Maidstone Borough Council

Maidstone Local Plan Review Habitats Regulations Assessment

Reg 19 HRA Report

Final report
Prepared by LUC
September 2021

Maidstone Borough Council

Maidstone Local Plan Review Habitats Regulations Assessment

Reg 19 HRA Report

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Chapter 1
Introduction

Background and context to this report

1.1 Maidstone Borough Council has commissioned LUC to undertake a Habitats Regulations Assessment (HRA) of its Local Plan Review.

1.2 The purpose of this HRA Report is to determine firstly whether the Local Plan Review will have likely significant effects on, and if so whether it will have adverse effects on the integrity of, any sites designated as Special Protection Areas (SPAs), Special Areas of Conservation (SACs), or Ramsar sites.

Background to the preparation of the Maidstone Local Plan Review

1.3 Maidstone Borough Council adopted the Maidstone Borough Local Plan in October 2017. It covers the period 2011-31. To ensure that the Local Plan remains up to date, the council has prepared a Local Plan Review document, that updates and will supersede the 2017 Local Plan.

1.4 This iteration of the HRA assesses the impacts of the Regulation 19 version of the Maidstone Local Plan Review (July 2021) and should be read in conjunction with that document. This HRA builds upon the HRA of the previous version of the Local Plan Review (Regulation 18b), taking into account any changes to the plan and information received through consultation with stakeholder organisations.

The requirement to undertake Habitats Regulations Assessment of Development Plans

1.5 The requirement to undertake HRA of development plans was confirmed by the amendments to the Habitats Regulations published for England and Wales in 2007[1]; the currently applicable version is the Habitats Regulations 2017[2], as amended. When preparing its development plan, Maidstone Borough Council is therefore required by law to

1 The Conservation (Natural Habitats, &c.) (Amendment) Regulations 2007 (2007) SI No. 2007/1843. TSO (The Stationery Office), London.
[2] 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), TSO (The Stationery Office), London.

carry out an HRA. The 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 Maidstone Borough Council as the 'competent authority'. The Council will consider this work and would usually[3] 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 requirement for authorities to comply with the Habitats Regulations when preparing a Plan is also noted in the Government's online Planning Practice Guidance[5] (PPG).

1.6 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).
- 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.

1.7 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 refers 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.

1.8 Although Ramsar sites do not form part of the new national site network, the Government Policy Paper[10] confirms that all Ramsar sites remain protected in the same way as SACs and SPAs. In LUC's view and unless the Government provides any guidance to the contrary, potential effects on Ramsar sites should continue to form part of the HRA of plans and projects since the requirement for HRA of plans and projects that might adversely affect Ramsar sites forms an essential part of the protection confirmed by the Government Policy Paper. Furthermore, the NPPF[11] and practice guidance[12] currently still state that competent authorities responsible for carrying out HRA should treat Ramsar sites in the same way as SACs and SPAs.

1.9 The requirement for HRA does not apply to other nationally designated wildlife sites such as Sites of Special Scientific Interest or National Nature Reserves; therefore, for clarity, this report uses the term 'European sites' rather than 'national site network'.

1.10 The overall purpose of the HRA is to conclude whether or not a proposal or policy, or whole development plan would adversely affect the integrity of the 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.

[3] The exception to this would be where 'imperative reasons of overriding public interest' can be demonstrated; see paragraph 1.13.
[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-2017
[10] https://www.gov.uk/government/publications/changes-to-the-habitats-regulations-2017/changes-to-the-habitats-regulations-2017
[11] NPPF (2021) para 181, available from https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1005759/NPPF_July_2021.pdf
[12] The HRA Handbook, Section A3. David Tyldesley & Associates, a subscription based online guidance document: https://www.dtapublications.co.uk/handbook/European

Stages of Habitats Regulations Assessment

1.11 **Table 1.1** summarises the stages involved in carrying out a HRA based on various guidance documents[13],[14]. This HRA presents the methodology and findings of Stage 1: Screening and Stage 2: Appropriate Assessment.

Table 1.1: Stages in HRA

Stage	Task	Outcome
Stage 1: Screening (the 'Significance Test')	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[15]. Review of other plans and projects. 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[16].	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 (the 'Integrity Test')	Information gathering (development plan and data on European sites[17]). 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 through, firstly, avoidance, and secondly, mitigation 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.
Stage 3: Assessment where no alternatives exist and adverse impacts remain taking into account mitigation	Identify and demonstrate '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.

[13] UK Government Planning Practice Guidance, available from https://www.gov.uk/guidance/appropriate-assessment
[14] The HRA Handbook. David Tyldesley & Associates, a subscription based online guidance document: https://www.dtapublications.co.uk/handbook/
[15] Conservation objectives are published by Natural England for SACs and SPAs:
[16] In line with the CJEU judgment in Case C-323/17 People Over Wind v Coillte Teoranta, mitigation must only be taken into consideration at this stage and not during Stage 1: HRA Screening.
[17] In addition to SAC and SPA citations and conservation objectives, key information sources for understanding factors contributing to the integrity of the sites include (where available) conservation objectives supplementary advice and Site Improvement Plans prepared by Natural England: http://publications.naturalengland.org.uk/category/5458594975711232

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

- 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 –
- Step 2: Under Reg. 105(1)(a) consider whether the plan is likely to have a significant effect on the site, either alone or in combination with other plans or projects (the 'Significance Test'). [These two steps are undertaken as part of Stage 1: Screening shown in Table 1.1 above.] If Yes –
- Step 3: Under Reg. 105(1), make an Appropriate Assessment of the implications for the 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 1.1.]
- 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 will not adversely affect the integrity of the European site.

1.13 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 avoidance of likely significant effects at Stage 1, and through Appropriate Assessment at Stage 2 by the inclusion of mitigation measures designed to avoid, reduce or abate 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 appropriate authority.

1.14 The HRA should be undertaken by the 'competent authority' - in this case Maidstone Borough Council, and LUC has been commissioned to do this on its behalf. The HRA also requires close working with Natural England as the statutory nature conservation body in order to obtain the necessary information and agree the process, outcomes and any mitigation proposals.

Case law

1.15 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).

1.16 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."

1.17 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 Review could result in likely significant effects on European sites, with any such measures being considered at the Appropriate Assessment stage as relevant.

1.18 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.
>
> Article 6(3) of Directive 92/43 must be interpreted as meaning that the competent authority is permitted to grant to a plan or project consent which leaves the developer free to determine subsequently certain parameters relating to the construction phase, such as the location of the construction compound and haul routes, only if that authority is certain that the development consent granted establishes conditions that are strict enough to guarantee that those parameters will not adversely affect the integrity of the site.

> Article 6(3) of Directive 92/43 must be interpreted as meaning that, where the competent authority rejects the findings in a scientific expert opinion recommending that additional information be obtained, the 'appropriate assessment' must include an explicit and detailed statement of reasons capable of dispelling all reasonable scientific doubt concerning the effects of the work envisaged on the site concerned."

1.19 In undertaking this HRA, LUC considers 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 habitat, and or species and habitats located beyond the boundaries of European site, but which may be important in supporting the ecological processes of the qualifying features, has also been fully considered in this HRA.

1.20 The approach to the HRA also takes into consideration the 'Wealden' judgement and the 'Dutch Nitrogen Case' judgements from the Court of Justice for the European Union.

1.21 The *Wealden District Council v Secretary of State for Communities and Local Government, Lewes District Council and South Downs National Park Authority* (2017) judgement 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.

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

1.23 The 2018 *'Coöperatie Mobilisation for the Environment and Vereniging Leefmilieu'* (Dutch Nitrogen) judgement stated that:

> "...the positive effects of the autonomous decrease in the nitrogen deposition…be taken into account in the appropriate assessment…, it is important that the autonomous decrease in the nitrogen deposition be monitored and, if it transpires that the decrease is less favourable than had been assumed in the appropriate assessment, that adjustments, if required, be made."

1.24 The Dutch Nitrogen judgement also states that according to previous case law:

> "…it is only when it is sufficiently certain that a measure will make an effective contribution to avoiding harm to the integrity of the site concerned, by guaranteeing beyond all reasonable doubt that the plan or project at issue will not adversely affect the integrity of that site, that such a measure may be taken into consideration in the 'appropriate assessment' within the meaning of Article 6(3) of the Habitats Directive."

1.25 The HRA of the Local Plan Review therefore only considers the existence of conservation and/or preventative measures if the expected benefits of those measures are certain at the time of the assessment.

Previous HRA work

1.26 In July 2020, LUC prepared a scoping report setting out the proposed methodology of the HRA and identifying the European sites and types of impact likely to require assessment in the HRA. The document was sent to Natural England for comment. Natural England confirmed that they agreed with the proposed approach and provided two comments:

- Where proposed development discharges into the River Stour catchment, consideration should be given to effects of nitrogen and phosphorus on Stodmarsh SAC, SPA and Ramsar; and
- Natural England's Site Improvement Plans only flag key high level issues rather than all potential risks to European site features; and the sites' Supplementary Advice may not flag water quality and quantity pressure risks where these have been prepared prior to recent updates to our water quality Impact Risk Zones (IRZs). Reference should therefore be made to the IRZs and relevant information relating to the Sites of Special Scientific Interest (SSSIs) which underpin the European sites.

1.27 In November 2020, LUC undertook HRA screening of the Local Plan Review: Regulation 18b Preferred Approach. The HRA concluded that physical damage or loss of habitat, non-physical disturbance, and non-toxic contamination could be screened out, with no likely significant effects arising from the Plan's policies or sites. The screening was not able to rule out likely significant effects arising from air pollution, recreational disturbance, and changes to water quantity or quality; these impacts would require Appropriate Assessment to determine whether they would result in adverse effects on the integrity of European sites. Natural England did not provide any further comments on the Screening report.

1.28 This HRA builds on the earlier HRA work and takes into account changes to the Local Plan Review since Reg. 18 and additional information available.

Structure of this report

1.29 This chapter (**Chapter 1**) has introduced the requirement to undertake HRA of the Local Plan Review. The remainder of the report is structured as follows:

- **Chapter 2**: **Maidstone Local Plan Review** summarises the content of the Regulation 19 Local Plan Review, which is the subject of this report.
- **Chapter 3**: **Approach to HRA** sets out the approach used and the specific tasks undertaken during the screening and Appropriate Assessment stages of the HRA.
- **Chapter 4**: **HRA screening** describes the findings of the screening stage of the HRA.
- **Chapter 5: Appropriate Assessment** describes the findings of the Appropriate Assessment stage of the HRA.
- **Chapter 6**: **Conclusions** summarises the HRA conclusions.
- **Appendix A:** lists the Local Plan Review site allocations.
- **Appendix B:** describes the attributes of the European sites considered in the HRA.
- **Appendix C:** sets out the screening matrices used to determine which policies and site allocations contribute to the need for Appropriate Assessment.
- **Appendix D:** provides the results of traffic modelling and air quality assessment used in the Appropriate Assessment.
- **Appendix E:** provides information on the proposed mitigation to achieve nutrient neutrality within the Stour Catchment.

Chapter 2
Maidstone Local Plan Review

Characteristics of the Local Plan Review relevant to the HRA

2.1 The Local Plan 2011-2031, adopted in October 2017, sets out the vision and objectives for the future of Maidstone up to 2031, anticipating and planning for new homes and business premises needed in the borough.

2.2 The Local Plan, seven Neighbourhood Plans (adopted between 2016-2021), the Kent Minerals and Waste Local Plan and Mineral Sites Plan (2020) and the South East Marine Plan (2021) comprise the development plan for Maidstone Borough.

2.3 The Local Plan Review (Regulation 19) updates and supersedes the 2017 Local Plan, whilst 'saving' relevant policies contained within in, and ensuring that it is in line with the latest national planning requirements, including extending the plan period to 2037

2.4 The Local Plan Review spatial vision is that:

> 'By 2037: embracing growth which provides improved infrastructure, economic opportunity, services, spaces and homes for our communities, while addressing biodiversity and climate change challenges and protecting our heritage, natural and cultural assets'.

2.5 The vision of what Maidstone will be by 2037 is underpinned by 11 strategic objectives:

1. Through the Local Plan Review the Council will provide for, during the plan period, a balance of new homes and related retail and employment opportunities across the borough.
2. Maintenance of the distinct character and identity of villages and the urban area.
3. Protection of the built and natural heritage, including the Kent Downs AONB and its setting, the setting of the High Weald AONB and areas of local landscape value.
4. Ensuring that development adequately mitigates and adapts to climate change, whilst addressing the issues of flooding and water supply and the need for dependable infrastructure for the removal of the sewage and wastewater.

5. Protection and enhancement of biodiversity, and protection and promotion of the multi-functional nature of the Borough's open spaces, rivers and other water courses.
6. Provision of strategic and local infrastructure to support new development and growth including a sustainable integrated transport strategy, adequate water supply, sustainable waste management, energy infrastructure, and social infrastructure such as health, schools and other educational facilities.
7. Improve the quality of air within the Air Quality Management Area (AQMA).
8. Renewal of Maidstone urban area with particular focus on Maidstone the town centre and areas of social and environmental deprivation.
9. Redressing the low wage economy by expanding the employment skills base to target employment opportunities.
10. Meeting housing needs by delivering affordable housing, local needs housing, accommodation for the elderly, accommodation to meet gypsy and traveller needs, and accommodation to meet rural housing needs.
11. Ensuring that all new development is built to a high standard of sustainable design and construction.

2.6 The Plan is set out in 9 chapters:

1. Introduction;
2. Introduction to the Maidstone Borough Local Plan Review;
3. Spatial Portrait and Key Local Issues;
4. Spatial Vision and Objectives;
5. The Borough Spatial Strategy;
6. Spatial Strategic Policies;
7. Thematic Strategic Policies;
8. Detailed Site Allocation Policies;
9. Development Management Policies.

2.7 The plan contains a number of strategic ('SP'), thematic strategic ('TSP'), detailed site allocation ('DSP'), and development management ('DMP') policies (organised by chapter, as above), and associated potential site allocations.

2.8 Allocated sites for the Local Plan Review consist of the following types of sites:

- Site allocations from Local Plan 2017 that include specific sites that will be delivered over the time period of the local plan, adopted in 2017 (assessed in-combination with new site allocations and broad locations only as these sites have already been subject to HRA within the 2017 Local Plan);
- Broad locations, adopted in 2017 at Maidstone Town Centre, Invicta Barracks (previously allocated development assessed in-combination only as already subject to HRA in the 2017 Local Plan), and Lenham (assessed alone and in combination, as allocated in Lenham Neighbourhood Plan but not yet subject to full HRA); and
- New site allocations and town centre opportunity sites (Local Plan Review / Regulation 19 sites; assessed alone and in combination with 2017 allocations).

2.9 A Strategic Housing Market Assessment (SHMA) for Maidstone Borough (March 2021) identified a total housing requirement of 1,157 homes per year, which in addition to a contingency equates to 18,225 over the period 2022-2037. MBC also published a draft Strategic Housing Land Availability Assessment (SLAA) in September 2020. This identified a known supply of 12,455 homes for the period 2022-2037 from allocations in the current Local Plan, existing permissions and anticipated windfall development.

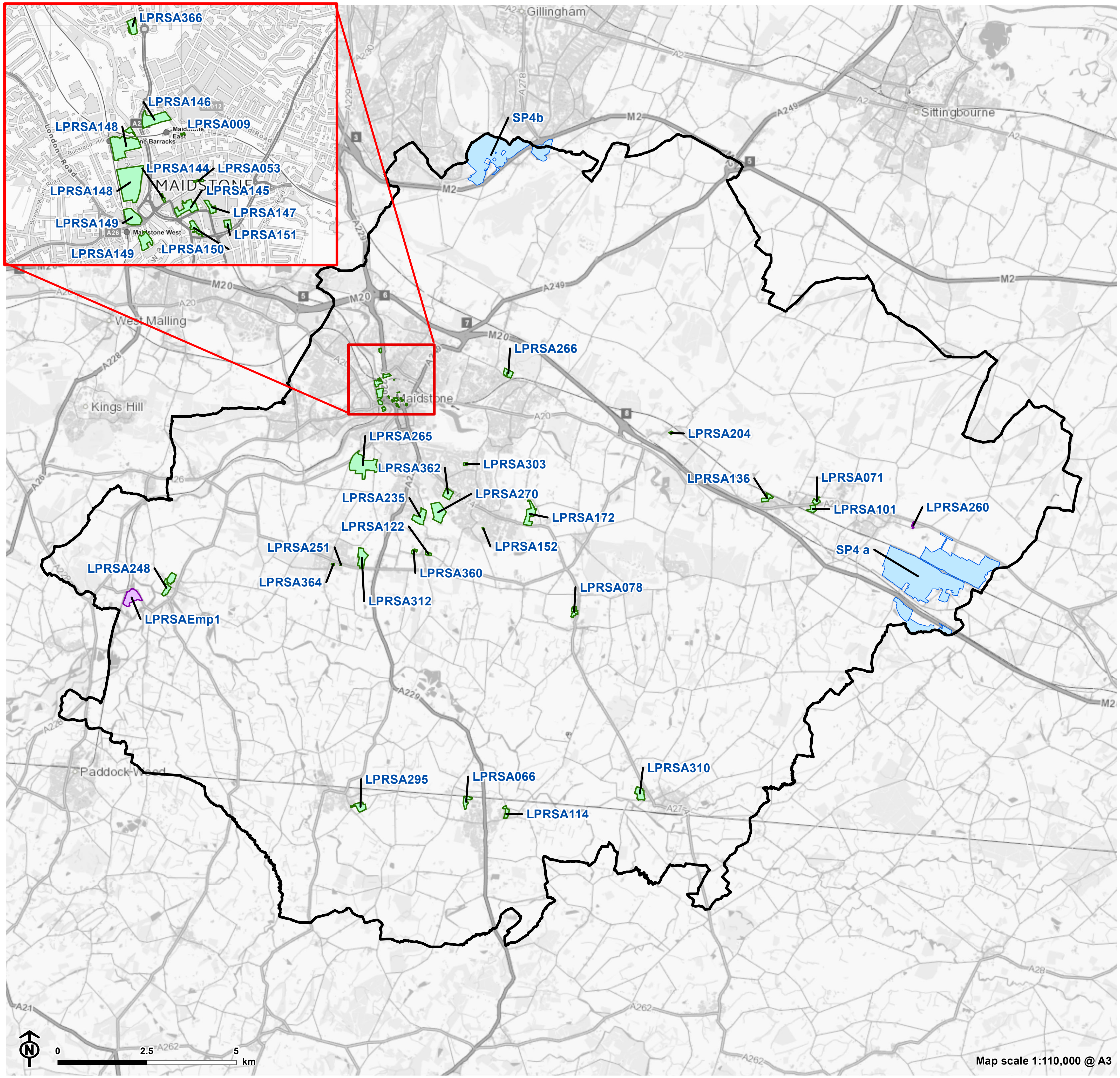
2.10 New site allocations within the Local Plan provide for 7,678 new homes.

2.11 The HRA therefore assesses the effects of 7,678 new homes associated with the Local Plan Review, plus 1,000 allocated in Lenham Neighbourhood Plan, alone and in combination with the 17,660 already allocated within the 2017 Local Plan.

2.12 The distribution of allocated sites across the borough is shown in **Figure 2.1:** and details of the allocated sites is provided in **Appendix A**.

Maidstone HRA
for Maidstone Borough Council

Figure 2.1: Allocated sites


LPRSA366
LPRSA146
LPRSA148
LPRSA009
LPRSA144
LPRSA053
MAIDSTONE
LPRSA148
LPRSA145
LPRSA147
LPRSA149
LPRSA151
LPRSA149
LPRSA150
Gillingham
SP4b
M2
Sittingbourne
A249
West Malling
Kings Hill
M20
LPRSA266
Maidstone
LPRSA204
LPRSA265
LPRSA362
LPRSA303
LPRSA136
LPRSA071
LPRSA235
LPRSA270
LPRSA101
LPRSA260
LPRSA172
LPRSA122
LPRSA251
LPRSA152
SP4 a
LPRSA248
LPRSA360
LPRSA364
LPRSA078
LPRSA312
LPRSAEmp1
A229
Paddock Wood
LPRSA310
LPRSA295
LPRSA066
LPRSA114
A262
A21
0
2.5
5
km
Map scale 1:110,000 @ A3

- Maidstone Borough

Regulation 19 site type

- Residential
- Employment site
- Garden settlement

CB:JH EB:Green_C LUC FIGXXX_AllocatedSites_r0_A3L 21/09/2021
Source: OS, MBC

Chapter 3
Approach to the HRA

Screening and Appropriate Assessment methodology

3.1 This chapter describes the method that has been taken in the HRA of the Local Plan Review throughout its development including the specific tasks that have been undertaken and the assumptions that underpin the HRA judgements made.

Screening assessment

3.2 HRA Screening of the plan has been undertaken in line with current available guidance and seeks to meet the requirements of the Habitats Regulations. The tasks that have been undertaken during the screening stage of the HRA and the conclusions reached are described in detail below.

3.1 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 Plan

3.2 In order 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 areas covered by a Plan, and also within a buffer distance from the boundary of the Plan area.

3.3 A distance of 15km has been used to identify European sites likely to be affected by impacts relating to development in Maidstone. In addition to this, consideration has also been given to European sites connected to the plan area beyond this distance, for example through hydrological pathways or recreational visits by residents of Maidstone.

3.4 Only one European site beyond 15km is considered to have connectivity to the Plan area. The Great Stour river, in the east of the borough near Lenham, is part of the Stour catchment and is hydrologically linked to Stodmarsh SAC and SPA/Ramsar.

3.5 Impacts from development in areas outside of the European site boundaries may also occur where habitat contributes towards maintaining the interest feature for which the European site is designated. This includes land which may provide offsite foraging and roosting habitat for birds. Natural England has advised that their recognised distance for the consideration of offsite functionally linked habitat is generally 2km, but for certain species, including most notably golden plover and lapwing, a much greater distance of up to 15km may be appropriate. In light of these guidelines, all European sites that support wetland bird species (excluding golden plover and lapwing) with potential to be affected by impacts on functionally-linked habitat are scoped out of the assessment as they are situated over 2km from the local authority boundary. These are Medway Estuary and Marshes SPA and Ramsar, The Swale SPA and Ramsar, Thames Estuary and Marshes SPA and Ramsar, Outer Thames Estuary SPA and Stodmarsh SPA and Ramsar. All the other European sites do not support qualifying features that are reliant on off-site functionally linked habitat within the Plan area. Effects on functionally linked habitats have therefore been scoped out of the assessment.

3.6 European sites considered within the HRA are listed below in **Table 3.1** below and **Figure 3.1**. Detailed information about each site is provided in **Appendix B**:

Table 3.1: European sites within 15km of, or otherwise linked to, Maidstone Borough

European site	Closest distance and direction from Maidstone Borough
SACs	
North Downs Woodlands	Within the borough
Peters Pit	3.7km north
Queendown Warren	Adjacent (north)
Wye and Crundale	12.3km east
Stodmarsh	23km east
SPAs	
Medway Estuary and Marshes	4.1km north
The Swale	7km north
Thames Estuary & Marshes	12.5km north
Stodmarsh	23km east
Ramsar sites	
Medway Estuary and Marshes	4.1km north
The Swale	7km north
Thames Estuary & Marshes	11.5km north
Outer Thames Estuary	14.6km north
Stodmarsh	23km east

3.7 The designated features and conservation objectives of the European sites, together with current pressures and potential threats, was established using Data Forms for SACs and SPAs[18] and Information Sheets for Ramsar Wetlands published on the JNCC website[19], as well as Natural England's Site Improvement Plans[20], Supplementary Advice Notes[21] and the most recent conservation objectives published on the Natural England website (most were published in 2014)[22]. This analysis enabled European site interest features to be identified, along with the features of each European site which determine site integrity and the specific sensitivities and threats facing the site. This information was then used to inform an assessment of how the potential impacts of the Local Plan Review may result in likely significant effects on each of the European sites in question, either alone or in-combination.

[18] These were obtained from the Joint Nature Conservation Committee and Natural England websites (www.jncc.gov.uk and www.naturalengland.org.uk)
[19] www.jncc.defra.gov.uk
[20] Natural England is in the process of compiling Site Improvement Plans for all Natura 2000 sites in England as part of the Improvement programme for England's Natura 2000 sites (IPENS).
[21] Supplementary Advice Notes, Natural England, (can be found under the relevant European site's Conservation Objectives): http://publications.naturalengland.org.uk/category/6490068894089216
[22] http://publications.naturalengland.org.uk/category/6490068894089216

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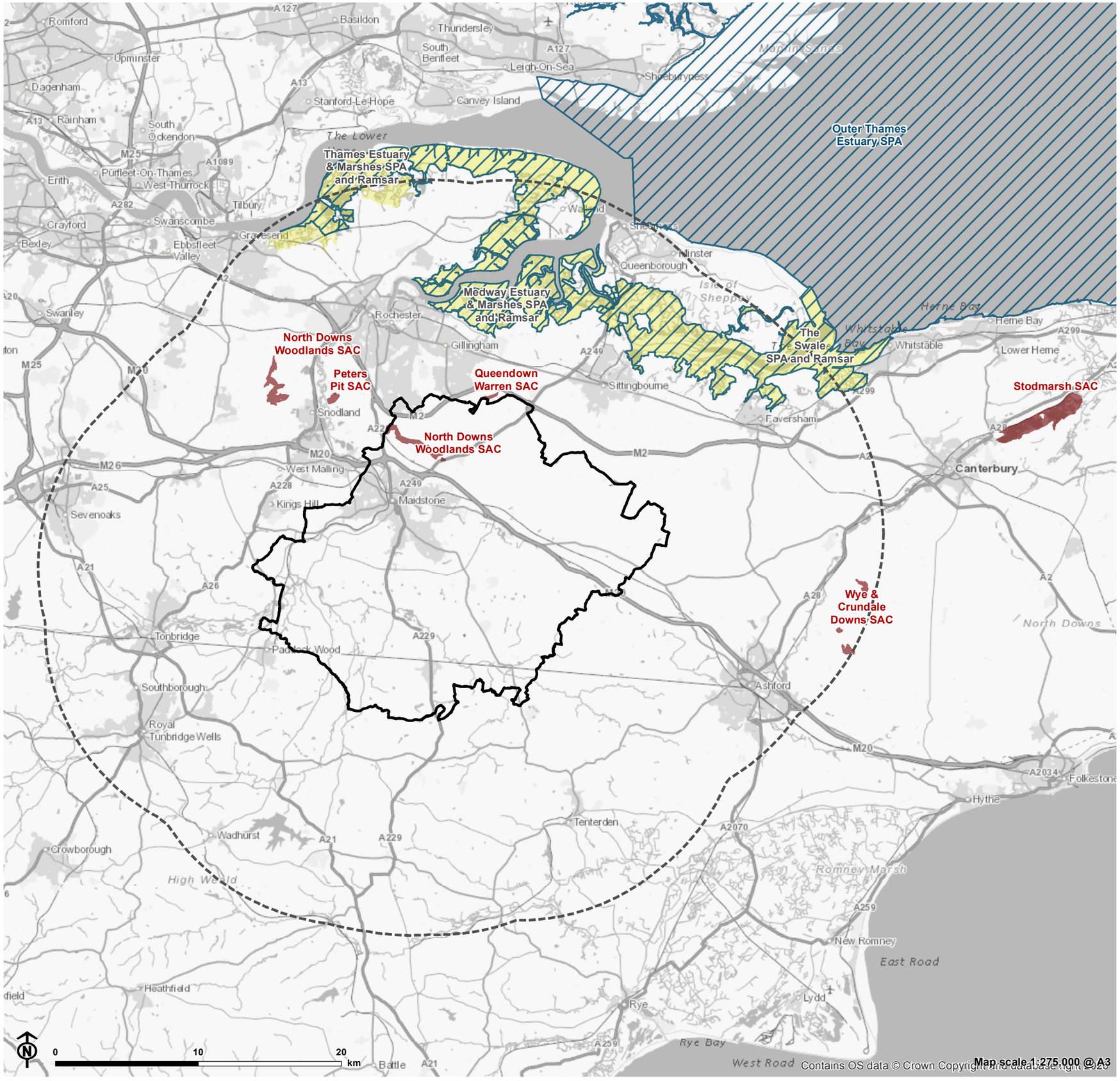
Figure 3.1: Location of European sites in relation to the plan area



CB:JH EB:Harbich_J LUC FIGXXX_EuropeanSites_r01_A3L 29/07/2021
Source: OS, NE

Assessment of 'Likely Significant Effect'

3.8 As required under Regulation 105 of The Conservation of Habitats and Species Regulations 2017[23] (as amended) (the 'Habitats Regulations'), an assessment has been undertaken of the 'likely significant effects' of the Plan. The assessment has been prepared in order to identify which policies or site allocations would be likely to have a significant effect on European sites.

3.9 Consideration has been given to the potential for the development proposed to result in significant effects associated with:

- Physical loss of/damage to habitat;
- Non-physical disturbance (noise, vibration and light);
- Non-toxic contamination;
- Air pollution;
- Recreation pressure; and
- Changes to hydrology including water quality and quantity.

3.10 A risk-based approach involving the application of the precautionary principle is adopted in the assessment, such that a conclusion of 'no significant effect' has only been 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'

3.11 Relevant case law helps to interpret when effects should be considered as a Likely Significant Effect (LSE), when carrying out HRA of a land use plan.

3.12 In the Waddenzee case[24], 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:

3.13 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).

3.14 An opinion delivered to the Court of Justice of the European Union[25] 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."*

3.15 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'.

3.16 The HRA screening assessment therefore considers whether the Local Plan Review policies could have likely significant effects either alone or in combination.

In-combination effects

3.17 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.

3.18 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 needs 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

[23] SI No. 2017/2012
[24] ECJ Case C-127/02 "Waddenzee" Jan 2004.
[25] Advocate General's Opinion to CJEU in Case C-258/11 Sweetman and others v An Bord Pleanala 22nd Nov 2012.

Assessment stage. This approach accords with recent guidance on HRA[26].

3.19 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.

3.20 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 will also be identified and reviewed.

3.21 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;
- Proposals in draft plans formally published or submitted for final consultation, examination or adoption.

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

Screening assessment

3.23 A screening matrix has been prepared (**Appendix C**), which considers the potential for likely significant effects resulting from each policy in the Local Plan Review, and the potential site allocations that may contribute to each type of impact. A 'traffic light' approach has been used in the screening matrix to record the likely impacts of each policy and site allocation on European sites and their qualifying habitats and species, using the colour categories shown below.

Red	There are likely to be significant effects (Appropriate Assessment required).
Amber	There may be significant effects, but this is currently uncertain (Appropriate Assessment required).
Green	There are unlikely to be significant effects (Appropriate Assessment not required).

3.24 The screening assessment is conducted without taking mitigation (e.g. embedded in policy) into account, in accordance with the 'People over Wind' judgment.

3.25 For some types of impacts, the potential for likely significant effects has 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 4**.

Appropriate Assessment methodology

3.26 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. EC Guidance[27] 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.

3.27 Unlike the Screening stage, Appropriate Assessment can take into account mitigation, for example as proposed within Local Plan policies.

[26] The HRA Handbook. David Tyldesley & Associates, a subscription based online guidance document [online] Available at: https://www.dtapublications.co.uk/handbook/European

[27] 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.

Assessing the effects on site integrity

3.28 A site's integrity depends on it being able to sustain its 'qualifying features' (i.e. the habitats and species for which it has been designated) and to ensure their continued viability. The Holohan judgement also clarifies that the effects on species and habitats not listed as qualifying features, but which could result in secondary effects upon the qualifying features of European sites also need to be considered. The Appropriate Assessment, if required, will refer the information set out in **Appendix B** of this report, to consider the characteristics of supporting habitats and species that could be affected by impacts identified at the screening stage.

3.29 A high degree of integrity at a site 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.

3.30 A conclusion needs to be reached as to whether or not the Local Plan Review would adversely affect the integrity of a European site. Assessing the effects on the site(s) integrity involves considering whether the predicted impacts of the Local Plan Review policies and/or sites (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.
- Result in the loss of key features.[28]

3.31 The conservation objectives for each SAC and SPA (**Appendix B**) are generally to maintain the qualifying features in favourable condition. Natural England does not define conservation objectives for Ramsar sites but these can often be inferred from those for co-located SAC or SPA features. The Site Improvement Plans for each site provide a high level overview of the issues (both current and predicted) affecting the condition of the designated features on the site(s) and outline the priority measures required to improve the condition of the features. An Appropriate Assessment draws on these to help to understand what is needed to maintain the integrity of the European sites.

3.32 For each European site where an uncertain or likely significant effect is identified in relation to the Local Plan Review, 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. A further in-combination assessment will need to be carried out for any likely significant effects identified where following Appropriate Assessment it is considered that the Local Plan Review will not on its own adversely affect the integrity of the European site. This will be undertaken in the same way as described above under the Screening stage drawing on information regarding the same types of relevant plans or projects referred to above. 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.

[28] Ibid.

Chapter 4
HRA screening

Screening conclusions and whether Appropriate Assessment is required

4.1 The HRA screening of the Local Plan Review has determined that Appropriate Assessment is required, as likely significant effects from the plan's policies and site allocations cannot be ruled out through screening. The reasoning for this is explained below.

4.2 **Appendix C** sets out the screening of each policy and site allocation in the Local Plan Review, and this chapter summarises the findings of that process.

Physical damage and loss of habitat

4.3 Any development resulting from the plan would take place within Maidstone; therefore, only European sites within the boundary could be affected by direct physical damage or loss of habitat within the site boundaries. North Downs Woodlands SAC is the only site located within Maidstone and therefore has the potential to be directly affected by physical damage and/or loss from development.

4.4 Effects on functionally linked habitats have been scoped out of the assessment (see **paragraph 3.5**) and will not be affected by physical damage or loss of habitat.

4.5 **No development is proposed within the boundary of North Downs Woodlands SAC; therefore there is no impact pathway and the Local Plan Review will not result in likely significant effect as a result of direct physical damage and loss, either alone or in-combination with other plans and projects.**

Non-physical disturbance

4.6 Noise and vibration effects, e.g. during the construction of new housing or employment 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. Artificial lighting at night (e.g. from streetlamps, flood lighting and security lights) has the potential to affect species where it occurs in close proximity to key habitat areas, such as key roosting sites of SPA birds.

4.7 It has been assumed that the effects of noise, vibration and light are most likely to be significant within a distance of 500 metres from the European site or functionally linked habitat. This is the distance that, in our experience, provides a robust assessment of effects and meets with the agreement of Natural England.

4.8 The qualifying features of North Downs Woodlands SAC and Queendown Warren SAC, which lie within and adjacent to the borough, do not support features that are susceptible to impacts from non-physical disturbance and are therefore scoped out of the assessment. All other European sites were scoped out of the assessment because they occur over 500 metres from the Maidstone local authority boundary, and any functionally linked habitat associated with them is also over 500 metres from the borough boundary (see **paragraph 3.5**).

4.9 There is no impact pathway for non physical disturbance of European sites' qualifying features; therefore the Local Plan Review will not result in likely significant effect as a result of direct physical damage and loss, either alone or in-combination with other plans and projects.

Non-toxic contamination

4.10 Habitats can be subject to non-toxic contamination, such as nutrient enrichment, changes in salinity and smothering from dust, due to industrial action, agriculture, construction and water abstraction and discharge. European sites with potential to be affected by non-toxic contamination are likely to be sites that lie within close proximity of planned development, or those that are hydrologically connected to areas of development provided for by the plan; however potential changes to water quantity and quality are separately considered below.

4.11 North Downs Woodland SAC and Queendown Warren SAC are the only European sites which lies within or adjacent to Maidstone and have potential to be susceptible to impacts from dust arising during construction. Due to the distance, all other European sites have been scoped out of the assessment. Air pollution associated with traffic emissions is assessed separately below.

4.12 No development is proposed within or adjacent to North Downs Woodlands SAC or Queendown Warren SAC; therefore there is no impact pathway and the Local Plan Review will not result in likely significant effects as a result of non-toxic contamination, either alone or in-combination with other plans and projects.

Maidstone HRA
for Maidstone Borough Council

LUC

Figure 4.1: Strategic roads within 200m of sensitive sites

- Maidstone Borough
- A-road
- Motorway
- Special Protection Area (SPA)
- Special Area of Conservation (SAC)

The four labelled A-roads are those which pass within 200m of a SAC or SPA - The A228, A249, A289, and A299.

Map scale 1:130,000 @ A3

CB:JH EB:Harbich_J LUC FIGXXX_StrategicRoadsNearSensitiveSites_r0_A3L 30/07/2021
Source: OS, MBC, NE

Air pollution

4.13 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 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 levels, which can then affect plant health, productivity and species composition.

4.14 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.

4.15 Based on the Highways Agency Design Manual for Road and Bridges (DMRB) LA105 Air Quality[29] (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.

4.16 The DMRB Guidance for the assessment of local air quality in relation to highways developments provides criteria that should be applied at the Screening Stage of an assessment of a plan or project, 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 5 m or more.

4.17 Where significant increases in traffic are possible on roads within 200m of European sites, traffic forecast data may be needed to determine if increases in vehicle traffic are likely to be significant. In line with the Wealden judgment[30], the traffic growth considered by the HRA should be based on the effects of development provided for by the Plan in combination with other drivers of growth such as development proposed in neighbouring districts and demographic change.

4.18 It has been assumed that only those roads forming part of the primary road network (motorways and 'A' roads) are likely to experience any significant increases in vehicle traffic as a result of development (i.e. greater than 1,000 AADT). 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.

4.19 The key commuting corridor for new housing and employment development will likely include the M2, M11, A20, A26, A249, A274 and A229 (**Figure 4.1:**). European sites within 15km of the Maidstone boundary and also within 200m of a strategic road to the borough include North Downs Woodlands SAC (A249, A229), Medway Estuary and Marshes SPA and Ramsar (A249) and The Swale SPA and Ramsar (A249).

4.20 All other sites are situated over 200m from key strategic roads to the borough and are therefore scoped out.

4.21 Therefore, likely significant effects relating to increased air pollution as a result of road traffic need to be considered further in relation to North Downs Woodlands SAC, Medway Estuary and Marshes SPA and Ramsar, and The Swale SPA and Ramsar.

North Downs Woodlands SAC

4.22 The SAC lies adjacent to the A249 and 170m from the A229. A total of 1.19% of the SAC's area is situated within 200m of the strategic roads.

4.23 Habitats present within 200m of the strategic roads comprise entirely woodland habitat, which the SAC is designated for. Corresponding SSSI units show habitats to be in favourable condition.

4.24 A review of APIS data identified nitrogen deposition for woodland habitat within this SAC to be at a minimum of 26.7 kg N/ha/yr and a maximum of 31.6 kg N/ha/yr. This currently exceeds the critical loads for *Taxus baccata* woods of the British Isles and *Asperulo-Fagetum* beech forests, which have a critical load of 5-15 kg N/ha/yr and 10-20 kg N/ha/yr respectively. As no grassland habitat is within 200m of a strategic road, the critical loads for these habitat types have not been considered as part of this assessment.

4.25 An increase in residential and employment sites in Maidstone Borough has potential to result in an increase in

[29] DMRB (2019) LA105 Air Quality, https://www.standardsforhighways.co.uk/dmrb/search/10191621-07df-44a3-892e-c1d5c7a28d90

[30] Wealden v SSCLG [2017] EWHC 351 (Admin)

traffic along the A249 and A299. The following policies may result in increases in traffic on these roads:

- Policy SS1: Maidstone Borough Spatial Strategy;
- Policy SP1: Maidstone Town Centre;
- Policy SP2: Maidstone Urban Area;
- Policy SP3: Development at the Edge of Maidstone;
- Policy SP4a: Heathlands Garden Settlement;
- Policy SP4b: Lidsing;
- Policy SP5b: Development at Invicta Barracks;
- Policy SP5c: Lenham Broad Location for Housing Growth; and
- Policy SP6b: Harrietsham.

4.26 And to a lesser extent:

- Policy SP6a Coxheath;
- Policy SP6c: Headcorn;
- Policy SP6d: Lenham;
- Policy SP6e: Marden;
- Policy SP6f: Staplehurst;
- Policy SP7a: East Farleigh;
- Policy SP7c: Sutton Valence; and
- Policy SP7d: Yalding.

4.27 To fully understand the potential impacts of the Local Plan Review on these strategic roads, road traffic AADT figures are required to determine whether thresholds are exceeded in-combination with other plans and projects as a result of the Local Plan Review. If these figures exceed the threshold of 1000 AADT for daily traffic flows or 200 AADT for HDV, an air quality assessment will be required to understand whether the plan will result in an adverse effect on integrity (AEoI) and whether avoidance and mitigation measures can be applied which would prevent AEoI.

4.28 There is potential for likely significant effects to occur in relation to air pollution at North Downs Woodlands SAC, which therefore requires further consideration at Appropriate Assessment.

Medway Estuary and Marshes SPA and Ramsar

4.29 The SPA and Ramsar lies 200m of the A249, A288 and A289. However due to the location of the A288 and A289 roads in relation to the borough, these are not considered to be strategic roads for Maidstone borough. A total proportion of 0.95% of the SPA and Ramsar is situated within 200m of the A249.

4.30 Policies that could contribute traffic to this road are the same as for North Downs Woodland SAC (see paragraphs 4.25 and 4.26).

4.31 Habitats present include grassland, restored saltmarsh and mudflats, which are key habitats that the qualifying bird species of the SPA and Ramsar rely on. It should be noted that saltmarsh and mudflats are likely to less susceptible to impacts from air pollution as these are flushed twice daily by tidal waters. In addition, the effect of air pollution would not expect to noticeably affect the feeding resource of benthic invertebrates upon which SPA and Ramsar birds depend. Corresponding SSSI units identified the SPA and Ramsar to be in unfavourable – recovering condition.

4.32 A review of APIS data identified nitrogen deposition across this SPA to be at a minimum of 13.9 kg N/ha/yr and a maximum of 24.9 kg N/ha/yr. For all habitat types, the nitrogen deposition levels exceeded at least the lower threshold for critical loads as detailed in **Table 4.1**. As advised by Natural England *"for the purpose of assessing air quality impacts to designated sites the lower critical load limit of the APIS range should be applied."* It can therefore be concluded that existing nitrogen deposition for habitat types that are present within 200m of the A249 exceeds the relevant lower critical loads.

Table 4.1: Critical loads for each habitat type

Habitat	Critical Load (kg N/ha/yr)
Raised and blanket bogs	5-10
Pioneer, low-mid, mid-upper saltmarshes	20-30
Shifting coastal dunes	10-20
Coastal stable dune grasslands - acid type	8-10
Coastal stable dune grasslands - calcareous type	10-15
Moist and wet oligotrophic grasslands: Heath (Juncus) meadows and humid (Nardus stricta) swards	10-20
Low and medium altitude hay meadows	20-30
Northern wet heath: Calluna-dominated wet heath (upland moorland)	10-20
Dry heaths	10-20
Northern wet heath: Calluna dominated wet heath (upland moorland)	10-20
Rich fens	15-30

4.33 To fully understand the potential impacts of the Local Plan Review on these strategic roads, road traffic AADT figures will be required to determine whether thresholds are exceeded in-combination with other plans and projects as a result of the Local Plan Review. If these figures exceed the threshold of 1000 AADT for daily traffic flows or 200 AADT for HDV, an air quality assessment will be required to understand whether the plan will result in an adverse effect on integrity (AEoI) and whether avoidance and mitigation measures can be applied which would prevent AEoI.

4.34 There is potential for likely significant effects to occur in relation to air pollution at Medway Estuary and Marshes SPA/Ramsar, which therefore requires further consideration at Appropriate Assessment.

The Swale SPA and Ramsar

4.35 The SPA and Ramsar lies adjacent to the A249. A total proportion of 1.23% of the SPA and Ramsar is situated within 200m of the SAC.

4.36 Policies that could contribute traffic to this road as the same as for North Downs Woodland SAC (see paragraphs 4.25 and 4.26).

4.37 Habitats present within 200m of the strategic road comprise grassland, restored saltmarsh and mudflats, which are key habitats that the qualifying bird species of the SPA and Ramsar rely on. It should be noted that saltmarsh and mudflats are likely to be less susceptible to impacts from air pollution as these are flushed twice daily by tidal waters. In addition, the effect of air pollution would not expect to noticeably affect the feeding resource of benthic invertebrates upon which SPA and Ramsar birds depend. Corresponding SSSI units show the SPA and Ramsar to be in favourable condition.

4.38 A review of APIS data identified nitrogen deposition across the Swale SPA to be at a minimum of 11.7 kg N/ha/yr and a maximum of 29 kg N/ha/yr. For all habitat types, existing nitrogen deposition exceeded at least the lower threshold for critical loads as detailed in **Table 4.1** above. The same habitats were present for both The Swale SPA and Ramsar and Medway Estuary SPA and Ramsar.

4.39 To fully understand the potential impacts of the Local Plan Review on these strategic roads, road traffic AADT figures will be required to determine whether thresholds are exceeded in-combination with other plans and projects as a result of the Local Plan Review. If these figures exceed the threshold of 1000 AADT, an air quality assessment will be required to understand whether the plan will result in an adverse effect on integrity (AEoI) and whether avoidance and mitigation measures can be applied which would prevent AEoI.

4.40 There is potential for likely significant effects to occur in relation to air pollution at The Swale SPA/Ramsar, which therefore requires further consideration at Appropriate Assessment.

Recreational disturbance

4.41 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.

4.42 The plan will result in housing growth, and associated population increase within Maidstone. 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. The Local Plan Review provides for a total of 7,678 new homes over the Plan period (plus 1,000 from Lenham Neighbourhood Plan), which would be in combination with the 17,660 already allocated in the 2017 Local Plan.

4.43 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.

4.44 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.

4.45 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. Particularly in relation to coastal European sites, which have the potential to draw large number of visitors from areas much further afield.

4.46 At this stage, there is limited information available for the non-coastal European sites within 15km of Maidstone to determine a specific ZOI. Although these sites are unique, they do 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 Thames Basin

Heath Delivery Framework[31], a ZOI of 7km was applied to all non-coastal European sites. Given the high sensitivity of the Thames Basin Heath SPA to recreational pressure, it was considered appropriate and precautionary to use the same ZOI in this assessment. Natural England has agreed in other HRA work that this is suitable.

4.47 The following non-coastal sites are within 7km of the borough:

- North Downs Woodlands SAC (within borough);
- Queendown Warren SAC (adjacent to borough); and
- Peter's Pit SAC (3.8km away).

4.48 In relation to the coastal European sites, previous visitor and bird disturbance studies were undertaken in 2011 and 2012 of the North Kent Coast, which included Medway Estuary and Marshes SPA and Ramsar, The Swale SPA and Ramsar and Thames Estuary and Marshes SPA, and are currently being used to inform North Kent Strategic Access Management and Monitoring Scheme (SAMMS). These studies identified that development within 6km of the coastline is particularly likely to lead to an increase in recreational use to these European sites. Based on this the SAMMS has applied a Zone of Influence of 6km, which is considered appropriate and will be applied to in this assessment. As part of an ongoing commitment to undertake monitoring for the SAMMS, updated surveys were due to be undertaken by BirdWise in January 2022, which may have refined the existing ZOI of 6km; however the surveys have been postponed due to the pandemic; Natural England has therefore confirmed that it is appropriate to continue to use the 6km ZOI.

4.49 The Swale SPA and Ramsar is located 7km and Thames Estuary SPA and Ramsar is located 11km from the borough boundary and is therefore scoped out of the assessment. However, Medway Estuary and Marshes SPA and Ramsar is located approximately 4km from the borough boundary and based on the 6km ZOI at this stage will require further consideration of the potential for likely significant effects, as set out below.

4.50 In addition, the potential for likely significant effects relating to recreational pressure needs to be considered further in relation to North Downs Woodlands SAC, Peter's Pit SAC, Queendown Warren SAC and Medway Estuary and Marshes SPA and Ramsar, and this is set out below.

North Downs Woodlands SAC

4.51 The SAC is designated for its woodland and calcareous grassland habitat with important orchid species, which is susceptible to recreational disturbance from recreational activities. Recreation can result in compaction of soil, particularly around mature and veteran trees, damage to woodland habitat from off-road vehicles and all terrain bikes and physical damage and loss through trampling, removal of orchids and nutrient enrichment of grassland associated with dog walkers.

4.52 Previous survey data[32], which was collected in 2012, found that the majority of visitors travelled to the SAC from Maidstone Town and Chatham and Gillingham in the adjacent borough to visit this SAC. The survey data found that 75% of visitors to the site travelled up to 7km to visit the SAC. This is broadly in line with the Thames Basin Heaths and Burnham Beeches Visitor Studies and justifies the precautionary ZOI of 7km that has been applied in this assessment. There are a number of site allocations within 7km of the SAC as detailed in **Table 4.2** below.

Table 4.2: Proposed development within 7km of the SAC

Site Allocation	Number of Residential Units
Garden Settlement	
Lidsing/North of M2	1,300
Site Allocations	
LPRSA145	159
LPRSA146	290
LPRSA147	40
LPRSA148	650
LPRSA149	130
LPRSA151	172
LPRSA152	8
LPRSA172	75
LPRSA204	9
LPRSA265	250
LPRSA266	67

[31] Thames Basin Heaths Joint Strategic Partnership Board, (2009), Thames Basin Heaths Special Protection Area Delivery Framework.

[32] J11092 Boxley Warren Local Nature Reserve Visitor Survey (October 2012)

Site Allocation	Number of Residential Units
LPRSA270	196
LPRSA303	20
LPRSA362	135
LPRSA366	150
Larger villages	
East Farleigh	50
Eyhorne Street (Hollingbourne)	24
Smaller villages	
Boxley	25
Detling	25
Stockbury	25
Total	**2,500**

4.53 These site allocations are associated with the following policies:

- SP4b Lidsing Garden Settlement;
- SP1 Maidstone Town Centre;
- SP2 Maidstone Urban Area;
- SP3 Development at the Edge of Maidstone; and
- SP7c Eyhorne Street (Hollingbourne).

4.54 Given that the SAC lies within the borough and lies within 7km of a number of proposed site allocations, there is potential for increased recreational pressure as a result of proposed development in the borough to result in a likely significant effect on the SAC and will require appropriate avoidance and mitigation measures to ensure no adverse effect on the SAC.

4.55 There is potential for likely significant effects to occur in relation to impacts from recreation at North Downs Woodlands SAC, which therefore requires further consideration at Appropriate Assessment.

Peter's Pit SAC

4.56 The SAC is designated for breeding great crested newt (GCN) population, which rely on a combination of breeding and terrestrial habitats. This species is not considered to be particularly susceptible to impacts from recreation and is more likely to be affected by changes in habitat management, which can cause fragmentation of terrestrial habitat preventing GCN from dispersing to breeding ponds. There is potential for recreational activities to result in minor impacts to terrestrial habitat used by this species, through trampling and erosion of habitat from walking and dog walking and loss of localised sections of habitat from antisocial behaviour, such as fires. No impacts were considered in relation to breeding ponds due to the limited access to these features.

4.57 Given that this species is not considered to be susceptible to impacts from recreation, no likely significant effects are considered in relation to the SAC as a result of increased recreational pressure in the borough or neighbouring authorities.

4.58 Therefore, no likely significant effect is anticipated as a result of recreation pressure at Peters Pit SAC, either alone or in-combination with other plans and projects.

Queendown Warren SAC

4.59 The SAC is designated for its calcareous grassland and is an orchid rich site. This habitat is susceptible to recreational activities, such as walking and dog walking, which can result in physical damage and loss through trampling, removal of orchids, vandalism or fire and nutrient enrichment.

4.60 There is no specific survey data available, which can be drawn to inform a ZOI for this SAC; therefore 7km has been used as a precautionary ZOI, as explained above in **paragraph 4.46**.

4.61 The only site allocation within 7km is Lidsing Garden Settlement at 2.2km west, which proposes 1,300 homes within the Plan period. This site is associated with Policy SP4b. The small villages of Detling, Boxley and Stockbury also have some residential development (25 homes each), associated with Policy SP8.

4.62 There is potential for likely significant effects to occur in relation to impacts from recreation at Queendown Warren SAC, which therefore requires further consideration at Appropriate Assessment.

Medway Estuary and Marshes SPA and Ramsar

4.63 The SPA and Ramsar are designated for a range of qualifying wetland bird species. These species are particularly susceptible to terrestrial and water-based activities, which can result in physical damage and loss of habitat, which they rely on through trampling and erosion, and increased nutrient enrichment, which can alter the soil chemistry and the prevalence of competitive plant species, and disturbance of bird species affecting the foraging and roosting patterns of these species.

4.64 Based on previous visitor and bird disturbance surveys for the North Kent Coast, including Medway Estuary SPA and Ramsar, which was completed in 2011 and 2012, to inform the North Kent Strategic Access Management and Monitoring Scheme (SAMMS), a ZOI of 6km has been applied in this assessment. This ZOI of was identified following visitor surveys, which recorded 75% of people to travel within 6km of the North Kent Coast European Sites. As noted above in **paragraph 4.48** Natural England has confirmed that it is appropriate to continue to use the 6km ZOI.

4.65 Only Lidsing Garden Settlement is within 6km of the SPA/Ramsar (5.4km away, 1,300 homes, Policy SP4b). There is therefore potential for increased recreational pressure as a result of proposed development in the borough to result in a likely significant effect.

4.66 There is potential for likely significant effects to occur in relation to impacts from recreation at Medway Estuary and Marshes SPA and Ramsar, which therefore requires further consideration at Appropriate Assessment.

Water quantity and quality

4.67 An increase in demand for water abstraction and treatment resulting from the growth proposed in the Local Plan Review 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 extent and distribution of preferred habitat conditions.

4.68 Given the aquatic nature of the sites, their proximity and potential hydrological connectivity between Medway Estuary and Marshes SPA/Ramsar; The Swale SPA/Ramsar; Thames Estuary and Marshes SPA/Ramsar; and Stodmarsh SAC and SPA/Ramsar to water sources in the borough, these sites are considered likely to be affected by impacts from changes in water quantity and quality.

4.69 North Downs Woodlands SAC, Queendown Warren and Wye and Crundale SAC are scoped out because the qualifying features are not considered susceptible to changes in water quantity and quality which could be affected as a result of the plan.

4.70 Peter's Pit SAC supports qualifying features that rely on water resources within and in close proximity to the designated site. However, due to its distance from the borough (3.7km north) and lack of hydrological connectivity as the ponds used by the qualifying species are entirely rain-fed, this site was not considered susceptible to changes in water quantity and quality associated with water abstraction or wastewater treatment discharges arising from new development in Maidstone and is therefore scoped out of the assessment.

4.71 The Outer Thames Estuary SPA lies approximately 14km from the borough and is located away from the coastline, extending for over 12 nautical miles into the North Sea, and comprises an extensive area of 3,924km2. As a result, the potential for changes in water quality and quantity to result in likely significant effects on the site's wintering bird species is negligible. This site is therefore scoped out of the assessment due to a lack of impact pathway.

4.72 Therefore, the potential for likely significant effects relating to water quantity and quality needs to be considered further only in relation to Medway Estuary and Marshes SPA and Ramsar, The Swale SPA and Ramsar, Thames Estuary and Ramsar and Stodmarsh SAC, SPA and Ramsar, and this is discussed below.

Medway Estuary and Marshes SPA and Ramsar

4.73 The SPA and Ramsar supports qualifying bird species, which are reliant on coastal and estuarine habitat. These aquatic habitats may therefore be susceptible to changes in water quality and quantity as a result of increased demand in water abstraction and treatment.

4.74 A review of the Environment Agency's water catchment data explorer[33] identified the borough to be hydrologically connected to the Medway Estuary via the River Medway, which runs through the borough. The borough lies within the Medway Catchment area, which is influenced by three key aquifers, including Chalk, Lower Greensand and Hastings. These aquifers comprise 97% of the groundwater resources and just over half of the total resource for the catchment. The Medway Catchment Abstraction Management Strategy (CAMS) identify that this SPA and Ramsar is influenced by freshwater flows and may be vulnerable to groundwater abstraction. As the CAMS identifies that there is restricted water available for licensing at low flow rates and no water available at higher flow rates, for areas within the borough, there is potential for increased demand for water abstraction to result in a likely significant effect on the SPA and Ramsar.

4.75 In addition to this, the River Medway, which is connected to the SPA and Ramsar site has previously been identified in the Maidstone Water Cycle Study[34] to have high nutrient levels as a result of wastewater treatment works discharges. The Aylesford Wastewater Treatment Works (WwTW), which is the main wastewater treatment works in Maidstone

[33] Environment Agency, Catchment Data Explorer: https://environment.data.gov.uk/catchment-planning/

[34] Halcrow Ltd, (2010), Water Cycle Study - Outline Report Non-Technical Summary

borough, discharges directly into the River Medway, as does the Wateringbury WwTW at Yalding. The Environment Agency has advised the Council that there are ongoing Water Industry National Environmental Programme (WINEP) investigations that need to be considered. Three of these relate to phosphorus and dissolved oxygen in the River Beult (Yalding to Marden area, which links to Medway). These are Southern Water investigations, however results have not yet been reported. Once these investigations have been completed, measures may be implemented that could include improvement schemes or changes to permit levels, although the changes are unknown and are not expected before the end of the Plan period. Therefore, an increase in demand in treatment of wastewater as a result of increased development in the borough has the potential to result in likely significant effects on the SPA and Ramsar.

4.76 All of the allocated sites, with the exception of those at Lenham would need to make use of WwTWs that either directly discharge into the River Medway (Aylesford) or one of its tributaries (Coxheath, Sutton Valence, Leeds, Harrietsham, or Staplehurst; see also **Table 5.4**).

4.77 There is potential for likely significant effects from changes in water quantity and quality at Medway Estuary and Marshes SPA and Ramsar, which therefore requires further consideration at Appropriate Assessment.

The Swale SPA and Ramsar

4.78 The SPA and Ramsar supports qualifying bird species, which are reliant on coastal and estuarine habitat. These aquatic habitats may therefore be susceptible to changes in water quality and quantity as a result of increased demand in water abstraction and treatment.

4.79 The Environment Agency's water catchment data explorer shows that there is no direct hydrological connectivity between the SPA and Ramsar and waterbodies within the borough. However, the North Kent catchment area, which is connected to the SPA and Ramsar is not characterised by a distinctive river but by spring-fed and surface-fed streams, which flow across the Medway/Swale Marshes and into the Swale Estuary[35]. The northern edge of the borough falls within this catchment, and the SSSI Impact Risk Zone data[36] states that "*Any discharge of water or liquid waste of more than 20m³/day to ground (ie to seep away) or to surface water, such as a beck or stream*" could be a risk to the SPA/Ramsar's component SSSI.

4.80 There are no site allocations within this catchment and a review of the previous WCS does not identify any WwTW that discharge into the SPA and Ramsar. Given the lack of hydrological connectivity and separation of the SPA and Ramsar from the borough by land and the adjacent Medway Estuary and Marshes, it is considered unlikely for impacts to occur in relation to the Swale SPA and Ramsar as a result of proposed development in the borough.

4.81 Therefore, there is no impact pathway and no likely significant effect is anticipated as a result of changes to water quality or quantity at The Swale SPA/Ramsar, either alone or in-combination with other plans and projects.

Thames Estuary and Marshes SPA and Ramsar

4.82 The SPA and Ramsar supports qualifying bird species, which are reliant on coastal and estuarine habitat. These aquatic habitats may therefore be susceptible to changes in water quality and quantity as a result of increased demand in water abstraction and treatment.

4.83 The Environment Agency's water catchment data explorer shows no direct hydrological connectivity between the SPA and Ramsar and waterbodies within the borough. However, the SPA and Ramsar does fall adjacent to the Medway Catchment, which identifies that this European site is influenced by freshwater flows and may be vulnerable to groundwater abstraction[37]. As the CAMS identifies that there is restricted water available for licensing at low flow rates and no water available at higher flow rates, for areas within the borough, there is potential for increased demand for water abstraction to result in a likely significant effect on the SPA and Ramsar[38].

4.84 Lidsing Garden Settlement (1,300 homes; Policy SP4b) falls within the SSSI Impact Risk Zones, which states that: *"Any discharge of water or liquid waste of more than 20m³/day to ground (ie to seep away) or to surface water, such as a beck or stream"* could pose a risk to the SPA/Ramsar's underlying SSSI.

4.85 As discussed above, the River Medway has previously been identified to have high nutrient levels as a result of WwTW discharges (among other sources such as diffuse agricultural pollution). The Aylesford WwTW, which is the main wastewater treatment works in Maidstone borough, and the Wateringbury WwTW at Yalding discharge directly into the River Medway. Due to the hydrological connectivity of the SPA

[35] Environment Agency, (2013), North Kent & Swale Abstraction Licensing Strategy
[36] Defra (2021) MAGiC, https://magic.defra.gov.uk/MagicMap.aspx
[37] Environment Agency, (2013), Medway Abstraction licensing strategy
[38] Environment Agency (2013), Medway Abstraction licensing strategy, https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/289875/LIT_1995_61b7f5.pdf

and Ramsar to the River Medway, there is potential for likely significant effects to occur.

4.86 There is potential for likely significant effects from changes in water quantity and quality at Thames Estuary and Marshes SPA and Ramsar, which therefore requires further consideration at Appropriate Assessment.

Stodmarsh SAC, SPA and Ramsar

4.87 The SAC, SPA and Ramsar site support qualifying species, Desmoulins whorl snail, invertebrates and wetland bird species, which are reliant on wetland habitat. Therefore, these Europeans sites are susceptible to changes in water quality and quantity as a result of increased demand in water abstraction and treatment.

4.88 These European sites have been identified by Natural England as being currently subject to high levels of nitrogen and phosphorous input to their water environment, which are causing eutrophication. A key contributor to these high levels of nutrients is treated wastewater discharges from existing housing (via WwTW) and also agricultural sources. Therefore, any increase in demand for wastewater treatment resulting in increased discharge to the catchment is likely to result in a significant effect to the European sites.

4.89 Parts of the east of the borough lie in the Stour Upper catchment area, which has been identified by Natural England to be hydrologically connected to the Stodmarsh SAC, SPA and Ramsar site. Therefore, any development proposed within or that will be served by wastewater treatment works discharging into this catchment will need to demonstrate no adverse effects to these European sites by achieving nutrient neutrality. This must be calculated using the Natural England methodology[39] and will require appropriate mitigation measures to achieve this.

4.90 The following site allocations are within the Stour Upper catchment:

- Heathlands Garden Settlement (1,400 homes);
- LPRSA260 (employment, therefore not required to achieve nutrient neutrality); and
- Lenham Broad Location (1,000 homes).

4.91 These sites are allocated within policies SP4a, SP11 and SP5c, respectively. No other allocated sites will be served by WwTW discharging into the catchment.

4.92 There is potential for likely significant effects from changes in water quality at Stodmarsh SAC, SPA and Ramsar, which therefore requires further consideration at Appropriate Assessment.

4.93 As noted above, the borough lies within the Medway Catchment area, which is influenced by three key aquifers, including Chalk, Lower Greensand and Hastings. These aquifers comprise 97% of the groundwater resources and just over half of the total resource for the catchment. The Stodmarsh SAC, SPA and Ramsar site are not hydrologically connected to these aquifers and are therefore not susceptible to impacts from water abstraction in Maidstone borough.

4.94 There is no impact pathway, and therefore no likely significant effect is predicted for Stodmarsh SAC, SPA and Ramsar in relation to changes in water quantity associated with the Local Plan Review alone or in combination with other plans and projects.

Screening conclusion

4.95 Appropriate Assessment is required as some likely significant effects from the Local Plan Review, alone or in combination with other projects or plans, cannot be ruled out.

4.96 The scope of the Appropriate Assessment has been narrowed down by considering each Local Plan Review policy and site allocation in turn, to determine whether it would result in the type of development that could have an LSE on a European site; this is detailed in **Appendix C**.

4.97 Table 4.3 and **Table 4.4:** present summaries of the screening matrices in **Appendix C**, to show the policies and site allocations for which likely significant effects could not be ruled out.

4.98 Table 4.5: summarises the Screening conclusions reached in this HRA, in relation to impact type and European site. The following categories are used:

- **Screened out** – due to distance thresholds/lack of sensitivities of qualifying features as discussed in this chapter.
- **No LSE** – as impact of Local Plan Review unlikely to be significant on its own or in combination.
- **Potential LSE** – as Local Plan Review is considered likely to have significant effect alone (or in combination).

4.99 Impact types for which a conclusion of 'Potential LSE' was reached are considered in more detail at the Appropriate Assessment stage in **Chapter 5**.

[39] Natural England, (2020), Advice on Nutrient Neutrality for New Development in the Stour Catchment in Relation to Stodmarsh Designated Sites - For Local Planning Authorities

Table 4.3: Policies giving rise to the need for Appropriate Assessment of the Local Plan Review

Plan Policy	Will the proposal have likely significant effects and therefore require Appropriate Assessment?
Policy SS1: Maidstone Borough Spatial Strategy 2022-2037 - 18,225 new homes (of which 7,678 plus 1,000 from Lenham Neighbourhood Plan are assessed in this HRA) - ≥33,430 m^2 offices, - 27,135m^2 industrial use, - 40,990m^2 warehousing, - 5,726m2 retail (convenience) and 1,116m^2 retail (comparison) - 6,927m^2 food and beverage	Uncertain – This policy sets out the overall quantum of development from the Local Plan Review and therefore will contribute to impacts that arise from the scale of development, for example air pollution, recreation disturbance and changes in water quantity. Effects associated with development in specific locations (e.g. non physical disturbance) is assessed in relation to the allocated sites and the policies that allocate them.
Policy SP1: Maidstone Town Centre - 3,059 new homes, - 6,169m^2 commercial - 8,757m^2 retail/food and drink - 5 opportunity sites, 4 allocated sites, 3 broad locations	Uncertain – Development in Maidstone town centre is within 7km of North Downs Woodlands SAC and could contribute to recreation pressure there. Development would also contribute traffic to the A249 and A229, and result in changes in water abstraction and discharge.
Policy SP2: Maidstone Urban Area - 178 new homes - 3 allocated sites	Uncertain - Development in Maidstone urban area is within 7km of North Downs Woodlands SAC and could contribute to recreation pressure there. Development would also contribute traffic to the A249 and A229, and result in changes in water abstraction and discharge.
Policy SP3: Development at the Edge of Maidstone - 1,015 new homes - 10 allocated sites	Uncertain - Development on the edge of Maidstone urban area is within 7km of North Downs Woodlands SAC and could contribute to recreation pressure there. Development would also contribute traffic to the A249 and A229, and result in changes in water abstraction and discharge.
Policy SP4a: Heathlands Garden Settlement - 5,000 new homes - 14ha of employment space - 6,300m^2 retail, leisure and services - Infrastructure and open space	Uncertain – Heathlands is not within 7km of any of the European sites so is unlikely to contribute to recreation pressure. Development at the Garden Settlement site may however contribute traffic to the A249 and A229, and result in changes in water abstraction and discharge.
Policy SP4b: Lidsing - 1,300 new homes - 14ha of employment space - At least 1,500 m2 retail, leisure & services - Infrastructure and open space	Uncertain – Lidsing is within 7km of, and could contribute to recreation pressure at, Queendown Warren SAC, North Downs Woodland SAC and Medway Estuary and Marshes SPA/Ramsar; but is unlikely to contribute to recreation pressure. The Garden Settlement site is adjacent to the M2 and would contribute to traffic on the A249 and A229, and result in changes in water abstraction and discharge.
Policy SP5b: Development at Invicta Barracks - Up to 1,300 new homes	Uncertain – The barracks are in Maidstone town and within 7km of North Downs Woodlands SAC and could contribute to recreation pressure there.

Plan Policy	Will the proposal have likely significant effects and therefore require Appropriate Assessment?
- School, community facilities etc - Infrastructure and open space	Development would also contribute traffic to the A249 and A229, and result in changes in water abstraction and discharge.
Policy SP5c: Lenham Broad Location for Housing Growth - 1,000 new homes (6 allocations in Lenham Neighbourhood Plan)	Uncertain – Lenham is not within 7km of any of the European sites so is unlikely to contribute to recreation pressure. Development at the Broad Location sites may however contribute traffic to the A249 and A229, and result in changes in water abstraction and discharge. Lenham is within the Stour catchment and developments are required to demonstrate nutrient neutrality to avoid effects on Stodmarsh SAC/SPA/Ramsar.
Policy SP6a Coxheath - 155 new homes - Infrastructure and open space - 5 allocated sites	Uncertain – Coxheath is not within 7km of any of the European sites so is unlikely to contribute to recreation pressure. Development at the allocated sites may however contribute traffic to the A249 and A229, and result in changes in water abstraction and discharge.
Policy SP6b: Harrietsham - 152 new homes - Community services and open space - 3 allocated sites	Uncertain – Harrietsham is not within 7km of any of the European sites so is unlikely to contribute to recreation pressure. Development at the allocated sites may however contribute traffic to the A249 and A229, and result in changes in water abstraction and discharge.
Policy SP6c: Headcorn - 385 new homes - 5,500m^2 employment - Infrastructure and open space - 1 allocated site	Uncertain – Headcorn is not within 7km of any of the European sites so is unlikely to contribute to recreation pressure. Development at the allocated sites may however contribute a small amount of traffic to the A249 and A229, and result in changes in water abstraction and discharge.
Policy SP6d: Lenham - 145 new homes - Two Gypsy and Traveller pitches - 3,296m^2 employment - Infrastructure and open space - 3 allocated sites (one residential, two employment)	Uncertain - Lenham is not within 7km of any of the European sites so is unlikely to contribute to recreation pressure. Development at the allocated sites may however contribute traffic to the A249 and A229, and result in changes in water abstraction and discharge. Lenham is within the Stour catchment and residential developments are required to demonstrate nutrient neutrality to avoid effects on Stodmarsh SAC/SPA/Ramsar.
Policy SP6e: Marden - 249 new homes - Two Gypsy and Traveller pitches - 4,085m2 employment - Infrastructure, community services and open space - 6 allocated sites	Uncertain– Marden is not within 7km of any of the European sites so is unlikely to contribute to recreation pressure. Development at the allocated sites may however contribute a small amount of traffic to the A249 and A229, and result in changes in water abstraction and discharge.
Policy SP6f: Staplehurst - 872 new homes	Uncertain – Staplehurst is not within 7km of any of the European sites so is unlikely to contribute to recreation pressure. Development at the allocated

Plan Policy	Will the proposal have likely significant effects and therefore require Appropriate Assessment?
- Four gypsy and traveller pitches - Infrastructure, community services, and open space - 3 allocated sites	sites may however contribute a small amount of traffic to the A249 and A229, and result in changes in water abstraction and discharge.
Policy SP7a: East Farleigh - 50 new homes	Uncertain – East Farleigh is just within 7km of North Downs Woodlands SAC and may make a small contribute to recreation pressure. Development in this location may also contribute a small amount traffic to the A229, and result in changes in water abstraction and discharge.
Policy SP7c: Sutton Valence - 119 new homes - 1 allocated site	Uncertain – Sutton Vallance is not within 7km of any of the European sites so is unlikely to contribute to recreation pressure. Development at the allocated sites may however contribute a small amount traffic to the A249 and A229, and result in changes in water abstraction and discharge.
Policy SP7d: Yalding - 190 new homes - 2 allocated sites	Uncertain – Yalding is not within 7km of any of the European sites so is unlikely to contribute to recreation pressure. Development at the allocated sites may however contribute a small amount traffic to the A249 and A229, and result in changes in water abstraction and discharge.

Table 4.4: Potential site allocations that will contribute to different types of likely significant effect

Type of impact	Screening criteria ('Development site could have a significant effect if…')	Potential development sites meeting screening criteria (sites to be considered in Appropriate Assessment)
Air pollution	Development increases traffic flows by at least 1,000 AADT or 200 HDVs AADT (alone or in combination) on the following roads: ■ North Downs Woodland SAC (A249, A229) ■ Medway Estuary and Marshes SPA and Ramsar (A249) ■ The Swale SPA and Ramsar (A249)	Traffic modelling has taken into account the overall traffic flows resulting from the Local Plan Review; however significant contributions to traffic flows are more likely to arise from: ■ Sites contributing traffic to the A249 (potentially any site, but particularly those in the north of the borough) ■ Sites contributing traffic to the A229 (potentially any site, but particularly those in the north of the borough)
Recreational disturbance	Residential development proposed within: ■ 7km of North Downs Woodlands SAC, Peter's Pit SAC, or Queendown Warren SAC; or ■ 6km of Medway Estuary and Marshes SPA/Ramsar.	Sites within 7km of North Downs Woodlands SAC: ■ Lidsing Garden Settlement, LPRSA009, LPRSA053, LPRSA144, LPRSA145, LPRSA146, LPRSA147, LPRSA148, LPRSA149, LPRSA150, LPRSA151, LPRSA152, LPRSA172, LPRSA204, LPRSA235, LPRSA265, LPRSA266, LPRSA270, LPRSA303, LPRSA362, LPRSA366. Sites within 7km of Queendown Warren SAC: ■ Lidsing Garden Settlement. Sites within 6km of Medway Estuary and Marshes SPA/Ramsar: ■ Lidsing Garden Settlement.

Type of impact	Screening criteria ('Development site could have a significant effect if…')	Potential development sites meeting screening criteria (sites to be considered in Appropriate Assessment)
Water quantity and quality	Development is adjacent to, or uses wastewater treatment works that discharges into, the River Medway (Medway Estuary and Marshes SPA/Ramsar). Development discharges wastewater to or abstracts water from the Medway Catchment, within the SSSI IRZ (Medway Estuary and Marshes SPA/Ramsar; The Swale SPA/Ramsar; Thames Estuary and Marshes SPA/Ramsar). Development discharges to watercourses / groundwater within the Upper Stour catchment (Stodmarsh SAC, SPA and Ramsar).	Development is adjacent to, or uses wastewater treatment works that discharges into, the River Medway: ■ All allocated sites, other than those at Lenham Development discharges wastewater to or abstracts water from the Medway Catchment, within the SSSI IRZ: ■ Lidsing Garden Settlement (SSSI IRZ for Thames Estuary and Marshes SPA/Ramsar) Development discharges to watercourses / groundwater within the Upper Stour catchment: ■ Heathlands Garden Settlement (1,400 homes); LPRSA260 (employment, therefore not required to achieve nutrient neutrality); and Lenham Broad Location (1,000 homes).

Table 4.5: Summary of Screening Assessment

European Site	Physical Damage/Loss	Non-physical disturbance	Non-toxic Contamination	Air Pollution	Recreational Disturbance	Water Quantity and Quality
North Downs Woodlands SAC	No LSE	Screened out	No LSE	Potential LSE	Potential LSE	Screened out
Peter's Pit SAC	Screened out	Screened out	Screened out	Screened out	Screened out	Screened out
Queendown Warren SAC	Screened out	Screened out	No LSE	Screened out	Potential LSE	Screened out
Wye and Crundale SAC	Screened out	Screened out	Screened out	Screened out	Screened out	Screened out
Medway Estuary and Marshes SPA and Ramsar	Screened out	Screened out	Screened out	Potential LSE	Potential LSE	Potential LSE
The Swale SPA and Ramsar	Screened out	Screened out	Screened out	Potential LSE	Screened out	Potential LSE (water quantity only)
Thames Estuary and Marshes SPA and Ramsar*	Screened out	Screened out	Screened out	No LSE	Screened out	Potential LSE
Outer Thames Estuary SPA	Screened out	Screened out	Screened out	Screened out	Screened out	Screened out

European Site	Physical Damage/Loss	Non-physical disturbance	Non-toxic Contamination	Air Pollution	Recreational Disturbance	Water Quantity and Quality
Stodmarsh SAC, SPA and Ramsar*	Screened out	Screened out	Screened out	Screened out	Screened out	Potential LSE (Water quality only)

* Note: the boundaries of the different designations for these sites differ e.g. SAC difference from SPA/Ramsar, but screening conclusions apply to all components of the site.

Chapter 5
Appropriate Assessment

Assessment into whether there will be adverse effects on the integrity of European sites

5.1 The HRA screening has identified the need for Appropriate Assessment, as certain likely significant effects from the Local Plan Review (alone or in combination with other projects or plans) cannot be ruled out without further assessment or information.

5.2 For each type of impact that has been identified as having a likely significant effect, the Appropriate Assessment considers the scale and likely impacts on each of the European sites, the elements of the Local Plan Review (and other plans or projects, where relevant) that would have those effects, and any mitigation or safeguards in place that would reduce the effects. The assessment then considers whether there would be an adverse effect on the integrity of a European site.

5.3 The Appropriate Assessment assesses the Local Plan Review, using currently available information. Where there is insufficient information to undertake quantitative assessment, the HRA identifies the information that will be required to do so (see also **Chapter 6**).

5.4 The following policies in the Local Plan Review, and potentially all of the site allocations, will result in the type of development or activities that could affect European sites (see **Table 4.3:** and **Table 4.4:**):

- Policy SS1: Maidstone Borough Spatial Strategy 2022-2037
- Policy SP1: Maidstone Town Centre
- Policy SP2: Maidstone Urban Area
- Policy SP3: Development at the Edge of Maidstone
- Policy SP4a: Heathlands Garden Settlement
- Policy SP4b: Lidsing
- Policy SP5b: Development at Invicta Barracks
- Policy SP5c: Lenham Broad Location for Housing Growth
- Policy SP6a Coxheath

- Policy SP6b: Harrietsham
- Policy SP6c: Headcorn
- Policy SP6d: Lenham
- Policy SP6e: Marden
- Policy SP6f: Staplehurst
- Policy SP7a: East Farleigh
- Policy SP7c: Sutton Valence
- Policy SP7d: Yalding

5.5 The likely significant effects identified for these policies and sites have been subject to an Appropriate Assessment below to determine whether they could have an adverse effect on integrity of the relevant European sites identified in **Chapter 4.**

Air pollution

5.6 Traffic modelling and air quality assessment has been carried out by Jacobs. The traffic modelling was used to confirm the affected road network (i.e. those roads experiencing greater than 1,000 AADT and/or the other thresholds in the DMRB guidance (see **paragraph 4.16**) when taking the Local Plan Review into account). This confirmed that roads adjacent to North Downs Woodlands SAC, Medway Estuary and Marshes SPA/Ramsar and The Swale SPA/Ramsar would require air quality assessment.

5.7 The traffic modelling used the following scenarios:

- Baseline year – used for validation purposes (2019);
- Do nothing – traffic growth forecast for a projected base year (2037) without committed development, calculated using growth estimates in TEMPro[40];
- Do minimum – traffic growth forecast for a projected base year (2037) including committed development (i.e. allocations in the 2017 Maidstone Local Plan and committed development from neighbouring authorities).
- Do something – traffic growth forecast for a projected base year (2037) including committed development , plus the new allocations in the Reg. 19 2021 Maidstone Local Plan.

5.8 The effects of the Local Plan Review alone (i.e. without the 2017 allocations) are therefore derived by subtracting the 'do minimum' traffic flows from the 'do something' flows.

5.9 The 'do something' scenario provides an estimate of in-combination effects from other plans and projects, taking into account general growth allowed for within the Tempro growth factor, developments in neighbouring authorities from the Kent county-wide traffic model (committed and likely developments within the Kent districts), and committed developments within the 2017 Local Plan.

5.10 In addition to the A229 and A249, identified at the HRA screening stage, the traffic modelling screened in Lidsing Road, a B road linking Maidstone to Lidsing. These roads would exceed one of the DMRB screening thresholds under the Do Something scenario (i.e. the Local Plan Review in combination with other developments within Kent, including the 2017 Maidstone Local Plan allocations). The traffic data (Appendix D) shows that the LPR allocations alone do not exceed the DMRB criteria (>1,000 AADT increase between 'do minimum' and 'do something' scenarios).

5.11 Air quality assessment was undertaken by Jacobs for transects at points along these three roads, following the methodology set out in *Natural England's approach to advising competent authorities on the assessment of road traffic emissions under the Habitats Regulations*[41]. The guidance states that the first step once it has been confirmed that a site is sensitive to air pollution is to determine whether the change in pollutant concentrations (leading to nitrogen deposition) alone or 'in combination' exceeds 1% of the critical level or load. If it does not exceed 1% of the critical level or load, then it can be concluded that no likely significant effect will arise since the total change in pollutant concentrations is imperceptible. The air quality assessment was based on the difference in nitrogen deposition predicted between the 'do nothing' scenario and the 'do something' scenario, i.e. the in-combination effects of the Local Plan Review.

5.12 The results of the air quality assessment are summarised below and presented in full in **Appendix D**.

North Downs Woodlands SAC

5.13 The air quality assessment found that the roads passing within 200m of North Downs Woodlands SAC will exceed a 1% increase in nitrogen deposition relative to the (lower)

[40] TEMPro calculates future traffic flows based on growth rates. It was considered acceptable as the relevant road links are away from the urban centres where more detailed network analysis would be required to model the complexity (ie because when a road is congested, traffic will move onto other roads). Because TEMPro is slightly less accurate than fully modelling an additional scenario, it was decided to take a precautionary approach, such that if traffic flows appeared to be just below the screening criteria those locations would have been assessed more accurately; however all links significantly exceeded the DMRB screening criteria.

[41] Natural England (2018) Natural England's approach to advising competent authorities on the assessment of road traffic emissions under the Habitats Regulations, http://publications.naturalengland.org.uk/publication/4720542048845824

critical load at all four assessed transects (see **Appendix D**), for the Local Plan Review in combination with other committed developments:

- Transect A (mixed woodland including yew) has a % change >1% from 0 to 200 metres from the A229 (5.3% change at 182m).
- Transect B (deciduous woodland) has a % change >1% from 0 to 111m from Lidsing Road (1% change at 111m).
- Transect C (deciduous woodland) has a % change >1% from 0 to 41m from Lidsing Road (1.2% change at 41m).
- Transect D (mixed woodland including yew) has a % change >1% from 0 to 191m from Detling Hill/A249 (6.2% change at 191m).

5.14 This was assessed against the most nitrogen sensitive habitat present at those locations. For transects A and D this is coniferous woodland (mixed, with yew and beech), with a lower critical load of 5 kgN/ha/yr; at transects B and C, the habitat close to the road is deciduous woodland (beech), with a lower critical load of 10 kgN/ha/yr. Habitat data within the 200m buffer from relevant roads has been determined from the National Forest Inventory online[42].

5.15 The Site Improvement Plan for the North Downs Woodlands SAC, produced by Natural England identifies air pollution as a future threat to the site. The supplementary conservation advice sets a 'restore' target for air quality, with targets to maintain extent of habitat and soil nutrients, in relation to both qualifying features within 200m of the assessed roads (yew and beech woodland).

5.16 The site is currently significantly exceeding critical loads for nitrogen deposition (26.7-31.1kgN/ha/yr; average 28.3, against critical loads of 10-20 for beech forests and 5-15 for yew woods). APIS Source Attribution Data shows that road transport is responsible for 25% of contributions to nitrogen deposition (KgN/ha/yr) from local sources, with a similar proportion arising from agricultural sources.

5.17 To determine whether sensitive qualifying features will be exposed to pollution from the road and thus the conservation objectives for the site compromised, **Table 5.1** shows the area of qualifying habitat (yew and beech woodland) within the distance at which critical loads are >1% (up to 200m). For Lidsing Road, where there are two transects, the higher figure has been used to estimate area affected, to take a precautionary approach.

Table 5.1: Area of qualifying habitat where critical loads >1%

Road	Buffer distance	Area of qualifying habitat within road buffer	% of total area of qualifying habitat within road buffer	Closest distance of qualifying habitat to road
A229 (Transect A)	200m	<1ha (mixed including yew)	<1%	163m
Lidsing Road (Transects B & C)	111m	13.5 ha (deciduous; beech)	4.7%	0m
A249 (Transect D)	191m	3.0 ha (mixed including yew)	1.1%	8m

5.18 Approximately 13.5 ha of deciduous woodland and 3ha of mixed woodland will be affected by air pollution, representing c.6% of the total SAC area. Although a larger area of the SAC is potentially affected by nitrogen deposition associated with the Lidsing Road, the percentage change in deposition is higher on the A249 and A229, due to higher traffic flows. APIS deposition rates for kilometre grid square averages[43] also show that average deposition is higher (31.1kgN/ha/yr) in the portion of the SAC closer to the A229 and lower (29.1 kgN/ha/yr) in the portion nearer Lidsing Road and the A249.

5.19 Although a relatively small area of the SAC would be affected, the increase in nitrogen deposition at the site would make it difficult to achieve the conservation objective of restoring air quality.

Mitigation

5.20 Policy TRA1 Air Quality requires development proposals that will have an impact on air quality to submit an Air Quality Impact Assessment (AQIA) to consider the potential impacts of pollution from individual and cumulative development, and to demonstrate how the air quality impacts of the development will be mitigated to acceptable levels. This policy makes

[42] National Forest Inventory dataset accessed via Defra's MAGiC website: https://magic.defra.gov.uk/MagicMap.aspx

[43] APIS (2018) North Downs Woodland SAC Site Detailed Grid Information: http://www.apis.ac.uk/app

reference to the council's Air Quality Planning Guidance (2017)[44], which sets out a process for assessing and addressing air pollution from new development (including measures such as travel plans and improved cycling infrastructure).

5.21 Policy SP14a states that "The Council will work with Natural England to assess, monitor and if necessary mitigate any recreation pressure or air pollution effects at North Downs Woodland SAC. An air pollution mitigation strategy will be developed and agreed with Natural England before the Local Plan is adopted and implemented prior to adverse effects on integrity occurring; developer contributions would be used to support this."

5.22 In this case, it is considered that a mitigation strategy may need to be agreed with Natural England as it may not be sufficient to simply minimise traffic from new development: the conservation objective is to *restore* air quality, not maintain. Mitigation could include measures such as reducing speeds on affected roads or reducing nitrogen deposition from other sources such as agriculture.

5.23 Other policies within the Local Plan Review that provide a degree of mitigation in terms of helping to reduce numbers of car journeys and associated emissions include:

- Policy SP12: Sustainable Transport which encourages the reduction and use of sustainable transport to minimise impacts from vehicle emissions, and supports the provision of and improvements to Electric Vehicle charging infrastructure.
- Policy SP14c Climate Change requires new development to encourage a shift towards sustainable travel through ensuring good provision of walking and cycling routes, ensuring public transport accessibility and through the provision of electric vehicle infrastructure.
- Policy TRA2 Assessing the transport impacts of development states that all new developments must demonstrate that any measures necessary to mitigate the transport impacts (e.g. air quality) of development are viable and will be delivered at the appropriate point in the proposed development's buildout.

Conclusion

5.24 Provided that a mitigation strategy is developed and agreed before the Local Plan Review is adopted, then it can be concluded that there will not be adverse effects on the integrity of the SAC. This could be verified during the Examination process and confirmed in an HRA Addendum and/or Adoption Statement.

Medway Estuary and Marshes SPA/Ramsar

5.25 The air quality assessment found that the roads passing Medway Estuary and Marshes SPA/Ramsar will exceed a 1% increase in nitrogen deposition relative to the (lower) critical load at the assessed transect, for the Local Plan Review in combination with other committed developments:

- Transect L has a % change >1% from 0 to 20.1m from the A249 (1% at 20.1m).

5.26 This was assessed against pioneer, low-mid, mid-upper saltmarshes (lower critical load of 20 kgN/ha/yr), as specified in the Supplementary Advice[45] for the site, for all qualifying bird species. The conservation objectives at this site are to maintain air quality below critical loads for all qualifying bird species, and to maintain the extent of supporting habitats and food availability. Nitrogen deposition at the site (saltmarshes) is currently 11.8-29 kgN/ha/yr (average 14.5); which exceeds the lower critical load of 20-30 kgN/ha/yr, some of the time.

5.27 To determine whether sensitive qualifying features (birds) will be exposed to pollution from the road and thus the conservation objectives for the site are compromised, **Table 5.2** shows the areas of habitats within 20.1m of the A249 (the area affected by critical loads >1% for the most sensitive habitat; saltmarsh).

Table 5.2: Area of grazing marsh, coastal saltmarsh and mudflats where critical loads >1%

Buffer distance from A249	Area of qualifying habitat within road buffer	% of total area of qualifying habitat within road buffer	Closest distance of qualifying habitat to road
Coastal and floodplain grazing marsh			
20.1m	2.7ha	<1%	0m
Coastal saltmarsh			
20.1m	<1ha	<1%	0m
Mudflats			

[44] Maidstone Borough Council (2017) Air Quality Planning Guidance: https://maidstone.gov.uk/__data/assets/pdf_file/0011/12071/Air-Quality-Guidance-November-2017.pdf

[45] Natural England (2019) Medway Estuary and Marshes Supplementary Advice [Supporting habitat: air quality; all qualifying features]: https://designatedsites.naturalengland.org.uk/Marine/SupAdvice.aspx?SiteCode=UK9012031&SiteName=medway&SiteNameDisplay=Medway+Estuary+and+Marshes+SPA&countyCode=&responsiblePerson=&SeaArea=&IFCAArea=&NumMarineSeasonality=11

Buffer distance from A249	Area of qualifying habitat within road buffer	% of total area of qualifying habitat within road buffer	Closest distance of qualifying habitat to road
20.1m	2.2ha	<1%	0m

5.28 There is very little saltmarsh within this area but there are significant areas elsewhere in the SPA/Ramsar site. The majority of the habitats adjacent to the road are grazing marsh and mudflats. The APIS website states that no studies have been made of N deposition effects on coastal and floodplain grazing marsh, and overall N deposition is likely to be less important than nutrient enrichment via fertiliser wash off into drainage channels[46]. Mudflats are submerged with the tides, and do not retain significant nitrogen.

5.29 Work undertaken in the Netherlands also suggests salt marsh vegetation is N limited which would make it vulnerable to eutrophication effects from atmospheric N deposition. However, the N addition experiments that have been undertaken have neither used very realistic N doses nor input methods. The guidance follows on that overall N deposition is likely to be of low importance for these systems as the inputs are probably significantly below the large nutrient loadings from river and tidal inputs.

5.30 APIS Source Attribution Data shows that road transport is responsible for 15.5% of contributions to Nitrogen deposition (KgN/ha/yr) from local sources. The Medway Estuary and Marshes SSSI condition data shows the units closest to the road are in unfavourable-recovering condition due to low bird numbers; air pollution is not given as one of the causes of decline.

5.31 As shown in Table 5.2, less than 1% of the overall area of qualifying habitats for the Medway Estuary and Marshes SPA falls within the distance of the A249 where critical N loads exceed 1%. In addition, nitrogen is not considered to be of importance for maintaining the integrity of the qualifying habitat and APIS attribution data shows that road transport is not a sizable contributor compared to other sources. It is not considered likely that increased nitrogen deposition adjacent to the A249 due to the Local Plan Review in combination with other plans and projects would alter the supporting habitats in such a way that the integrity of the qualifying bird populations would be affected (for example by reducing the extent of the habitats or the availability of food).

Mitigation

5.32 As noted in paragraph 5.20, policies already contained within the Local Plan Review provide some mitigation in terms of helping to reduce numbers of car journeys and associated emissions.

Conclusion

5.33 It is considered that changes to the small area of habitat adjacent to the A249 that may arise due to an increase in traffic associated with the Local Plan Review alone or in combination with other committed developments are unlikely to result in adverse effects on the integrity of the qualifying bird species.

The Swale SPA/Ramsar

5.34 The air quality assessment found that the roads passing The Swale SPA/Ramsar will exceed a 1% increase in nitrogen deposition relative to the (lower) critical load at the assessed transect, for the Local Plan Review in combination with other committed development:

- Transect E has a % change >1% from 0 to 9.4m from the A249 (1.2%).

5.35 This was assessed against pioneer, low-mid, mid-upper saltmarshes (lower critical load of 20 kgN/ha/yr), as specified in the Supplementary Advice[47] for the site, for all qualifying bird species except Dunlin (unaffected). The conservation objectives at this site are to maintain air quality below critical loads for all qualifying bird species, and to maintain the extent of supporting habitats and food availability. Nitrogen deposition at the site (saltmarshes) is currently 11.7-29 kgN/ha/yr (average 16.8); which exceeds the lower critical load of 20-30 kgN/ha/yr, some of the time.

5.36 To determine whether sensitive qualifying features (birds) will be exposed to pollution from the road and thus the conservation objectives for the site compromised, **Table 5.3** shows areas of habitats within 9.4m of the A249 (the area affected by critical loads >1% for the most sensitive habitat; saltmarsh).

[46] APIS (2021) Coastal and floodplain grazing marsh: http://www.apis.ac.uk/node/967
[47] Natural England (2019) The Swale Supplementary Advice [Supporting habitat: air quality; all qualifying features]: https://designatedsites.naturalengland.org.uk/Marine/SupAdvice.aspx?SiteCode=UK9012011&SiteName=the+swale&SiteNameDisplay=The+Swale+SPA&countyCode=&responsiblePerson=&SeaArea=&IFCAArea=&NumMarineSeasonality=2

Table 5.3: Area of grazing marsh, coastal saltmarsh and mudflats where critical loads >1%

Buffer distance from A249	Area of qualifying habitat within road buffer	% of total area of qualifying habitat within road buffer	Closest distance of qualifying habitat to road
Coastal and floodplain grazing marsh			
9.4m	5.9 ha	0.1%	0m
Coastal saltmarsh			
9.4m	0 ha	0%	94m
Mudflats			
9.4m	0 ha	0%	144m

5.37 There is no saltmarsh within this distance; the majority of the habitats adjacent to the A249 are coastal and floodplain grazing marsh. As noted above under Medway Estuary and Marshes SPA/Ramsar, nitrogen deposition is not considered to be a significant risk to maintaining the integrity of coastal saltmarsh habitats or mudflats. In addition, APIS Source Attribution Data shows that road transport is responsible for 8.55% of contributions to Nitrogen deposition (KgN/ha/yr) at The Swale SPA/Ramsar from local sources. The Swale SSSI units nearby the road are also in favourable condition.

5.38 As shown in Table 5.3, only 0.1% of the area of qualifying habitat for The Swale SPA falls within the distance of the A249 where critical loads exceed 1%. In addition, nitrogen is not considered to be of importance for the qualifying habitat and attribution data shows that road transport is not a sizable contributor compared to other sources.

5.39 It is not considered likely that increased nitrogen deposition adjacent to the A249 due to the Local Plan Review in combination with other plans and projects would alter the supporting habitats in such a way that the integrity of the qualifying bird populations would be affected (for example by reducing the extent of the habitats or the availability of food).

Mitigation

5.40 As noted in paragraph 5.20, policies already contained within the Local Plan Review provide some mitigation in terms of helping to reduce numbers of car journeys and associated emissions.

Conclusion

5.41 It is considered that changes to the small area of habitat adjacent to the A249 that may arise due to an increase in traffic associated with the Local Plan Review alone or in combination with other committed developments are unlikely to result in adverse effects on the integrity of the qualifying bird species.

Recreation disturbance

North Downs Woodlands SAC

5.42 Allocated sites (and development permitted outside these, e.g. within villages) within 7km of North Downs Woodlands SAC, which includes sites around Maidstone town and Lidsing, could contribute to visitor pressure at the European site.

5.43 Natural England has confirmed through consultation[48] that the issues with recreation at North Downs Woodland SAC are from off road vehicles and mountain bikes coming off the permitted rights of way into the woodland. Legitimate uses such as walking are not seen as a concern. Antisocial behaviour is by a small number of visitors and therefore not as strongly linked to nearby population increases as overall visitor numbers would be, although there is likely to be some correlation.

Mitigation

5.44 Natural England has said that in order to manage the effects of off road vehicles, the relevant authorities need to maintain paths in good condition (particularly the byways) and work with landowners and the community to deter off-roading.

5.45 Policy SP14a of the Local Plan Review states that:

> *"The Council will work with Natural England to assess, monitor and if necessary mitigate any recreation pressure and air pollution effects at North Downs Woodland SAC. "*

5.46 This is considered sufficient to address the effects of recreation associated with residential development within 7km of the SAC, which are primarily associated with off-road vehicles rather than general visitor numbers.

[48] Natural England (2021) *personal communication via NE Lead Advisor for Sussex & Kent,* 27 July 2021

Conclusion

5.47 Safeguards within the Local Plan Review policy are considered sufficient to avoid adverse effects on the integrity of the SAC.

Medway Estuary and Marshes SPA/Ramsar

5.48 Lidsing Garden Settlement is the only site allocation within 6km of Medway Estuary and Marshes SPA/Ramsar. The site is 5.3km away at its nearest point; only the northernmost part of the Garden Settlement is within 6km of the SPA Ramsar. This development, allocated under Policy SP4b, provides for 1,300 new homes; although only part of the site is within 6km of the SPA/Ramsar.

Mitigation

5.49 The Bird Wise North Kent Mitigation Strategy[49] requires all new dwellings within 6km of the SPA/Ramsar to contribute to a tariff to fund access management and monitoring. The strategy is currently in place until 2034, which falls slightly short of the Local Plan Review end date of 2037; however, because the updated visitors surveys have been postponed due to the pandemic, Natural England has confirmed[50] that Maidstone Borough Council can rely on the strategy as mitigation to 2037.

5.50 Policy INF1 requires developments to contribute towards maintaining the borough-wide target of 6.5ha of natural/ semi-natural open space per 1,000 head of population, which will help to provide alternative accessible greenspace; and Policy SP4b confirms Lidsing Garden Settlement will contribute to the Bird Wise tariff.

5.51 Proposals for the site also include a cycling and walking link to Capstone Valley Country Park and enhancements to the country park, as well as open space within the new settlement (31ha of semi natural open space plus amenity green space, play, sports and allotment provision) which is expected to provide an alternative designation for recreation visits.

Conclusion

5.52 With mitigation set out in Policy SP4b, adverse effects on the integrity of the Medway Estuary and Marshes SPA/Ramsar as a result of impacts from recreation will be avoided.

Queendown Warren SAC

5.53 Lidsing/North of M2 Garden Settlement (Policy SP4b) is 2.2km west of the SAC and has the potential to contribute to recreation pressure at the SAC with 1,300 homes proposed within the Plan period.

5.54 It is therefore only Lidsing Garden Settlement that has the potential to contribute to recreation pressure at the site. Kent Wildlife Trust (which manages the SAC) has confirmed[51] that they do not expect many visitors arriving on foot at the SAC and visits by car are now limited by parking charges.

Mitigation

5.55 As stated above, Policy SP4b includes provision to enhance Capstone Country Park and links to it, as well open space within the new settlement, which is considered sufficient to minimise visits to Queendown Warren SAC.

Conclusion

5.56 Mitigation contained with Local Plan Review Policy SP4b is considered sufficient to be able to conclude no adverse effects on the integrity of Queendown Warren SAC, due to recreation pressure.

Water quality and quantity

5.57 **Table 5.4:** identifies the wastewater treatment works (WwTWs) that serve Maidstone borough and the rivers that they discharge into. Discharges into the River Medway or River Stour may affect the Medway Estuary and Marshes SPA/Ramsar, Thames Estuary and Marshes SPA/Ramsar or Stodmarsh SAC & SPA/Ramsar.

5.58 Note that estimates of WwTW capacity are taken from a study undertaken for the Medway Local Plan in 2017 as this is more up to date than the latest available Water Cycle Study for Maidstone (2010).

5.59 A high proportion of Southeast Water's supply (73%) comes from groundwater[52], with water supply in South East Water's Water Resources Zone 6 (Maidstone and West Malling) coming from groundwater (78%), surface water (12%) and transfer from other areas (10%).

5.60 The Water Cycle Study[53] concluded in 2010 that the North Downs Aquifer and River Medway are over licenced (i.e.

[49] Bird Wise (2018) *Bird Wise North Kent Mitigation Strategy*, https://northkent.birdwise.org.uk/wp-content/uploads/2018/02/Mitigation-Strategy.pdf
[50] Natural England, personal communication via Lead Advisor for Sussex and Kent, 21 July 2021
[51] Kent Wildlife Trust, personal communication via Maidstone Borough Council Senior Planner, 22 April 2021
[52] Southeast Water (2019) Draft Water Resources Management Plan https://corporate.southeastwater.co.uk/media/2219/draft-water-resources-management-plan-2019-main-document.pdf
[53] Maidstone Borough Council (2010) Water Cycle Study https://maidstone.gov.uk/__data/assets/pdf_file/0019/12088/Water-Cycle-Study-Outline-Report-2010.pdf

licences issued by the Environment Agency permit more abstraction than possible without environmental damage). The Lower Greensand aquifer was also considered to be over abstracted.

Table 5.4: Wastewater treatment works (WwTWs) serving Maidstone borough

WwTW[54]	Area served[55]	Policies or site allocations resulting in development in these areas	Discharges into river…[56]	Notes on capacity (estimate of capacity remaining following development of dwellings in Medway Local Plan, after 2031)[57]
Aylesford (Tonbridge & Malling)	Aylesford, Eccles, Quarry Wood, Royal British Legion Village, Maidstone, Allington, Barming, Bearsted, Boughton Monchelsea, Boxley, Chart Sutton, Coxheath, Detling, Downswood, East Farleigh, Grafty Green, Harrietsham, Hollingbourne, Hunton, Invicta Park, Kingswood, Langley, Leeds, Lenham Heath, Lenham, Linton, Mereworth, Nettlestead, Otham, Pendenen Heath, Sandling, Sutton Valence, Teston, Thurnham, Tovil, Ulcombe, Wateringbury, Weavering, West Fairleigh, Maidstone	SP1, SP2, SP3, SP5b, SP7a, LPRSA265, LPRSA362, LPRSA270, LPRSA152, LPRSA303, LPRSA266, LPRSA366, LPRSA146, LPRSA148, LPRSA149, H1(13), LPRSA145, LPRSA147, LPRSA151. Plus development in Coxheath, Sutton Valence, Linton, Leeds, Harrietsham, Lenham, and Ulcombe that may be instead served by smaller local WwTWs (see below).	River Medway	8,200 homes
Coxheath	Maidstone, Boughton Monchelsea, East Fairleigh, Loose, West Fairleigh, Coxheath, Hunton	SP6a, LPRSA251, LPRSA312, LPRSA360	Loose Stream (tributary of River Medway)	<100 homes
Sutton Valence	Sutton Valence	SP7c & LPRSA078	Not specified (Medway catchment)	600 homes
Linton	Linton	SP10c (screened out as small scale)	n/a	n/a
Leeds	Kingswood, Hollingbourne, Leeds, Sutton Valance, Chart Sutton, Langley, Ulcombe, Maidstone	SP5a, SP7b, LPRSA204, LPRSA172	Unspecified tributary of River Len (and therefore River Medway)	Insufficient capacity for Medway homes
Harrietsham	Harrietsham, Maidstone, Lenham	SP5c, SP6b, SP6d, LPRSA101, LPRSA071	River Len (tributary of River Medway)	Insufficient capacity for Medway homes

[54] Kent Waste and Mineral Sites: https://www.kent.gov.uk/__data/assets/pdf_file/0019/90910/Kent-waste-and-mineral-sites.pdf
[55] Southern Water (2020) Drainage and wastewater management plan, River Medway Catchment: https://www.southernwater.co.uk/media/3860/medway-dwmp-strategic-context.pdf
[56] European Commission (2016) Urban waste water treatment website: https://uwwtd.eu/United-Kingdom/uwwtps/treatment
[57] Aecom (2017) Kent Water for Sustainable Growth Study (for Medway Council): https://www.medway.gov.uk/download/downloads/id/2374/kent_water_for_sustainable_growth_2017.pdf

WwTW[54]	Area served[55]	Policies or site allocations resulting in development in these areas	Discharges into river…[56]	Notes on capacity (estimate of capacity remaining following development of dwellings in Medway Local Plan, after 2031)[57]
Lenham	Lenham Heath, Lenham Maidstone, Platts Heath, Sandway	SP4a, SP5c, SP6d, LPRSA260	Great Stour	200 homes (although later requirements for nutrient neutrality in the Stour, effectively reduce the capacity to zero)
Staplehurst	Tonbridge, Staplehurst	SP6f, LPRSA114, LPRSA066	River Beult (tributary of River Medway)	400 homes
Ulcombe	Ulcombe, Grafty Green	None	n/a	n/a
Headcorn	Headcorn, Ashford	SP6c, LPRSA310	River Beult (tributary of River Medway)	900 homes
Horsmonden (Tunbridge Wells)	Tonbridge, Marden, Horsmonden, Matfield, Brenchley, Goudhurst	SP6e, LPRSA295 & LPRSA315	River Teise (tributary of River Medway)	3,200 homes
Motney Hill (Medway)	Chatham, Bluebell Hill, St. Marys Island, Walderslade, Gillingham, Brompton, Gillingham Business Park, Hempstead, Rainham, Rochester, Allhallows, Burham, Chattenden, Cliffe Woods, Cliffe, Cooling, Cuxton, Halling, High Halstow, Highham, Hoo, Lower Stoke, Medway City Estate, Middle Stoke, St. Mary, Hoo, Strood, Upper Stoke, Wainscott, Wouldham, Rochester, Gillingham, Walderslade, Upchurch, Newington, Rain	SP4b	River Medway	700 homes
Wateringbury (Tonbridge & Malling)	Maidstone, Laddingford, Wateringbury, Yalding, Teston, Barming, Mereworth, Nettlestead, Hunton, West Peckham, West Fairleigh, Marden, East Fairleigh, Maidstone, Barming	SP7d, LPRSAEmp1, LPRSA248	River Medway	237 homes

Medway Estuary and Marshes SPA/Ramsar

5.61 As can be seen in **Table 5.4:**, all of the WwTWs serving the borough, with the exception of Lenham, discharge into the River Medway or one of its tributaries. All of the site allocations and policies allocating development (with the exception of those using Lenham WwTW) therefore have the potential to impact upon the Medway Estuary and Marshes SPA/Ramsar. However, it is likely that Aylesford, Motney Hill and Wateringbury WwTWs will have the more significant effect as these large treatment works discharge directly into the River Medway; discharges from further upstream will be more dispersed and diluted by the time they reach the estuary.

5.62 The qualifying features of the SPA/Ramsar are its waterbird populations. Conservation objectives[58] relating to water quality or quantity include:

- Nutrients: Maintain water quality at mean winter dissolved inorganic nitrogen levels where biological indicators of eutrophication (opportunistic macroalgal and phytoplankton blooms) do not affect the integrity of the site and features, avoiding deterioration from existing levels.
- Dissolved oxygen: Maintain the dissolved oxygen (DO) concentration at levels equating to Good Ecological Status, avoiding deterioration from existing levels.
- Contaminants: Reduce aqueous contaminants to levels equating to (Good/High) status according to the Water Framework Directive, avoiding deterioration from existing levels.
- Hydrology/flow within intertidal habitats: Maintain the availability of fresh water on mudflats within feeding and resting areas.
- Hydrology/flow within grassland: Maintain water availability within feeding areas to maintain moderately high water tables that provide shallow surface water.

5.63 The 2019 Environment Agency Waterbody Classification for the Medway Swale Estuary[59] shows the overall water quality classification as moderate, with reasons for not achieving good being due, in part, to pollution e.g. dissolved inorganic nitrogen. Classification of the groundwater[60] also identified the North Kent aquifer as being in 'poor' condition, mainly due to agriculture.

5.64 Natural England has advised[61] that the Medway and Swale estuary have previously been considered to be a low risk of eutrophication due to physical characteristics and turbidity.

5.65 Natural England has also said that they are aware of some localised issues with water quality that may affect the European site, including algal blooms reported by locals due to Motney Hill WwTW and the unfavourable condition of Medway Estuary and Marshes SSSI. In 2017, areas of littoral sediment were assessed at the SSSI. The Adverse Condition Reason for one of the units which was assessed as unfavourable declining was due to water pollution. The assessor noted that algal blooms were in front of a sewage treatment works outfall, smothering the mudflats and impacting on the food availability for the Medway bird assemblage.

Mitigation

5.66 Water companies have to operate within the regulatory framework established through a number of Acts of Parliament (such as the Water Act, Environment Act and Flood and Water Management Act) as well regulations which transposed relevant EU Directives (such as the Water Framework, Urban Wastewater Treatment and Drinking Water Directives). They therefore are legally required to provide water supply and treatment for new development, even if that means expanding existing capacity (for example by creating new WwTWs). Southern Water and South East Water will therefore be required to meet the waste water treatment and water supply needs of development allocated within the Local Plan Review, although they will be limited by permitting requirements for abstraction and discharge, which the Environment Agency regulates.

5.67 The supporting text to Policy SP14a: Natural Environment states “SACs/SPAs/Ramsar sites downstream of Maidstone borough may also be affected by changes in water quality or quantity, via abstraction or discharge into rivers or groundwater. All major developments will be required to demonstrate that there is sufficient capacity in water supply and wastewater treatment infrastructure.”

5.68 It also states “Developments discharging wastewater into or abstracting water from the River Medway catchment or abstracting groundwater may also affect water quality and quantity at coastal and estuarine European sites downstream

[58] Natural England (2019) Medway Estuary and Marshes SPA Supplementary Advice: https://designatedsites.naturalengland.org.uk/Marine/SupAdvice.aspx?SiteCode=UK9012031&SiteName=medway+estuary&SiteNameDisplay=Medway+Estuary+and+Marshes+SPA&countyCode=&responsiblePerson=&SeaArea=&IFCAArea=&NumMarineSeasonality=11

[59] Environment Agency (2019) Water Body classification for Medway Swale Estuary: https://environment.data.gov.uk/catchment-planning/WaterBody/GB530604002300

[60] Environment Agency (2019) Kent North Medway Chalk Summary: https://environment.data.gov.uk/catchment-planning/OperationalCatchment/1142/Summary

[61] Natural England, personal communication via Freshwater Lead Adviser (Sussex & Kent), 10 August 2021

of Maidstone borough. Water abstraction and discharge is regulated through permitting, and South East Water's Water Resources Management Plan 2019 plans ahead to 2080 to ensure that water infrastructure can meet requirements for housing growth as well as environmental protection.

5.69 Policy SP14A itself then requires under point 1 "developers to ensure that new developments incorporate measures where appropriate to [within a list of criteria i to viii]:

- (iv) Control pollution to protect ground and surface waters where necessary and mitigate against the deterioration of water bodies and adverse impacts on Groundwater Source Protection Zones, and/or incorporate measures to improve the ecological status of water bodies as appropriate; Major developments will not be permitted unless they can demonstrate that new or existing water supply, sewage and wastewater treatment facilities can accommodate the new development. Wastewater treatment and supply infrastructure must be fit for purpose and meet all requirements of both the permitting regulations and the Habitats Regulations (for example in relation to nutrient neutrality at Stodmarsh)."

Conclusion

5.70 Combined with capacity upgrades of WwTW serving Maidstone Borough which Southern Water may need to carry out to stay within permitting limits, the mitigation contained with Local Plan Review Policy SP14A is considered sufficient to be able to conclude no adverse effects on the integrity of Medway Estuary and Marshes SPA/Ramsar, due to changes in water quantity or quality.

Thames Estuary and Marshes SPA and Ramsar

5.71 As stated in relation to the Medway Estuary and Marshes SPA/Ramsar, most of the WwTWs discharge into the River Medway or one of its tributaries; and, like the Medway Estuary and Marshes, Thames Estuary and Marshes SPA/Ramsar partially overlies the aquifer used for drinking water supply, although the Thames Estuary is less strongly linked to Maidstone borough via the North Downs Chalk Aquifer than the Medway, as groundwater within the borough largely flows towards the Medway[62]. The quality of these waterbodies is as stated for Medway Estuary and Marshes SPA/Ramsar, although unlike the Medway site, none of the component SSSI units at the Thames Estuary and Marshes SPA/Ramsar are in unfavourable condition.

5.72 The qualifying features of the SPA/Ramsar are its waterbird populations. Conservation objectives[63] relating to water quality or quantity include:

- Nutrients: Maintain water quality at mean winter dissolved inorganic nitrogen levels where biological indicators of eutrophication (opportunistic macroalgal and phytoplankton blooms) do not affect the integrity of the site and features, avoiding deterioration from existing levels.
- Dissolved oxygen: Maintain the dissolved oxygen (DO) concentration at levels equating to High Ecological Status, avoiding deterioration from existing levels.
- Contaminants: Reduce aqueous contaminants to levels equating to (Good/High) status, avoiding deterioration from existing levels.
- Hydrology/flow within intertidal habitats: Maintain the availability of fresh water on mudflats within feeding and resting areas.
- Hydrology/flow within grassland: Maintain water availability within feeding areas to maintain moderately high water tables that provide shallow surface water (redshank); and maintain high water tables that provide surface water and/or damp field conditions with [20-30%] of the area soggy or flooded overall (black-tailed godwit).

5.73 As stated in the Greater Thames Complex Site Improvement Plan[64], "The Medway Estuary feeds into and lies on the south side of the outer Thames Estuary in Kent, south-east England. It forms a single tidal system with the Swale and joins the Thames Estuary between the Isle of Grain and the Isle of Sheppey." Therefore, in terms of water quality the Thames Estuary is linked to the Medway, though it is not the only influence, and is certainly less likely to be affected by changes in the Medway estuary than the Medway Estuary and Marshes SPA/Ramsar.

Mitigation

5.74 As described above under Medway Estuary and Marshes SPA and Ramsar, there are already various mitigation measures relating to water pollution within the supporting text and wording of Policy SP14A: Natural Environment.

[62] Defra (2021) MagicMap (Aquifer designation layers), https://magic.defra.gov.uk/MagicMap.aspx
[63] Natural England (2019) Thames Estuary and Marshes SPA Supplementary Advice: https://designatedsites.naturalengland.org.uk/Marine/SupAdvice.aspx?SiteCode=UK9012021&SiteName=thames+estuary&SiteNameDisplay=Thames+Estuary+and+Marshes+SPA&countyCode=&responsiblePerson=&SeaArea=&IFCAArea=&NumMarineSeasonality=8
[64] Natural England (2014) Site Improvement Plan Greater Thames Complex: http://publications.naturalengland.org.uk/publication/6270737467834368

Conclusion

5.75 Combined with capacity upgrades of WWTW serving Maidstone Borough which Southern Water may need to carry out to stay within permitting limits, the mitigation contained with Local Plan Review Policy SP14A is considered sufficient to be able to conclude no adverse effects on the integrity of Thames Estuary and Marshes SPA/Ramsar, due to changes in water quantity or quality.

Stodmarsh SAC & SPA/Ramsar

5.76 Proposed development around Lenham within Policies SP5c Lenham Broad Location, and SP6d Lenham (rural service centre; largely employment and therefore not required to be nutrient neutral) and the Heathlands Garden Settlement falls within the Stour Catchment (see **Table 5.4**). This area is served by the Lenham WwTW, which discharges into the River Stour and could therefore affect water quality at Stodmarsh SAC and SPA/Ramsar.

5.77 The proposed Heathlands Garden Settlement lies at the upper end of the Stour catchment. Surface water run-off from the site and also treated effluent from the existing Lenham WwTW discharges into the Stour and, due to levels of nutrients (nitrogen and phosphorus) within that discharge water, has the potential to affect water quality within European designated wetlands and lakes in the Stodmarsh area downstream.

5.78 Conservation objectives for the site relating to water quality are:

- Maintain the quality of waters within the site as indicated by the presence of an abundant and diverse invertebrate community and meet the lake water quality targets ensuring a base rich supply of water (for the SAC); and
- Where the supporting habitats of the SPA feature are dependent on surface water, restore water quality and quantity to a standard which provides the necessary conditions to support the feature (for the SPA).

5.79 The water quality at the Stodmarsh site is currently in an unfavourable condition due to elevated concentrations of nitrogen and phosphorus. It has therefore been considered that any increase in these nutrients could result in an adverse effect on the integrity of the SAC or SPA/Ramsar. A mitigation strategy is now in place that requires nutrient neutrality from developments discharging water into the Stour catchment.

5.80 The developers of the Heathlands Garden Settlement site (Homes England) have prepared a Nutrient Neutrality Review[65] (NN Review). The NN Review states: “The existing wastewater treatment plant is not suitable to support the proposed garden settlement both in terms of both operational capacity, or ability to mitigate resultant increases in nutrients. Replacement or upgrading the Lenham WTW represents an opportunity to provide mitigation through an increase in both capacity and treatment levels. Regulatory constraints mean that this may not be a viable route in the timescales required to facilitate the development but discussions with Southern Water are ongoing to identify potential solutions. An alternative route for treatment of wastewater, and thus mitigation of additional nutrient load, is the inclusion of a new and separate treatment works to serve the development. Constructive and positive discussions are currently being held with third parties to explore this opportunity.”

5.81 In relation to the other development sites around Lenham, Maidstone Borough Council commissioned Stantec to prepare a Nutrient Impact Assessment and Mitigation Screening report[66], which provides a nutrient budget calculation for sites around Lenham (LPRSA260 and the Broad Location) and concluded that mitigation would be required for all of the Lenham sites.

Mitigation

5.82 Natural England's *Advice on Nutrient Neutrality for New Development in the Stour* requires that developments within the catchment of the SAC/SPA/Ramsar demonstrate nutrient neutrality, in order to avoid adverse effects on the integrity of the European site.

5.83 Policy SP4(A) Heathlands requires proposals for the garden settlement (under Point 6: Infrastructure) to:

- d) Address the future expansion or redevelopment of Lenham Waste Water Treatment Works, or provide a suitable alternative facility.

5.84 Policy SP14a Natural Environment states that:

- Development in Lenham and Lenham Heath that would result in a net increase in population served by a wastewater system will need to ensure that it will not have an adverse effect on the integrity of Stodmarsh SAC/SPA/Ramsar site. Where a proposed development falls within the Stour Catchment (e.g. Lenham, east of Faversham Road), or where sewage from a development will be treated at a Waste Water Treatment Works that discharges into the river Stour or its tributaries, then applicants will be required to demonstrate that the requirements set out in the advice note on Nutrient Neutrality issued by Natural England have been met.This will enable the Council to ensure

[65] Ramboll (June 2021) Heathlands Garden Settlement Nutrient Neutrality Review (for Homes England)

[66] Stantec (April 2021) Maidstone Local Plan – Lenham Nutrient Impact Assessment and Mitigation Screening

that the requirements of the Habitats Regulations are being met.

5.85 As noted above under the Medway Estuary and Marshes SPA, there are also already various mitigation measures within the supporting text and wording of Policy SP14a: Natural Environment. With respect to the potential for adverse effects on integrity of the Stodmarsh SAC/SPA/Ramsar site, point 4 of Policy SP14a requires development proposals to give weight to protection of designated sites equal to the significance of their status (of which the European sites referred to in this HRA are the highest level). It also specifically includes criterion v about the effects on Stodmarsh SAC/SPA/Ramsar site, as follows:

- v. "Development in Lenham and Lenham Heath that would result in a net increase in population served by a wastewater system will need to ensure that it will not have an adverse effect on the integrity of Stodmarsh SAC/SPA/Ramsar site. Where a proposed development falls within the Stour Catchment (e.g. Lenham, east of Faversham Road), or where sewage from a development will be treated at a Waste Water Treatment Works that discharges into the river Stour or its tributaries, then applicants shall will be required to undertake an Appropriate Assessment to demonstrate that the requirements set out in the advice note on Nutrient Neutrality issued by Natural England have been met. This will enable the Council to ensure that the requirements of the Habitats Regulations are being met."

5.86 The proposed approach to treating wastewater from new development around Lenham (Heathlands garden settlement and Lenham broad location) is set out in the Nutrient Neutrality Assessment by Ramboll (**Appendix E**). The report states that:

> *"It is intended that wastewater from the garden community will be treated by a new WWTW. The new WWTW will not only serve the development, but also incorporate flows and loads from sites within the vicinity of Lenham that are currently proposed as part of the Local Plan.*
>
> *Calculations show that the new treatment works would offset the majority of the increased load in nutrients resulting from the proposed development, and that utilisation of a wetland to 'polish' discharge from the treatment works would provide removal of the remainder of load associated with wastewater. Additional wetland provision would treat nutrient load within surface water run-off from the Site. In these ways it is planned to provide mitigation to offset the predicted increase in nutrient loadings on Site, without the need for additional off-site mitigation, and the proposed garden community development will be nutrient neutral."*

Conclusion

5.87 The nutrient neutrality assessment demonstrates that residential development around Lenham can achieve nutrient neutrality, via measures that are planned to be put in place prior to the completion of the development.

5.88 Maidstone Borough Council has met with Natural England during preparation of the Reg. 19 Local Plan Review and advised of the nutrient neutrality calculations undertaken for the Heathlands Garden Settlement and Lenham Broad Location, along with the proposed mitigation measures and policy requirements contained in the Local Plan Review and Natural England has confirmed they are supportive in principle of this approach.

5.89 Provided that Natural England is supportive of the policy requirements and mitigation measures developed and agreed before the Local Plan Review is adopted, then it can be concluded that there will not be an AEOI from the LPR. This could be verified during the Examination process and confirmed in an HRA Addendum and/or Adoption Statement.

Summary of Appropriate Assessment

5.90 The conclusions of the Appropriate Assessment are summarised in **Table 5.1**:

- The European sites that are shown as screened out indicate sites that were screened out due to lack of impact pathway/sensitive qualifying features or assessed and concluded to have no Likely Significant Effect at the screening stage.
- The European sites highlighted as having no adverse effect on integrity were found to have no adverse effect on integrity due to the more detailed assessment carried out and/or confirmed mitigation already included in the draft Local Plan Review.
- For the remaining European sites, the potential for adverse effects on integrity from the Local Plan Review in relation to these sites is uncertain until Natural England has formally agreed the proposed mitigation measures.

Table 5.5: Summary of Appropriate Assessment

European Sites	Air Pollution	Recreational Pressure	Water Quantity and Quality
North Downs Woodlands SAC	Uncertain – should be no AEoI once mitigation strategy agreed with NE	No adverse effects on integrity	No adverse effects on integrity
Medway Estuary & Marshes SPA / Ramsar	No adverse effects on integrity	No adverse effects on integrity	No adverse effects on integrity
Thames Estuary & Marshes SPA / Ramsar	No adverse effects on integrity	Screened out	No adverse effects on integrity
Queendown Warren SAC	Screened out	No adverse effects on integrity	No adverse effects on integrity
Stodmarsh SAC & SPA / Ramsar	Screened out	Screened out	Uncertain – should be no AEoI once mitigation strategy formally agreed with NE

Chapter 6
Conclusions

Findings of the HRA process

6.1 The HRA Screening in Chapter 4 concluded that the following policies and all potential site allocations currently identified in the Regulation 18 Local Plan Review could have a likely significant effect on European sites, alone or in combination with other plans or projects:

- Policy SS1: Maidstone Borough Spatial Strategy 2022-2037
- Policy SP1: Maidstone Town Centre
- Policy SP2: Maidstone Urban Area
- Policy SP3: Development at the Edge of Maidstone
- Policy SP4a: Heathlands Garden Settlement
- Policy SP4b: Lidsing
- Policy SP5b: Development at Invicta Barracks
- Policy SP5c: Lenham Broad Location for Housing Growth
- Policy SP6: Rural Service Centres
- Policy SP6a Coxheath
- Policy SP6b: Harrietsham
- Policy SP6c: Headcorn
- Policy SP6d: Lenham
- Policy SP6e: Marden
- Policy SP6f: Staplehurst
- Policy SP7a: East Farleigh
- Policy SP7c: Sutton Valence
- Policy SP7d: Yalding

6.2 The findings of the HRA screening determined that impacts from air pollution, recreation and water quantity and quality could result in a likely significant effect in relation to:

- **Air pollution –** in relation to North Downs Woodland SAC, Medway Estuary and Marshes SPA/Ramsar, and the Swale SPA/Ramsar

- **Recreation** – in relation to North Downs Woodland SAC, Medway Estuary Marshes SPA/Ramsar, and Queendown Warren SAC
- **Water quantity and quality** – in relation to Medway Estuary and Marshes SPA/Ramsar, Thames Estuary and Marshes SPA/Ramsar, Stodmarsh SAC & SPA/Ramsar

6.3 The Appropriate Assessment in Chapter 5 considered 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 summarised below.

Air pollution

6.4 The Appropriate Assessment concluded no adverse effect on integrity as a result of increased air pollution in relation to Medway Estuary and Marshes SPA/Ramsar and The Swale SPA/Ramsar, due to the scale of nitrogen deposition impact and characteristics of the sites.

6.5 Nitrogen deposition at North Downs Woodlands SAC has the potential for adverse effects on integrity, due to the impact of the LPR in combination with other plans and projects, on traffic flows the A229, A249 and Detling Road.

6.6 Mitigation could include measures such as reducing speeds on affected roads or reducing nitrogen deposition from other sources such as agriculture. Provided that a mitigation strategy is developed and agreed with Natural England before the Local Plan Review is adopted, then it can be concluded that there will not be adverse effects on the integrity of the SAC. This could be verified during the Examination process and confirmed in an HRA Addendum and/or Adoption Statement.

Recreation

6.7 The Appropriate Assessment concluded no adverse effect on integrity as a result of increased recreational pressure in relation to all European sites, provided that the following safeguards and mitigation measures required by the plan are successfully implemented:

- Policy SP14a: "The Council will work with Natural England to assess, monitor and if necessary mitigate any recreation pressure and air pollution effects at North Downs Woodland SAC."
- Policy SP4b: confirms Lidsing Garden Settlement will contribute to the Bird Wise tariff. Proposals for the site include a cycling and walking link to Capstone Valley Country Park and enhancements to the country park, as well as open space within the new settlement (31ha of semi natural open space plus amenity green space, play, sports and allotment provision).

Water quality and quantity

6.8 The Appropriate Assessment concluded no adverse effect on integrity as a result of increased pressure on water abstraction and treatment in relation to all European sites, provided that the following safeguards and mitigation measures are required by the plan and successfully implemented:

- Policy SP14a: “developers to ensure that new developments incorporate measures where appropriate to [within a list of criteria i to viii]:
  - (iv) Control pollution to protect ground and surface waters where necessary and mitigate against the deterioration of water bodies and adverse impacts on Groundwater Source Protection Zones, and/or incorporate measures to improve the ecological status of water bodies as appropriate; Major developments will not be permitted unless they can demonstrate that new or existing water supply, sewage and wastewater treatment facilities can accommodate the new development. Wastewater treatment and supply infrastructure must be fit for purpose and meet all requirements of both the permitting regulations and the Habitats Regulations (for example in relation to nutrient neutrality at Stodmarsh).”
- New wastewater treatment works are planned at Heathlands Garden Settlement, to serve the garden community and other new development in Lenham (broad location), with constructed wetlands to provide additional treatment, including of surface water; as set out in **Appendix E**.

6.9 Provided that Natural England is supportive of the policy requirements and mitigation measures developed and agreed in relation to nutrient neutrality at sites affecting Stodmarsh SAC and SPA/Ramsar before the Local Plan is adopted, then it can be concluded that there will not be an AEOI from the LPR. This could be verified during the Examination process and confirmed in an HRA Addendum and/or Adoption Statement.

Next steps

6.10 HRA is an iterative process and as such may need to be updated in light of newly available evidence and comments from key consultees. This report will be subject to consultation with Natural England and the Environment Agency alongside the Regulation 19 Local Plan Review document to confirm that

the conclusions of the assessment are considered appropriate at this stage of plan-making.

6.11 There may be a need for an HRA Addendum to be prepared during the Examination of the Local Plan Review if a number of Main Modifications are proposed and consulted upon, or to take into account formal agreements of mitigation.

Appendix A
Allocated sites

A.1 New site allocations within the Local Plan provide for 7,678 new homes.

6.12 The HRA therefore assesses the effects of 7,678 new homes associated with the Local Plan Review, plus 1,000 allocated in Lenham Neighbourhood Plan, alone and in combination with the 17,660 already allocated within the 2017 Local Plan.

A.2 The sites contributing to development from the Local Plan Review are listed in Table A.1.

Table A.1: Locations of development associated with Local Plan Review

Site Ref	Site Name	Location	Employment (m2)	Town centre (m2)	Resi units
Local Plan Review allocated sites and opportunity sites					
LPRSA071	Land adjacent Keilen Manor	Harrietsham			47
LPRSA066	Land east of Lodge Rd	Staplehurst			78
LPRSA078	Haven Farm & L/a 4 Southways	Sutton Valence	1,900		100
LPRSA101	Land south of A20	Harrietsham			53
LPRSA114	Land at Home Farm	Staplehurst			49
H1(13)	34-35 High St/ Maidstone	Maidstone Town Centre			10 (plus 40 previously allocated)
LPRSA145	Len House	Maidstone Town Centre	530	265	159
LPRSA146	Maidstone East	Maidstone Town Centre	5,000	2,000	290 (plus 210 previously allocated)
LPRSA147	Gala Bingo & Granada House	Maidstone Town Centre	200	100	40
LPRSA148	Maidstone Riverside	Maidstone Town Centre	5,148	2,574	460 (plus 190 previously allocated)
LPRSA149	Maidstone West	Maidstone Town Centre	1,034	517	130
LPRSA151	Mote Road car park	Maidstone Town Centre	2,000	0	172
LPRSA152	Royal British Legion Social Club	Maidstone Urban Area			8
LPRSA172	Land at Sutton Road	SE of Maidstone			75
LPRSA204	Land south of Eyhorne Street	Eyhorne St (H'bourne)			9
LPRSA248	Land north & south of Kenward Road	Yalding			100
LPRSA251	Land at Heath Rd	Coxheath			5
LPRSA260	Ashford Road	Lenham	3,108		

Site Ref	Site Name	Location	Employment (m2)	Town centre (m2)	Resi units
LPRSA265	Land at Abbey Farm, Tovil	SW of Maidstone			250
LPRSA266	North of Ware Street, Bearstead	NE of Maidstone			67
LPRSA270	Land south of Police HQ, Pested Barrs	S of Maidstone			196
LPRSA295 & LPRSA315	Land north of Copper Lane and Albion Road	Marden			113
LPRSA303	EIS Oxford Road	E of Maidstone			20
LPRSA310	Land Mote Road	Headcorn			110
LPRSA312	Land north of Heath Road	Coxheath			85
LPRSA360	Campfield Farm	Boughton Monchelsea			30
LPRSA362	Kent Police HQ, Sutton Road	SE of Maidstone			135
LPRSA364	Kent Ambulance HQ, Heath Road	Coxheath			10
LPRSA366	Springfield Tower	Maidstone Urban Area			150
Strategic Development Locations (Broad Locations and Garden Settlements)					
Policy SP1	The Mall broad location	Maidstone Town Centre			400
Policy SP1	Office conversion broad location	Maidstone Town Centre			247
Policy SP1	Residual from 700 town centre	Maidstone Town Centre			215
Policy SP4a	Heathlands garden community	Lenham	124,066 jobs	6,300m2 retail, leisure, services	1,400
Policy SP4b	Land north of the M2 Lidsing	Lidsing	2,000 jobs	1,500m2 retail, leisure, services	1,300
Policy SP5b	Invicta Barracks broad location	Maidstone Urban Area			800 (plus 500 previously allocated)
Villages (development outside of allocated sites, in Larger Villages and Small Villages)					

Site Ref	Site Name	Location	Employment (m2)	Town centre (m2)	Resi units
Policy SP7a	Larger Village	East Farleigh			50
Policy SP8	Smaller Villages	Ulcombe			35
Policy SP8	Smaller Villages	Laddingford			35
Policy SP8	Smaller Villages	Kingswood			35
Policy SP8	Smaller Villages	Teston			35
Policy SP8	Smaller Villages	Boxley			25
Policy SP8	Smaller Villages	Chart Sutton			25
Policy SP8	Smaller Villages	Detling			25
Policy SP8	Smaller Villages	Grafty Green			25
Policy SP8	Smaller Villages	Hunton			25
Policy SP8	Smaller Villages	Platt's Heath			25
Policy SP8	Smaller Villages	Stockbury			25
Development allocated in Lenham Neighbourhood Plan but not previously subject to HRA					
Policy SP5c	Lenham broad location	Lenham			1,000

Appendix B

Attributes of European sites screened into HRA

This appendix contains information about the European sites scoped into the HRA. Information about each site's area, the site descriptions, qualifying features and pressures and threats are drawn from Natural England's Site Improvement Plans (SIPs)[67], Standard Data Forms or Ramsar Information Sheets available from the JNCC website[68] and Supplementary Advice Notes[69], which advise on the sites features and how to implement the conservation objectives. Site conservation objectives are drawn from Natural England's website and are only available for SACs and SPAs[70].

[67] Site Improvement Plans: East of England, Natural England, http://publications.naturalengland.org.uk/category/4873023563759616
[68] JNCC Data Forms http://jncc.defra.gov.uk/default.aspx?page=4
[69] Supplementary Advice Notes, Natural England, http://publications.naturalengland.org.uk/category/6490068894089216
[70] European Site Conservation Objectives, Natural England, http://www.naturalengland.org.uk/ourwork/conservation/designations/sac/conservationobjectives.aspx

European Site	Summary of reasons for designation	European site pressures and threats	Conservation objectives	Non-qualifying habitats and species on which the qualifying habitats and/or species depend
This site consists of mature Beech forests and Yew woods on steep slopes. The stands lie within a mosaic of scrub and other woodland types and are the most easterly of the Beech woodland sites selected. Parts of the woods were affected by the storm of 1987. Small areas of unimproved chalk grassland are also present.				
North Downs Woodlands SAC	H9130. *Asperulo-Fagetum* beech forests; Beech forests on neutral to rich soils H6210 Semi-natural dry grasslands and scrubland facies: on calcareous substrates (Festuco-Brometalia); Dry grasslands and scrublands on chalk or limestone H91J0. *Taxus baccata* woods of the British Isles; Yew-dominated woodland	**Public Access/Disturbance** - Off-road vehicles as well as all-terrain bikes are having an impact on parts of the woodland. Vehicle damage is associated with vehicles coming off the Public Rights of Way (PRoW) into the woodland. All-terrain bikes favour Yew woodland where there is no understorey and the creation of tracks by bikes is eroding soil around the roots of Yews. **Forestry and woodland management** – Beech regeneration is insufficient to retain canopy cover in the long term. In addition, Beech saplings are susceptible to squirrel damage. **Invasive Species** – Invasive Sycamore has the potential to regenerate in woodland gaps reducing overall extent of SAC feature. This is more of an issue in Beech stands than in Yew woodland where Yew tends to eventually succeed in dominating the canopy.	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	In general, qualifying habitats of the SAC rely on: ■ Key species to maintain the structure, function and quality of habitat. ■ Natural vegetation transitions to create diversity and support a range of species. ■ Habitat connectivity to the wider landscape to allow for migration, dispersal and genetic exchange of species typical of this habitat. ■ Active and ongoing conservation management to protect, maintain or restore these habitats. More specific information has been provided for each qualifying habitat as follows: H6210 Semi-natural dry grasslands and scrubland facies: on calcareous substrates (*Festuco-Brometalia*)

		Air Pollution: impact of atmospheric nitrogen deposition – Nitrogen deposition exceeds site relevant critical loads.		■ Grazing and pollination plays a key role in maintaining areas of typical grassland species, including orchids. H9130. *Asperulo-Fagetum* beech forests; Beech forests on neutral to rich soils ■ Light grazing and browsing from herbivores, such as deer to promote diverse woodland structure and continuous seedling establishment. H91J0. *Taxus baccata* woods of the British Isles; Yew-dominated woodland ■ Light grazing and browsing from herbivores, such as deer to promote diverse woodland structure and continuous seedling establishment.
Peter's Pit SAC	*Triturus cristatus*: Great crested newt	No current issues affecting the European site's feature(s) have been identified on this site.	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:	In general, the qualifying species of the SAC rely on: ■ The sites ecosystem as a whole (see list of habitats below).

			■ 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.	■ Maintenance of populations of species that they feed on (see list of diets below). ■ Habitat connectivity to between breeding and terrestrial habitat to sustain metapopulations. *Triturus cristatus:* Great crested newt ■ Habitat – Large ponds situated amongst grassland, scrub and woodland. The ponds have widely fluctuating water levels and large great crested newt *Triturus cristatus* populations have been recorded breeding here. ■ Diet – primarily of invertebrates including insects, worms, water snails, larvae and sometimes tadpoles.
This site hosts the priority habitat type "orchid rich sites". Queendown Warren contains an important assemblage of rare and scarce species, including Early Spider-orchid *Ophrys sphegodes*, Burnt orchid *Orchis ustulata* and Man orchid *Aceras anthropophorum.*				
Queendown Warren SAC	Semi-natural dry grasslands and scrubland facies on calcareous substrates (*Festuco-Brometalia*) (*important orchid sites)	**Species Decline** – Numbers of Early Spider-orchid have declined from 10 years ago. Trials are underway to assess the impact of rabbit grazing on the orchid population. There is also a	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	In general, qualifying habitats of the SAC rely on: ■ Key species to maintain the structure, function and quality of habitat.

		concern with potential effects of air pollution, climate change, lack of genetic diversity or lack of pollinating insects. **Habitat fragmentation** – The small size and relative isolation of the site raises concern for the long-term genetic viability of some of the orchid populations. **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. This requires further investigation.	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	■ Natural vegetation transitions to create diversity and support a range of species. ■ Habitat connectivity to the wider landscape to allow for migration, dispersal and genetic exchange of species typical of this habitat. ■ Active and ongoing conservation management to protect, maintain or restore these habitats. More specific information has been provided for each qualifying habitat as follows: Semi-natural dry grasslands and scrubland facies on calcareous substrates (*Festuco-Brometalia*) (*important orchid sites) ■ Thin, well-drained, lime-rich soils. Most of these agriculturally unimproved calcareous grasslands are maintained by grazing.
This site hosts the priority habitat type "orchid rich sites". Wye and Crundale Downs has an important assemblage of rare, scarce and uncommon orchids, including Early Spider-orchid *Ophrys sphegodes*, Late Spider-orchid *Ophrys fuciflora*, Burnt orchid *Orchis ustulata* and Lady orchid *Orchis purpurea*.				
Wye and Crundale Downs SAC	H6210 Semi-natural dry grasslands and scrubland facies: on calcareous substrates (*Festuco-Brometalia*) (important orchid sites)	**Overgrazing** – Grazing pressure from livestock and rabbits is only partially controlled and parts of the site are overgrazed resulting in too short a sward height and	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	In general, qualifying habitats of the SAC rely on:

		inhibiting flowering plants. A programme of rabbit control is underway, but effectiveness needs to be monitored. **Inappropriate scrub control** – Scrub encroachment on the steep slopes of the Devil's Kneading Trough and other areas of the NNR is only partially controlled by grazing, which is leading to a reduction in the extent of grassland feature. **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.	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	■ Key species to maintain the structure, function and quality of habitat. ■ Natural vegetation transitions to create diversity and support a range of species. ■ Habitat connectivity to the wider landscape to allow for migration, dispersal and genetic exchange of species typical of this habitat. ■ Active and ongoing conservation management to protect, maintain or restore these habitats. More specific information has been provided for each qualifying habitat as follows: Semi-natural dry grasslands and scrubland facies: on calcareous substrates (Festuco-Brometalia) (important orchid sites) ■ This habitat is maintained by grazing and is reliant on key pollinator species.
The Medway Estuary feeds into and lies on the south side of the outer Thames Estuary in Kent, south-east England. It forms a single tidal system with the Swale and joins the Thames Estuary between the Isle of Grain and Sheerness. It has a complex arrangement of tidal channels, which drain around large islands of saltmarsh and peninsulas of grazing marsh.				
Medway Estuary & Marshes SPA	Breeding bird assemblage	**Public Access/Disturbance** – Breeding and overwintering	Ensure that the integrity of the site is maintained or restored as	In general, the qualifying bird species of the SPA rely on:

	Recurvirostra avosetta: Pied avocet *Pluvialis squatarola:* Grey plover *Branta bernicla bernicla:* Dark-bellied brent goose *Tadorna tadorna:* Common shelduck *Anas acuta:* Northern pintail *Calidris canutus:* Red knot *Charadrius hiaticula:* Ringed plover *Calidris alpina alpina:* Dunlin Waterbird assemblage *Tringa totanus:* Common redshank	waterbirds are susceptible to human disturbance from a range of land- and water-based activities, including boating and watersports; walking; bait-digging; fishing, and wildfowling. Some activities such as powerboating, may produce physical disturbance to habitats. Public access, (especially dog walking and recreational boating) was identified as a medium risk during the 2009 EMS risk review project and this activity is still occuring. Moderate levels of disturbance in less sensitive locations may have no significant effect on the numbers of birds using the SIP area but the types, levels and locations of potentially disturbing activities are constantly changing. Managing the changes to minimise the risk of disturbance impacts will require a better understanding of which species and habitats are most susceptible, which types of activity are most disturbing, and which locations and times of year are most sensitive. There is inadequate information to provide appropriate management.	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.	■ The sites ecosystem as a whole (see list of habitats below). ■ Maintenance of populations of species that they feed on (see list of diets below). ■ Off-site habitat, which provide foraging habitat for these species. ■ Open landscape with unobstructed line of sight within nesting, foraging or roosting habitat. The individual qualifying species of the SPA also rely on the following habitats and species: *Recurvirostra avosetta:* Pied avocet ■ Habitat Preference – Mudflats, lagoons and sandy beaches. ■ Diet - Aquatic insects and their larvae, crustaceans and worms. *Pluvialis squatarola:* Grey plover ■ Habitat Preference – Tundra, and on migration pasture and estuaries.

		Invasive species – Freshwater non-native invasive species such as pennywort, crassula, parrots feather etc. can engulf ditches, leading to loss of habitat for diving ducks. Although there are some mechanisms in place to ensure ditch management, more baseline information is needed, particularly on those species for which ditch management is not the solution. **Changes in species distributions** – There is a decline in population size for some of the bird species on some of the SPAs (Cook et al. 2013*). A greater understanding of the relative importance of site-based and wider influences is required in order to identify the potential for further actions that might halt declines, restore populations or identify scenarios where it is thought unlikely that site-based measures will reverse population declines. **Fisheries: Commercial marine and estuarine** – The extent and impacts of fisheries on private grounds, particularly in the Swale Estuary, needs to be better understood. There are particular		▪ Diet - In summer, invertebrates and in winter primarily marine worms, crustaceans and molluscs. *Branta bernicla bernicla:* Dark-bellied brent goose ▪ Habitat Preference – Tundra, and on migration marshes and estuaries. ▪ Diet - Vegetation, especially eel-grass. *Tadorna tadorna:* Common shelduck ▪ Habitat Preference – Coasts, estuaries and lakes. ▪ Diet - Mostly invertebrates, especially insects, molluscs and crustaceans. *Anas acuta:* Northern pintail ▪ Habitat Preference – Lakes, rivers, marsh & tundra. ▪ Diet - A variety of plants and invertebrates. *Calidris canutus:* Red knot ▪ Habitat Preference – Tundra, and on migration coastal habitat.

		concerns regarding the dredging of shellfish within the SPAs which are a food source for the protected birds. **Commercial fishing activities** categorised as 'amber or green' under Defra's revised approach to commercial fisheries in European Marine Sites require assessment and (where appropriate) management. This assessment will be undertaken by Kent & Essex IFCA. For activities categorised as 'green', these assessments should take account of any in-combination effects of amber activities, and/or appropriate plans or projects, in the site. **Vehicles: illicit** – The illicit use of motor vehicles (often bikes) occurs across the area. This can cause disturbance to SPA birds. This activity was identified as a medium risk during the 2009 EMS risk review project and is still occurring. Whilst various mechanisms are in place to prevent the use of vehicles they are clearly not entirely effective. **Air pollution: risk of atmospheric nitrogen**		■ Diet - In summer, insects and plant material, and in winter inter-tidal invertebrates, esp molluscs. *Charadrius hiaticula:* Ringed plover ■ Habitat Preference – Sandy areas with low vegetation, and on migration estuaries. ■ Diet - In summer, invertebrates and in winter primarily marine worms, crustaceans and molluscs. *Calidris alpina alpina:* Dunlin ■ Habitat Preference – Tundra, moor, heath, and on migration estuaries and coastal habitat. ■ Diet - Insects, snails and worms. *Tringa totanus:* Common redshank ■ Habitat Preference – Rivers, wet grassland, moors and estuaries. ■ Diet - Invertebrates, especially earthworms, cranefly larvae (inland)

		deposition – Nitrogen deposition exceeds site-relevant critical loads		crustaceans, molluscs, marine worms (estuaries). *Sterna albifrons:* Little tern ■ Habitat Preference – Seacoasts, rivers and lakes. ■ Diet - Small fish and invertebrates. Waterbird Assemblage – At the time of classification, the site supported internationally or nationally important wintering populations of the migratory waterfowl.
Medway Estuary & Marshes Ramsar	**<u>Ramsar criterion 2</u>** The site supports a number of species of rare plants and animals. The site holds several nationally scarce plants, including sea barley *Hordeum marinum*, curved hard-grass *Parapholis incurva*, annual beard-grass *Polypogon monspeliensis*, Borrer's saltmarsh-grass *Puccinellia fasciculata*, slender hare`s-ear *Bupleurum tenuissimum*, sea clover *Trifolium squamosum*, saltmarsh goose-foot *Chenopodium chenopodioides*, golden samphire *Inula crithmoides*, perennial glasswort *Sarcocornia perennis* and one-flowered glasswort	Similar to Medway Estuary and Marshes SPA above.	None available.	**Plants** - Plant communities are reliant on the coastal habitats within the Ramsar site. These habitats are dependent on a range of coastal factors and processes, including salinity, sedimentation, sea level, turbidity and elevation. **Invertebrates** - These species are reliant on the saltmarsh habitat and characteristic flora and fauna present within the European site. Key sources of food range from flowering plants, organic matter and other invertebrate species. **Birds** -

	Salicornia pusilla. A total of at least twelve British Red Data Book species of wetland invertebrates have been recorded on the site. These include a ground beetle *Polistichus connexus*, a fly *Cephalops perspicuus*, a dancefly *Poecilobothrus ducalis*, a fly *Anagnota collini*, a weevil *Baris scolopacea*, a water beetle *Berosus spinosus*, a beetle *Malachius vulneratus*, a rove beetle *Philonthus punctus*, the ground lackey moth *Malacosoma castrensis*, a horsefly *Atylotus latistriatuus*, a fly *Campsicnemus magius*, a solider beetle, *Cantharis fusca*, and a cranefly *Limonia danica*. A significant number of non-wetland British Red Data Book species also occur. **Ramsar criterion 5** Assemblages of international importance: Species with peak counts in winter: ■ 47637 waterfowl (5 year peak mean 1998/99-2002/2003) Ramsar criterion 6 – species/populations occurring at levels of international importance.			Refer to Medway Estuary and Marshes SPA above.

	Qualifying Species/populations (as identified at designation): Species with peak counts in spring/autumn: ■ Grey plover *Pluvialis squatarola* ■ Common redshank *Tringa totanus tetanus* Species with peak counts in winter: ■ Dark-bellied brent goose *Branta bernicla bernicla* ■ Common shelduck *Tadorna tadorna* ■ Northern pintail *Anas acuta* ■ Ringed plover *Charadrius hiaticula* ■ Red knot *Calidris canutus islandica* ■ Dunlin Calidris *alpina alpine* Species/populations identified subsequent to designation for possible future consideration under criterion 6. Species with peak counts in spring/autumn: ■ Black-tailed godwit Limosa limosa islandica			

The Swale is an estuarine area that separates the Isle of Sheppey from the Kent mainland and joins the Medway to the west. This site forms part of the Greater Thames complex, which support a wide diversity of coastal habitats, such as grazing marsh, saltmarsh and mud/sandflat and eelgrass beds that support important numbers of waterbirds throughout the year. Wintering birds that use these estuaries include grebes, geese, ducks and waders whilst in summer breeding birds can be found, such as waders and terns. The area is also important for spring and autumn migration periods.				
The Swale SPA	Breeding Bird Assemblage *Pluvialis squatarola:* Grey plover *Branta bernicla bernicla*: Dark-bellied brent goose *Charadrius hiaticula:* Ringed plover Waterbird Assemblage *Tringa totanus*: Common redshank *Calidris alpina alpin*a: Dunlin	Similar to Thames Estuary and Marshes SPA above. **Invasive species** – Non-native invasive species such as sea squirt and pacific oyster are spreading along the Kent coast and could begin to impact on the Swale. Sea squirt has been found in the Medway, and Pacific oysters are regarded as increasing in the Essex-Southend area. These species threaten habitats due to their ability to smother substrate and other sessile organisms. There is no good understanding of the overall distribution of these species in this site. Assessment is needed in key areas of ports and marinas, where introductions tend to first occur.	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.	In general, the qualifying bird species of the SPA rely on: ■ The sites ecosystem as a whole (see list of habitats below). ■ Maintenance of populations of species that they feed on (see list of diets below). ■ Off-site habitat, which provide foraging habitat for these species. ■ Open landscape with unobstructed line of sight within nesting, foraging or roosting habitat. The individual qualifying species of the SPA also rely on the following habitats and species: *Pluvialis squatarola:* Grey plover ■ Habitat Preference – Tundra, and on migration pasture and estuaries. ■ Diet - In summer, invertebrates and in winter

				primarily marine worms, crustaceans and molluscs. *Branta bernicla bernicla*: Dark-bellied brent goose ■ Habitat Preference – Tundra, and on migration marshes and estuaries. ■ Diet - Vegetation, especially eelgrass. *Charadrius hiaticula:* Ringed plover ■ Habitat Preference – Sandy areas with low vegetation, and on migration estuaries. ■ Diet - In summer, invertebrates and in winter primarily marine worms, crustaceans and molluscs. *Tringa totanus*: Common redshank ■ Habitat Preference – Rivers, wet grassland, moors and estuaries. ■ Diet - Invertebrates, especially earthworms, cranefly larvae (inland) crustaceans, molluscs, marine worms (estuaries). *Calidris alpina alpina*: Dunlin

				■ Habitat Preference – Tundra, moor, heath, and on migration estuaries and coastal habitat. ■ Diet - Insects, snails and worms. Breeding Bird Assemblage – The grazing marshes support a typical assemblage of breeding species. Waterbird Assemblage – The mudflats also support smaller numbers of wintering migratory waterfowl. ■ The grazing marshes support internationally and nationally important numbers of several waterbirds.
The Swale Ramsar	**Ramsar criterion 2** The site supports nationally scarce plants and at least seven British Red data book invertebrates. **Ramsar criterion 5** Assemblages of international importance: ■ Species with peak counts in winter: 77501 waterfowl	Similar to Medway Estuary & Marshes SPA above.	None available.	**Plants -** Plant communities are reliant on the coastal habitats within the Ramsar site. These habitats are dependent on a range of coastal factors and processes, including salinity, sedimentation, sea level, turbidity and elevation. **Invertebrates -**

	Ramsar criterion 6 – species/populations occurring at levels of international importance. Qualifying Species/populations (as identified at designation): Species with peak counts in spring/autumn: ■ Common redshank *Tringa totanus tetanus* Species with peak counts in winter: ■ Dark-bellied brent goose *Branta bernicla bernicla* ■ Grey plover *Pluvialis squatarola* Species/populations identified subsequent to designation for possible future consideration under criterion 6. Species with peak counts in spring/autumn: ■ Ringed plover Charadrius hiaticula Species with peak counts in winter: ■ Eurasian wigeon Anas Penelope ■ Northern pintail *Anas acuta*			These species are reliant on the coastal habitat and characteristic flora and fauna present within the European site. Key sources of food range from flowering plants, organic matter and other invertebrate species. **Birds -** Refer to The Swale SPA above.

	■ Northern shoveler Anas clypeata ■ Black-tailed godwit Limosa limosa islandica			
This site forms part of the Greater Thames Complex, which supports a wide diversity of coastal habitats, such as grazing marsh, saltmarsh and mud/sandflat and eelgrass beds that support important numbers of waterbirds throughout the year. Wintering birds that use these estuaries include grebes, geese, ducks and waders whilst in summer breeding birds can be found, such as waders and terns. The area is also important for spring and autumn migration periods.				
Thames Estuary and Marshes SPA	*Recurvirostra avosetta*: Pied avocet *Circus cyaneus*: Hen harrier *Charadrius hiaticula*: Ringed plover *Pluvialis squatarola*: Grey plover *Limosa limosa islandica*: Black-tailed godwit *Calidris canutus*: Red knot *Calidris alpina alpina*: Dunlin *Tringa totanus*: Common redshank	Similar to Medway Estuary and Marshes SPA above.	■ 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.	In general, the qualifying bird species of the SPA rely on: ■ The sites ecosystem as a whole (see list of habitats below). ■ Maintenance of populations of species that they feed on (see list of diets below). ■ Off-site habitat, which provide foraging habitat for these species. ■ Open landscape with unobstructed line of sight within nesting, foraging or roosting habitat. The individual qualifying species of the SPA also rely on the following habitats and species: *Recurvirostra avosetta:* Pied avocet

				■ Habitat Preference - Mudflats, lagoons and sandy beaches. ■ Diet - Aquatic insects and their larvae, crustaceans and worms. *Circus cyaneus:* Hen harrier ■ Habitat Preference - Moor, marsh, steppe and fields. ■ Diet - Mainly small birds and mammals. *Charadrius hiaticula:* Ringed plover ■ Habitat Preference - Sandy areas with low vegetation, and on migration estuaries. ■ Diet - In summer, invertebrates and in winter primarily marine worms, crustaceans and molluscs. *Pluvialis squatarola:* Grey plover ■ Habitat Preference - Tundra, and on migration pasture and estuaries. ■ Diet - In summer, invertebrates and in winter primarily marine worms, crustaceans and molluscs.

				Limosa limosa islandica: Black-tailed godwit ■ Habitat Preference - Marshy grassland and steppe, and on migration mudflats. ■ Diet - Insects, worms and snails, but also some plants, beetles, grasshoppers and other small insects during the breeding season. *Calidris canutus:* Red knot ■ Habitat Preference - Tundra, and on migration coastal habitat. ■ Diet - In summer, insects and plant material, and in winter inter-tidal invertebrates, esp molluscs. *Calidris alpina alpina:* Dunlin ■ Habitat Preference - Tundra, moor, heath, and on migration estuaries and coastal habitat. ■ Diet - Insects, snails and worms. *Tringa totanus:* Common redshank

				■ Habitat Preference - Rivers, wet grassland, moors and estuaries. ■ Diet - Invertebrates, especially earthworms, cranefly larvae (inland) crustaceans, molluscs, marine worms (estuaries).
Thames Estuary and Marshes Ramsar	Ramsar criterion 2 The site supports one endangered plant species and at least 14 nationally scarce plants of wetland habitats. The site also supports more than 20 British Red Data Book invertebrates. Ramsar criterion 5 Assemblages of international importance: Species with peak counts in winter: ■ 45118 waterfowl (5 year peak mean 1998/99-2002/2003) Ramsar criterion 6 – species/populations occurring at levels of international importance Qualifying Species/populations (as identified at designation):	Similar to Medway Estuary & Marshes SPA above.	None available	**Plants** – Plant communities are reliant on the coastal habitats within the Ramsar site. These habitats are dependent on a range of coastal factors and processes, including salinity, sedimentation, sea level, turbidity and elevation. **Birds** – Refer to Thames Estuary and Marshes SPA above.

	Species with peak counts in spring/autumn: ■ Ringed plover *Charadrius hiaticula* ■ Black-tailed godwit *Limosa limosa islandica* Species with peak counts in winter: ■ Grey plover *Pluvialis squatarola* ■ Red knot *Calidris canutus islandica* ■ Dunlin *Calidris alpina alpine* ■ Common redshank *Tringa totanus totanus*			
The Outer Thames Estuary Special Protection Area was designated to protect the red-throated diver Gavia stellata population and its supporting habitats (subtidal sands) in favourable condition. The main part of the site is the outer part of the estuary (east of a line north from Sheerness, Kent to Shoebury Ness, Essex); a separate area extending south along the coast of E Norfolk (from Caister-on-Sea) to Woodbridge, Suffolk and lying mainly within the 12 nautical mile zone, except for two small areas which extend slightly into the 12 nm zone offshore from about Lowestoft; and a third area lying slightly further north and partly within 12 nm, but also with a larger area extending well beyond the 12 nm zone).				
Outer Thames Estuary SPA	*Gavia stellata:* Red-throated Diver	**Fisheries: Commercial marine and estuarine** – The gear types being assessed are towed demersal gear and dredges, and suction dredges for cockles as well as static/passive fishing gear methods such as set gillnets and drift netting represent potentially the most serious direct risk from fishing activity to the birds	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	In general, the qualifying bird species of the SPA rely on: ■ The sites ecosystem as a whole (see list of habitats below). ■ Maintenance of populations of species that they feed on (see list of diets below).

		themselves. Disturbance and displacement effects may arise from boat movements associated with fishing activities. Removal of fish and larger molluscs can have a significant impact on the structure and functioning of benthic communities. Entanglement in static fishing nets is an important cause of death for red-throated divers in the UK waters. Netting is widespread across the sandbanks but is seasonal and occurs primarily when the Red-throated diver population is not at its peak. The scale of by-catch within the site has been assessed by the Kent & Essex IFCA and was not found to be problematic and so can be deemed to be low-risk.	■ The structure and function of the habitats of the qualifying features ■ The supporting processes on which the habitats of the qualifying features rely	*Gavia stellata:* Red-throated Diver ■ Habitat preference - Shallow ponds & lakes. ■ Diet - Primarily fish, captured by seizing in the bill, also frogs and large invertebrates.
Stodmarsh SPA is a wetland comprising open water bodies, reedbeds, grazing marshes and alder-carr. The site provides wintering and breeding habitats for important assemblages of wetland bird species, particularly wildfowl and waders. It regularly supports nationally important over-wintering populations of bittern and hen harrier. It supports over 1% of the national breeding population of gadwall, bearded tit and shovler. It regularly supports a diverse assemblage of breeding birds including great crested grebe, lapwing, redshank, snipe, grasshopper warbler, savi's warbler, sedge warbler and reed warbler. It also regularly supports a diverse assemblage of over-wintering birds including white-fronted goose, wigeon, mallard, pochard, tufted duck, water rail, lapwing and snipe. Stodmarsh SAC supports the UKBAP species Desmoulin's whorl snail *Vertigo moulinsiana* which occurs within the site on emergent vegetation in fen areas and along ditches in the grazing marsh				
Stodmarsh SAC	Desmoulin's Whorl Snail *Vertigo moulinsiana*	None specifically identified within the Site Improvement Plan.	Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the	In general, the qualifying bird species of the SAC rely on:

			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 the qualifying species, and, ■ The distribution of the qualifying species within the site	■ The sites ecosystem as a whole (see list of habitats below). ■ Maintenance of populations of species that they feed on (see list of diets below). Desmoulins's Whorl Snail *Vertigo moulinsiana* ■ Habitat preference – permanently wet, usually calcareous, swamps, fens and marshes, bordering rivers, lakes and ponds, or in river floodplains ■ Diet – fungi, micro-algae and bacteria.
Stodmarsh SPA	*Botaurus stellaris:* Great bittern *Anas strepera:* Gadwall *Anas clypeata:* Northern shoveler *Circus cyaneus:* Hen harrier	**Water pollution -** Poor water quality has been recorded in the NNR lake (Unit 10) and associated reedbeds. The Lampen stream and Great Stour which feeds into the lake have fairly high nitrogen levels, and orthophosphate levels regularly over 100ug/L, especially since 2009. This leads to a reduction in fish stocks and macrophytes,	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	In general, the qualifying bird species of the SAC rely on: ■ The sites ecosystem as a whole (see list of habitats below). ■ Maintenance of populations of species that they feed on (see list of diets below). *Botaurus stellaris:* Great bittern

		which impacts on food availabity for SPA birds (bittern, gadwall). **Invasive Species** - Crassula is present within several areas of the NNR and potentially elsewhere within the site. Crassula forms a blanket of vegetation which can reduce food source and hinder birds finding food. **Inappropriate scrub control** - Scrub cover is too high in the reedbed and around the lakes (approximately 12 ha). Development of scrub can reduce habitat suitability for SPA birds. **Air pollution -** Nitrogen deposition exceeds site-relevant critical loads.	■ 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.	Habitat preference – Reedbed and marshes. Diet – Mostly fish, amphibians, insects but wide variety, mostly in shallow water in or near cover. *Anas strepera:* Gadwall Habitat preference – Marshes, lakes, on migration also rivers, estuaries Diet – Leaves, shoots, mostly while swimming with head under water *Anas clypeata:* Northern shoveler Habitat preference – Shallow lakes, marsh, reedbed & wet meadow Diet – Omnivorous, esp. small insects, crustaceans, molluscs, seeds; filters particles with sideways sweeping of bill *Circus cyaneus:* Hen harrier Habitat preference – Moor, marsh, steppe and fields Diet – Mostly, small birds, nestlings and small rodents
Stodmarsh Ramsar	Ramsar criterion 2	Similar to Stodmarsh SPA above.	None available	Similar to Stodmarsh SPA above.

	Six British Red Data Book wetland invertebrates. Two nationally rare plants, and five nationally scarce species. A diverse assemblage of rare wetland bird: Qualifying Species/populations (as identified at designation): Species regularly supported during the breeding season: Gadwall *Anas strepera* Species with peak counts in spring/autumn: Gadwall *Anas strepera* Species with peak counts in winter: Great bittern *Botaurus stellaris* Northern shoveler *Anas clypeata* Hen harrier *Circus cyaneus*			

Appendix C

Screening matrices

C.1 The matrices below show which types of impacts on European sites could potentially result from each of the policies and site allocations in the Maidstone Local Plan Review. In **Table B.1**, where a policy is not expected to have a particular type of impact, the relevant cell is shaded green. Where a policy could potentially have a certain type of impact, this is shown in orange. Policies that could provide mitigation for adverse effects on European sites are identified in explanatory text highlighted grey. The final column of the policies matrix 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.

C.2 The allocated sites matrix (**Table B.2**) considers which sites need to be screened in for different types of impact.

Table C.1: Screening matrix - policies

Plan Policy	Likely activities to result as a consequence of the proposal	Likely effect if proposal is implemented	Will the proposal have likely significant effects and therefore require Appropriate Assessment?
Borough Spatial Strategy			
Policy SS1: Maidstone Borough Spatial Strategy 2022-2037 - 18,225 new homes (of which 7,678 [plus 1,000 at Lenham broad location] are assessed in this HRA) - ≥33,430 m^2 offices, - 27,135m^2 industrial use, - 40,990m^2 warehousing, - 5,726m2 retail (convenience) and 1,116m^2 retail (comparison) - 6,927m^2 food and beverage	New development (residential, employment, retail) Increased in vehicle use Increase in recreational activities Increase in demand for water abstraction and treatment	Increased air pollution Disturbance from recreation Change in water quantity and quality	Uncertain – This policy sets out the overall quantum of development from the Local Plan Review and therefore will contribute to impacts that arise from the scale of development, for example air pollution, recreation disturbance and changes in water quantity. Effects associated with development in specific locations (e.g. non physical disturbance) is assessed in relation to the allocated sites and the policies that allocate them.
Strategic Policies			
Policy SP1: Maidstone Town Centre - 3,059 new homes, - 6,169m^2 commercial - 8,757m^2 retail/food and drink - 5 opportunity sites, 4 allocated sites, 3 broad locations	New development (residential, employment, retail) Increased in vehicle use Increase in recreational activities Increase in demand for water abstraction and treatment	Increased air pollution Disturbance from recreation. Change in water quantity and increased water pollution	Uncertain – Development in Maidstone town centre is within 7km of North Downs Woodlands SAC and could contribute to recreation pressure there. Development would also contribute traffic to the A249 and A229, and result in changes in water abstraction and discharge.
Policy SP2: Maidstone Urban Area	Residential development	Increased air pollution	Uncertain - Development in Maidstone urban area is within 7km of North Downs Woodlands SAC and could contribute to recreation pressure there.

Plan Policy	Likely activities to result as a consequence of the proposal	Likely effect if proposal is implemented	Will the proposal have likely significant effects and therefore require Appropriate Assessment?
- 178 new homes - 3 allocated sites	Increased in vehicle use Increase in recreational activities Increase in demand for water abstraction and treatment	Disturbance from recreation. Change in water quantity and increased water pollution	Development would also contribute traffic to the A249 and A229, and result in changes in water abstraction and discharge.
Policy SP3: Development at the Edge of Maidstone - 1,015 new homes - 10 allocated sites	Residential development Increased in vehicle use Increase in recreational activities Increase in demand for water abstraction and treatment	Increased air pollution Disturbance from recreation. Change in water quantity and increased water pollution	Uncertain - Development on the edge of Maidstone urban area is within 7km of North Downs Woodlands SAC and could contribute to recreation pressure there. Development would also contribute traffic to the A249 and A229, and result in changes in water abstraction and discharge.
Policy SP4a: Heathlands Garden Settlement - 5,000 new homes - 14ha of employment space - 6,300m^2 retail, leisure and services - Infrastructure and open space	New development (residential, employment, leisure, retail) Increased in vehicle use Increase in recreational activities Increase in demand for water abstraction and treatment Increase in active travel	Increased air pollution Change in water quantity and increased water pollution	Uncertain – Heathlands is not within 7km of any of the European sites so is unlikely to contribute to recreation pressure. Development at the site may however contribute traffic to the A249 and A229, and result in changes in water abstraction and discharge. Heathlands is within the Stour catchment and and developments are required to demonstrate nutrient neutrality to avoid effects on Stodmarsh SAC/SPA/Ramsar.
Policy SP4b: Lidsing - 1,300 new homes - 14ha of employment space - At least 1,500 m2 retail, leisure & services - Infrastructure and open space	New development (residential, employment, leisure, retail) Increased in vehicle use Increase in recreational activities Increase in demand for water abstraction and treatment	Increased air pollution Disturbance from recreation. Change in water quantity and increased water pollution	Uncertain – Lidsing is within 7km of, and could contribute to recreation pressure at, Queendown Warren SAC, North Downs Woodland SAC and Medway Estuary and Marshes SPA/Ramsar; but is unlikely to contribute to recreation pressure. The site is adjacent to the M2 and would contribute to traffic on the A249 and A229, and result in changes in water abstraction and discharge.

Plan Policy	Likely activities to result as a consequence of the proposal	Likely effect if proposal is implemented	Will the proposal have likely significant effects and therefore require Appropriate Assessment?
Policy SP5: Strategic Development Locations	This is the overarching policy for SP5a-c; the effects of those are assessed separately, below.	n/a	n/a
Policy SP5a: Potential Development of Leeds-Langley Corridor	None – this policy safeguards land for transport infrastructure but will not itself result in development	n/a	No
Policy SP5b: Development at Invicta Barracks - Up to 1,300 new homes - School, community facilities etc - Infrastructure and open space	Yes – this policy sets out the provision of 1,300 new homes within the Local Plan Review. Increased in vehicle use Increase in recreational activities Increase in demand for water abstraction and treatment	Increased air pollution Disturbance from recreation. Change in water quantity and increased water pollution	Uncertain – The barracks are in Maidstone town and within 7km of North Downs Woodlands SAC and could contribute to recreation pressure there. Development would also contribute traffic to the A249 and A229, and result in changes in water abstraction and discharge.
Policy SP5c: Lenham Broad Location for Housing Growth - 1,000 new homes (6 allocations in Lenham Neighbourhood Plan)	Residential development Increased in vehicle use Increase in recreational activities Increase in demand for water abstraction and treatment	Increased air pollution Change in water quantity and increased water pollution	Uncertain – Lenham is not within 7km of any of the European sites so is unlikely to contribute to recreation pressure. Development at the site may however contribute traffic to the A249 and A229, and result in changes in water abstraction and discharge. Lenham is within the Stour catchment and developments are required to demonstrate nutrient neutrality to avoid effects on Stodmarsh SAC/SPA/Ramsar.
Policy SP6: Rural Service Centres	This is the overarching policy for SP6a-f; the effects of those are assessed separately, below.	n/a	n/a
Policy SP6a Coxheath - 155 new homes - Infrastructure and open space	Residential development Increased in vehicle use Increase in recreational activities	Increased air pollution. Change in water quality and increased water pollution.	Uncertain – Coxheath is not within 7km of any of the European sites so is unlikely to contribute to recreation pressure. Development at the site may however contribute traffic to the A249 and A229, and result in changes in water abstraction and discharge.

Plan Policy	Likely activities to result as a consequence of the proposal	Likely effect if proposal is implemented	Will the proposal have likely significant effects and therefore require Appropriate Assessment?
- 5 allocated sites	Increase in demand for water abstraction and treatment		
Policy SP6b: Harrietsham - 152 new homes - Community services and open space - 3 allocated sites	New development (residential, community) Increased in vehicle use Increase in recreational activities Increase in demand for water abstraction and treatment	Increased air pollution Change in water quantity and increased water pollution	Uncertain – Harrietsham is not within 7km of any of the European sites so is unlikely to contribute to recreation pressure. Development at the site may however contribute traffic to the A249 and A229, and result in changes in water abstraction and discharge.
Policy SP6c: Headcorn - 385 new homes - 5,500m^2 employment - Infrastructure and open space - 1 allocated site	New development (residential, employment) Increased in vehicle use Increase in recreational activities Increase in demand for water abstraction and treatment	Increased air pollution Change in water quantity and increased water pollution	Uncertain – Headcorn is not within 7km of any of the European sites so is unlikely to contribute to recreation pressure. Development at the site may however contribute a small amount of traffic to the A249 and A229, and result in changes in water abstraction and discharge.
Policy SP6d: Lenham - 145 new homes - Two Gypsy and Traveller pitches - 3,296m^2 employment - Infrastructure and open space - 3 allocated sites	New development (residential, employment) Increased in vehicle use Increase in recreational activities Increase in demand for water abstraction and treatment	Increased air pollution Change in water quantity and increased water pollution	Uncertain - Lenham is not within 7km of any of the European sites so is unlikely to contribute to recreation pressure. Development at the site may however contribute traffic to the A249 and A229, and result in changes in water abstraction and discharge. Lenham is within the Stour catchment and residential developments are required to demonstrate nutrient neutrality to avoid effects on Stodmarsh SAC/SPA/Ramsar.
Policy SP6e: Marden - 249 new homes	New development (residential, employment) Increased in vehicle use	Increased air pollution Disturbance from recreation.	Uncertain– Marden is not within 7km of any of the European sites so is unlikely to contribute to recreation pressure. Development at the site may however contribute a small amount of traffic to the A249 and A229, and result in changes in water abstraction and discharge.

Plan Policy	Likely activities to result as a consequence of the proposal	Likely effect if proposal is implemented	Will the proposal have likely significant effects and therefore require Appropriate Assessment?
- Two Gypsy and Traveller pitches - 4,085m2 employment - Infrastructure, community services and open space - 6 allocated sites	Increase in recreational activities Increase in demand for water abstraction and treatment	Change in water quantity and increased water pollution	
Policy SP6f: Staplehurst - 872 new homes - Four gypsy and traveller pitches - Infrastructure, community services, and open space - 3 allocated sites	Residential development Increased in vehicle use Increase in recreational activities Increase in demand for water abstraction and treatment	Increased air pollution Change in water quantity and increased water pollution	Uncertain – Staplehurst is not within 7km of any of the European sites so is unlikely to contribute to recreation pressure. Development at the site may however contribute a small amount of traffic to the A249 and A229, and result in changes in water abstraction and discharge.
Policy SP7: Larger Villages	This is the overarching policy for SP7a-d; the effects of those are assessed separately, below.	n/a	n/a
Policy SP7a: East Farleigh - 50 new homes	Residential development Increased in vehicle use Increase in recreational activities Increase in demand for water abstraction and treatment	Increased air pollution Change in water quantity and increased water pollution	Uncertain – East Farleigh is just within 7km of North Downs Woodlands SAC and may make a small contribute to recreation pressure. Development in this location may also contribute a small amount traffic to the A229, and result in changes in water abstraction and discharge.
Policy SP7b: Eyhorne Street (Hollingbourne) - 24 new homes	Residential development Increased in vehicle use Increase in recreational activities	Increased air pollution Disturbance from recreation.	No – this policy will result in small scale development that will not result in likely significant effect on European sites.

Plan Policy	Likely activities to result as a consequence of the proposal	Likely effect if proposal is implemented	Will the proposal have likely significant effects and therefore require Appropriate Assessment?
- 1 allocated site	Increase in demand for water abstraction and treatment	Change in water quantity and increased water pollution	
Policy SP7c: Sutton Valence - 119 new homes - 1 allocated site	Residential development Increased in vehicle use Increase in recreational activities Increase in demand for water abstraction and treatment	Increased air pollution Change in water quantity and increased water pollution	Uncertain – Sutton Vallance is not within 7km of any of the European sites so is unlikely to contribute to recreation pressure. Development at the site may however contribute a small amount traffic to the A249 and A229, and result in changes in water abstraction and discharge.
Policy SP7d: Yalding - 190 new homes - 2 allocated sites	Residential development Increased in vehicle use Increase in recreational activities Increase in demand for water abstraction and treatment	Increased air pollution Disturbance from recreation. Change in water quantity and increased water pollution	Uncertain – Yalding is not within 7km of any of the European sites so is unlikely to contribute to recreation pressure. Development at the site may however contribute a small amount traffic to the A249 and A229, and result in changes in water abstraction and discharge.
Policy SP8: Smaller Villages - 35 new homes at each of Ulcombe, Laddingford, Kingswood, and Teston; and - 25 units at each of Boxley, Chart Sutton, Detling, Grafty Green, Hunton, Platt's Heath, and Stockbury.	Residential development Increased in vehicle use Increase in recreational activities Increase in demand for water abstraction and treatment	Increased air pollution Disturbance from recreation. Change in water quantity and increased water pollution	No – this policy will result in small scale development that will not result in likely significant effect on European sites.
Policy SP9: Development in the Countryside	This policy sets out the requirements for development to meet if proposed in the countryside but will not itself result in new development.	None	No
Thematic Strategic Policies			

Plan Policy	Likely activities to result as a consequence of the proposal	Likely effect if proposal is implemented	Will the proposal have likely significant effects and therefore require Appropriate Assessment?
Policy SP10: Housing	This is the overarching policy for SP10a-c; the effects of those are assessed separately, below.	n/a	n/a
Policy SP10a: Housing Mix	This policy sets out requirements for housing mix in new developments but will not itself result in new development.	None	No
Policy SP10b: Affordable Housing	This policy sets out the requirements affordable housing but will not itself result in new development.	None	No
Policy SP10c: Gypsy and Travel Site Allocations - 22 pitches across 11 sites (allocated in 2017 Local Plan)	Residential development	Increased air pollution Disturbance from recreation Change in water quantity and increased water pollution	No – this policy will result in small scale development that will not result in likely significant effect on European sites.
Policy SP11: Economic Development	This is the overarching policy for SP11a-c; the effects of those are assessed separately, below.	None	No
Policy SP11a: Safeguarding existing employment sites and premises	Employment development	Increased air pollution Change in water quantity and increased water pollution	No – this policy allows for intensification and redevelopment within safeguarded employment sites and is unlikely to result in significant effects at European sites.
Policy SP11b: Creating new employment opportunities	This policy collates details of employment proposed within allocated sites; the effects of those are assessed separately within the relevant area policy (e.g. Policy SP1 Maidstone Town Centre) and	n/a	n/a

Plan Policy	Likely activities to result as a consequence of the proposal	Likely effect if proposal is implemented	Will the proposal have likely significant effects and therefore require Appropriate Assessment?
	also within Policy SS1 Spatial Strategy.		
Policy SP11c: Town, District and Local Centres	This policy identifies the locations in which town centre uses will be permitted, but will not itself result in new development.	None	No
Policy SP12: Sustainable Transport	This policy makes provision for transport infrastructure already identified in the Integrated Transport Strategy and the Infrastructure Delivery Plan; no significant additional proposals are included in the Local Plan Review.	None	No
Policy SP13: Infrastructure Delivery	This policy sets out the requirement for new and improved infrastructure and will not directly result in development.	None	No
Policy SP14a: Natural Environment	This policy sets out the requirement to ensure new development protects and enhances the natural environment and for new development to provide biodiversity net gain.	None	No The policy provides the following general protection for European sites: ■ Development must: "avoid significant adverse impacts as a result of development [on] a. Internationally, nationally and locally designated sites of importance for biodiversity (either within or beyond the borough)" and that "If significant harm to habitats and biodiversity cannot be avoided, then the mitigation hierarchy should be followed." ■ "Development proposals will give weight to the protection of the following designated sites for biodiversity… For internationally designated sites (SACs, SPAs, and Ramsar sites; including candidate sites), the highest level of protection will apply, as afforded by the Habitats Regulations 2017 (as amended). Other than in exceptional circumstances (as set out in the Regulations), development will only be

Plan Policy	Likely activities to result as a consequence of the proposal	Likely effect if proposal is implemented	Will the proposal have likely significant effects and therefore require Appropriate Assessment?
			permitted where the Council is satisfied that any necessary mitigation, management or monitoring measures are secured in perpetuity as part of the proposal and will be implemented in a timely manner, such that, in combination with other plans and development proposals, there will not be adverse effects on the integrity of a European site." The policy also states the following, which will contribute to mitigation for water quality / quantity effects: ■ "Major developments will not be permitted unless they can demonstrate that new or existing water supply, sewage and wastewater treatment facilities can accommodate the new development. Wastewater treatment and supply infrastructure must be fit for purpose and meet all requirements of both the permitting regulations and the Habitats Regulations (for example in relation to nutrient neutrality at Stodmarsh)." ■ "Development in Lenham and Lenham Heath that would result in a net increase in population served by a wastewater system will need to ensure that it will not have an adverse effect on the integrity of Stodmarsh SAC/SPA/Ramsar site. Where a proposed development falls within the Stour Catchment (e.g. Lenham, east of Faversham Road), or where sewage from a development will be treated at a Waste Water Treatment Works that discharges into the river Stour or its tributaries, then applicants shall will be required to undertake an Appropriate Assessment to demonstrate that the requirements set out in the advice note on Nutrient Neutrality issued by Natural England have been met. This will enable the Council to ensure that the requirements of the Habitats Regulations are being met." Safeguards are also provided in relation to recreation pressure and air pollution: ■ The Council will work with Natural England to assess, monitor and if necessary mitigate any recreation pressure and air pollution effects at North Downs Woodland SAC. An air pollution mitigation strategy will be developed and agreed with Natural England before the Local Plan is

Plan Policy	Likely activities to result as a consequence of the proposal	Likely effect if proposal is implemented	Will the proposal have likely significant effects and therefore require Appropriate Assessment?
			adopted and implemented prior to adverse effects on integrity occurring; developer contributions would be used to support this.
Policy SP14b: Historic Environment	This policy sets out the requirement to protect the historic environment and will not result in development.	None	No
Policy SP14c: Climate Change	This policy sets out the requirement for development to mitigate and adapt to climate change; it will not result in development.	None	No
Policy SP15: Design	This policy sets outs the principles of good design and will not result in development.	None	No
Development management policies			
HOU1: Development on brownfield land	This policy steers development towards brownfield land but will not itself result in new development.	None	No
HOU2: Residential extensions, conversions, annexes and redevelopment in the built up area	Residential development	Increased air pollution Disturbance from recreation Change in water quantity and increased water pollution	No – this policy will result in small scale development that will not result in likely significant effect on European sites.
HOU3: Residential premises above shops and businesses	Residential development	Increased air pollution Disturbance from recreation Change in water quantity and increased water pollution	No – this policy will result in small scale development that will not result in likely significant effect on European sites.

Plan Policy	Likely activities to result as a consequence of the proposal	Likely effect if proposal is implemented	Will the proposal have likely significant effects and therefore require Appropriate Assessment?
HOU4: Residential garden land	Residential development	Increased air pollution Disturbance from recreation Change in water quantity and increased water pollution	No – this policy will result in small scale development that will not result in likely significant effect on European sites.
HOU5: Density of residential development	This policy sets out required development density but will not itself result in new development.	None	No
HOU6: Affordable local housing need on rural exception sites including first homes	This policy sets out principles for the provision of affordable homes but will not itself result in new development.	None	No
HOU7: Specialist residential accommodation	This policy sets out principles for the provision of specialist accommodation but will not itself result in new development.	None	No
HOU8: Gypsy, Traveller and Travelling Showpeople accommodation	This policy sets out principles for the provision of traveller sites but will not itself result in new development.	None	No
HOU9: Custom and self-build housing	This policy sets out principles for the provision of self build homes but will not itself result in new development.	None	No
HOU10: Build to rent proposals	This policy sets out principles for the provision of rental properties but will not itself result in new development.	None	No

Plan Policy	Likely activities to result as a consequence of the proposal	Likely effect if proposal is implemented	Will the proposal have likely significant effects and therefore require Appropriate Assessment?
HOU11: Rebuilding, extending and subdivision of dwellings in the countryside	Residential development	Increased air pollution Disturbance from recreation Change in water quantity and increased water pollution	No – this policy will result in small scale development that will not result in likely significant effect on European sites.
CD1: Shops, facilities and services	This policy describes where shops and town centre uses will be permitted but will not itself result in development.	None	No
CD2: Primary shopping area	This policy describes where changes of use will be permitted within shopping areas but will not itself result in new development.	None	No
CD3: Accommodation for rural workers	Residential development	Increased air pollution Disturbance from recreation Change in water quantity and increased water pollution	No – this policy will result in small scale development that will not result in likely significant effect on European sites.
CD4: Live work units	Residential development	Increased air pollution Disturbance from recreation Change in water quantity and increased water pollution	No – this policy will result in small scale development that will not result in likely significant effect on European sites.
CD5: New agricultural buildings and structures	Agricultural development	Increased air pollution Change in water quantity and increased water pollution	No – this policy will result in small scale development that will not result in likely significant effect on European sites.
CD6: Expansion of existing businesses in rural areas	Employment development	Increased air pollution	No – this policy will result in small scale development that will not result in likely significant effect on European sites.

Plan Policy	Likely activities to result as a consequence of the proposal	Likely effect if proposal is implemented	Will the proposal have likely significant effects and therefore require Appropriate Assessment?
		Change in water quantity and increased water pollution	
CD7: Equestrian development	This policy sets out principles for the conversion of existing buildings for equestrian use but will not itself result in new development.	None	No
TLR1: Mooring facilities and boat yards	Residential development	Increased air pollution Change in water quantity and increased water pollution	No – this policy will result in small scale development that will not result in likely significant effect on European sites.
TLR2: Holiday lets, caravan and camp sites	Tourism development	Increased air pollution Disturbance from recreation Change in water quantity and increased water pollution	No – this policy will result in small scale development that will not result in likely significant effect on European sites.
TRA1: Air quality	This policy describes where air quality assessment will be required and will not result in development.	None	No This policy requires air quality impact assessment within AQMAs and *"Development proposals which have the potential, by virtue of their scale, nature and/or location, to have a significant negative impact on air quality outside of identified Air Quality Management Areas will submit an AQIA to consider the potential impacts of pollution from individual and cumulative development, and to demonstrate how the air quality impacts of the development will be mitigated to acceptable levels."* This could contribute to mitigation for air pollution effects.
TRA2: Assessing the transport impacts of development	This policy describes where transport assessment will be required and will not result in development.	None	No This policy requires development to *"Demonstrate that any measures necessary to mitigate the transport impacts (in terms of highway safety and capacity as well as air quality) of development are viable and will be delivered*

Plan Policy	Likely activities to result as a consequence of the proposal	Likely effect if proposal is implemented	Will the proposal have likely significant effects and therefore require Appropriate Assessment?
			at the appropriate point in the proposed development's buildout." This could contribute to mitigation for air pollution effects.
TRA3: Park and ride	Transport infrastructure	Air pollution	No This policy will change the flow of traffic around Maidstone but has been incorporated into the traffic modelling as part of the future baseline and does not require assessment alone.
TRA4: Parking policy	This policy sets out standards for parking provision and will not result in new development.	None	No
INF1: Publicly accessible open space and recreation	This policy sets out standards for open space provision and will not result in new development.	None	No This policy requires the provision of recreation and play spaces and "a contribution towards maintaining the borough-wide target of 6.5ha of natural/ semi-natural open space per 1,000 head of population". This could contribute to mitigation for recreation pressure.
INF2: Community facilities	This policy requires developments to provide or contribute to community facilities but will not itself result in new development.	None	No
INF3: Renewable and low carbon energy schemes	Renewable energy infrastructure	None	No
INF4: Digital communications and connectivity	This policy sets out requirements for digital connectivity and will not result in new development.	None	No
ENV1: Historic environment	This policy protects heritage assets and will not result in new development.	none	No

Plan Policy	Likely activities to result as a consequence of the proposal	Likely effect if proposal is implemented	Will the proposal have likely significant effects and therefore require Appropriate Assessment?
ENV2: Change of use of agricultural land to domestic garden land	This policy states when changes of land use will be permitted but will but result in new development.	None	No
ENV3: Caravan storage in the countryside	This policy sets out principles for caravan storage and will not result in new development.	None	No
Q&D1: Sustainable design	This policy sets out principles for sustainable design and will not result in new development.	None	No This policy requires new dwellings to achieve a water efficiency of 110l per person, per day. This may contribute to mitigation for water quality or quantity impacts.
Q&D2: External lighting	This policy sets out principles for lighting and will not result in new development.	None	No This policy states that proposals near enough to significantly affect areas of nature conservation e.g. SACs will only be permitted in exceptional circumstances. This would contribute to mitigation for non-physical disturbance impacts.
Q&D3: Signage and building frontages	This policy sets out principles for signs and shopfronts and will not result in new development.	None	No
Q&D4: Design principles in the countryside	This policy sets out principles for design and will not result in new development.	None	No
Q&D5: Conversion of rural buildings	Residential development Tourism development	Increased air pollution Disturbance from recreation Change in water quantity and increased water pollution	No – this policy will result in small scale development that will not result in likely significant effect on European sites.

Plan Policy	Likely activities to result as a consequence of the proposal	Likely effect if proposal is implemented	Will the proposal have likely significant effects and therefore require Appropriate Assessment?
Q&D6: Technical standards	This policy sets out internal space standards for buildings but will not result in new development.	None	No
Q&D7: Private amenity space standards	This policy sets out external space standards for buildings but will not result in new development.	None	No

Table C.2: Screening matrix - allocated sites

Type of impact	Screening criteria ('Development site could have a significant effect if…')	Potential development sites meeting screening criteria (sites to be considered in Appropriate Assessment)
Physical damage and loss of habitat	Development occurs within or immediately adjacent to a European site or functionally linked habitat.	None
Non-physical disturbance	Development occurs within 500m of a European site of functionally linked habitat that supports qualifying features susceptible to impacts from non-physical disturbance, such as vibration, noise and light.	None – Queendown Warren SAC & North Downs Woodland SAC are not sensitive to this impact; other sites >500m from borough.
Non-toxic contamination	Development occurs within or immediately adjacent to a European site or functionally linked habitat.	None
Air pollution	Development increases traffic flows by at least 1,000 AADT or 200 HDVs AADT (alone or in combination) on the following roads: ■ North Downs Woodland SAC (A249, A229) ■ Medway Estuary and Marshes SPA and Ramsar (A249) ■ The Swale SPA and Ramsar (A249)	Traffic modelling has taken into account the overall traffic flows resulting from the Local Plan Review; however significant contributions to traffic flows are more likely to arise from: ■ Sites contributing traffic to the A249 (potentially any site, but particularly those in the north of the borough) ■ Sites contributing traffic to the A229 (potentially any site, but particularly those in the north of the borough)

Type of impact	Screening criteria ('Development site could have a significant effect if…')	Potential development sites meeting screening criteria (sites to be considered in Appropriate Assessment)
Recreational disturbance	Residential development proposed within: ■ 7km of North Downs Woodlands SAC, Peter's Pit SAC, or Queendown Warren SAC; or ■ 6km of Medway Estuary and Marshes SPA/Ramsar.	Sites within 7km of North Downs Woodlands SAC: ■ Lidsing Garden Settlement, LPRSA145, LPRSA146, LPRSA147, LPRSA148, LPRSA149, LPRSA151, LPRSA152, LPRSA172, LPRSA204, LPRSA265, LPRSA266, LPRSA270, LPRSA303, LPRSA362, LPRSA366. Sites within 7km of Queendown Warren SAC: ■ Lidsing Garden Settlement. Sites within 6km of Medway Estuary and Marshes SPA/Ramsar: ■ Lidsing Garden Settlement.
Water quantity and quality	Development is adjacent to, or uses wastewater treatment works that discharges into, the River Medway (Medway Estuary and Marshes SPA/Ramsar). Development discharges wastewater to or abstracts water from the Medway Catchment, within the SSSI IRZ (Medway Estuary and Marshes SPA/Ramsar; The Swale SPA/Ramsar; Thames Estuary and Marshes SPA/Ramsar). Development discharges to watercourses / groundwater within the Upper Stour catchment (Stodmarsh SAC, SPA and Ramsar).	Development is adjacent to, or uses wastewater treatment works that discharges into, the River Medway: ■ All allocated sites other than those at Lenham Development discharges wastewater to or abstracts water from the Medway Catchment, within the SSSI IRZ: ■ Lidsing Garden Settlement (SSSI IRZ for Thames Estuary and Marshes SPA/Ramsar) Development discharges to watercourses / groundwater within the Upper Stour catchment: ■ Heathlands Garden Settlement (1,400 homes); LPRSA260 (employment, therefore not required to achieve nutrient neutrality); and Lenham Broad Location (1,000 homes).

Appendix D

Traffic modelling and air quality assessment

D.1 This appendix summarises the findings of traffic modelling and air quality assessment undertaken by Jacobs in August 2021.

D.2 Jacobs report 'Maidstone Local Plan Air Quality Assessment, August 2021' considered the effects of the Local Plan Review on a range of air quality receptors. The data relevant to the HRA is presented below: the location of assessed transects, traffic data and nitrogen deposition rates at those locations.

D.3 All images and data provided by Jacobs.

Air quality assessment transect locations

Figure D.1: North Downs Woodlands SAC

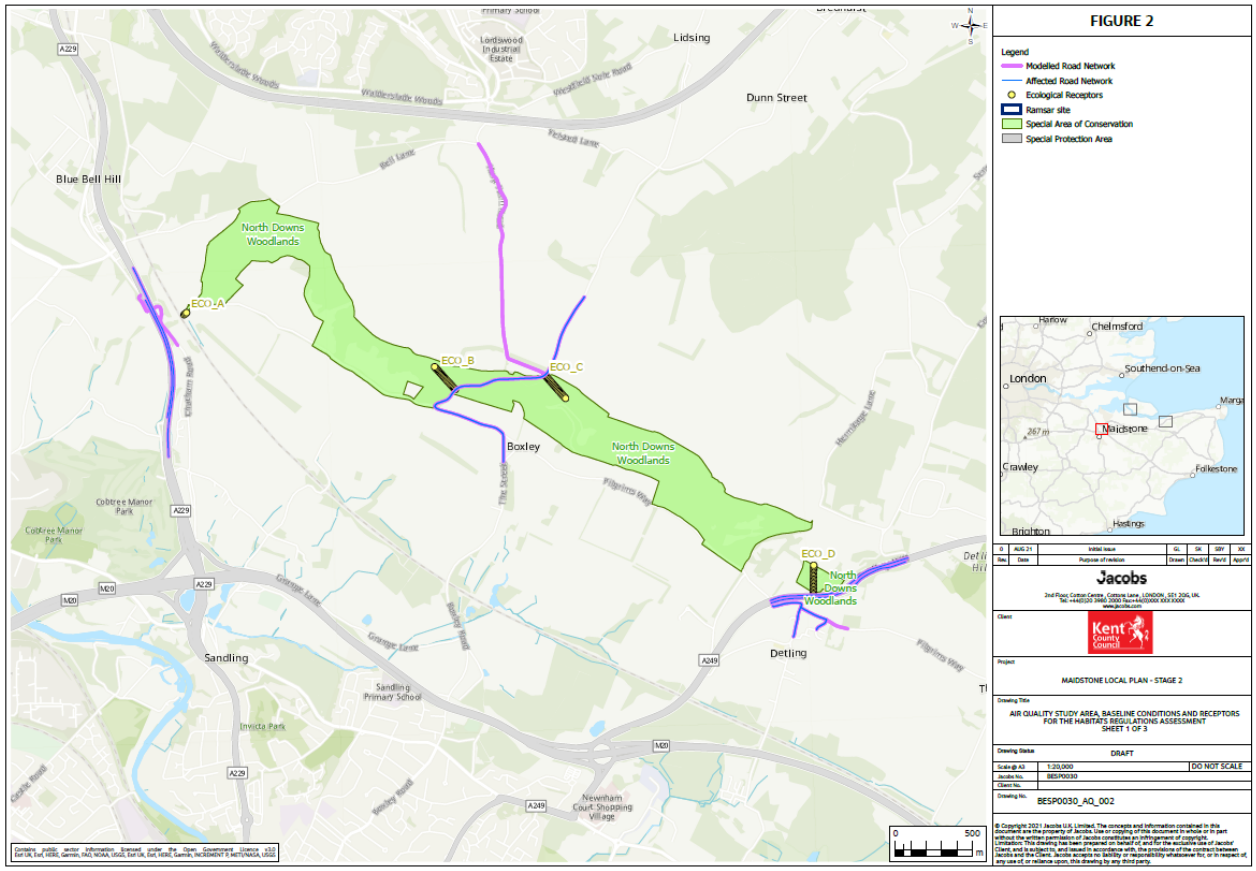


Figure D.2: North Downs Woodlands SAC (supplementary information available from transects used to assess Wouldham to Detling Escarpment SSSI)

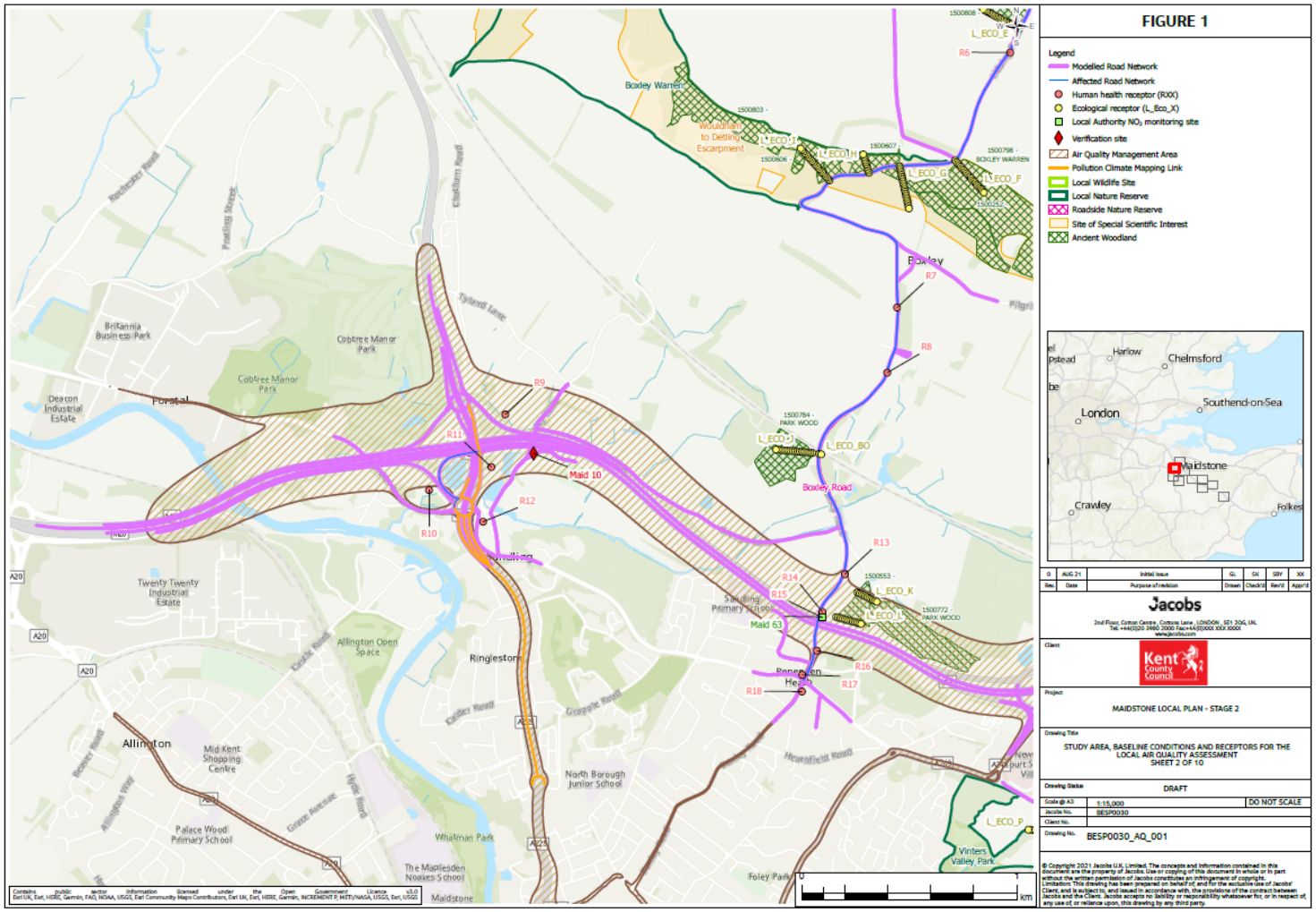
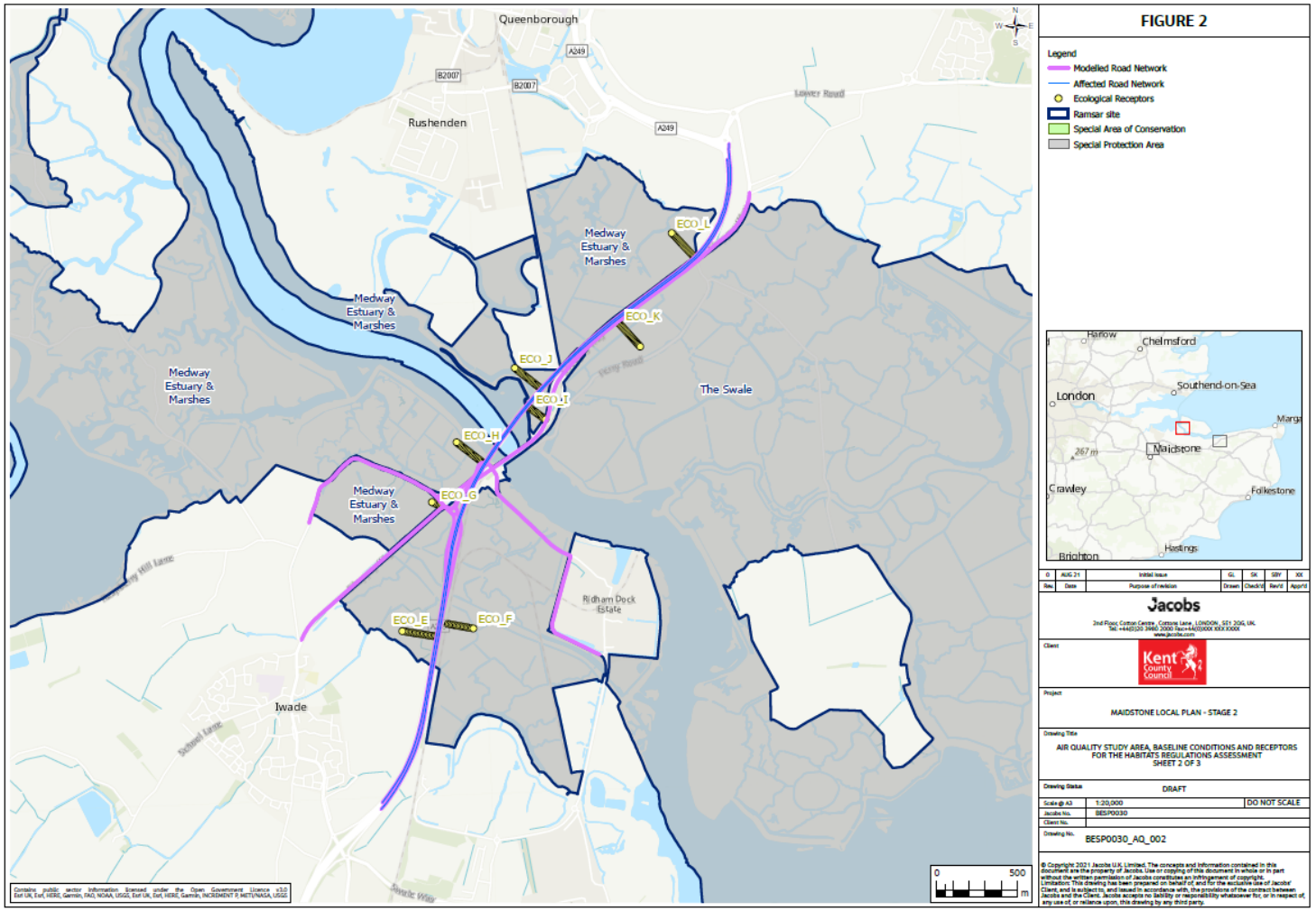
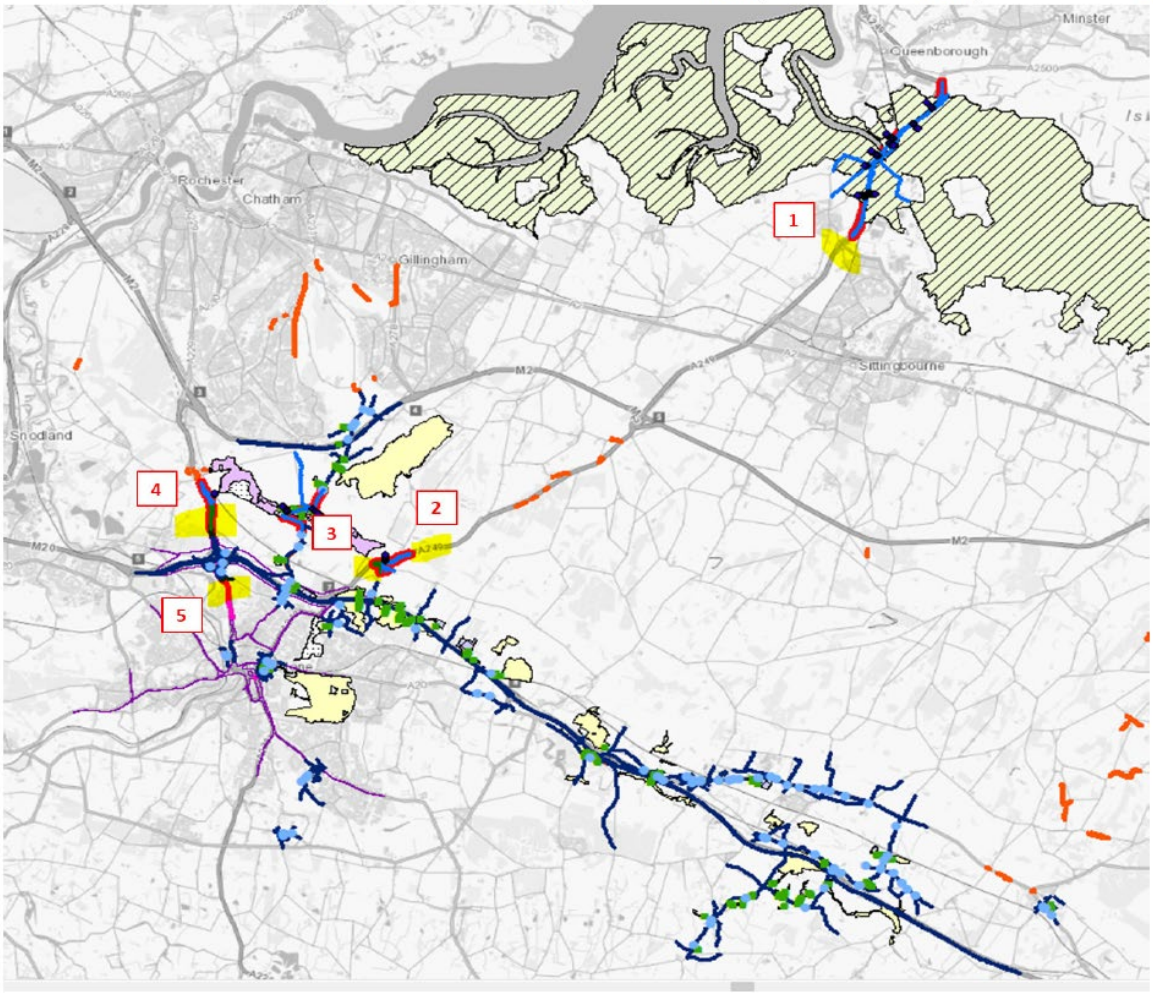


Figure D.3: Medway Estuary & Marshes SPA/Ramsar and The Swale SPA/Ramsar



Traffic data

Road	PointID	AADT 2019 Base	Do Nothing	Do Minimum (Ref case)	Do Something (Option 1)
A249 near Sittingbourne	1_NB	15,425	16,421	20,512	20,567
	1_SB	16,873	17,779	22,384	22,416
A249 Delting Hill	2_NB	21,031	22,222	34,392	34,332
	2_SB	18,891	19,973	33,248	33,213
Lidsing Road	3_NB	24,371	25,545	37,219	37,249
	3_SB	21,315	21,905	30,810	30,864
A229	4_NB	29,762	30,831	39,569	39,808
	4_SB	28,494	29,975	40,736	40,964
A229 Royal Engineer's Road	5_NB	16,468	17,136	22,221	22,629
	5_SB	17,146	17,864	23,894	24,087



Air quality assessment data

Main assessment: European sites

Comparison between 'do nothing' and 'do something' scenarios, for roads passing the European sites. Data below shows only those points on the transects where the % change in relation to the lower critical load exceeds 1%.

Receptor	Sensitive habitat	2037 NOx background concentration ($\mu g/m^3$)	APIS data[1] (average total nitrogen (N) deposition	Critical load (kg N/ha/yr)	Ecological Site	Distance to nearest air quality Affected Road Network road (m)	Dry deposition (kg N/ha/yr)		Change in N deposition (kg N/ha/yr)	Critical Load (kg N/ha/yr)	% Change in relation to lower critical load
							2037 projected baseline	2037 with LP and in combination			
ECO_A_0	Coniferous Woodlands	12.1	31.1	5.0	SAC North Downs Woodlands #1	161.5	31.6	31.9	0.3	5.0	5.9%
ECO_A_10	Coniferous Woodlands	12.1	31.1	5.0	SAC North Downs Woodlands #1	171.5	31.6	31.9	0.3	5.0	5.5%
ECO_A_20	Coniferous Woodlands	12.1	31.1	5.0	SAC North Downs Woodlands #1	181.5	31.6	31.8	0.3	5.0	5.3%
ECO_B_0	Broadleaved deciduous woodland	11.2	29.1	10.0	SAC North Downs Woodlands #2	0.1	30.2	31.1	0.9	10.0	8.6%
ECO_B_10	Broadleaved deciduous woodland	11.2	29.1	10.0	SAC North Downs Woodlands #2	10.1	29.5	29.9	0.4	10.0	3.7%
ECO_B_20	Broadleaved deciduous woodland	11.2	29.1	10.0	SAC North Downs Woodlands #2	20.1	29.4	29.6	0.2	10.0	2.4%
ECO_B_30	Broadleaved deciduous woodland	11.2	29.1	10.0	SAC North Downs Woodlands #2	30.1	29.3	29.5	0.2	10.0	1.7%
ECO_B_40	Broadleaved deciduous woodland	11.2	29.1	10.0	SAC North Downs Woodlands #2	40.1	29.3	29.4	0.1	10.0	1.4%
ECO_B_50	Broadleaved deciduous woodland	11.2	29.1	10.0	SAC North Downs Woodlands #2	50.1	29.2	29.4	0.1	10.0	1.1%
ECO_C_0	Broadleaved deciduous woodland	11.2	29.1	10.0	SAC North Downs Woodlands #3	0.1	29.8	30.3	0.4	10.0	4.5%
ECO_C_10	Broadleaved deciduous woodland	11.2	29.1	10.0	SAC North Downs Woodlands #3	10.1	29.4	29.5	0.2	10.0	1.6%
ECO_C_20	Broadleaved deciduous woodland	11.2	29.1	10.0	SAC North Downs Woodlands #3	20.1	29.3	29.4	0.1	10.0	1.0%
ECO_D_0	Coniferous Woodlands	10.7	29.1	5.0	SAC North Downs Woodlands #4	10.7	31.7	33.9	2.2	5.0	44.4%
ECO_D_10	Coniferous Woodlands	10.7	29.1	5.0	SAC North Downs Woodlands #4	20.7	30.9	32.6	1.7	5.0	33.4%
ECO_D_20	Coniferous Woodlands	10.7	29.1	5.0	SAC North Downs Woodlands #4	30.7	30.5	31.9	1.3	5.0	27.0%
ECO_D_30	Coniferous Woodlands	10.7	29.1	5.0	SAC North Downs Woodlands #4	40.7	30.3	31.4	1.1	5.0	22.8%
ECO_D_40	Coniferous Woodlands	10.7	29.1	5.0	SAC North Downs Woodlands #4	50.7	30.1	31.1	1.0	5.0	19.7%
ECO_D_50	Coniferous Woodlands	10.7	29.1	5.0	SAC North Downs Woodlands #4	60.7	30.0	30.8	0.9	5.0	17.4%
ECO_D_60	Coniferous Woodlands	10.7	29.1	5.0	SAC North Downs Woodlands #4	70.7	29.9	30.6	0.8	5.0	15.5%
ECO_D_70	Coniferous Woodlands	10.7	29.1	5.0	SAC North Downs Woodlands #4	80.7	29.8	30.5	0.7	5.0	14.0%

ECO_D_80	Coniferous Woodlands	10.7	29.1	5.0	SAC North Downs Woodlands #4	90.7	29.7	30.4	0.6	5.0	12.8%
ECO_D_90	Coniferous Woodlands	10.7	29.1	5.0	SAC North Downs Woodlands #4	100.7	29.7	30.2	0.6	5.0	11.7%
ECO_D_100	Coniferous Woodlands	10.7	29.1	5.0	SAC North Downs Woodlands #4	110.7	29.6	30.2	0.5	5.0	10.8%
ECO_D_110	Coniferous Woodlands	10.7	29.1	5.0	SAC North Downs Woodlands #4	120.7	29.6	30.1	0.5	5.0	9.9%
ECO_D_120	Coniferous Woodlands	10.7	29.1	5.0	SAC North Downs Woodlands #4	130.7	29.5	30.0	0.5	5.0	9.2%
ECO_D_130	Coniferous Woodlands	10.7	29.1	5.0	SAC North Downs Woodlands #4	140.7	29.5	29.9	0.4	5.0	8.6%
ECO_D_140	Coniferous Woodlands	10.7	29.1	5.0	SAC North Downs Woodlands #4	150.7	29.5	29.9	0.4	5.0	8.0%
ECO_D_150	Coniferous Woodlands	10.7	29.1	5.0	SAC North Downs Woodlands #4	160.7	29.5	29.8	0.4	5.0	7.5%
ECO_D_160	Coniferous Woodlands	10.7	29.1	5.0	SAC North Downs Woodlands #4	170.7	29.4	29.8	0.4	5.0	7.0%
ECO_D_170	Coniferous Woodlands	10.7	29.1	5.0	SAC North Downs Woodlands #4	180.7	29.4	29.7	0.3	5.0	6.6%
ECO_D_180	Coniferous Woodlands	10.7	29.1	5.0	SAC North Downs Woodlands #4	190.7	29.4	29.7	0.3	5.0	6.2%
ECO_E_0	Littoral Sediment - saltmarshes	11.3	29.1	20.0	SPA/RAMS AR The Swale #1	9.4	30.3	30.5	0.2	20.0	1.2%
ECO_L_0	Pioneer, low-mid, mid-upper saltmarshes	11.2	29.1	20.0	SPA/RAMS AR Medway Estuary and Marshes #5	0.1	30.8	31.3	0.4	20.0	2.1%
ECO_L_10	Pioneer, low-mid, mid-upper saltmarshes	11.2	29.1	20.0	SPA/RAMS AR Medway Estuary and Marshes #5	10.1	30.2	30.5	0.3	20.0	1.3%
ECO_L_20	Pioneer, low-mid, mid-upper saltmarshes	11.2	29.1	20.0	SPA/RAMS AR Medway Estuary and Marshes #5	20.1	30.0	30.2	0.2	20.0	1.0%

Supplementary data: Wouldham to Detling SSSI

Comparison between 'do minimum and 'do something' scenarios, for Detling Road, only. Comparison between 'do nothing' (main assessment) and 'do minimum' provides additional information on contribution of LPR alone.

Receptor	Ecological Transect	Minimum Distance to Road (m)	Total Nitrogen Deposition Rate 2037 (Maximum) (kg N/ha/yr)		Change in Nitrogen Deposition (DS-DM) (kg N/ha/yr)	Site Relevant Critical Load (kg N/ha/yr)	Change in Nitrogen Deposition in Relation to Lower Critical Load (%)
			DM	DS			
L_ECO_F_0	SSSI Wouldham to Detling Escarpment and AW Boxley Warren (1500798)	0.1	35.7	36.4	0.7	10	6.7%
L_ECO_F_10	SSSI Wouldham to Detling Escarpment and AW Boxley Warren (1500798)	10.1	31.3	31.4	0.2	10	1.6%
L_ECO_G_0	AW Boxley Warren (1500798) and SSSI Wouldham to Detling Escarpment	0.1	34.6	35.2	0.5	10	5.4%
L_ECO_G_10	AW Boxley Warren (1500798) and SSSI Wouldham to Detling Escarpment	10.1	31.6	31.8	0.2	10	1.9%
L_ECO_G_20	AW Boxley Warren (1500798) and SSSI Wouldham to Detling Escarpment	20.1	30.9	31.0	0.1	10	1.2%
L_ECO_H_0	AW unnamed (1500607) AND SSSI Wouldham to Detling Escarpment (Area 1) AND LNR Boxley Warren	0.1	36.7	37.4	0.8	10	7.7%
L_ECO_H_10	AW unnamed (1500607) AND SSSI Wouldham to Detling Escarpment (Area 1) AND LNR Boxley Warren	10.1	32.6	32.9	0.3	10	3.0%
L_ECO_H_20	AW unnamed (1500607) AND SSSI Wouldham to Detling Escarpment (Area 1) AND LNR Boxley Warren	20.1	31.6	31.8	0.2	10	1.9%
L_ECO_H_30	AW unnamed (1500607) AND SSSI Wouldham to Detling Escarpment (Area 1) AND LNR Boxley Warren	30.1	31.1	31.3	0.1	10	1.5%
L_ECO_H_40	AW unnamed (1500607) AND SSSI Wouldham to Detling Escarpment (Area 1) AND LNR Boxley Warren	40.1	30.9	31.0	0.1	10	1.1%
L_ECO_I_0	SSSI Wouldham to Detling Escarpment (Area 1) AND LNR Boxley Warren and AW unnamed (1500607&1500803)	100.1	37.4	38.3	0.9	10	8.5%
L_ECO_I_10	SSSI Wouldham to Detling Escarpment (Area 1) AND LNR Boxley Warren and AW unnamed (1500607&1500803)	110.1	32.5	32.8	0.3	10	2.9%
L_ECO_I_20	SSSI Wouldham to Detling Escarpment (Area 1) AND LNR Boxley Warren and AW unnamed (1500607&1500803)	120.1	31.4	31.6	0.2	10	1.7%
L_ECO_I_30	SSSI Wouldham to Detling Escarpment (Area 1) AND LNR Boxley Warren and AW unnamed (1500607&1500803)	130.1	30.9	31.1	0.1	10	1.2%

Appendix E

Nutrient neutrality within the Stour catchment

Intended for
Homes England and Maidstone Borough Council

Document type
Report

Date
September 2021

HEATHLANDS GARDEN COMMUNITY
NUTRIENT NEUTRALITY ASSESSMENT

RAMBOLL Bright ideas. Sustainable change.

HEATHLANDS GARDEN COMMUNITY
NUTRIENT NEUTRALITY ASSESSMENT

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Prepared by	**Wendy Furgusson**
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Description	**Nutrient Neutrality Assessment**

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CONTENTS

APPENDICES

EXECUTIVE SUMMARY

Ramboll UK Ltd. has been appointed by Mace Ltd. on behalf of Homes England and Maidstone Borough Council to provide a nutrient neutrality evidence base for the Site known as Heathlands Garden Community, Maidstone, Kent ('the Site').

The proposed Heathlands Garden Community lies at the upper end of the Stour catchment. Surface water run-off from the Site and also treated effluent from the existing Lenham wastewater treatment works (WWTW) discharge into the Stour and, due to levels of nutrients (nitrogen and phosphorus) within that discharge water, have the potential to affect water quality within European designated wetlands and lakes in the Stodmarsh area downstream. The water quality at the Stodmarsh site is currently in an unfavourable condition due to elevated concentrations of these nutrients.

Development of current agricultural land into the garden community is predicted to result in an increase in nutrient load from the Site, partly associated with surface water run-off, but predominantly due to the increase in treated wastewater associated with additional habitants. Natural England require this increase in nutrient load to be mitigated in order to avoid further deterioration of the waters at Stodmarsh.

The existing WWTW is not suitable to support the proposed garden community both in terms of operational capacity and ability to mitigate resultant increases in nutrients. Regulatory constraints mean that replacement or upgrading of the Lenham WWTW is also unlikely to be a viable option and thus it is intended that wastewater from the garden community will be treated by a new WWTW. The new WWTW will not only serve the development, but also incorporate flows and loads from sites within the vicinity of Lenham that are currently proposed as part of the Local Plan.

Calculations show that the new treatment works would offset the majority of the increased load in nutrients resulting from the proposed development, and that utilisation of a wetland to 'polish' discharge from the treatment works would provide removal of the remainder of load associated with wastewater. Additional wetland provision would treat nutrient load within surface water run-off from the Site. In these ways it is planned to provide mitigation to offset the predicted increase in nutrient loadings on Site, without the need for additional off-site mitigation. and the proposed garden community development will be nutrient neutral.

1. INTRODUCTION

Ramboll UK Limited ('Ramboll') has been appointed by Mace Ltd. on behalf of Homes England and Maidstone Borough Council to provide a nutrient neutrality assessment for the Site known as Heathlands Garden Community, Maidstone, Kent ('the Site'). This report has been prepared to present high level nutrient budget (appropriate to the Local Plan development stage) calculations for the proposed community, together with proposals for mitigation to offset any predicted increase in nutrient load from the Site. The assessment presented in this report is based upon the proposed development shown in the Barton Willmore Framework Plan ref 29248 RG-M-32-1 Rev M.

2. BACKGROUND

As part of the Local Planning Authority, Maidstone Borough Council's (MBC's) regulatory role as a competent authority it is required, under the Conservation of Habitats and Species Regulations (CHSR) (2017), to assess the potential implications of plans or projects for sites designated for nature conservation or habitats at a European level (i.e. Special Protection Area (SPA), Special Area of Conservation (SAC) and Ramsar sites). Where a plan or project is *considered likely to have a significant effect* on a European site, the competent authority, in this case the local Planning Authority, must complete an Appropriate Assessment in order to understand the implications in terms of the Site's conservation objectives, and ensure that appropriate mitigation is put in place to avoid any predicted damage.

In July 2020, Natural England ('NE') published advice[1] (updated in November 2020)[2] that agricultural practices and residential development (for the latter, be it via wastewater discharged to sewers or surface water run-off) within the catchment of the River Stour are *likely to be having a significant effect* on the waters of designated sites at Stodmarsh. Stodmarsh is a series of wetlands/lakes to the northeast of Canterbury and is designated as an SPA, SAC and Ramsar site. Water quality at the Stodmarsh site is currently in an unfavourable condition due to elevated concentrations of nitrogen and phosphorus.

NE therefore advised local planning authorities in the Stour catchment (including MBC) that proposed developments that would result in a net increase in population served by a wastewater system should be nutrient neutral in order to remove uncertainty as to whether they might contribute to the unfavourable water quality at Stodmarsh, and thus facilitate their compliance with the CHSR. Any development being approved for development through the planning process that is not nutrient neutral could be deemed to contravene the CHSR and the approving planning authority be at risk of judicial review as a result of objection by NE.

The Site lies at the north western edge of the Upper Stour catchment and therefore falls under the NE requirements. Development at the Site must therefore be nutrient neutral, and where this is not the case, mitigation must be provided on-site or through other means (such as off-site mitigation or financial contribution to third party strategic schemes) to comply with NE's requirements and be compliant with the CHSR. In order to demonstrate a site's nutrient neutrality, NE has developed a methodology of assessment which also provides guidance on potential options for mitigation. This method is discussed in more detail in Section 4 and has been used to calculate a high level nutrient budget for the Site as well as inform the possible options for mitigation discussed.

[1] Natural England, Advice on Nutrient Neutrality for New Developments in the Stour Catchment in Relation to Stodmarsh Designated Sites – for Local Planning Authorities, July 2020. Available at: https://www.folkestone-hythe.gov.uk/media/2747/ID-1042876-2-MM7-/pdf/ID_1042876_(2)_(MM7).pdf?m=637309397591500000

[2] Natural England, Advice on Nutrient Neutrality for New Developments in the Stour Catchment in Relation to Stodmarsh Designated Sites – for Local Planning Authorities, November 2020. Available at https://www.ashford.gov.uk/media/l3dgnfyu/stodmarsh-nutrient-neutral-methodology-november-2020.pdf

3. BASIS OF ASSESSMENT

3.1 General Overview

The Site comprises an area of approximately 332 hectares and is located on land in the vicinity of the villages of Lenham and Charing Heath in Kent. The Site lies approximately 17 km southeast of Maidstone and 12 km north west of Ashford and is centred on an approximate Ordnance Survey National Grid reference of TQ916497.

3.2 Current Site Status

The Site boundary is illustrated in Figure 3-1.

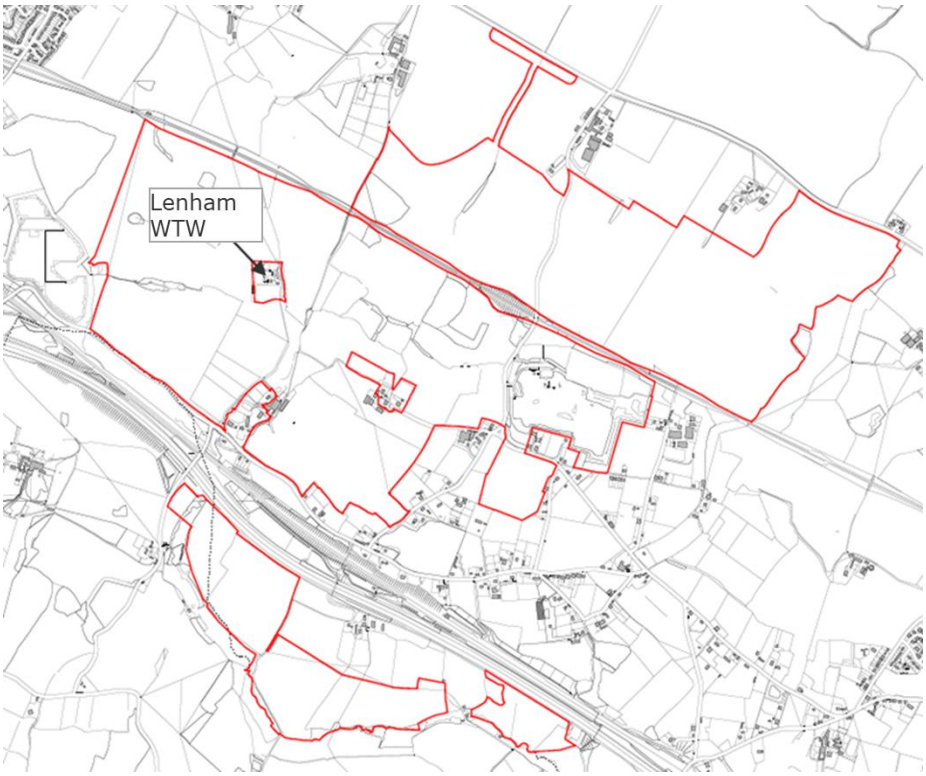

Figure 3-1: Site Boundary

Land Use

The nutrient load associated with any site is based upon the type of land use within that site, or portions of it. Land uses at the Site have been approximated using mapping within the Preliminary Ecological Appraisal (albeit for an earlier iteration of the masterplan), completed by RSK (report Ref. 858818-01 (01), dated 4 March 2020), together with review of GoogleEarth aerial imagery of the Site taken over the last decade (in order to understand the long term use of the land). Current land uses within the Site, classified as per the NE guidance, are as listed in Table 3-1 and illustrated in Figure 3-2.

Table 3-1: Current Land Uses

Land use	**Approximate Area (hectares (ha))**
Urban (roads, non-agricultural residential development, extractive industry)	25
Lowland grazing	20
Woodland	13
Arable - cereals	243
Arable – general cropping	10
Open space (grassland/scrub, not in agricultural use)	24

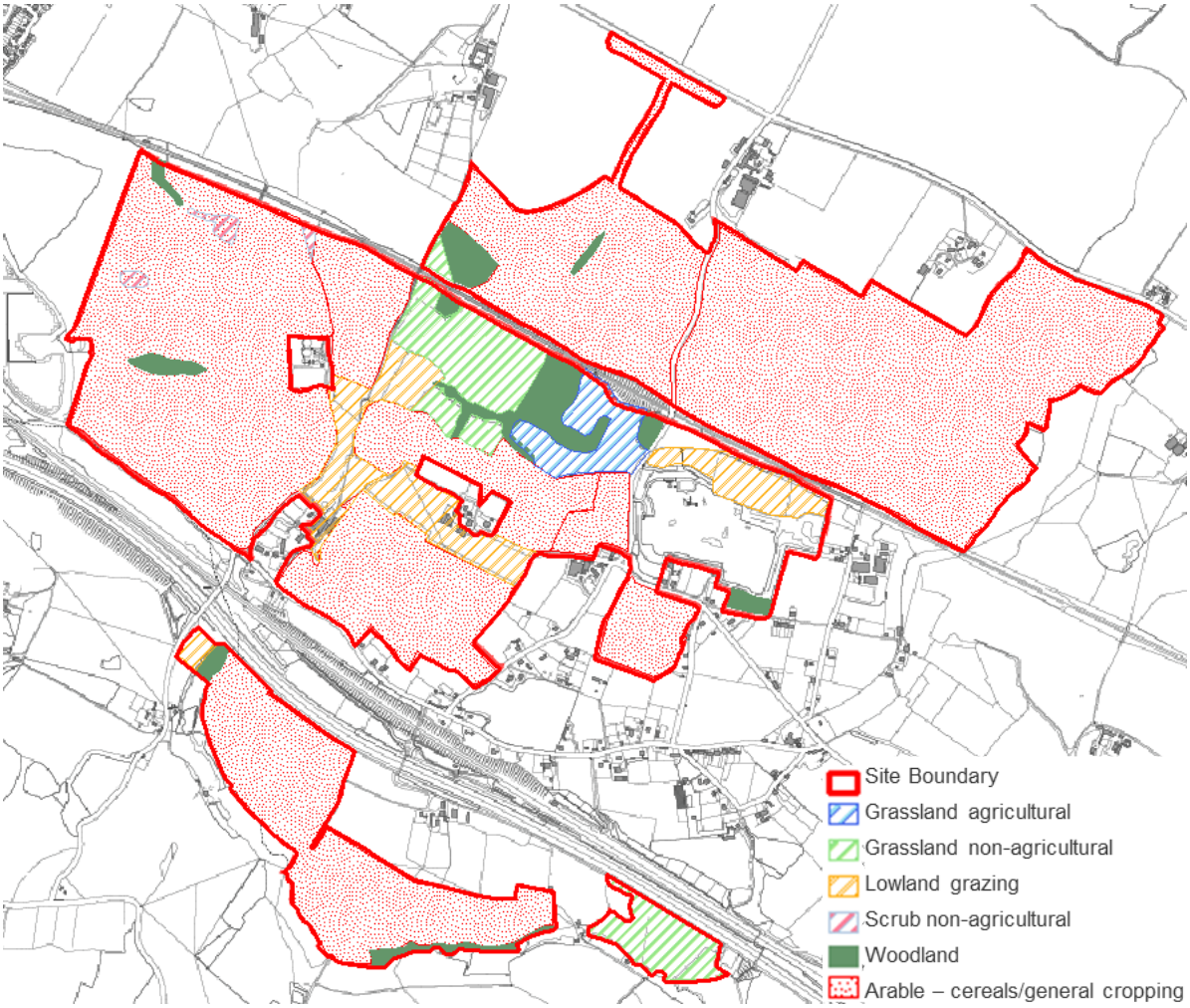

Figure 3-2: Current Land Uses

Wastewater Treatment Provision

The region within which the Site sits is served by Southern Water (SW', with existing foul drainage discharging to the Lenham Wastewater Treatment Works (WWTW'). The WWTW is not included within the proposed garden community but is located within the western portion of the Site, surrounded by the garden community boundary (see Figure 3-1). The WWTW discharges into a small tributary that flows in a southerly direction to the Great Stour, located to the south of the M20. The Great Stour then flows eastwards and hence in a north easterly direction, flowing through Stodmarsh and from there into the sea to the south of Ramsgate.

The WWTW provides both primary and secondary treatment, serving a population equivalent of approximately 3,200 people, and operates under a permit issued by the Environment Agency (EA, permit ref. SO/W00517/007). The environmental permit for the WWTW states that nutrient removal should be carried out prior to discharge but does not state whether it is nitrogen or phosphorus that is removed. The permit requires that the WWTW discharges effluent with a maximum concentration of 1 mg/l of total phosphorus ('TP') but does not contain limits in terms of total nitrogen ('TN'). It is therefore concluded that the nutrient removal undertaken at the WWTW is for TP. SW issued a position statement on nitrates in the Stour, together with accompanying FAQs in October 2020 (see Appendix A). In that document they state that the TP permit limit at Lenham is planned to be reduced to 0.5 mg/l by 2024.

Water quality monitoring data of discharges from the WWTW have been received from the EA and SW. The SW monitoring data does not include analytical results for TP or TN. The EA data

documents TP concentrations and shows an average TP at the outlet of 0.61 mg/l over the period 2015 to 2020, indicating that the WWTW is operating within its current permitted level.

Within SW's position statement on nitrates in the Stour (see Appendix A) they state that:

- Within the existing environmental and financial regulatory framework, it is not possible for it to increase TN and TP removal beyond the limit currently placed via their permits;
- There is no current mechanism for accepting developer contributions to improve the quality of discharges;
- The requirements to remove TP or TN at any one WWTW is dependent upon the nature of the receiving water. Phosphorus is believed to be the primary limiting nutrient for inland UK waters so currently there is no regulatory or scientific impetus to add TN to permit levels in such scenarios; and
- NE's guidance outlines that it is not possible to provide separate TP/TN removal prior to discharge to a WWTW operated by SW.

Therefore, based upon the above constraints, use of the existing WWTW to support the proposed garden community is not considered to be a viable option and thus has been discounted. It is thus excluded from the nutrient load calculations presented in Section 4.

Surface water on the Site that is not intercepted and removed via engineered drainage is anticipated to discharge to the same tributary of the Great Stour as noted above. Therefore, surface water runoff from the Site is likely to follow the same route and will have the potential to affect water quality at Stodmarsh.

3.3 Proposed Site Land Uses

The proposed land uses as illustrated in the Framework Plan (Barton Willmore, Ref. 29248-RG-M-32, Rev M), and classified as per the NE guidance, are as follows:

Land use	**Area (ha)**
Urban	186*
Allotments	2.3
Retained roads/development	0.7
Woodland, country park, natural, semi-natural, designated open space	143

* In line with NE guidance all areas of play provision and formal sports areas have been included within the urban land use classification.

4. NUTRIENT ASSESSMENT

4.1 Nutrient Budget Calculations

In order to assess the potential scale of change in nutrient load at the site, an initial estimate of the nutrient budget for the proposed development has been undertaken based on the land uses and approximate areas noted in Section 3. The calculations assume treatment of wastewater at a new WWTW constructed as part of the garden community.

The nutrient budget calculation is a staged process and is set out below. For further details and background as to the process, see the NE guidance[2].

Table 4-1: Stage 1 Calculation of total nutrient in kilograms per annum derived from the development that would exit the WWTW after treatment

Measurement	Value	Unit	Explanation/Notes
Development increasing the population	5000	Residential Dwellings	Proposed no. of dwellings as per masterplan
Additional population	12,000	Persons	Based upon ONS National Average occupancy rate (2.4) in line with NE guidance, as no detailed breakdown of housing mix available at this stage
Wastewater volume generated by development	1,320,000	Litres/day	Based upon additional population and Building Regulations 2010 *optional* requirement of a maximum water use of 110 litres per day (as recommended in the NE guidance)
Nutrient Load Calculations - Nitrogen			
Receiving WWTW permit limit for TN	10	mg/l TN	Achievable TN limit at new WWTW.
TN discharged after WWTW treatment	11.88	Kg/TN/day	Waste water volume * 90% as permit level known, divided by 1,000,000
Wastewater total nitrogen load arising from planned development	**4,336.20**	**Kg/TN/year**	Kg/TN/day x365
Nutrient Load Calculations - Phosphorus			
Receiving WWTW permit limit for TP	0.50	mg/l TP	WWTW permit value equivalent to Lenham WWTW, as of 2024.
TP discharged after WWTW treatment	0.59	Kg/TP/day	Waste water volume * 90 % as permit level known, divided by 1,000,000
Wastewater total nitrogen load arising from planned development	**216.81**	**Kg/TP/year**	Kg/TP/day x365

Table 4-2: Stage 2 Calculation of total nutrient load from current land use

	Cereals	Woodland	Urban	General Cropping	Lowland Grazing	Greenfield[4]	Total (Kg/TN/yr)
Area (ha)	243	13	25	10	20	24	
Explanation	1	2	3	1	1	1	
Nitrate loss rate (Kg/ha/yr)	27.3	5	14.3	27.9	12.2	5	**7699.4**
Total nitrate loss for land use type (Kg/ha/yr)	6633.9	65	357.5	279	244	120	
Phosphorus loss rate (Kg/ha/yr)	0.36	0.02	0.83	0.28	0.24	0.14	**119.5**
Total phosphorus loss for land use type (Kg/ha/yr)	87.48	0.26	20.75	2.8	4.8	3.36	

Notes:

1 As per Google Earth images (10 year record) and satellite images

2 As per preliminary ecological appraisal, Google Earth images (10 year record) and satellite images

3 Includes urban roads, residential development (non-agri) and current extractive activities

4 Not believed to be in agricultural use for 10 years (based on Google Earth images (10 year record) and satellite images)

Table 4-3: Stage 3: Calculation of total nutrient load from land uses with the proposed development

	Allotments	Woodland/ open space	Urban	Total (Kg/TN/yr)
Area (ha)	2.3	143	186	
Explanation	Based upon Framework Plan Rev M			
Nitrate loss rate (Kg/ha/yr)	23.5	5	14.3	**3430.18**
Total nitrate loss for land use type (Kg/ha/yr)	54.05	715.9	2660.2	
Phosphorus loss rate (Kg/ha/yr)	0.28	0.02	0.83	**175.09**
Total phosphorus loss for land use type (Kg/ha/yr)	0.64	20.05	154.4	

Table 4-4: Stage 4 Calculation of the net change in the total nutrient load that would result from the development

Measurement	Value	Unit	Explanation
Summary Calculations - Nitrogen			
Total future nitrogen load from waste water	4336.20	Kg/N /yr	Result of Stage 1
Total nitrogen load from future land use	4,269.22	Kg/N /yr	Result of stage 2 minus result of stage 3 (+ value = net decrease in TN load)
Total Nitrogen Budget	66.98	Kg/N /yr	Net future nitrogen load resulting from development
Buffer for uncertainties	13.40	Kg/N /yr	20 % of total budget
Nitrogen Budget plus 20 % buffer	**80.37**	Kg/N /yr	Stage 4 total plus buffer
Assessment Conclusion	**MITIGATION REQUIRED**		
Summary Calculations - Phosphorus			
Total future phosphorus load from waste water	216.81	Kg/N /yr	Result of Stage 1
Total phosphorus load from future land use	-55.68	Kg/N /yr	Result of stage 2 minus result of stage 3 (- value = net increase in TP load)
Total phosphorus Budget	272.49	Kg/N /yr	Future phosphorus from waste water minus net phosphorus load from future land use
Buffer for uncertainties	54.49	Kg/N /yr	20 % of total budget
Phosphorus Budget plus 20 % buffer	**326.94**	Kg/N /yr	Stage 4 total plus buffer
Assessment Conclusion	**MITIGATION REQUIRED**		

5. PROPOSED SOLUTIONS FOR DELIVERY

5.1 Introduction

Development of the Site without mitigation would result in a net gain in nutrients entering the Stour, which could potentially affect the Stodmarsh SPA/SAC/Ramsar site. Demonstration of the ability to incorporate mitigation into the development is therefore required to provide a level of assurance, as part of the Local Plan development process, to confirm nutrient neutral development is possible and that the proposed garden community is appropriate for inclusion in the Local Plan Review. The mitigation strategy outlined below has been developed on a cross-discipline and iterative basis, informing the development of the masterplan in order to provide an integrated solution, meeting multiple needs.

5.2 Lenham Local Plan Development

Whilst the assessment within this report focuses on the Heathlands Garden Community, it is recognised that it will not exist in isolation. A number of other sites within the vicinity of Lenham are currently proposed as part of the Local Plan, fall within the catchment of Lenham WWTW and are likely to result in an increase in nutrient load into the Stour catchment.

As noted above, the existing Lenham WWTW does not have capacity to take additional load and it is recognised by the Local Planning Authority that the provision of a new WWTW for the Heathlands Garden Community is an opportunity to also service the needs of these other developments. The Local Planning Authority has therefore requested that Ramboll consider within this report the potential for those developments remaining to be discharged to be served by the WWTW proposed for Heathlands.

Nutrient assessments for each of these sites were completed in April 2021 by Stantec Ltd, and those assessments have been used as the basis for updating the nutrient load calculations to reflect the remaining supply balance and treatment of the wastewater from them by the WWTW at Heathlands. The results of this update are presented in Table 5-1.

Table 5-1: Nutrient Load Balances for Lenham Wider Developments (Supply Balance only)

Site No.	Site name	Input Data					Resulting Nutrient Loads Based on New WWTW*			
		Stage 1	Stage 2		Stage 3		Stage 4			
		No. units (supply balance)	Baseline Land Type(s)	Area	Proposed Land Type(s)	Area	TN without buffer	TN with buffer	TP without buffer	TP with buffer
1	Land South of Old Ashford Road	85	Cereal	11.89	Urban	6.37	-64.45	n/a	5.20	6.24
					SANG	5.52				
2	Land West of Headcorn Road and north of leading green	57	Woodland	3.96	Urban	2.81	87.69	105.23	3.72	4.47
					SANG	1.15				
3	Land East of Old Ham Lane and South of the Railway	230	n/a - outside of Stour catchment		n/a - outside of Stour catchment		299.20	359.04	9.97	11.97
4	Land West of Headcorn Road	45	Woodland	0.1	Urban	3.59	61.08	73.30	2.81	3.38
			Open grazing	3.76	SANG	0.25				
5	Land West of Old Ham Lane and North of the Railway	275	n/a - outside of Stour catchment		n/a - outside of Stour catchment		357.74	429.28	11.92	14.31
6	William Pitt Field	50	n/a - outside of Stour catchment		n/a - outside of Stour catchment		65.04	78.05	2.17	2.60
n/a	Tanyard Farm, Old Ashford Road	102	Cereal	3.52	Urban	3.06	82.65	99.18	5.76	6.91
					SANG	0.46				
	Total	**844**					888.95	**1144.08**	41.56	**49.87**

* calculations based upon WWTW permit levels discussed in section 5.3, include supply balance units only, land use values taken from nutrient assessments completed by Stantec Ltd (April 2021)

5.3 Basis of Delivery

Provision of New Wastewater Treatment Works

As noted above, the nutrient budget calculations have been undertaken on the basis of a new WWTW servicing the Site. Ongoing and positive discussions are currently being held with a 'new appointments and variations ('NAV')' company[3] to explore what levels of treatment can be achieved at the Site. The company is regulated by Ofwat and experienced in providing development-specific, sustainable, water treatment for similar scale developments.

The new plant would operate under formal permit levels for both TN and TP and be subject to compliance with permit levels agreed with the EA and also the requirements of the Water Framework Directive and CHSR. It would be in place and operational in time for occupation of Phase 1 of the garden community and would serve the garden community, whilst Lenham WWTW would continue to operate separately.

Treatment levels that would be achieved are advised at this stage to be a minimum of 15 mg/l TN with a minimum of 0.5 mg/l TP (the latter matching that which will be in place in from 2024 at Lenham as contained in Table A 1.2 of Appendix A). Potentially lower levels could be achieved, and this will be pursued through the later stages of masterplanning and design of the garden community. The information presented below therefore represents a conservative case. The WWTW and other mitigation elements outlined below will be subject to detailed design and site factors such as topography, existing land uses and relation to the adjacent Stour tributary.

5.4 Proposed Mitigation Strategy

Calculations show (see Table 5-2) that the new treatment works would offset the majority of the increased load in nutrients resulting from the proposed development and wider Lenham developments (rounded up to 1000 units).

Constructed Wetlands (CW)

Wetlands are a mitigation method supported by NE and are proposed to be used to treat residual nutrient load within the WWTW treated effluent prior to discharge into the tributary of the Great Stour.

An additional wetland designed in line with NE guidance[3] within the open space area of the garden community will provide a third element of mitigation to facilitate a nutrient neutral development, treating surface water run-off from the development and will also support biodiversity at the site.

The NE guidance[2] provides indicative removal rates for constructed wetlands based upon research reported by Land *et al* in 2016. The median nutrient removal rates quoted are 930 kg/ha/yr for TN and 12 kg/ha/yr for TP, and can be used to provide an indication of the scale of wetland potentially required. These rates have been used to inform the size of the CW in the open space listed in Table 5-2.

Both wetlands will be subject to detailed design and positioning within the Site in order to ensure that:

- The hydraulic loading is appropriate to facilitate the required level of nutrient removal;
- There is connectivity with the adjacent water environments (i.e. the Stour tributary);
- Hydraulic requirements (for example permanent input of water) are met to support its long term successful operation;
- NE requirements for sizing and other design aspects are met; and
- Any wetland would not increase the risk of flooding.

[3] Limited company which provides a water and/or sewerage service to customers in an area which was previously provided by the incumbent monopoly provider.

Table 5-2: Mitigation Strategy

Baseline assessment	**Lenham wider developments**		**Heathlands**		**Notes**
	Wastewater load 1000 units TN permit 15 mg/l TP permit 0.5 mg/l	Land use load	Wastewater load 5000 units TN permit 15 mg/l TP permit 0.5 mg/l	Land use load	NE Method Stages 1,2,3 (Tables 4-1, 4-2 and 4-3) Permit levels – NAV Lenham wider developments – Table 5-1
Resultant increase in nutrient load	TN 1144 kg/TN/yr TP 50 kg/TP/yr		TN 4243 kg/TN/yr TP 379 kg/TP/yr		NE Method Stage 4 (Table 4-4) Lenham wider developments – Table 5-1
Combined resultant increase in nutrient load	TN 5387 kg/TN/yr TP 429 kg/TP/yr				
Mitigation: Post WWTW Constructed Wetland (CW)	Removal TN of ~7.5 mg/l*, load reduction of ~ 4336 kg/yr** Removal TP to ~0.01 mg/l*, load reduction of ~211 kg/yr* Estimated CW area: 13 ha				* Removal rates and load based upon NAV estimations (subject to detailed design) ** Load – based on removal rates from NAV and annual flows from NE Method Stage 1 (7.5 mg/l x 578,160 m^3/yr = 4336 kg/yr)
Remaining mitigation	TN 1057 kg/TN/yr TP218 kg/TP/yr				
Mitigation: Constructed Wetland in 'Open Space' area	Removal of TN 1057 kg/yr Removal TP 218 kg/yr Estimated CW area: 18 ha				Load/CW area – based on median removal rates per ha within NE guidance[2]
	Full mitigation achieved Development nutrient neutral				

5.5 Discounted Mitigation Options

Contribution to Strategic Offsetting Scheme

Ramboll is not aware of strategic offsetting schemes that are currently in operation within the Stodmarsh catchment, although it is considered likely that these will develop in due course given the pressure to unlock development within the region. As and when such strategic schemes are developed, there is likely to be the potential to contribute to them, should that be needed, however on-site mitigation should be prioritised in the first instance, and there is the need to demonstrate the ability to provide mitigation at the Local Plan stage, which relying on a potential future third party scheme does not provide. This option has therefore been discounted as viable at this time.

Offsetting of Land Off-site

This mitigation approach involves the removal of land elsewhere within the Stour catchment from agricultural use and conversion to less nutrient intensive uses such as woodland, open space or Suitable Alternative Natural Greenspace (SANG), in order to offset the nutrient increases at the Site. This route could be taken via direct purchase of land by Homes England or establishing an agreement with a landowner (and thus differs from a third party offsetting scheme). This is not considered to be a viable option for the Heathlands Garden Community due to the scale of mitigation required. Cereal crops are the predominant land use within the catchment, so taking that as an example, conversion of cereal crop land to offset the proposed garden community would require the offsetting of approximately 475 ha (to offset TN) and 1,500 ha (to offset TP). This has therefore been discounted as a viable mitigation route.

6. CONCLUSIONS

The proposed Heathlands Garden Community development will result in a net gain in nutrients discharged from the Site. This net gain will be mitigated, and this is proposed to be done by provision of a new WWTW serving the community accompanied by two constructed wetlands. The result of implementation of this mitigation will be a development that will be nutrient neutral.

APPENDIX A
SOUTHERN WATER POSITION STATEMENT

Southern Water Position Statement: Nitrates in the Stour
October 2020

Nutrients, including phosphates, entering the water system from a variety of sources, are understood to be causing eutrophication in certain waterbodies within the Stour region.

Natural England has issued advice to Local Planning Authorities on achieving nutrient-neutral development in the Stour region to reduce the impact of additional nutrients, in particular phosphorous, arising from new homes.

The Environment Agency (EA) is the water industry's environmental regulator and defines the environmental permits and associated effluent discharge standards that water companies are required to meet from their Wastewater Treatment Works (WWTWs). Where there is capacity to take extra wastewater flows from new development within existing permit limits, the EA considers the development would be acceptable. Southern Water operates within the regulatory parameters of the water industry, in which permit levels and standards are set and monitored by the EA.

The EA works with water companies and other environmental bodies such as Natural England, to develop the Water Industry National Environment Programme (WINEP) which includes schemes and investigations to protect and enhance the environment. Many of these schemes will require permit standards from WWTWs to be improved. The latest dataset, issued in March 2020, can be downloaded via; https://data.gov.uk/dataset/a1b25bcb-9d42-4227-9b3a-34782763f0c0/water-industrynational-environment-programme

In July 2020, Natural England issued 'Advice on Nutrient Neutrality for New Development in the Stour Catchment in Relation to Stodmarsh Designated Sites - For Local Planning Authorities' a Technical Guidance Note on Wastewater treatment capacity for new development in the Stour Area which can be found online. Page 29 includes a decision tree on nutrient assessment methodology for developing land. Natural England can also provide further advice on how to calculate these which is a chargeable service. This report confirms in Table A 1.2 WWTW with planned phosphate permit updates due in 2024. No further investment is needed to treat wastewater to tighter, or new, phosphorous or nitrogen limits in the Stour area at this point in time however the WINEP investigation into the Stodmarsh lakes due to report by 31st March 2022 may indicate if future improvements in effluent quality are required.

Significant investment is usually required to introduce or increase nutrient removal at a WWTW, and this would be funded through the Business Plan for delivery in the period April 2025 to March 2030, which requires the approval of Ofwat, our economic regulator. The justification for this cost would need to come through the regulatory process outlined above and would be included in the WINEP. It is unlikely any improvements required could be delivered before March 2030.

Mitigation options for WWTWs are included in the NE Advice document.

Southern Water and nutrient removal from wastewater - FAQs

Is Southern Water currently open to agreements that you will increase the nitrogen or phosphate removal rate at the receiving Waste Water Treatment Works beyond consented levels, to provide mitigation for housing developments in the area?

Within the existing environmental and financial regulatory framework of the water industry, this is not feasible. Southern Water operates its Wastewater Treatment Works (WWTWs) in accordance with permitted discharge and quality limits which are issued by, monitored and reported to the Environment Agency. Our WWTWs are designed, constructed and upgraded when necessary to achieve the permit limits in force at the time and to any changes to these during the lifespan of the WWTW. The Environment Agency's Water Industry National Environment Programme (WINEP) investigation scope has agreed the water company assets that are to be part of the investigation into impacts on Stodmarsh designated sites (June 2020). No further investment is needed to treat wastewater to a tighter nitrogen limit at any of the WWTWs in the Stour area in the Business Plan 2020-2025.

In order to voluntarily increase nitrogen or phosphate (nutrient) removal beyond a WWTW's existing permit, or to introduce nutrient removal at a WWTW where it does not presently exist, significant investment would be required, particularly in the latter case. This would be financed through our General Charges Income (GCI) collected from existing customers and promoted through the Water Industry National Environment Programme (WINEP) which we agree with NE and the EA at the start of each AMP (Asset Management Period)Southern Water would need to seek the approval of Ofwat, the water industry's economic regulator, through the 5 yearly price review process, to use GCI to invest in upgrades to our WWTWs to meet tighter discharge standards and this would require customer bills to increase to pay for the improvements required. It is very unlikely that it would be possible to justify this cost, and pass it on to customers, when investigation work carried out by our environmental regulator has already shown that this is not currently necessary, and where our economic regulator is also looking to protect the interests of customers, and ensure operational efficiency.

There is currently no mechanism for accepting developer contributions to improve the quality of discharges from our WWTWs

Nutrients include both Nitrogen (N) and Phosphorous (P) and WWTWs tend to have either a P or N permit, rather than both. What is the difference?

Environmental permits for discharges from WWTWs are determined based on statutory water quality standards and objectives. These standards and objectives differ depending on whether the receiving watercourse is inland or coastal and also depending on its quality, amenity and whether there are any protected sites located nearby.

For inland receiving water, the assessment will take into account the immediate receiving water and main receiving river. In general, P is believed to be the primary limiting nutrient for UK inland waters, hence for inland waters discharges only P removal is required. There are exceptional cases, but these will be linked to specific factors.

What is the capacity of works? Is there enough capacity for the proposed development?

Growth within each WWTW catchment is monitored through population forecasts, as well as through Local Plan housing allocations, and monitoring of local authorities housing supply and delivery. Where this monitoring identifies a risk that capacity at a WWTW is likely to be met within the next 5 year investment period, known as an Asset Management Programme (AMP), we would make a case in our business plan for new infrastructure to support the projected growth in population. Once our business plan is agreed, we can then work towards delivering the required additional capacity to accommodate projected growth.

The Environment Agency is the water industry's environmental regulator and defines the environmental permits and the associated effluent discharge standards that water companies are required to meet. These permits are designed to protect the environment and ensure that water quality objectives are met. Southern Water therefore operates its WWTWs in accordance with environmental permits issued and enforced by the Environment Agency. The permits set the maximum volume of treated wastewater that the company is permitted to recycle to the environment (in terms of Dry Weather Flow, DWF). They also define the standards of treatment that must be met in order to protect water quality objectives.

If the future release of treated wastewater at a WWTW is anticipated to exceed the maximum allowed by the environmental permit (as a result of new development), Southern Water could apply to the Environment Agency for a new or amended permit. This would increase the volumetric permit headroom above that which is currently available. The Environment Agency would normally permit increased flows provided the treatment standards are tightened so that the total load (eg of nitrogen or phosphates) to the environment is not increased. This is in line with the "no deterioration" principle.

Fundamentally wastewater treatment capacity is not a constraint to future new development even if investment requirements are significant. Southern Water has a statutory obligation to find solutions and provide infrastructure to serve new development. Local Plan periods generally run for 15 years so there are repeated opportunities through the water industry's five yearly price review process to investigate and implement solutions.

In the absence of a Nitrogen or Phosphate permit level, are you able to provide details of the nitrogen/phosphate effluent levels for WWTW?

Where there is no Nitrogen (N) or Phosphorous (P) permit in place, Southern Water does not monitor N or P levels in the final effluent discharging from that WWTW. It is therefore not possible to state what levels of N or P are in the discharges from a WWTW that has no N or P permit.

What are the current N and P permit levels at WWTWs in the Stour area?

Please see the following table;

Table A 1.2 Waste Water Treatment Works covered by this Guidance			
Southern Water Waste Water Treatment Works Continuous Discharges considered as part of WINEP investigation * (waterbody/ catchment into which it discharges in brackets)	TP Limit current (planned permit by 2024 in brackets)	TN Limit current	Population Equivalent (2020)
Ashford (Bybrook)WwTW (Stour -Ashford Wye)	0.5mg/l OSM**	None	115,149
Canterbury WwTW (Stour A2 to West Stourmouth)	2mg/l	None	72,498
Charing Wwtw (Upper Great Stour)	1mg/l (OSM only) (0.5 mg/l by 2024)	None	2,057
Chartham Wwtw (Stour Wye –A2)	None	None	6,966
Chilham (Stour Wye- A2)	None	None	946
Dambridge (Wingham)	2mg/l (0.25 mg/l by 2024)	None	21,347
Lenham Wwtw (Upper Great Stour)	1mg/l (OSM only) (0.5 mg/l by 2024)	None	3,206
May St (Herne Bay) WwTW (Oyster coast brooks)	2 mg/l (0.3 mg/l by 2024)	None	43,025
Newnham valley WwTW (Little Stour)	None (1mg/l by 2024)	None	7,372
Sellindge WwTW (East Stour)	1mg/l OSM annual mean (0.5 mg/l by 2024)	None	5,443
Westbere WwTW (Stour A2 to West Stourmouth)	None	None	6,503
Wye (Stour –Ashford Wye)	None	None	2,135
Good intent cottages WwTW **Nats Lane Brook WwTW** **Westwell WwTW**	None None None	None None None	15 308 216

*Natural England have chosen to exclude Minster WwTW from this advice as it is likely that this works will be excluded from the WINEP investigation. ** This works has an UWWTD annual mean figure of 1mg/l but the OSM figure is sufficiently certain to be used for planning purposes

Are you able to provide advice as to the mitigation of Phosphate in our development?

Unfortunately not, Natural England have devised a methodology to calculate how much mitigation is needed for a particular development in their document 'Advice on Nutrient Neutrality for New Development in the Stour Catchment in Relation to Stodmarsh Designated Sites - For Local Planning Authorities July 2020' they also offer a paid for service or it would be best to speak to the Local Planning Authority about what neds to be included in your planning submission.

We are however happy to work with relevant parties on any mitigation projects that might be identified for example the creation of wetlands fed by our WWTW discharges.

Am I able to treat Phosphate at the development site before connecting to Southern Waters sewerage network?

Unfortunately not, Natural England's methodology explains in more detail that this is not feasible due to the way our permits function. Here is an extract from the November 2020 NE methodology;

5.18 Water companies often use chemical dosing to achieve permit limits on nutrients in particular phosphorus. They can dose the influent to achieve permit compliance, therefore when influent becomes less concentrated they can simply reduce the chemical dosing. For this reason mitigation that reduces the influent concentration at a works (such as sending to a package plant before sending to mains) does not have a guaranteed nutrient reduction in the corresponding effluent discharged and therefore is not certain as a mitigation measure.