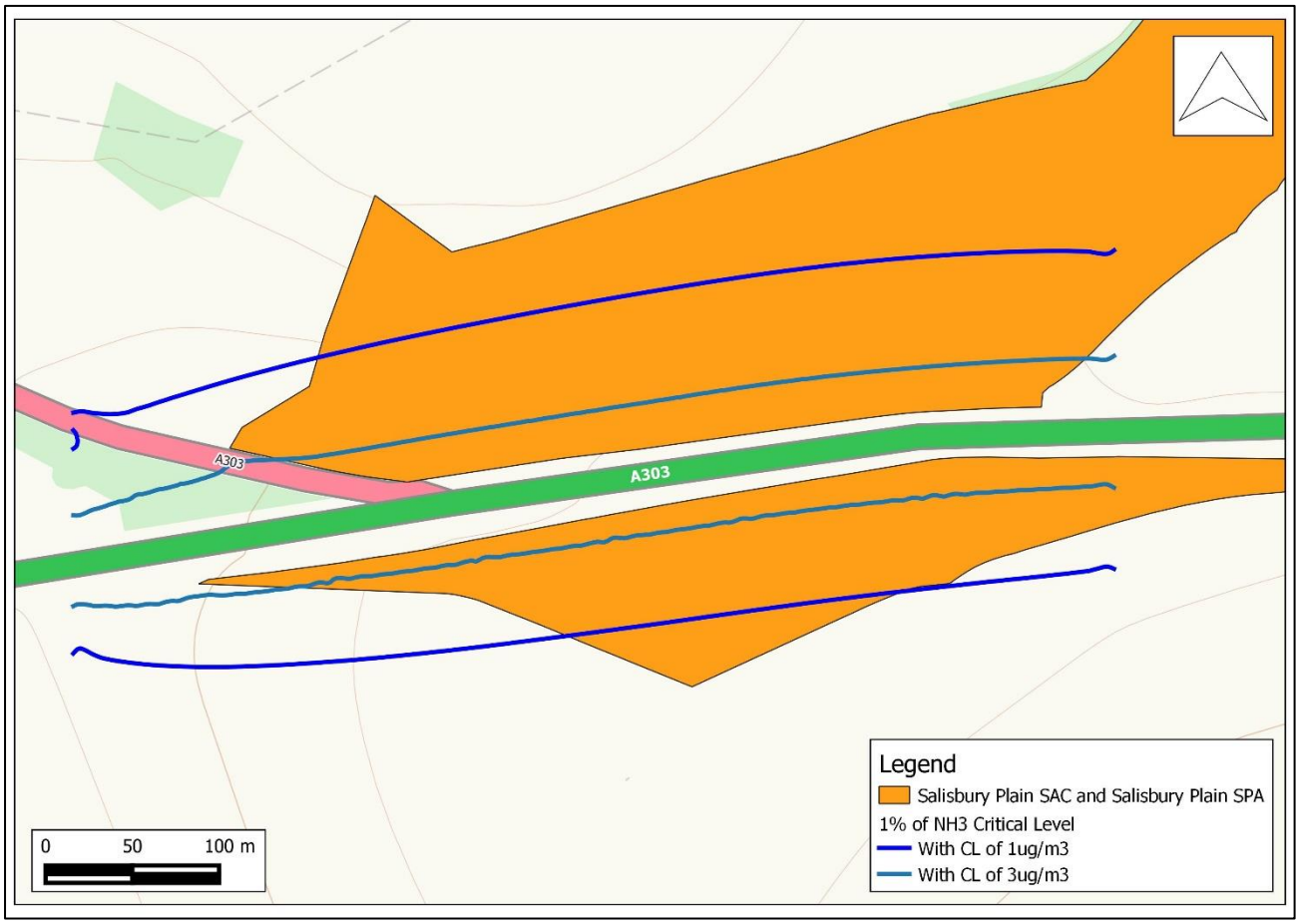
Receptor	Site	PEC NH_3 (µg/m^3)			Impact		
		Without the Local Plan	With the Local Plan	Increase due to the Local Plan	Critical Level	Increase as Percentage of Critical Level (%)	PEC with Local Plan as Percentage of Critical Level (%)
SP SAC8	Salisbury Plain SAC	2.39	2.45	0.06	1	6.0	245.2
SP SAC9	Salisbury Plain SAC	2.30	2.34	0.05	1	4.9	234.4
SP SAC10	Salisbury Plain SAC	2.23	2.27	0.04	1	4.1	227.2
SP SAC11	Salisbury Plain SAC	2.18	2.22	0.04	1	3.5	221.6
SP SAC12	Salisbury Plain SAC	2.14	2.17	0.03	1	3.1	217.5
SP SAC13	Salisbury Plain SAC	1.95	1.96	0.01	1	1.0	196.1
SP SAC14	Salisbury Plain SAC	3.56	3.66	0.10	1	10.2	365.7
SP SAC15	Salisbury Plain SAC	3.26	3.34	0.08	1	8.3	334.5
SP SAC16	Salisbury Plain SAC	3.07	3.14	0.07	1	7.1	313.7
SP SAC17	Salisbury Plain SAC	2.93	2.99	0.06	1	6.2	298.8
SP SAC18	Salisbury Plain SAC	2.81	2.87	0.05	1	5.5	286.9
SP SAC19	Salisbury Plain SAC	2.72	2.77	0.05	1	4.9	277.3
SP SAC1	Salisbury Plain SPA	3.4	3.5	0.09	3	2.9	116.1
SP SAC2	Salisbury Plain SPA	3.2	3.3	0.07	3	2.5	108.7
SP SAC3	Salisbury Plain SPA	3.0	3.1	0.07	3	2.2	103.3
SP SAC4	Salisbury Plain SPA	2.9	3.0	0.06	3	2.0	99.3
SP SAC5	Salisbury Plain SPA	2.8	2.9	0.05	3	1.8	95.6

Receptor	Site	PEC NH_3 (µg/m^3)			Impact		
		Without the Local Plan	With the Local Plan	Increase due to the Local Plan	Critical Level	Increase as Percentage of Critical Level (%)	PEC with Local Plan as Percentage of Critical Level (%)
SP SAC6	Salisbury Plain SPA	2.7	2.8	0.05	3	1.6	92.8
SP SAC7	Porton Down SPA	2.6	2.6	0.08	3	2.6	87.7
SP SAC8	Porton Down SPA	2.4	2.5	0.06	3	2.0	81.7
SP SAC9	Porton Down SPA	2.3	2.3	0.05	3	1.6	78.1
SP SAC10	Porton Down SPA	2.2	2.3	0.04	3	1.4	75.7
SP SAC11	Porton Down SPA	2.2	2.2	0.04	3	1.2	73.9
SP SAC12	Porton Down SPA	2.1	2.2	0.03	3	1.0	72.5
SP SAC13	Porton Down SPA	2.0	2.0	0.01	3	0.3	65.4
SP SAC14	Salisbury Plain SPA	3.6	3.7	0.10	3	3.4	121.9
SP SAC15	Salisbury Plain SPA	3.3	3.3	0.08	3	2.8	111.5
SP SAC16	Salisbury Plain SPA	3.1	3.1	0.07	3	2.4	104.6
SP SAC17	Salisbury Plain SPA	2.9	3.0	0.06	3	2.1	99.6
SP SAC18	Salisbury Plain SPA	2.8	2.9	0.05	3	1.8	95.6
SP SAC19	Salisbury Plain SPA	2.7	2.8	0.05	3	1.6	92.4

Figure 5.1: Extent of Exceedance of the 1% NH_3 Screening Threshold Close to A30[2]

[2] Contains Ordnance Survey data © Crown copyright and database right 2024

Figure 5.2: Extent of Exceedance of the 1% NH_3 Screening Threshold Close to A303[2]



Nutrient Nitrogen Deposition

5.12 Nutrient nitrogen deposition PECs are set out in **Table 5.7**. The nutrient nitrogen deposition PECs are above the relevant critical loads at receptors where the 1% screening threshold is exceeded at the Salisbury Plain SAC and SPA and the Porton Down SPA.

5.13 The extent of the area of exceedance of the 1% screening thresholds for the 5kg/ha/yr and 10 kg/ha/yr critical loads are shown in **Figure 5.3 and Figure 5.4**.

5.14 There is a risk of significant effects due to nutrient nitrogen deposition up to 22m from the kerb of the A30, assuming a critical level of 10kg/ha/yr.

5.15 There is a risk of significant effects due to nutrient nitrogen deposition up to 108m from the kerb of the A303 assuming a critical level of 5kg/ha/yr, or up to 55m from the kerb of the A303 assuming a critical level of 10kg/ha/yr.

5.16 The area of exceedance of the screening threshold is 4.6ha at the Salisbury Plain SAC, 8.1ha at the Salisbury Plain SPA and 0.3ha at the Porton Down SPA.

Table 5.7: Predicted 2036 Nutrient Nitrogen PEC

Exceedances of the both the 1% screening threshold and critical level at a receptor are shown in bold.

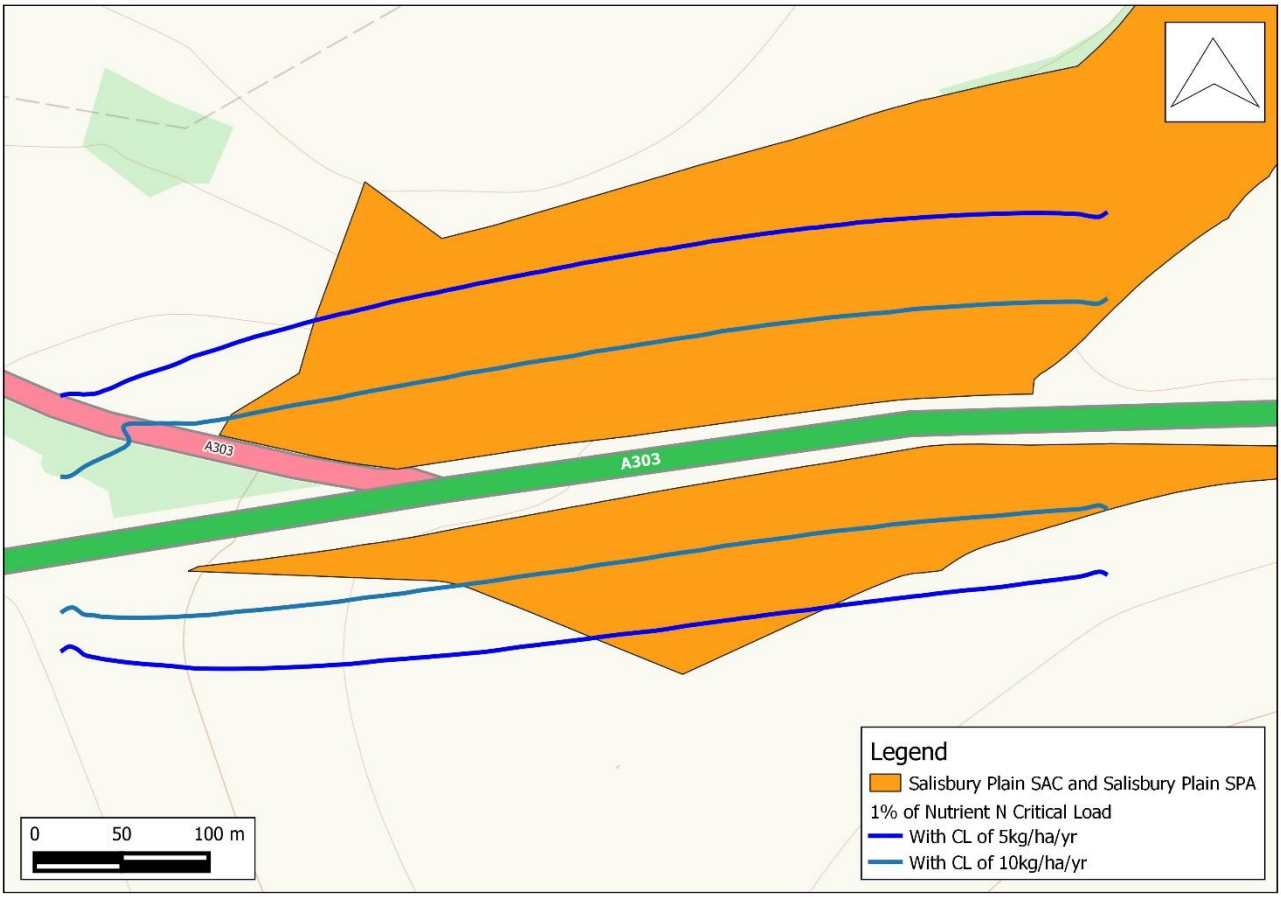
Receptor	Site	PEC Nutrient N (kg/ha/yr)			Impact		
		Without the Local Plan	With the Local Plan	Increase due to the Local Plan	Critical Load	Increase as Percentage of Critical Load (%)	PEC with Local Plan as Percentage of Critical Load (%)
SP SAC1	Salisbury Plain SAC	23.45	23.95	0.495	10	5.0	239.5
SP SAC2	Salisbury Plain SAC	22.26	22.69	0.427	10	4.3	226.9
SP SAC3	Salisbury Plain SAC	21.39	21.77	0.378	10	3.8	217.7
SP SAC4	Salisbury Plain SAC	20.74	21.07	0.339	10	3.4	210.7
SP SAC5	Salisbury Plain SAC	20.15	20.45	0.306	10	3.1	204.5
SP SAC6	Salisbury Plain SAC	19.69	19.97	0.278	10	2.8	199.7
SP SAC7	Salisbury Plain SAC	18.88	19.33	0.450	10	4.5	193.3
SP SAC8	Salisbury Plain SAC	17.98	18.32	0.343	10	3.4	183.2
SP SAC9	Salisbury Plain SAC	17.43	17.71	0.279	10	2.8	177.1
SP SAC10	Salisbury Plain SAC	17.07	17.30	0.234	10	2.3	173.0

Receptor	Site	PEC Nutrient N (kg/ha/yr)			Impact		
		Without the Local Plan	With the Local Plan	Increase due to the Local Plan	Critical Load	Increase as Percentage of Critical Load (%)	PEC with Local Plan as Percentage of Critical Load (%)
SP SAC11	Salisbury Plain SAC	16.79	16.99	0.202	10	2.0	169.9
SP SAC12	Salisbury Plain SAC	16.58	16.75	0.175	10	1.7	167.5
SP SAC13	Salisbury Plain SAC	15.47	15.53	0.058	10	0.6	155.3
SP SAC14	Salisbury Plain SAC	24.38	24.96	0.582	10	5.8	249.6
SP SAC15	Salisbury Plain SAC	22.71	23.19	0.477	10	4.8	231.9
SP SAC16	Salisbury Plain SAC	21.60	22.01	0.407	10	4.1	220.1
SP SAC17	Salisbury Plain SAC	20.80	21.16	0.357	10	3.6	211.6
SP SAC18	Salisbury Plain SAC	20.17	20.48	0.316	10	3.2	204.8
SP SAC19	Salisbury Plain SAC	19.65	19.93	0.283	10	2.8	199.3
SP SAC1	Salisbury Plain SPA	23.45	23.95	0.495	5	9.9	478.9
SP SAC2	Salisbury Plain SPA	22.26	22.69	0.427	5	8.5	453.8
SP SAC3	Salisbury Plain SPA	21.39	21.77	0.378	5	7.6	435.4
SP SAC4	Salisbury Plain SPA	20.74	21.07	0.339	5	6.8	421.5
SP SAC5	Salisbury Plain SPA	20.15	20.45	0.306	5	6.1	409.0
SP SAC6	Salisbury Plain SPA	19.69	19.97	0.278	5	5.6	399.4
SP SAC7	Porton Down SPA	18.88	19.33	0.450	10	4.5	193.3
SP SAC8	Porton Down SPA	17.98	18.32	0.343	10	3.4	183.2

Receptor	Site	PEC Nutrient N (kg/ha/yr)			Impact		
		Without the Local Plan	With the Local Plan	Increase due to the Local Plan	Critical Load	Increase as Percentage of Critical Load (%)	PEC with Local Plan as Percentage of Critical Load (%)
SP SAC9	Porton Down SPA	17.43	17.71	0.279	10	2.8	177.1
SP SAC10	Porton Down SPA	17.07	17.30	0.234	10	2.3	173.0
SP SAC11	Porton Down SPA	16.79	16.99	0.202	10	2.0	169.9
SP SAC12	Porton Down SPA	16.58	16.75	0.175	10	1.7	167.5
SP SAC13	Porton Down SPA	15.47	15.53	0.058	10	0.6	155.3
SP SAC14	Salisbury Plain SPA	24.38	24.96	0.582	5	11.6	499.2
SP SAC15	Salisbury Plain SPA	22.71	23.19	0.477	5	9.5	463.8
SP SAC16	Salisbury Plain SPA	21.60	22.01	0.407	5	8.1	440.2
SP SAC17	Salisbury Plain SPA	20.80	21.16	0.357	5	7.1	423.2
SP SAC18	Salisbury Plain SPA	20.17	20.48	0.316	5	6.3	409.6
SP SAC19	Salisbury Plain SPA	19.65	19.93	0.283	5	5.7	398.7

Figure 5.3: Extent of Exceedance of the 1% Nutrient N Deposition Screening Threshold Close to A30[2]

Figure 5.4: Extent of Exceedance of the 1% Nutrient N Deposition Screening Threshold Close to A303[2]



Acid Nitrogen Deposition

5.17 Acid nitrogen deposition PECs are set out in **Table 5.8**. The acid nitrogen deposition PECs are below the critical load at receptors where the 1% screening threshold is exceeded at the Salisbury Plain SPA.

5.18 The extent of the area of exceedance of the 1% screening thresholds for the 1.792 keq/ha/yr critical load are shown in **Figure 5.5**.

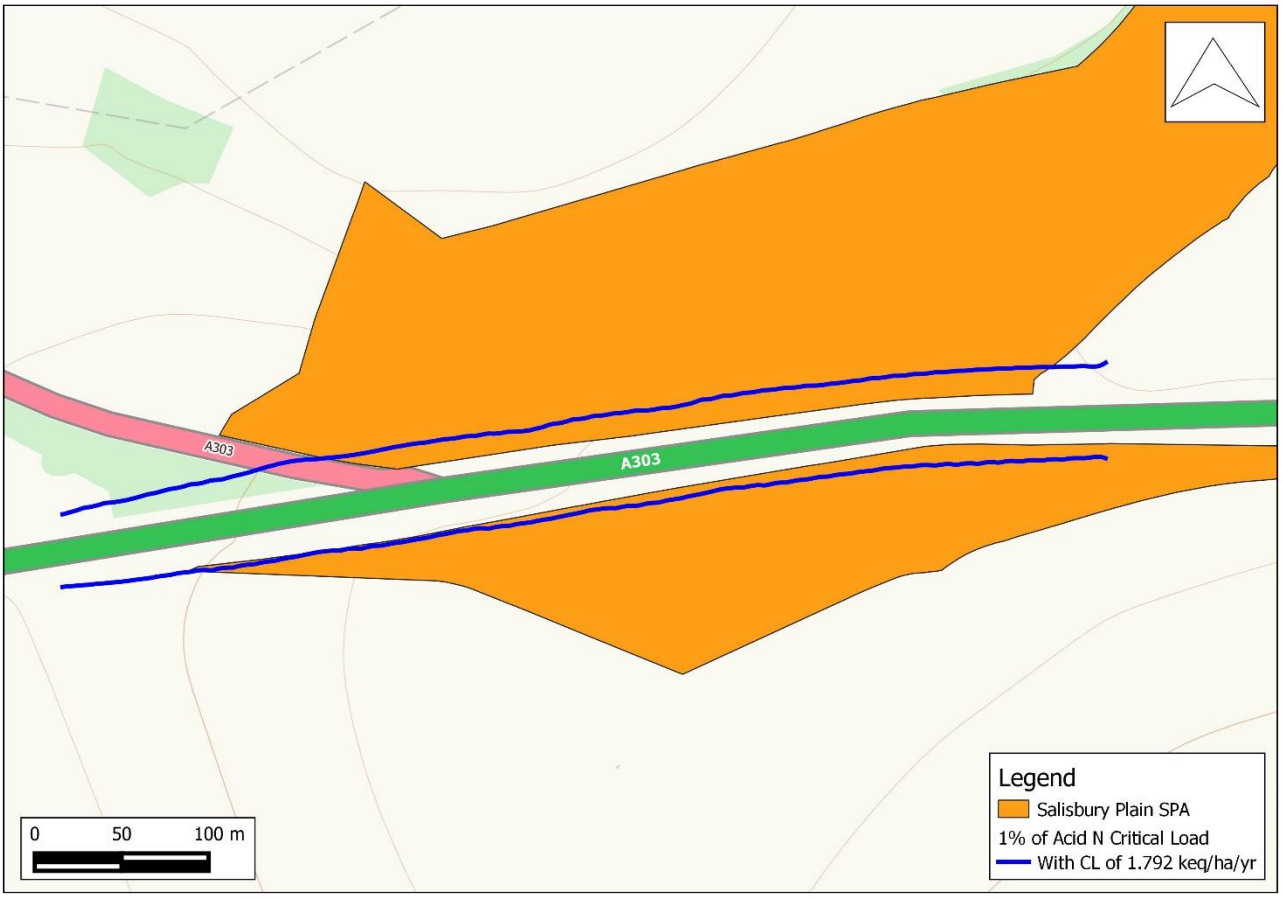
5.19 There is a risk of significant effects due to acid nitrogen deposition up to 20m from the kerb of the A303 assuming a critical level of 1.792keq/ha/yr.

5.20 The area of exceedance of the screening threshold is 1.0ha at the Salisbury Plain SPA.

Table 5.8: Predicted 2036 Acid Nitrogen PEC

Receptor	Site	PEC Acid N (keq/ha/yr)			Impact		
		Without the Local Plan	**With the Local Plan**	**Increase due to the Local Plan**	**Critical Load**	**Increase as Percentage of Critical Load (%)**	**PEC with Local Plan as Percentage of Critical Load (%)**
SP SAC1	Salisbury Plain SPA	1.680	1.715	0.035	1.792	2.0	95.7
SP SAC2	Salisbury Plain SPA	1.595	1.625	0.030	1.792	1.7	90.7
SP SAC3	Salisbury Plain SPA	1.533	1.560	0.027	1.792	1.5	87.0
SP SAC4	Salisbury Plain SPA	1.486	1.510	0.024	1.792	1.4	84.3
SP SAC5	Salisbury Plain SPA	1.444	1.466	0.022	1.792	1.2	81.8
SP SAC6	Salisbury Plain SPA	1.411	1.431	0.020	1.792	1.1	79.9
SP SAC14	Salisbury Plain SPA	1.745	1.787	0.042	1.792	2.3	99.7
SP SAC15	Salisbury Plain SPA	1.626	1.660	0.034	1.792	1.9	92.7
SP SAC16	Salisbury Plain SPA	1.547	1.576	0.029	1.792	1.6	88.0
SP SAC17	Salisbury Plain SPA	1.490	1.516	0.025	1.792	1.4	84.6
SP SAC18	Salisbury Plain SPA	1.445	1.467	0.023	1.792	1.3	81.9
SP SAC19	Salisbury Plain SPA	1.408	1.428	0.020	1.792	1.1	79.7

Figure 5.5: Extent of Exceedance of the 1% Acid N Deposition Screening Threshold Close to A303[2]



Chapter 6
Conclusions

6.1 The assessment has demonstrated that the screening threshold for NOx has been exceeded at the Salisbury Plain SAC and SPA and at the Porton Down SPA. PECs have been provided and an appropriate assessment would need to be completed. PCs remained below the screening threshold at the River Avon SAC and the impact of the Local Plan on NOx at the River Avon SAC would not be significant.

6.2 The screening threshold for ammonia concentrations has been exceeded at the River Avon SAC, the Salisbury Plain SAC and SPA and the Porton Down SPA. PECs have been provided and an appropriate assessment would need to be completed.

6.3 The screening threshold for nutrient nitrogen deposition has been exceeded at the Salisbury Plain SAC and SPA and the Porton Down SPA. PECs have been provided and an appropriate assessment would need to be completed.

6.4 The screening threshold for acid nitrogen deposition has been exceeded at the Salisbury Plain SPA. PECs have been provided and an appropriate assessment would need to be completed. PCs remained below the screening threshold at the Salisbury Plan SAC and Porton Down SPA and the impact of the Local Plan on acid nitrogen deposition at the Salisbury Plain SAC and Porton Down SPA would not be significant.

Appendix A
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8 8

Appendix B

Glossary

AADT	Annual Average Daily Traffic
ADMS Roads	Atmospheric Dispersion Modelling System
CURED	Calculator Using Realistic Emissions for Diesels
Defra	Department for Environment, Food and Rural Affairs
DfT	Department for Transport
EFT	Emissions Factor Toolkit
EPUK	Environmental Protection UK
Exceedence	A period of time when the concentration of a pollutant is greater than the appropriate air quality objective. This applies to specified locations with relevant exposure.
HDV	Heavy Duty Vehicles (> 3.5 tonnes)
HGV	Heavy Goods Vehicle
IAMQ	Institute of Air Quality Management
LAQM	Local Air Quality Management
µg/m³	Microgrammes per cubic metre
NO	Nitric oxide
NO_2	Nitrogen dioxide
NOx	Nitrogen oxides (taken to be NO_2 + NO)
NPPF	National Planning Policy Framework
Objectives	A nationally defined set of health-based concentrations for nine pollutants, seven of which are incorporated in Regulations, setting out the extent to which the standards should be achieved by a defined date. There are also vegetation-based objectives for sulphur dioxide and nitrogen oxides.
Standards	A nationally defined set of concentrations for nine pollutants below which health effects do not occur or are minimal.

Appendix C
Modelling Methodology

Model Inputs

Receptors

Figure C.1: Receptor Locations RA SAC1-RA SAC4

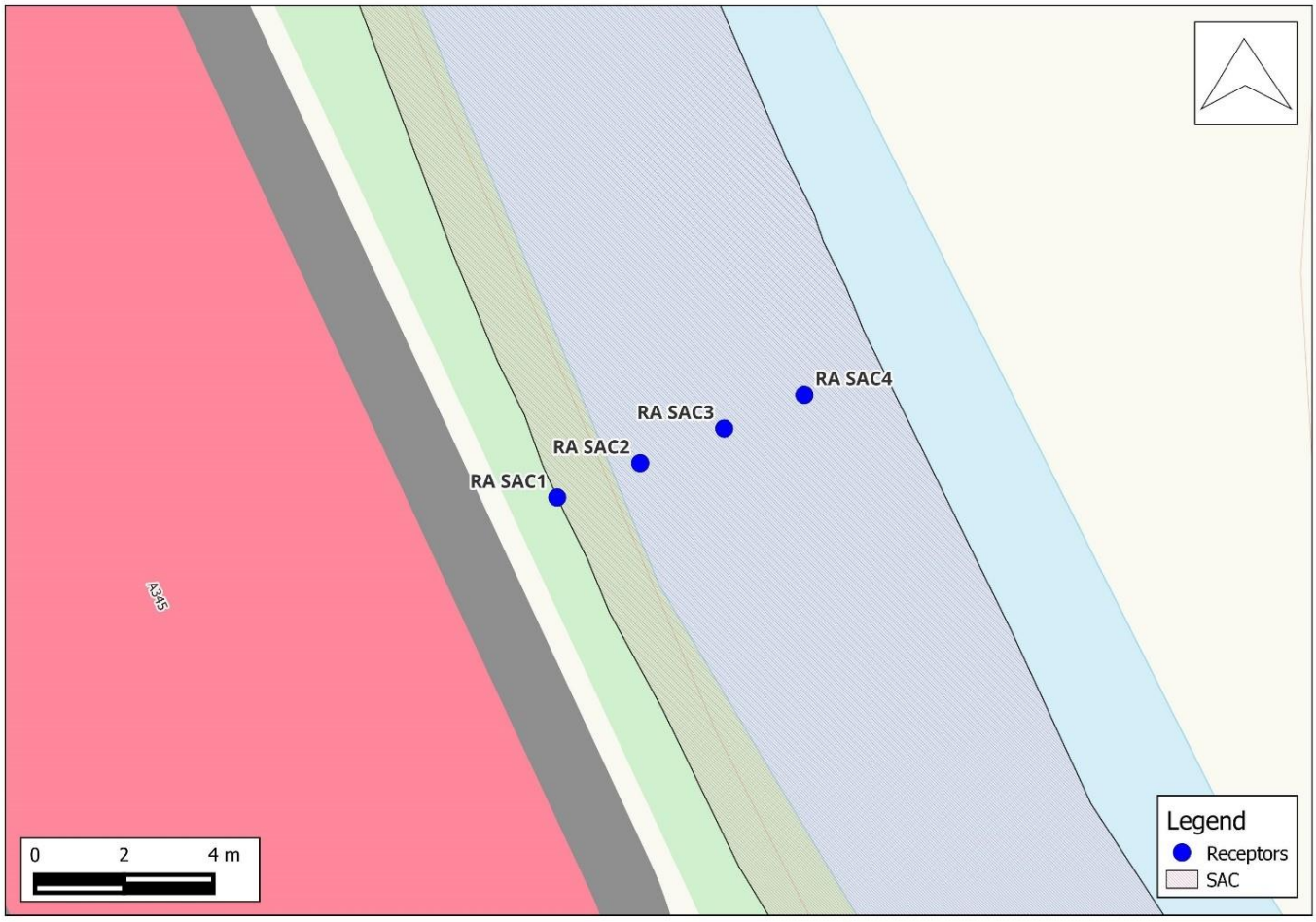


Figure C.2: Receptor Locations RA SAC13-RA SAC15

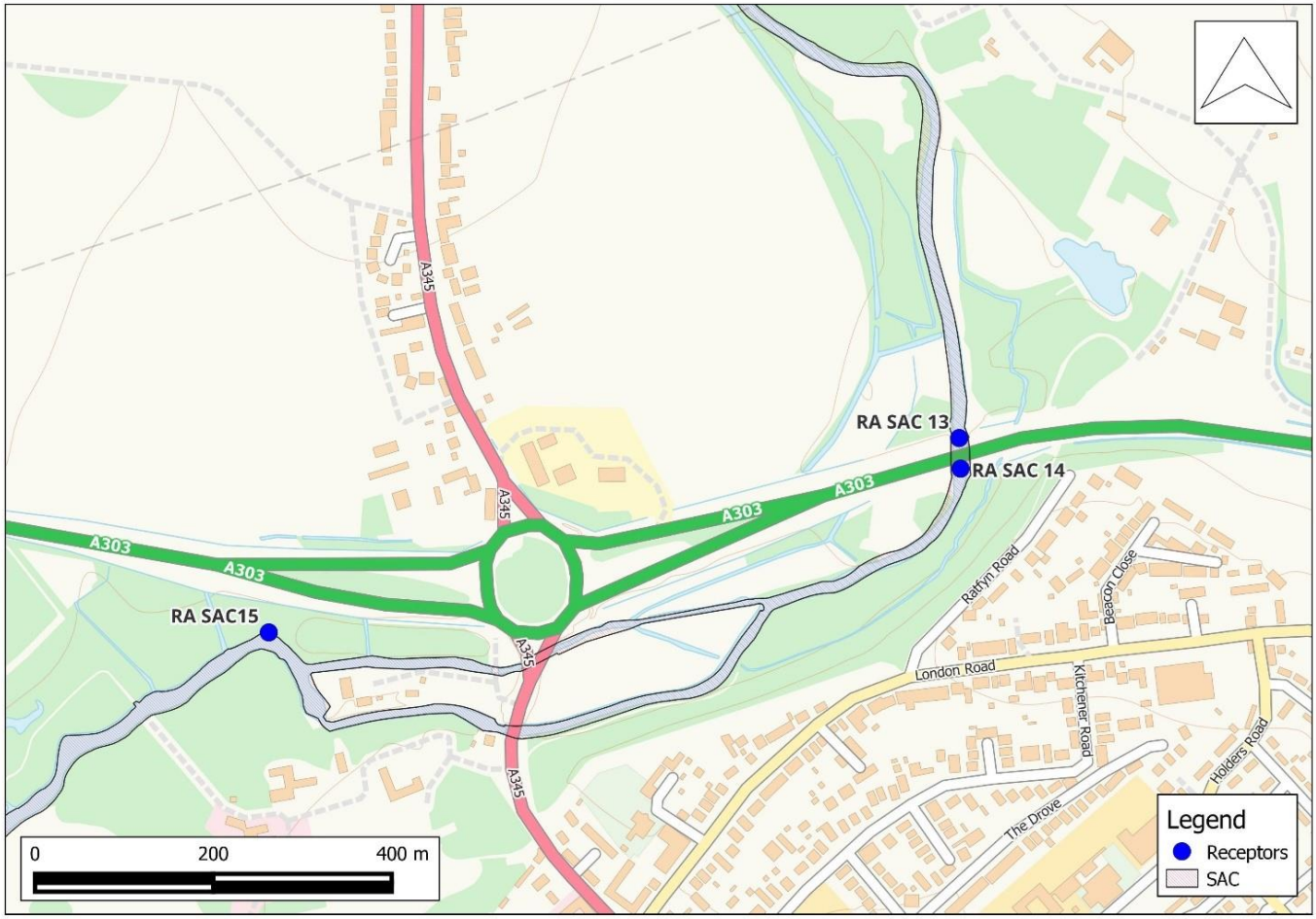


Figure C.3: Receptor Locations SP SAC1-SP SAC6 and SP SAC14-SP SAC19

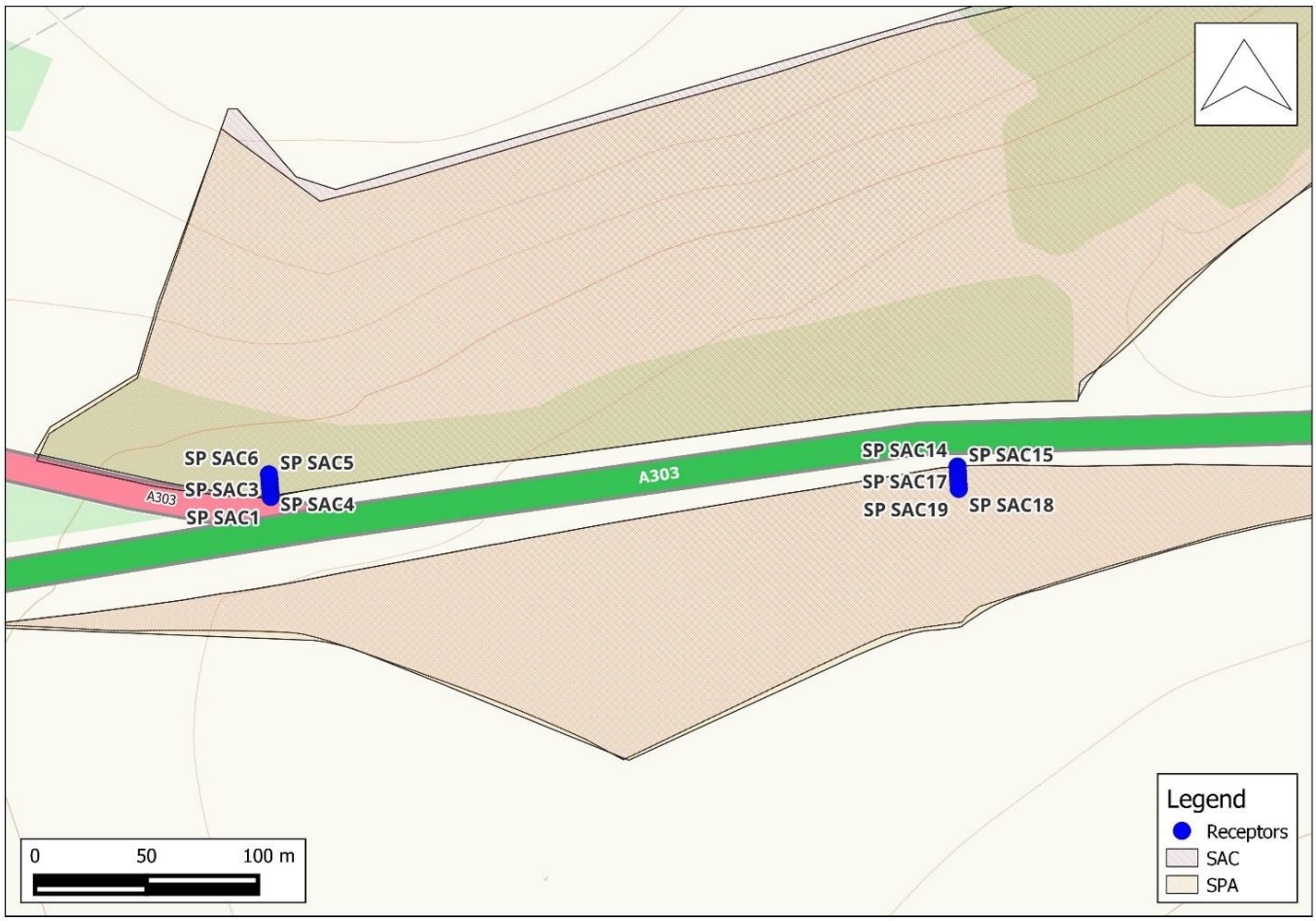


Figure C.4: Receptor Locations SP SAC7-SP SAC12

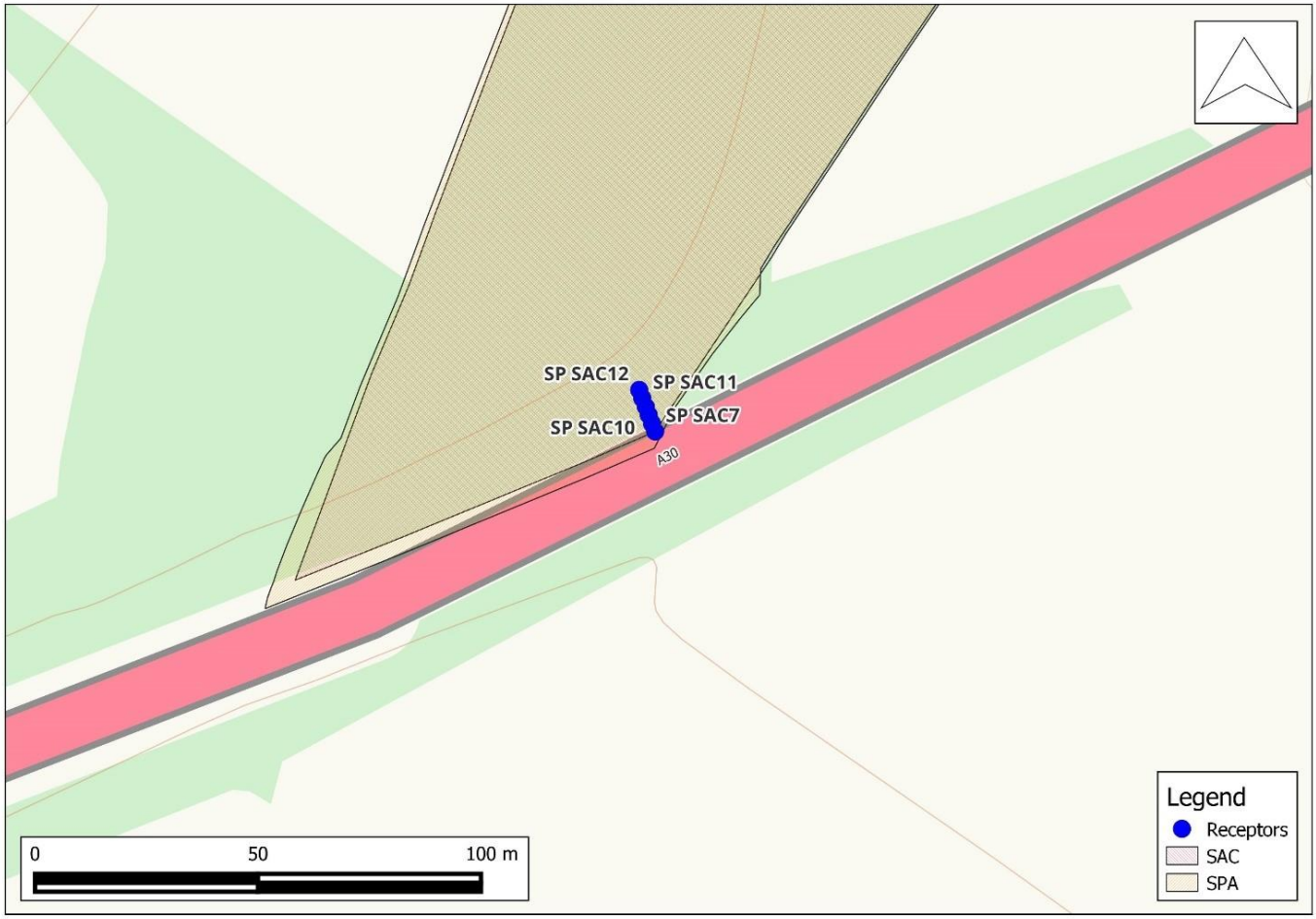


Figure C.5: Receptor Locations RA SAC16-RA SAC25

Traffic Data

C.2 The annual average daily traffic (AADT) flows have been provided by Atkins. Traffic flows for some roads used in the model verification and the vehicle fleet composition data have been determined using data from the interactive web-based map provided by the Department for Transport (DfT) (DfT, 2024a). The vehicle fleet composition is assumed to remain the same for the 2036 scenarios as it is in 2019. Traffic speeds have been estimated based on the speed limit, reduced to 20km/h within 25m of a junction stop line. The traffic data are shown in **Table C.1**. The modelled road network is shown in **Figure C.6.**

C.3 Diurnal flow profiles for the traffic have been derived from the national diurnal profiles published by the DfT (DfT, 2024b).

C.4 Road used for model verification, located within Salisbury, have been modelled as street canyons using the advanced street canyon module in ADMS Roads.

Table C.1: Summary of Traffic Data used in the Assessment

LGV = light goods vehicle (<3.5 tonnes)

HGV = heavy goods vehicle (>3.5 tonnes)

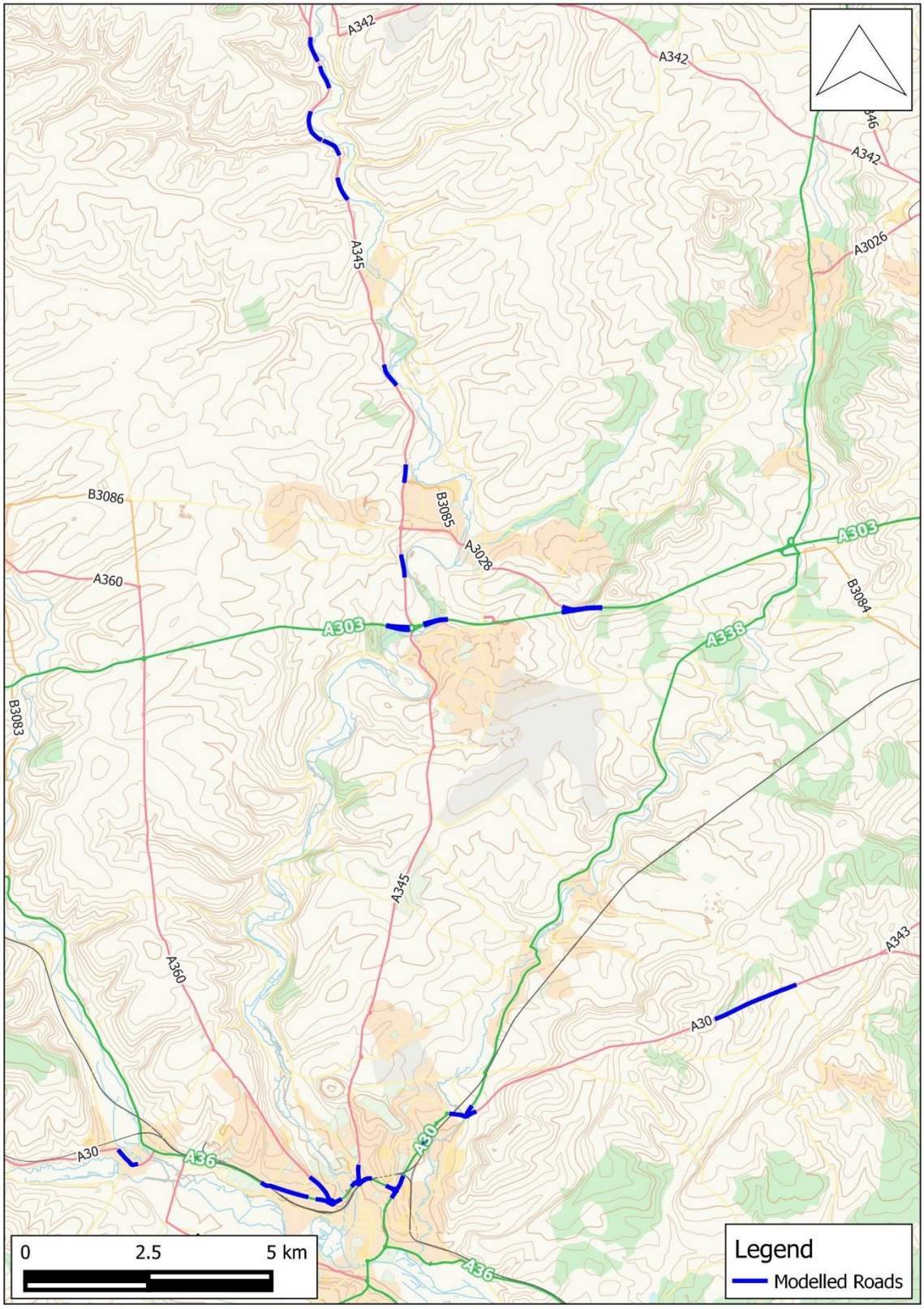
MC = motorcycle

Road Name	AADT			Fleet Composition (%)					
	2019	2036		Car	LGV	Rigid HGV	Artic HGV	Bus Coach	MC
		Without Local Plan	With Local Plan						
A345	7,070	10,458	11,694	81.9	13.3	2.0	1.1	0.6	1.0
A345	5,288	8,610	9,840	81.9	13.3	2.0	1.1	0.6	1.0
A345	7,178	10,568	11,790	81.9	13.3	2.0	1.1	0.6	1.0
A345	11,443	15,201	15,909	83.6	11.9	2.1	1.1	0.4	0.9
A303 eb	15,024	17,231	18,362	77.8	13.2	3.6	4.5	0.4	0.6
A303 wb	15,024	14,802	15,574	77.8	13.2	3.6	4.5	0.4	0.6
A303 wb	11,398	17,861	18,894	76.6	14.3	3.6	4.4	0.3	0.8
A303 eb	12,162	17,809	18,862	77.8	13.2	3.6	4.5	0.4	0.6
A303 eb	13,219	19,204	20,298	76.7	13.9	3.8	4.6	0.4	0.6
A303 wb	14,859	20,683	22,035	76.7	13.9	3.8	4.6	0.4	0.6
A3028	1,057	1,394	1,436	79.3	17.2	2.0	0.3	0.4	0.8
A30	9,360	10,862	12,155	84.5	12.2	1.4	0.4	0.5	1.0

Road Name	AADT			Fleet Composition (%)					
	2019	2036		Car	LGV	Rigid HGV	Artic HGV	Bus Coach	MC
		Without Local Plan	With Local Plan						
A30	11,411	12,881	14,153	84.5	12.2	1.4	0.4	0.5	1.0
A30	15,521	16,185	17,295	83.8	12.2	2.1	0.6	0.5	0.8
A30	11,411	12,881	14,153	84.5	12.2	1.4	0.4	0.5	1.0
A30	16,484	17,089	18,112	83.8	12.2	2.1	0.6	0.5	0.8
A338	13,049	14,631	15,893	84.1	11.7	2.3	0.4	0.5	1.0
A30	16,484	17,089	18,112	83.8	12.2	2.1	0.6	0.5	0.8
A36	32,334	32,948	33,626	80.4	14.1	2.3	1.5	0.6	1.1
A36	32,346	32,346	32,346	84.4	10.7	1.8	1.9	0.5	0.7
A36	32,334	32,948	33,626	80.4	14.1	2.3	1.5	0.6	1.1
A36	28,266	29,214	29,065	83.0	11.9	1.9	1.7	0.5	0.9
A36	32,334	32,948	33,626	80.4	14.1	2.3	1.5	0.6	1.1
A36	28,266	29,214	29,065	83.0	11.9	1.9	1.7	0.5	0.9
A345	22,572	21,730	22,551	81.9	12.5	1.7	1.0	2.0	0.9
A345	22,572	21,730	22,551	81.9	12.5	1.7	1.0	2.0	0.9
A36	28,266	29,214	29,065	83.0	11.9	1.9	1.7	0.5	0.9
A36	28,266	29,214	29,065	83.0	11.9	1.9	1.7	0.5	0.9

Road Name	AADT			Fleet Composition (%)					
	2019	2036		Car	LGV	Rigid HGV	Artic HGV	Bus Coach	MC
		Without Local Plan	With Local Plan						
A36	16,365	16,365	16,365	79.5	14.3	2.5	1.7	1.2	0.7
A360	10,528	10,528	10,528	82.5	12.4	1.9	1.0	1.7	0.5
A30	8,730	9,396	9,678	79.3	15.1	2.9	0.5	1.2	0.9

Figure C.6: Modelled Roads



Emissions

C.5 NOx emissions have been calculated using the most recent version of the Emissions Factor Toolkit (EFT) v12.0.1, which provides fleet projections and emission rates through to 2050 (Defra, 2024b). The traffic data were entered into the EFT in order to calculate a combined emission rate for each of the road links in the modelled network. Supporting Local Air Quality Management (LAQM) tools published by Defra, i.e., the background mapping data and NOx to NO2 Calculator, only support assessment years up to 2030; therefore, 2036 emissions data from the EFT have been used, along with 2030 data from the LAQM tools.

C.6 There is evidence that excluding NH_3 from road traffic emissions assessments may underestimate impacts on sensitive habitats (Air Quality Consultants Ltd, 2020a). Emissions of NH_3 from individual vehicle types are highly uncertain as they are not regulated, which would also mean that the level of nitrogen deposition derived from the ambient NH_3 concentrations would be highly uncertain. There is currently no tool publicly available for the assessment of road traffic emissions of NH_3 from National Highways, Defra, Natural England, or other nature conservation bodies; therefore, NH_3 emissions have been calculated using the Calculator for Road Emissions of Ammonia (CREAM) tool (V1A) published by Air Quality Consultants Ltd (Air Quality Consultants Ltd, 2020b). The NH_3 emissions in the tool have been derived from the results of remote sensing, real-world fuel consumption data, and ambient ammonia measurements recorded in Ashdown Forest (2014-2016). There are no results from direct testing of ammonia emissions from vehicles made over representative drive cycles which are considered suitable to generate robust, fleet-wide emissions factors for use in the UK. There is a high level of uncertainty associated with the CREAM NH_3 emissions data; however, Air Quality Consultants Ltd consider that using the emissions factors to make future-year predictions will be an improvement on any assessment that omits ammonia and that the emissions can be considered to provide the most robust estimate of traffic-related ammonia possible at the present time.

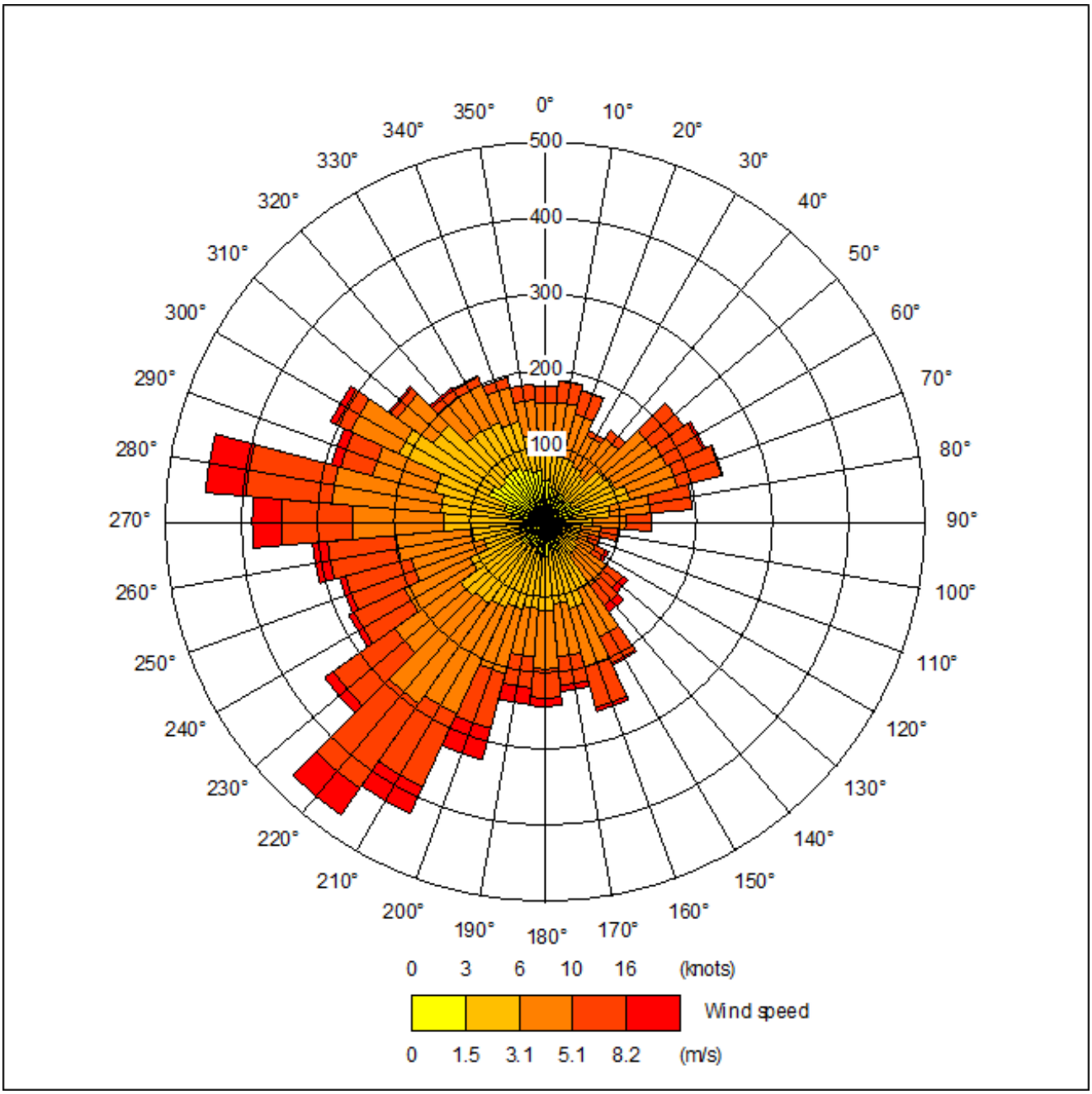
C.7 The CREAM tool currently uses vehicle fleet information from Defra's EFT v9 which has now been superseded by EFT v12.0.1. EFT v9 used base 2018 fleet composition data that assumes that there are no electric vehicles in rural areas in England in 2035, the latest year that CREAM emissions data are available. EFT v12.0.1 uses base 2022 fleet composition data that assumes that 21.5% of cars and 1.6% of LGVs in rural areas will be electric in 2036. Air Quality Consultants Ltd is currently working on an update to the CREAM tool that will use the DfT's Transport Analysis Guidance (TAG) to estimate the proportion of electric vehicles on the road in future years (Air Qualtiy Consultants Ltd, 2023). The UK government has announced a ban on new diesel and petrol cars from 2035, with a requirement that 80% of new cars and 70% of new vans be zero emission by 2030, and the TAG assumes that 55% of cars and 19% of LGVs in rural areas will be electric in 2036 (DfT, 2024c). Therefore, as electric vehicles do not have any on road emissions, the current CREAM tool significantly underestimates the number of electric vehicles on the road in future years and is likely to overestimate ammonia emissions.

C.8 In order to account for the expected fleet composition of electric vehicles in 2036, 21.5% of cars and 1.6% of LGVs have been removed from the annual average daily traffic flows input to the CREAM tool. This results in estimated ammonia emissions in 2036 that use CREAM 2035 emissions data and the 2036 EFT v12.0.1 fleet composition data.

Meteorological Data

C.9 The model has been run using the full year of meteorological data that corresponds with the most recent set of published monitoring data used for model verification (2019). The meteorological data has been taken from the monitoring station located at Middle Wallop, approximately 14 km to the east of the study area. A wind rose of the data is shown in **Figure C.7**.

Figure C.7: Wind Rose Middle Wallop 2019



Background Concentrations

C.10 Background NOx and NO_2 concentrations have been derived from those published by Defra (Defra, 2024a). These cover the whole country on a 1 km by 1 km grid and are published for each year from 2018 to 2030. The current maps have been verified against measurements undertaken during 2018. As the background maps are only available up to 2030, it has been assumed that background concentrations in 2036 will be the same as those in in the Defra 2030 map.

C.11 Background NH_3 and nitrogen and acid deposition data have been taken from the APIS database (APIS, 2024). Future year background concentrations and deposition fluxes have been assumed to be the same as the 2020-2022 average provided by APIS.

C.12 Future estimates of atmospheric ammonia concentrations and nitrogen deposition rates are not provided by APIS and the assessment assumes there will be no reduction in background ammonia concentrations and nitrogen deposition rates. This is a conservative assumption as, under the National Emissions Ceilings Regulations (NECR), the UK must meet legally binding ammonia emissions reductions of 16% compared with the relevant 2005 baseline emission levels by 2030, and this should result in a reduction in background concentrations and deposition rates. A National Air Pollution Control Programme (NAPCP) sets out how the UK can meet the legally binding 2030 emission reduction commitments (ERCs). The Nitrogen Futures project has developed a quantitative spatial dataset of 2030 ammonia emissions based on future projections of source activities for NAPCP scenarios (JNCC, 2024). The results from the Nitrogen Futures 2030 NAPCP+DA (NECR NOx) baseline scenario provide the most likely future baseline for ammonia concentrations and nutrient nitrogen deposition (JNCC, 2020). DA refers to modifications due to input from the Devolved Administrations and NECR NOx refers to NOx emissions meeting the 2030 NECR targets. The Nitrogen Futures project compared a current baseline (2017) with 2030 baseline scenario NAPCP+DA (NECR NOx) to evaluate the likely effects of NECR related polices on atmospheric ammonia and nutrient nitrogen deposition.

C.13 The Nitrogen Futures project estimates that implementation of the NAPCP would result in a 12% reduction in UK ammonia emissions when compared to the 2017 baseline, with a corresponding decrease in atmospheric ammonia concentrations of between 0.05-0.25µg/m3 in the study area. Nutrient nitrogen deposition to low growing semi-natural vegetation features is predicted to decrease by 2.5-5kgN/ha/yr in the study area.

Verification

C.14 The verification process seeks to minimise uncertainties associated with the air quality model by comparing the model output with locally measured concentrations. The model has been verified against data from eight diffusion tube monitoring sites located in Salisbury. The verification methodology is described below.

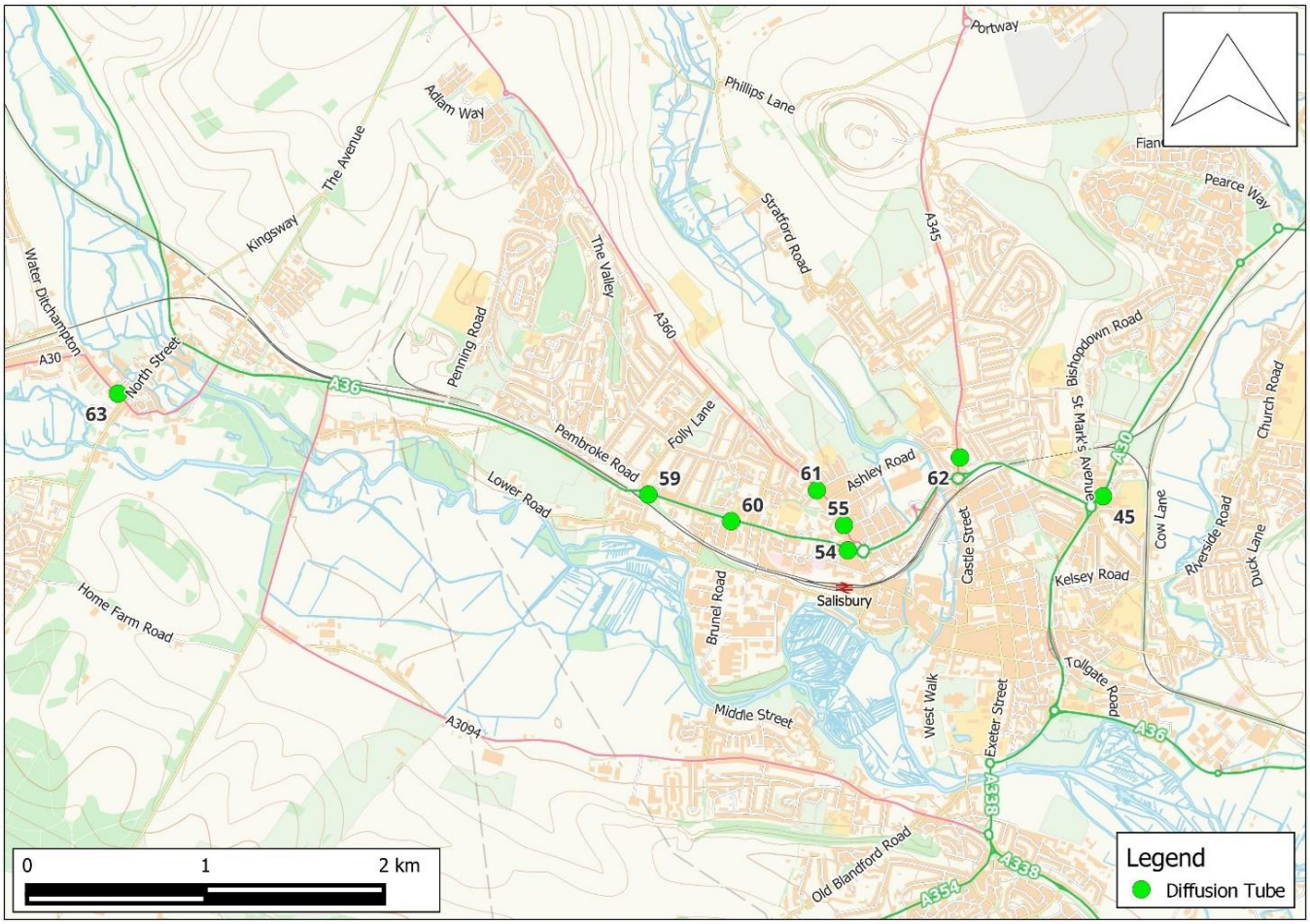
Background Concentrations

C.15 Background concentrations at each of the monitoring sites in the verification year (2019) have been derived from those published by Defra (Defra, 2024a) and are shown in **Table C.2**.

Table C.2: Annual Mean NO2 Background Concentrations at the Monitoring Sites (µg/m3)

Monitoring Site ID	Monitoring Site Location	Grid Square	Annual Mean Background NO2 Concentration 2019 (µg/m3)
45	74 London Road	415500,130500	10.9
54	17 Wilton Road	413500,130500	11.9
55	31 Devizes Road	413500,130500	11.9
59	225 Wilton Rd	412500,130500	10.0
60	107 Wilton Rd	413500,130500	11.9
61	99 Devizes Rd	413500,130500	11.9
62	37 Castle Road	414500,130500	13.3
63	12 West Street, Wilton	409500,131500	8.5

Figure C.8: Monitoring Sites used for Verification



NO2

C.16 Most NO_2 is produced in the atmosphere by reaction of nitric oxide (NO) with ozone. It is therefore most appropriate to verify the model in terms of primary pollutant emissions of nitrogen oxides (NOx = NO + NO_2). The model has been run to predict the 2019 annual mean NOx concentrations at five diffusion tube monitoring sites located in Aylesbury, as shown in **Figure C.8**.

C.17 The model output of road-NOx has been compared with the 'measured' road-NOx, calculated from the measured annual mean NO_2 concentrations and the background concentrations using the NOx from NO_2 calculator v8.1 published by Defra (Defra, 2024b).

C.18 The slope of the best-fit line between the 'measured' road-NOx contribution and the model derived road-NOx contribution, forced through zero, has been used to determine the adjustment factor (**Figure C.9**). The adjustment factor of 2.4 has been applied to the modelled road-NOx concentration for each receptor to provide adjusted modelled road-NOx concentrations. The NOx to NO_2 calculator has then been used to determine total NO_2 concentrations from the adjusted modelled road-NOx concentrations and the background NO_2 concentrations. A comparison of the final adjusted modelled total NO_2 at each monitoring site to the measured total NO_2 shows close agreement (**Figure C.10**).

C.19 The results imply that the model has under-predicted the road-NOx contribution. This is a common experience with this and most other models. An evaluation of the model performance using statistical methods is shown in **Table C.3**.

Figure C.9: Comparison of Measured Road NOx to Unadjusted Modelled Road NOx Concentrations

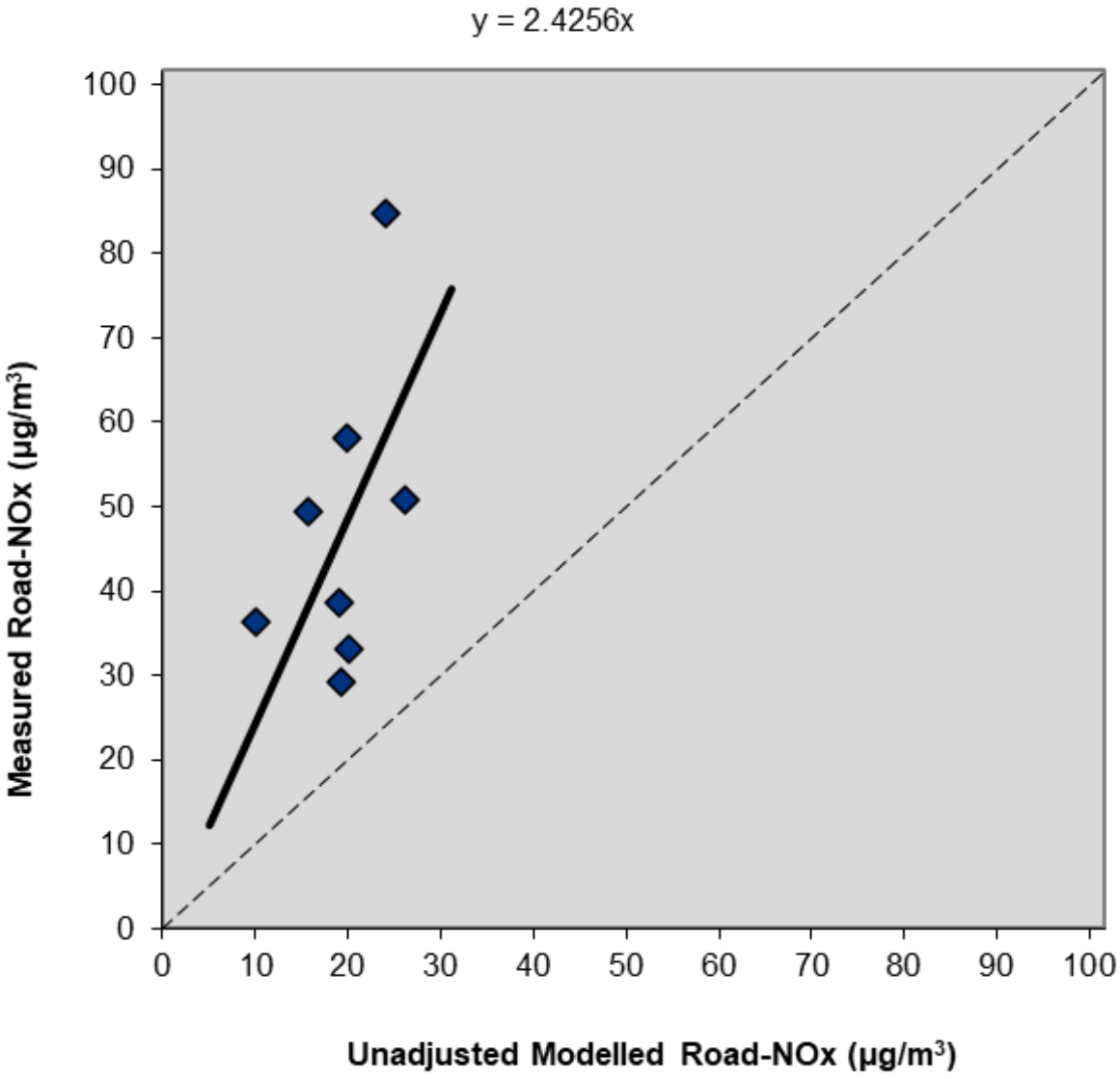


Figure C.10: Comparison of Measured Total NO2 to Primary Adjusted Modelled Total NO2 Concentrations

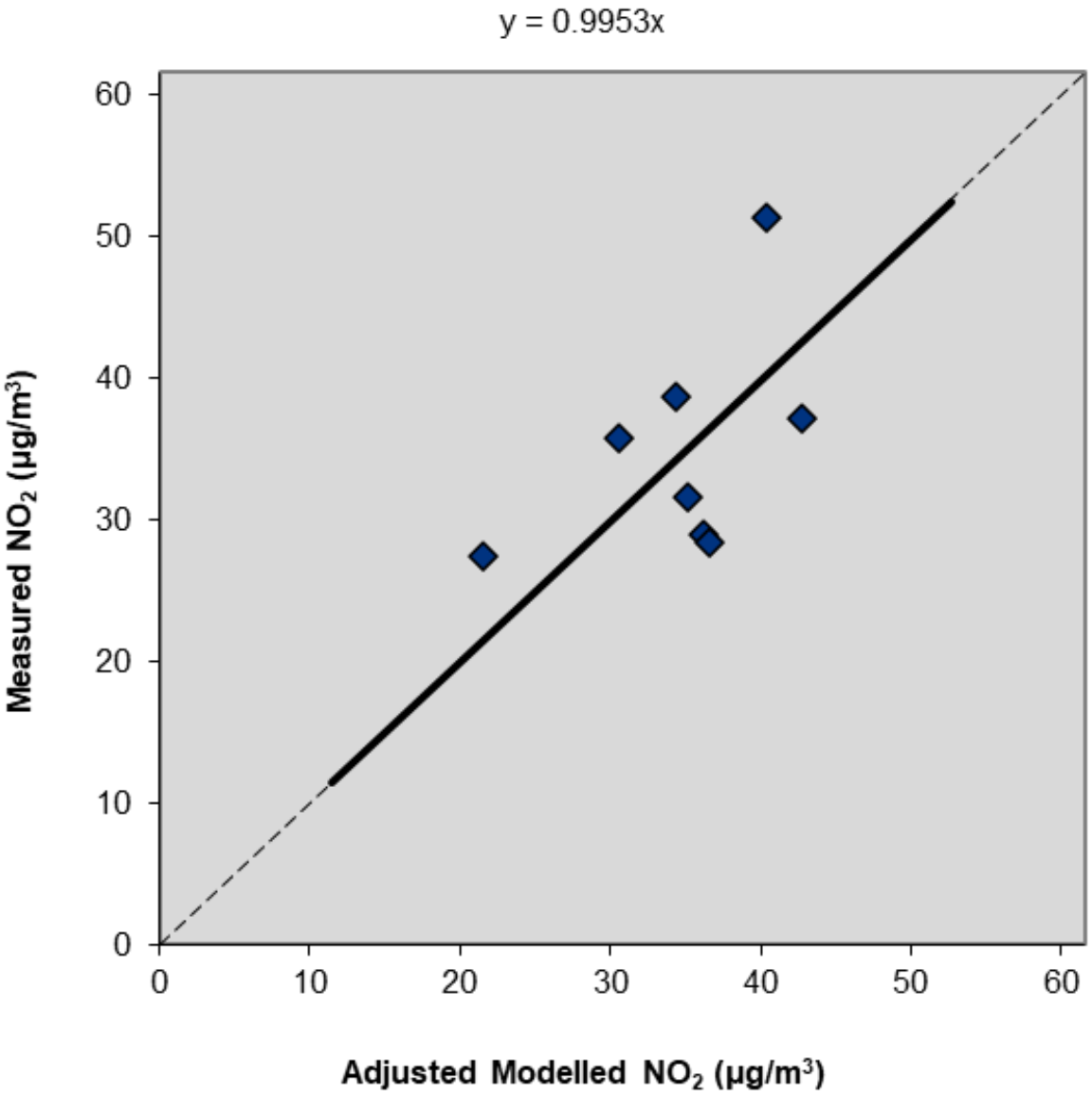


Table C.3: Evaluation of Model Performance

Statistical Parameter	Description	Values		
		Before Verification (Figure C.9)	After Verification (Figure C.10)	Ideal
Correlation coefficient	Linear relationship between predicted and observed data. Less useful for small datasets as single high/low values can have a large effect.	0.47	0.51	1.00
Fractional bias	Identifies systematic tendency to over/under predict (negative = over-predict, positive = under-predict).	0.85	0.01	0.00
Root mean square error (RMSE)	Average error of the model (µg/m³). Ideally within 10% of the annual mean NO2 objective, i.e. 4 µg/m³; however, within 25% acceptable, i.e. 10 µg/m³.	32.08	6.74	0.00

Model Post-processing

NO2

C.20 The NOx to NO_2 calculator v8.1 published by Defra (Defra, 2024b) has been used to convert the modelled, verified road-NOx output for each receptor to road-NO_2.

Deposition Fluxes

C.21 Ammonia depletes rapidly with distance from source; therefore, dry deposition of nitrogen from ammonia has been included within the dispersion model using the deposition velocity for grass of 0.02 m/s, as published by the Environment Agency (Environment Agency, 2011).

C.22 Dry deposition of nitrogen from NO_2 has been calculated from the predicted ambient NO_2 concentration using the deposition velocity for grass of 0.0015 m/s, as published by the Environment Agency (Environment Agency, 2011).

C.23 The deposition velocity multiplied by the predicted concentration (µg/m^3) gives the deposition flux (µg/m^2/s). A factor of 259.7 for NH_3 and 96 for NO_2 was then used to calculate the nutrient nitrogen deposition rate in units of kg/ha/yr (Environment Agency, 2011).

C.24 The acid nitrogen deposition has been calculated from the nutrient nitrogen deposition using a factor of 0.071428 (Environment Agency, 2011).

C.25 Wet deposition has not been assessed as it is not considered to be significant within the distances covered by the study area (Environment Agency, 2011).

Appendix D

Professional Experience

Bob Thomas, BSc (Hons) PgDip MSc MIEnvSc MIAQM CSci

D.1 Bob Thomas is a Director at AQA, with over twenty years working in the sciences and sixteen years' experience in the field of air quality management and assessment. He has carried out air quality assessments for a wide range of developments, including residential, commercial, industrial, minerals and waste developments. He has been responsible for air quality projects that include ambient air quality monitoring of nitrogen dioxide, dust and PM10, the assessment of nuisance odours and dust, and the preparation of Review and Assessment reports for local authorities. He has extensive dispersion modelling experience for road traffic, energy centre and industrial sources, and has completed many stand-alone reports and chapters for inclusion within an Environmental Statement. Bob has worked with a variety of clients to provide expert air quality services and advice, including local authorities, planners, developers, architects and process operators, and has provided expert witness services at public inquiry. He is a Chartered Scientist, a Member of the Institute of Air Quality Management and a Member of the Institution of Environmental Sciences.

D.2 A full CV for Bob Thomas is available at http://aqassessments.co.uk/about