

Charing Neighbourhood Plan

Habitats Regulations Assessment

Charing Parish Council

October 2021

Quality Information

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1. Introduction

Scope of Project

- 1.1 AECOM was appointed by Locality (on behalf of Charing Parish Council) to undertake a Habitats Regulations Assessment (HRA) of the Charing Neighbourhood Plan 2011-2030 (pre-submission draft, 2012). This HRA has been undertaken to inform the planning group and Charing Parish Council (CPC) of the potential effects of development allocated within the draft Charing Neighbourhood Plan 2011-2030 (hereafter 'the draft NP') on European sites and how these are being addressed in the draft NP.
- 1.2 The draft NP includes two site allocations which together include a total of up to 57 new dwellings. These allocations (detailed in Policies H1 and H3 of the draft NP) are as follows:
 - Policy H1: land at Parsons Mead & Burleigh Bungalow (up to 48 new dwellings); and
 - Policy H3: land next to Crofters (up to 9 new dwellings).
- 1.3 Consultation with Natural England confirmed that there are no European sites within the Neighbourhood Plan area and acknowledged, when providing comment on the Strategic Environmental Assessment (SEA) Screening process for the draft NP in 2012, the draft NP was not considered likely to have significant effects on European sites. Notwithstanding this, two European sites lie within 10km from the parish boundary, including the Wye & Crundale Downs SAC and the Swale SPA / Ramsar. Furthermore, Charing Parish lies within the hydrological catchment of the Stodmarsh SPA / Ramsar / SAC, which has since been identified as being under threat from eutrophication. Therefore, Natural England require that all new residential development in hydrological connectivity with these sites are phosphorus and nitrogen neutral. This HRA will consider all the identified European sites and determine whether the draft NP will result in Likely Significant Effects and, potentially, adverse effects on site integrity.
- 1.4 The adopted Ashford Local Plan (LP) 2011-2030 does allocate specific sites for development within Charing village, these allocated sites may have an in combination effect with the allocated sites from the draft NP. The allocated sites comprised a total of 235 new dwellings, these allocations (detailed in Policies S28, S29, and S55 of the LP) are as follows:
 - Policy S28: land at Northdown Service Station, Maidstone Road
 - Policy S29: land south of the Arthur Baker Playing Field
 - Policy S55: land adjacent to Poppyfields

Legislation

- 1.5 The UK left the EU on 31 January 2020 under the terms set out in the European Union (Withdrawal Agreement) Act 2020 ("the Withdrawal Act"). This established a transition period, which ended on 31 December 2020. The Withdrawal Act retains the body of existing EU-derived law within our domestic law and this continues to apply in the UK.
- 1.6 The need for HRA is set out within the Conservation of Habitats & Species Regulations 2017 (as amended) and concerns the protection of European sites. European sites (also collectively referred to as the National Site Network) include Special Areas of Conservation (SAC), Special Protection Areas (SPA) and proposed/candidate sites for these designations. It is also Government policy for sites designated under the Convention on Wetlands of International Importance (Ramsar sites) to be treated as having equivalent status to European sites.
- 1.7 The HRA process applies the precautionary principle to protected areas. Plans and projects can only be permitted having ascertained that there will be no adverse effect on the integrity of the site(s) in question. Plans and projects may still be permitted if there are no alternatives to them and there are Imperative Reasons of Overriding Public Interest (IROPI) as to why they should go

ahead. In such cases, compensation would be necessary to ensure the overall integrity of the site network.

Conservation of Habitats and Species Regulations 2017 (as amended)

With specific reference to Neighbourhood Plans, Regulation 106(1) states that:

“A qualifying body which submits a proposal for a neighbourhood development plan must provide such information as the competent authority [the Local Planning Authority] may reasonably require for the purpose of the assessment under regulation 105... [which sets out the formal process for determination of ‘likely significant effects’ and the appropriate assessment].”

Figure 1: The legislative basis for HRA

1.8 Therefore, it is important to note that this report has two purposes:

- To assist the Qualifying Body (Charing Parish Council) in preparing their plan by recommending (where necessary) any adjustments required to protect European sites, thus making it more likely their plan will be deemed compliant with the Conservation of Habitats and Species Regulations 2017 (as amended); and
- On behalf of the Qualifying Body, to assist the Local Planning Authority (Ashford District Council) to discharge their duty under Regulation 105 (in their role as ‘plan-making authority’ within the meaning of that regulation) and Regulation 106 (in their role as ‘competent authority’).

1.9 As ‘competent authority’, the legal responsibility for ensuring that a decision of ‘Likely Significant Effects’ is made, an ‘Appropriate Assessment’ (where required) is undertaken, and Natural England are consulted, falls on the Local Planning Authority. However, they are entitled to request from the Qualifying Body the necessary information on which to base their judgment and that is the key purpose of this report.

1.10 Over the years, ‘Habitats Regulations Assessment’ (HRA) has come into wide currency to describe the overall process set out in the Habitats Regulations, from screening through to identification of IROPI. This has arisen in order to distinguish the overall process from the individual stage of “Appropriate Assessment”. Throughout this report the term HRA is used to describe the overall process and Appropriate Assessment to identify that specific stage of HRA.

2. Methodology

Introduction

- 2.1 Figure 2 below outlines the stages of HRA according to current Ministry of Housing, Communities and Local Government guidance. The stages are essentially iterative, being revisited as necessary in response to more detailed information, recommendations, and any relevant changes to the Plan until no significant adverse effects remain.

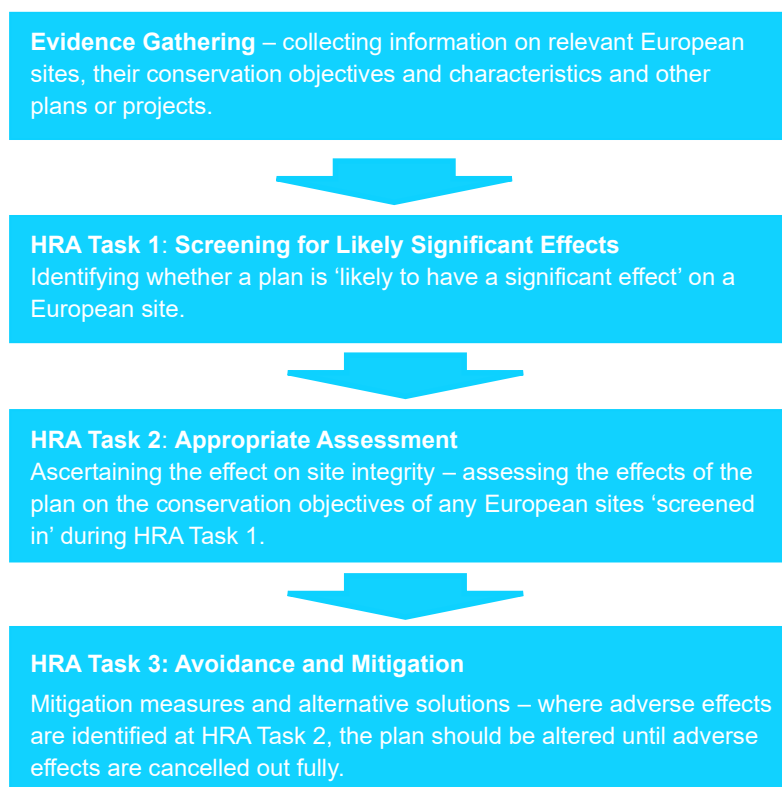


Figure 2 Four Stage Approach to Habitats Regulations Assessment (GOV.UK, 2019)

HRA Task 1: Test of Likely Significant Effects (LSEs)

- 2.2 Following evidence gathering, the first stage of any HRA is a Likely Significant Effects (LSEs) test; essentially a risk assessment to decide whether the full subsequent stage known as Appropriate Assessment is required. The essential question is:

"Is the project, either alone or in combination with other relevant projects and plans, likely to result in a significant effect upon European sites?"

- 2.3 The objective is to 'screen out' those plans and projects that can, without any detailed appraisal, be said to be unlikely to result in significant adverse effects upon European sites, usually because there is no mechanism for an adverse interaction. This stage is undertaken in Chapter 0 of this report.

HRA Task 2: Appropriate Assessment (AA)

- 2.4 Where it is determined that a conclusion of 'no likely significant effect' cannot be drawn, the analysis has proceeded to the next stage of HRA known as Appropriate Assessment. Case law has clarified that 'Appropriate Assessment' is not a technical term. In other words, there are no

particular technical analyses, or level of technical analysis, that are classified by law as belonging to Appropriate Assessment rather than determination of likely significant effects.

- 2.5 During July 2019 the Ministry of Housing, Communities and Local Government published guidance for Appropriate Assessment¹. Paragraph: 001 Reference ID: 65-001-20190722 explains: 'Where the potential for likely significant effects cannot be excluded, a competent authority must make an appropriate assessment of the implications of the plan or project for that site, in view of the site's conservation objectives. The competent authority may agree to the plan or project only after having ruled out adverse effects on the integrity of the habitats site. Where an adverse effect on the site's integrity cannot be ruled out, and where there are no alternative solutions, the plan or project can only proceed if there are imperative reasons of over-riding public interest and if the necessary compensatory measures can be secured'.
- 2.6 As this analysis follows on from the screening process, there is a clear implication that this stage will be more detailed than undertaken at the Screening stage and one of the key considerations during Appropriate Assessment is whether there is available mitigation that would entirely address the potential effect. In practice, the Appropriate Assessment takes any policies or allocations that could not be dismissed following the high-level screening analysis and assesses the potential for an effect in more detail, with a view to concluding whether there would be an adverse effect on integrity (in other words, disruption of the coherent structure and function of the European site(s)).
- 2.7 It is also important to note that a decision by the European Court of Justice² concluded that measures intended to avoid or reduce the harmful effects of a proposed project on a European site may no longer be taken into account by competent authorities at the Likely Significant Effects or 'screening' stage of HRA.

HRA Task 3: Avoidance and Mitigation

- 2.8 Where necessary, measures are recommended for incorporation into the Plan in order to avoid or mitigate adverse effects on European sites. There is considerable precedent concerning the level of detail that a Neighbourhood Plan document needs to contain regarding mitigation for recreational impacts on European sites. The implication of this precedent is that it is not necessary for all measures that will be deployed to be fully developed prior to adoption of the Plan, but the Plan must provide an adequate policy framework within which these measures can be delivered.
- 2.9 When discussing 'mitigation' for a Neighbourhood Plan document, one is concerned primarily with the policy framework to enable the delivery of such mitigation rather than the details of the mitigation measures themselves since Neighbourhood Plans are high-level policy documents. A Neighbourhood Plan is a lower level constituent of a Local Development Plan.

Confirming Other Plans and Projects That May Act 'In Combination'

- 2.10 It is a requirement of the Regulations that the impacts of any land use plan being assessed are not considered in isolation but in combination with other plans and projects that may also be affecting the European site(s) in question.
- 2.11 When undertaking this part of the assessment it is essential to bear in mind the principal intention behind the legislation; i.e. to ensure that those projects or plans (which in themselves may have minor impacts) are not simply dismissed on that basis but are evaluated for any cumulative contribution they may make to an overall significant effect. In practice, in-combination assessment is therefore of greatest relevance when the plan or policy would otherwise be screened out because its individual contribution is inconsequential. This particularly applies to

¹<https://www.gov.uk/guidance/appropriate-assessment#what-are-the-implications-of-the-people-over-wind-judgment-for-habitats-regulations-assessments> [Accessed: 07/01/2020].

² People Over Wind and Sweetman v Coillte Teoranta (C-3.23/17).

Neighbourhood Plans, which typically allocate small quanta of growth (e.g. only 57 dwellings are allocated in the CNP).

- 2.12 For example, the volume of surface water run-off and treated sewage effluent contributed to the hydrological catchment of the Stodmarsh SAC/SPA/Ramsar is unlikely to result in ecosystem changes in isolation. However, these impacts need to be considered cumulatively with growth across Ashford Borough and other adjoining authorities. In-combination effects of the CNP are best appraised by taking account of the Ashford Borough Local Plan and its accompanying HRA.

3. European Designated Sites

3.1 As outlined in Chapter 1, the HRA undertaken within this report is specifically concerned with potential impacts from increased Nitrogen and phosphate levels on the Stodmarsh SAC/SPA/Ramsar sites. The features, vulnerabilities and conservation objectives for this internationally designated site are summarised below.

Stodmarsh SAC/SPA/Ramsar

Introduction

3.2 Stodmarsh is a wetland site resulting in part from subsidence under the valley of the Great Stour in Kent and aggregate extraction but lies within the natural floodplain of the river. There are a range of wetland habitats including open water, reedbeds, grazing marsh and alder *Alnus glutinosa* carr. The site supports a number of uncommon wetland invertebrates and plants and provides breeding and wintering habitats for important assemblages of wetland bird species, particularly waterfowl.

Reason for SAC designation³

3.3 Annex II species that are a primary reason for selection of this site:

- **Desmoulin's whorl snail *Vertigo moulinsiana*** - A sizeable population of Desmoulin's whorl snail *Vertigo moulinsiana* lives beside ditches within pasture on the floodplain of the River Stour, where reed sweet-grass *Glyceria maxima*, large sedges *Carex* spp. and sometimes common reed *Phragmites australis* dominate the vegetation. Stodmarsh is a south-eastern outlier of the main swathe of sites and is important in confirming the role of underlying base-rich rock (chalk) as a factor determining this species' distribution.

Reason for SPA designation⁴

3.4 The primary reason for this site selection is the assemblage of rare birds that are supported by the site. These are:

- Non-breeding bittern *Botaurus stellaris*
- Breeding and non-breeding gadwall *Anas strepera*
- Non-breeding hen harrier *Circus cyaneus*
- Non-breeding shoveler *Anas clypeata*

Reason for Ramsar designation⁵

3.5 The site is designated as a Ramsar due to British Red Data Book wetland invertebrates, nationally rare/ nationally scarce plant species and a diverse assemblage of rare wetland birds. These species are:

Nationally rare/scarce flora

- Sharp-leaved pondweed *Potamogeton acutifolius* (critically endangered)
- Water-meadow dandelion *Taraxacum hygrophilum*

³ Natural England (2014) *Stodmarsh SAC*. Available at: <http://publications.naturalengland.org.uk/publication/5199409650335744>. Accessed 23/09/2021

⁴ Natural England (2014) *Stodmarsh SPA*. Available at: <http://publications.naturalengland.org.uk/publication/6543516511502336>. Accessed 23/09/2021

⁵ Ramsar (2005) *Stodmarsh Ramsar*. Available at: <https://rsis.ramsar.org/RISapp/files/RISrep/GB646RIS.pdf>. Accessed 23/09/2021

- Whorl-leaf watermilfoil *Myriophyllum verticillatum* (Vulnerable)
- Rootless duckweed *Wolffia arrhizal* (Vulnerable)
- Divided sedge *Carex divisa* (Vulnerable)
- Dittander *Lepidium draba*
- Marsh sowthistle *Sonchus palustris*

British Red Data Book species of wetland invertebrates

- *Segmentina nitida*,
- *Grammotaulius nitidus*,
- *Deltote banksianna*,
- *Polistichus connexus*,
- *Cercyongranarius*,
- *Haliphus mucronatus*,
- *Hydrophilus piceus* and
- *Vertigo moulinsiana*

Qualifying bird species/populations

- Water rail *Rallus aquaticus* (occurring at levels of national importance)
- Ruff *Philomachus pugnax* (occurring at levels of national importance)
- Gadwall *Anas strepera* (breeding and peak counts in spring/autumn)
- Great bittern *Botaurus stellaris* (peak counts in spring/autumn)
- Northern shoveler *Anas clypeata* (peak counts in spring/autumn)
- Hen harrie *Circus cyaneus* (peak counts in spring/autumn)

Qualifying mammal species/populations

- Otter *Lutra lutra*

Current threats and pressures⁶

3.6 Stodmarsh is a complex wetland comprising a matrix of open water bodies, reedbeds, grazing marshes and alder-carr. These mosaics of habitat present support a diversity of rare species of different taxa. Therefore, a range of threats and pressures are currently experienced by the site as identified in the Site Improvement Plan. These are:

- Water pollution,
- Invasive species,
- Inappropriate scrub control, and
- Air pollution: impact of atmospheric nitrogen deposition

⁶ Natural England (2014) *Site improvement plan: Stodmarsh*. Available at: <http://publications.naturalengland.org.uk/publication/5749196032311296>. Accessed 23/09/2021

Conservation Objectives

Stodmarsh SAC⁷

3.7 'Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring;

- The extent and distribution of the habitats of qualifying species
- The structure and function of the habitats of qualifying species
- The supporting processes on which the habitats of qualifying species rely
- The populations of the qualifying species, and,
- The distribution of the qualifying species within the site.'

Stodmarsh SPA⁸

3.8 '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.'

The Swale Ramsar / SPA

Introduction

4. The Swale SPA is a wetland of international importance, comprising intertidal mudflats, shell beaches, saltmarshes and extensive grazing marches. It provides habitats for important assemblages of wintering waterfowl, and also supports notable breeding bird populations.

Reasons for SPA designation⁹

4.1 The primary reason for this site selection is the assemblage of breeding birds, waterbirds and rare birds that are supported by the site. These are:

- Non-breeding Dark-bellied brent goose *Branta bernicla bernicla*
- Non-breeding Dunlin *Calidris alpina alpina*

Reasons for Ramsar designation¹⁰

4.2 The site is designated as a Ramsar due to the site falling under criteria 2, 5, and 6 and has a diverse assemblage of breeding birds and waterbirds. These species are:

Nationally rare/scarce flora

- Slender hare's-ear *Bupleurum tenuissimum* (vulnerable)

⁷ Natural England (2014) *Stodmarsh SAC Conservation Objectives*. Available at: <http://publications.naturalengland.org.uk/file/5432460578127872>. Accessed 23/09/21

⁸ Natural England (2014) *Stodmarsh SPA Conservation Objectives*. Available at: <http://publications.naturalengland.org.uk/file/5083313333338112>. Accessed 2/09/2021

⁹ JNCC (2012). *The Swale SPA*. Available from: <https://jncc.gov.uk/jncc-assets/SPA-N2K/UK9012011.pdf>, accessed 23/09/2021

¹⁰ Ramsar (2007). *The Swale Ramsar site information service*. Available from: <https://rsis.ramsar.org/RISapp/files/RISrep/GB299RIS.pdf?language=en>, accessed 23/09/2021

- Divided sedge *Carex divisa* (vulnerable)
- Sea barley *Hordeum marinum* (vulnerable)
- Small cord-grass *Spartina maritima* (endangered)

Qualifying bird species/populations

- Ringed plover *Charadrius hiaticula* (occurring at levels of national importance)
- Black-tailed godwit *Limosa limosa islandica* (occurring at levels of national importance)
- Eurasian wigeon *Anas Penelope* (occurring at levels of national importance)
- Northern pintail *Anas acuta* (occurring at levels of national importance)
- Northern shoveler *Anas clypeata* (occurring at levels of national importance)

Current threats and pressures¹¹

4.3 Current threats and pressures identified in the Site Improvement Plan are:

- Coastal squeeze,
- Public access/disturbance,
- Invasive species,
- Changes in species distribution,
- Fisheries: commercial marine and estuarine,
- Vehicles: illicit, and
- Air pollution: risk of atmospheric nitrogen deposition

Conservation objectives¹²

4.4 Ensure that subject to natural change, the integrity of the site is maintained or restored as appropriate, and that the site contributes to achieving the aims of the Wild Birds Directive, by maintaining or restoring;

1. *the extent and distribution of the habitats of the qualifying features*
2. *the structure and function of the habitats of the qualifying features*
3. *the supporting processes on which the habitats of the qualifying features rely*
4. *the populations of each of the qualifying features*
5. *the distribution of qualifying features within the site*

Wye and Crundale Downs SAC

Introduction

4.5 The Wye and Crundale Downs SAC contains a mosaic of different habitats including species-rich grassland, neutral grassland, scrub and woodland on chalk, and calcareous fen-meadow on the Gault Clay. The grassland and woodland support outstanding assemblage of rare and scarce plants, two of which are specially protected. It supports an outstanding assemblage of invertebrates including one of only two British populations of Black veined moth. Part of the site,

¹¹ Natural England (2015). *Site improvement plan: Greater Thames Complex*. Available from: <http://publications.naturalengland.org.uk/publication/6270737467834368>, accessed 22/09/2021

¹² Natural England (2016) *The Swale SPA*. Available from: <https://designatedsites.naturalengland.org.uk/Marine/MarineSiteDetail.aspx?SiteCode=UK9012011&SiteName=the%20swale&countyCode=&responsiblePerson=&HasCA=1&NumMarineSeasonality=2&SiteNameDisplay=The%20Swale%20SPA#hlco>. Accessed 23/09/21

the Devil's Kneading Trough, is of importance for its fossil remains and geomorphological interest which extends onto the Gault Clay plain.

Reasons for designation¹³

4.6 Annex I habitats that are a primary reason for selection of this site:

4.7 **Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia) (* important orchid sites)** - this site hosts the priority habitat type "orchid rich sites". Wye and Crundale Downs consists mostly of NVC types CG4 *Brachypodium pinnatum* and CG5 *Bromus erectus*–*Brachypodium pinnatum* grasslands, although small areas of CG2 *Festuca ovina*–*Avenula pratensis* grassland also occur. It has an important assemblage of rare, scarce and uncommon orchids, including early spider-orchid *Ophrys sphegodes*, late spider-orchid *O. fuciflora*, burnt orchid *Orchis ustulata* and lady orchid *Orchis purpurea*. The site contains the largest UK colony of *O. fuciflora*, representing about 50% of the national population.

Current threats and pressures¹⁴

4.8 This site hosts the priority habitat type "orchid rich sites". Current threats and pressures identified in the Site Improvement Plan are:

- Overgrazing,
- Inappropriate scrub control, and
- Air pollution: risk of atmospheric nitrogen deposition.

Conservation objectives¹⁵

4.9 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;

1. *The extent and distribution of qualifying natural habitats*
2. *The structure and function (including typical species) of qualifying natural habitats, and*
3. *The supporting processes on which qualifying natural habitats rely*

¹³ JNCC (2019). *Wye and Crundale Downs SAC*. Available from: <https://sac.jncc.gov.uk/site/UK0012831>, accessed 21/09/2021

¹⁴ Natural England (2015). *Site improvement plan: Wye and Crundale SAC*. Available from: <http://publications.naturalengland.org.uk/publication/5075562599022592>, accessed 21/09/2021

¹⁵ Natural England (2014). *European Site Conservation Objectives for Wye & Crundale Downs SAC*. Available from: <http://publications.naturalengland.org.uk/publication/5065822208786432>. Accessed 21/09/2021

5. Test of Likely Significant Effects

5.1 As described in Chapter 1, when providing comment on the SEA Screening process for the draft NP in 2012, Natural England did not consider that the draft NP would be likely to have significant effects on European sites. There are two European Sites located within 10km of Charing Parish Boundary; however, as the Charing Parish lies within the Stour catchment in relation to Stodmarsh designated sites the impacts caused by water pollution namely how Nitrogen and Phosphorus may impact Stodmarsh.

5.2 Table 1 describes the environmental impact pathway.

Table 1 Description of potential impact pathways from increased development to European Sites.

Impact pathway	Discussion
Water quality (surface runoff)	Increased residential development within Charing Parish could lead to the loss of previously undeveloped land and increased surface water runoff to nearby European Sites. Stodmarsh SAC/SPA/Ramsar is hydrologically connected to Charing village via the River Stour. As such, there is a risk that pollution contaminants could enter the European Site via surface water runoff. Since the development area lies within the Stour catchment area the impacts of surface water runoff is assessed for Stodmarsh SAC/SPA/Ramsar, where applicable, in this NP HRA.
Water quality (discharge of treated sewage effluent)	Increased housing development at Charing could lead to increased sewage production. Therefore, it is necessary to consider any risk that increased sewage could degrade the water quality (i.e. through increased phosphorus discharge) of European Sites, in the absence of environmental mitigation and adequate wastewater treatment works. Since the development area lies within the Stour catchment area the impacts of discharge of treated sewage effluent is assessed for Stodmarsh SAC/SPA/Ramsar, where applicable, in this NP HRA.
Recreational pressure (due to bird disturbance, trampling and nutrient enrichment)	Increased housing development at Charing could lead to increased recreational pressure and impact breeding and overwintering bird populations. Breeding and overwintering waterbirds are susceptible to human disturbance from a range of land- and water-based activities, including: boating and water sports; 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, due to the disturbance they can cause to bird populations as well as causing eutrophication as a result of dog fouling. The recreational pressure of increased housing development can also cause increased trampling damage to plants and sensitive habitats. However, since the development area lies beyond the screening distance for recreational pressures of 10km from the European sites, therefore the impacts of Recreational pressure are not likely to have a likely significant effect.
Atmospheric pollution (as a result of nitrogen deposition)	Increased housing development at Charing could have an increased impact European sites. The impacts could be caused by either increased oxides of nitrogen from vehicle exhausts or through eutrophication from other land uses such as agricultural sources. The Swale SPA / Ramsar, Stodmarsh SPA / SAC and Wye & Crundale Downs SAC habitats are naturally low in nutrients and are therefore susceptible to eutrophication and nutrient enrichment from nitrogen deposition. The Swale SPA site does lie within 200m of a major road being the A249, however as the road is not close to the development area, 15km, the impacts for Atmospheric pollution are not considered to have a likely significant effect
Loss of functionally linked habitat	Areas of land or sea outside of the boundary of a European site may be important ecologically in supporting the populations for which the site has been designated or classified, such as the Swale SPA / Ramsar for the dark-bellied brent goose. Increased development may result in the loss or reduction in extent of the ecologically functionally linked habitats. The Charing parish development area lies beyond the average distance travelled by off-site foraging dark-

bellied brent geese from the swale SPA/Ramsar, therefore the impacts of loss of functionally linked habitats are not considered to have a likely significant effect.

Coastal squeeze Coastal defences that exist along much of the coastline near the Swale SPA / Ramsar, these defences in combination with sea level rise can cause coastal squeeze, this is the loss of natural habitats or deterioration of their quality arising from anthropogenic structures or actions, preventing the landward transgression of those habitats that would otherwise naturally occur in response to sea level rise in conjunction with other coastal processes. This results in the loss or reduction in extent and duration of mudflats and sandflats used by many breeding and overwintering bird populations. The Charing parish development area lies beyond the screening distance, over 10km, from the estuary, therefore the impacts of coastal squeeze are not considered to have a likely significant effect.

Visual and noise disturbance from construction Increased development at Charing could cause an increased impact of European sites though the visual and noise disturbance caused by construction from heavy machinery, work lights or vehicles accessing the development site. The Charing parish lies beyond the screening distances for noise disturbance, 200m, and visual disturbance, 300m, therefore the impacts of visual and noise disturbance are not considered to have a likely significant effect.

Screening for Likely Significant Effects

- 5.3 Screening of policies within the draft NP with the potential for Likely Significant Effects (LSEs) on European sites (either in isolation, or in combination with other development) is detailed in Table 2 below. For full wording of each policy refer to the draft NP.
- 5.4 In Table 2 below, green shading in the 'Screening outcome' column indicates that the draft NP policy has been determined not to lead to LSEs on European sites via the established impact pathways. Orange shading indicates that LSEs on European sites cannot be screened out at this stage of HRA, in which case further examination is required.

Table 2 Screening assessment (test of likely significant effects) on relevant draft NP policies

Policy	Summary of policy	Screening outcome
C1: New community centre, & improved sports facilities, at Parsons Mead	Policy states how development proposals for a new community centre developed on Parsons Mead will be support.	No Likely significant effect. Screened out (no Appropriate Assessment required.) This is a development management policy and does not specifically allocate sites for the development of a community centre. Therefore, no impact pathways exist to European Sites.
C2: Infrastructure and utilities	Policy states the requirements of development proposals.	No Likely significant effect. Screened out (no Appropriate Assessment required.) This is a development management policy and does not specifically allocate sites for development. Therefore, no impact pathways exist to European Sites.
C3: New burial ground	Policy states how development proposals for a natural burial ground will be supported.	No Likely significant effect. Screened out (no Appropriate Assessment required.)

		This is a development management policy and does not specifically allocate sites for the development of a natural burial ground. Therefore, no impact pathways exist to European Sites.
C4: Communications infrastructure	Policy states how proposals that seek the expansion of electrical/digital communication networks and high-speed broadband will be supported. The policy also states that all residential developments should endeavour to enable fibre to the premises.	No Likely significant effect. Screened out (no Appropriate Assessment required.) This is a development management policy and does not specifically allocate sites for development. Therefore, no impact pathways exist to European Sites.
C5: Shopping	Policy states the support of proposals for additional retail services in and around the high street, and for proposals to increase footfall within retail units through appropriate forms of tourism development.	No Likely significant effect. Screened out (no Appropriate Assessment required.) This is a development management policy and does not specifically allocate sites for development. Therefore, no impact pathways exist to European Sites.
C6: Health and health care	Policy states that development proposals that expand the Charing Surgery and Practice to meet local patient needs will be supported.	No Likely significant effect. Screened out (no Appropriate Assessment required.) This is a development management policy and does not specifically allocate sites for the development of the Charing Surgery and Practice. Therefore, no impact pathways exist to European Sites.
C7: Education	Policy states the requirement for development proposals to provide for necessary education infrastructure and facilities in order to be supported.	No Likely significant effect. Screened out (no Appropriate Assessment required.) This is a development management policy and does not specifically allocate sites for the development of education infrastructure. Therefore, no impact pathways exist to European Sites.
C8: New skate park and other recreational facilities for older children	Policy states that proposals to build a new skate park on the Arthur Baker playing fields will be supported.	No Likely significant effect. Screened out (no Appropriate Assessment required.) This is a development management policy and does not specifically allocate sites for the development of a new skate park. Therefore, no impact pathways exist to European Sites.
C9: Contributions to new community facilities	Policy states that financial contributions will be required from developers to help fund new community facilities.	No Likely significant effect. Screened out (no Appropriate Assessment required.) This is a development management policy and does not specifically allocate sites for development. Therefore, no impact pathways exist to European Sites.

T1: Traffic congestion and speed	Policy lists development proposals that will be supported based on traffic congestion and speed. These include proposals that result in improvements to free flow of traffic, proposals that reduce speed of traffic through Charing village, and proposals to reduce the number of HGVs travelling through Station road and Pluckley road.	<p>No Likely significant effect. Screened out (no Appropriate Assessment required.)</p> <p>This is a development management policy and does not specifically allocate sites for development. Therefore, no impact pathways exist to European Sites.</p>
T2: Pedestrian safety	Policy states the need for development proposals to demonstrate pedestrian safety and how proposals to make the centre of Charing more attractive to pedestrians will be supported.	<p>No Likely significant effect. Screened out (no Appropriate Assessment required.)</p> <p>This is a development management policy and does not specifically allocate sites for development. Therefore, no impact pathways exist to European Sites.</p>
T3: Residential car parking spaces	Policy states the requirements for Residential car parking spaces for developments	<p>No Likely significant effect. Screened out (no Appropriate Assessment required.)</p> <p>This is a development management policy and does not specifically allocate sites for development. Therefore, no impact pathways exist to European Sites.</p>
T4: Charing village parking	Policy states the support for development proposals for additional public car parking in Charing village centre.	<p>No Likely significant effect. Screened out (no Appropriate Assessment required.)</p> <p>This is a development management policy and does not specifically allocate sites for the development of public car parks. Therefore, no impact pathways exist to European Sites.</p>
T5: Rights of way, bridleways, and cycleways	Policy states that development proposals will be expected to take opportunities to connect with and enhance public rights of way, bridleways and cycle ways, and that new developments should seek to connect with footpaths and cycleways.	<p>No Likely significant effect. Screened out (no Appropriate Assessment required.)</p> <p>This is a development management policy and does not specifically allocate sites for the development of public rights of way, bridleways and cycleways. Therefore, no impact pathways exist to European Sites.</p>
EC1: Locations allocated for new business units	Policy allocated sites for the development of new business premises, and that development proposals will be expected to demonstrate the suitability of design and use whilst ensuring appropriate servicing and access arrangements	<p>No Likely significant effect. Screened out (no Appropriate Assessment required.)</p> <p>The allocation of 3 sites within the parish are within sites already proposed for development in Policy H1 and S28. Therefore, the impact pathways have already been covered in those likely significant effect.</p>
EC2: Mixed use developments	Policy states that mixed use developments, comprising commercial and domestic properties, will be supported on Parsons Mead, sites S28, S29, and S55, and any new housing sites	<p>No Likely significant effect. Screened out (no Appropriate Assessment required.)</p>

		<p>This is a development management policy and does not specifically allocate sites for development. Therefore, no impact pathways exist to European Sites.</p>
<p>Policy EC3: Protection of existing commercial / industrial zones</p>	<p>Policy states the protection of existing commercial / industrial zones listed in the policy.</p>	<p>No Likely significant effect. Screened out (no Appropriate Assessment required.)</p> <p>This is a development management policy and does not specifically allocate sites for development. Therefore, no impact pathways exist to European Sites.</p>
<p>E1: Historic environment</p>	<p>Policy states that any designated heritage assets in the parish will be conserved and enhanced for their historic significance, and any development proposals that affect non-designated historic assets will be considered taking account of any harm or loss to the assets.</p>	<p>No Likely significant effect. Screened out (no Appropriate Assessment required.)</p> <p>This is a development management policy and does not specifically allocate sites for development. Therefore, no impact pathways exist to European Sites.</p>
<p>Policy E2: Listed buildings & non-designated heritage assets</p>	<p>Policy states that proposals will be supported that ensure that listed buildings, and non-designated heritage assets, in this plan will be maintained, or suitably restored.</p>	<p>No Likely significant effect. Screened out (no Appropriate Assessment required.)</p> <p>This is a development management policy and does not specifically allocate sites for development. Therefore, no impact pathways exist to European Sites.</p>
<p>Policy E3: The archbishop's palace</p>	<p>Policy states the support for proposals for ongoing restoration and if shown to enhance public access.</p>	<p>No Likely significant effect. Screened out (no Appropriate Assessment required.)</p> <p>This is a development management policy and does not specifically allocate sites for development. Therefore, no impact pathways exist to European Sites.</p>
<p>Policy E4: Designation of local green spaces in the parish</p>	<p>Policy lists designated Local Green Spaces within the parish.</p>	<p>No Likely significant effect. Screened out (no Appropriate Assessment required.)</p> <p>This is a development management policy and does not specifically allocate sites for development. Therefore, no impact pathways exist to European Sites.</p>
<p>Policy E5: Local green space development</p>	<p>Policy states that proposals for inappropriate development will only be allowed in very special circumstances, listed in the policy.</p>	<p>No Likely significant effect. Screened out (no Appropriate Assessment required.)</p> <p>This is a development management policy and does not specifically allocate sites for development. Therefore, no impact pathways exist to European Sites.</p>

Policy E6: Landscape strategy, and safeguarding and enhancing biodiversity	Policy states the requirements of development proposals to include a proportionate landscape strategy, should put forward proposals to enhance the biodiversity and green infrastructure, and should safeguard features of nature conservation interest.	No Likely significant effect. Screened out (no Appropriate Assessment required.) This is a development management policy and does not specifically allocate sites for development. Therefore, no impact pathways exist to European Sites.
Policy E7: Views	Policy states that developments will not be supported that significantly detract from views listed in the policy.	No Likely significant effect. Screened out (no Appropriate Assessment required.) This is a development management policy and does not specifically allocate sites for development. Therefore, no impact pathways exist to European Sites.
Policy E8: Climate change	Policy states the requirements for new developments to be supported in regards to climate change.	No Likely significant effect. Screened out (no Appropriate Assessment required.) This is a development management policy and does not specifically allocate sites for development. Therefore, no impact pathways exist to European Sites.
Policy H1: Land allocation at Parsons Mead & Burleigh Bungalow	Policy allocates land at Parsons Mead & Burleigh Bungalow for the development of up to 48 open market houses, a new community centre, and other community facilities.	Likely Significant Effect. Screened in. The allocation of land at Parsons Mead & Burleigh Bungalow within the parish, which could lead to likely significant effects to water quality.
Policy H2: Housing in Charing Heath	Policy states that small-scale developments will be supported on appropriate sites within the confines of Charing Heath.	No Likely significant effect. Screened out (no Appropriate Assessment required.) This is a development management policy and does not specifically allocate sites for development. Therefore, no impact pathways exist to European Sites.
Policy H3: Allocation of land next to Crofters	Policy allocates land next to Crofters for the development of up to 9 dwellings provided they follow listed requirements.	Likely Significant Effect. Screened in. The allocation of land next to Crofters within the parish, which could lead to likely significant effects to water quality.
Policy H4: Larger new developments	Policy states that proposals for further major housing developments during the plan period will not be supported.	No Likely significant effect. Screened out (no Appropriate Assessment required.) This is a development management policy and does not specifically allocate sites for development. Therefore, no impact pathways exist to European Sites.
Policy H5: Affordable housing	Policy states the requirements for affordable housing in regard to developments of 10 or more dwellings, or sites of 0.5 hectares or more.	No Likely significant effect. Screened out (no Appropriate Assessment required.) This is a development management policy and does not specifically allocate

		sites for development. Therefore, no impact pathways exist to European Sites.
Policy H6: Local-needs housing	Policy states that new affordable housing should be made available to those with a local connection, which is defined in the policy.	No Likely significant effect. Screened out (no Appropriate Assessment required.) This is a development management policy and does not specifically allocate sites for development. Therefore, no impact pathways exist to European Sites.
Policy H7: Local-needs housing on exception sites	Policy states that proposals for the development of small-scale housing schemes of less than 10 dwellings for local needs where housing would not normally be permitted will be supported.	No Likely significant effect. Screened out (no Appropriate Assessment required.) This is a development management policy and does not specifically allocate sites for development. Therefore, no impact pathways exist to European Sites.
Policy H8: Size of homes	Policy states the requirements of home sizes within developments.	No Likely significant effect. Screened out (no Appropriate Assessment required.) This is a development management policy and does not specifically allocate sites for development. Therefore, no impact pathways exist to European Sites.
Policy H9: Mixed development	Policy states the requirement for all future developments to provide a mix of residential and commercial premises.	No Likely significant effect. Screened out (no Appropriate Assessment required.) This is a development management policy and does not specifically allocate sites for development. Therefore, no impact pathways exist to European Sites.
Policy H10: Housing in Charing Heath	Policy states the requirement for housing within the confines of Charing Heath to integrate with the existing settlement.	No Likely significant effect. Screened out (no Appropriate Assessment required.) This is a development management policy and does not specifically allocate sites for development. Therefore, no impact pathways exist to European Sites.
Policy H11: Infill development	Policy lists the requirements for infill development to be supported.	No Likely significant effect. Screened out (no Appropriate Assessment required.) This is a development management policy and does not specifically allocate sites for development. Therefore, no impact pathways exist to European Sites.
Policy H12: New development, including extensions	Policy states that small-scale development normally up to 5 dwellings or extensions may be supported	No Likely significant effect. Screened out (no Appropriate Assessment required.)

outside village confines

<p>Policy H13: Development in residential gardens</p>	<p>Policy states that development proposals involving the complete or partial redevelopment of residential garden land will be permitted as long as it follows listed requirements.</p>	<p>No Likely significant effect. Screened out (no Appropriate Assessment required.)</p> <p>This is a development management policy and does not specifically allocate sites for development. Therefore, no impact pathways exist to European Sites.</p>
<p>Policy H14: Development on groundwater protection zones</p>	<p>Policy states that appropriate site investigation will be carried out if the development site overlies a groundwater protection zone.</p>	<p>No Likely significant effect. Screened out (no Appropriate Assessment required.)</p> <p>This is a development management policy and does not specifically allocate sites for development. Therefore, no impact pathways exist to European Sites.</p>
<p>Policy H15: Rest of site S55 (S55/2)</p>	<p>Policy states the requirements for site development to be supported.</p>	<p>No Likely significant effect. Screened out (no Appropriate Assessment required.)</p> <p>This is a development management policy and does not specifically allocate sites for development. Therefore, no impact pathways exist to European Sites.</p>
<p>Policy D1: Good design</p>	<p>Policy lists the design requirements for all forms of new development such as water conservation, sustainable design, etc.</p>	<p>No Likely significant effect. Screened out (no Appropriate Assessment required.)</p> <p>This is a development management policy and does not specifically allocate sites for development. Therefore, no impact pathways exist to European Sites.</p>
<p>Policy D2: Good, imaginative and innovative design</p>	<p>Policy states that development proposals which demonstrably address the listed considerations about design will be supported.</p>	<p>No Likely significant effect. Screened out (no Appropriate Assessment required.)</p> <p>This is a development management policy and does not specifically allocate sites for development. Therefore, no impact pathways exist to European Sites.</p>
<p>Policy D3: Street furniture</p>	<p>Policy lists the requirements for the development of street furniture.</p>	<p>No Likely significant effect. Screened out (no Appropriate Assessment required.)</p> <p>This is a development management policy and does not specifically allocate sites for development. Therefore, no impact pathways exist to European Sites.</p>

6. Appropriate Assessment

Introduction

- 6.1 Whilst the law does not prescribe how an Appropriate Assessment should be undertaken or presented, an Appropriate Assessment must consider all impact pathways that have been screened in, whether they are due to policies alone or to impact pathways that may arise in combination with other projects and plans. That analysis is the purpose of this section. The law does not require the 'alone' and 'in combination' effects to be examined separately provided all effects are discussed.
- 6.2 The draft NP allocates at least 57 new dwellings spread between two sites. These allocations are described in Chapter 0.
- 6.3 By virtue of the small amount of housing proposed within the draft NP, effects on the integrity of the Stodmarsh SAC/SPA/Ramsar sites from increased phosphorus levels are inherently 'in combination' with all other growth within the hydrological catchment of this European site. However, for completeness, the potential impacts of draft NP housing development in isolation are also assessed.
- 6.4 The HRA screening exercise undertaken in Chapter 0 (see Table 2) concluded that Likely Significant Effects (LSEs) on the Stodmarsh SAC/SPA/Ramsar due to nutrient enrichment could not be excluded for draft NP Policies H1 and H3. Therefore, it was necessary to proceed to the next stage of HRA known as Appropriate Assessment.

Appropriate Assessment of Phosphorus and Nitrogen Impacts on Stodmarsh SAC/SPA/Ramsar

- 6.5 Considering that Charing Parish is hydrologically connected to Stodmarsh SAC/SPA/Ramsar (via the River Stour) there is a risk that conversion of greenfield sites to hardstanding and poor drainage could lead to contaminated runoff causing an excessive build-up of nutrients in water bodies flowing into the SPA/SAC/Ramsar.
- 6.6 The quality of the water that feeds European Sites is an important nature determinant of their habitats and the species they support¹⁶. Rivers, streams and aquatic environments supported/that are fed by these sites can be affected by pollution from road run-off such as oil/vehicle chemicals, and in the winter increased salt from de-icing the roads and pollution incident(s).
- 6.7 Within areas of excavation (i.e. construction activities) there is a potential for increased risk to groundwater resources from any spills/leaks of fuel, oil and/or sediment.
- 6.8 The impacts of poor water quality entering European sites can have far-reaching consequences similar to air quality. For example:
- At high levels, toxic chemicals and metals can result in immediate death of aquatic life, and can have detrimental effects even at lower levels, including increased vulnerability to disease and changes in wildlife behaviour. Eutrophication, the enrichment of plant nutrients in water, increases plant growth and consequently results in oxygen depletion. Algal blooms, which commonly result from eutrophication, increase turbidity and decrease light penetration. The decomposition of organic wastes that often accompanies eutrophication deoxygenates water further, augmenting the oxygen depleting effects of eutrophication. In the marine environment, nitrogen is the limiting plant nutrient and so eutrophication is associated with

¹⁶ Johnson, W.W. and Finley, M.T., 1980. *Handbook of acute toxicity of chemicals to fish and aquatic invertebrates: Summaries of toxicity tests conducted at Columbia National Fisheries Research Laboratory, 1965-78* (No. 137). US Fish and Wildlife Service.

discharges containing available nitrogen^{17 18}. At lower concentrations, detrimental effects can also be experienced, including increased vulnerability to disease and changes in wildlife behaviour¹⁹.

- Some pesticides, industrial chemicals, and components of sewage effluent are suspected to interfere with the functioning of the endocrine system, possibly having negative effects on the reproduction and development of aquatic life.

6.9 Stodmarsh SPA/SAC/Ramsar supports a variety of wetland habitats including open water, reedbeds, grazing marsh and alder *Alnus glutinosa* carr. In turn, these habitats support a diversity of features that are the primary reason for SPA/SAC/Ramsar selection. Different species have their own optimal ranges and tolerance levels for these parameters (and these can vary from season to season).

6.10 For example, the Desmoulin's whorl snail *Vertigo moulinsiana* snail lives in swamps, fens and marshes, bordering rivers, lakes and ponds, or in river floodplains and is found on tall monocotyledons. For fen habitats, good water quality is one of the most important hydrological elements²⁰. Poor water quality arising from pollution contaminates or changes in Biochemical Oxygen Demand (BOD) could result in the loss of supported habitat suitable to Desmoulin's whorl snail. Natural England's Site Improvement Plan for the Stodmarsh SAC/SPA/Ramsar highlights that water pollution is a current threat to the integrity of the site. Nutrient-enriched water and/or contaminated water may leach into the SAC/SPA/Ramsar and degrade habitats.

Background

6.11 The risk and frequency of surface water flooding (i.e. the failure to adequately drain rainwater) can increase when hard, impermeable surfaces are constructed on greenfield land²¹. In the event of inappropriate or inadequate drainage design, contaminated water (i.e. toxic chemicals dissolved into flood water) could leach into surrounding water courses and thereafter to the SAC/SPA/Ramsar.

6.12 As groundwater migrates, natural filtration occurs; this has a positive correlation with increased distance travelled from the point source²². However, due to the hydrological relationship of Charing to Stodmarsh SAC/SPA/Ramsar the movement of contaminated water through this system could occur as a result of development in isolation or in-combination with surrounding parishes during times of flooding and/or due to poor drainage design. In addition, Stodmarsh SAC/SPA/Ramsar supports two lakes (Reserve Lake/Stodmarsh Nature Reserve Pool and Collards Lake/ Great Puckstone Lake) that has been identified by Natural England to have unfavourable water quality, as a result of high phosphate and nitrogen concentrations.

Discussion

6.13 All allocated sites are within the basin catchment and within close proximity of the River Stout. Therefore, there is a risk of pollution during and post-construction to reach the Stodmarsh SAC/SPA/Ramsar, in the absence of mitigation.

6.14 Preventing further surface water runoff and flood risk within Charing Parish can be mitigated using high quality drainage design that prevents surface water entering environmentally sensitive areas, and standard construction pollution controls. Based on its policies, the Charing NP recognises this risk and provides policy mitigation for the management of surface water/flooding/drainage:

¹⁷ Rabalais, N.N., 2002. Nitrogen in aquatic ecosystems. *AMBIO: A Journal of the Human Environment*, 31(2), pp.102-113.

¹⁸ Howarth, R.W. and Marino, R., 2006. Nitrogen as the limiting nutrient for eutrophication in coastal marine ecosystems: evolving views over three decades. *Limnology and Oceanography*, 51(1part2), pp.364-376.

¹⁹ Poulin, R., 1992. Toxic pollution and parasitism in freshwater fish. *Parasitology Today*, 8(2), pp.58-61.

²⁰ Killeen IJ (2003). Ecology of Desmoulin's Whorl Snail. Conserving Natura 2000 Rivers Ecology Series No. 6. English Nature, Peterborough.

²¹ GOV (2016). *Flood risk and coastal change*. Available online: <https://www.gov.uk/guidance/flood-risk-and-coastal-change> [Accessed: 15/01/20]

²² Cheremisinoff, N.P., 1998. *Groundwater remediation and treatment technologies*. Elsevier.

- Policy C2: *'New developments must ensure sustainable drainage systems to address surface water drainage.'*
- Policy E8: *'Development will be supported which ensures appropriate flood defences.'*
- Policy H14: *'Where a site for development overlies a Groundwater Protection Zone, an appropriate site investigation and risk assessment will be required to be undertaken, in consultation with the Environment Agency, prior to the grant of planning permission.'*
- Policy D1 (**Climate change**): *'New buildings, infrastructure and landscape should be resilient to climate change and other environmental threats in the long-term. Policies and plans should take a proactive approach to mitigating and adapting to climate change impacts, such as periods of increased and reduced precipitation (i. e. surface water flood risk and water use/supply).'*
- Policy D1: *'Surfacing of large areas with concrete or tarmac should be avoided. Brick or block paving should be encouraged; in areas of light use, pea shingle on hoggin would be a viable alternative. In general, a permeable or semi-permeable surface would assist with minimising run-off and localised flooding.'*

6.15 In addition, drainage and flooding mitigation measures are provided by the overarching Ashford LP, to which all development in Charing Parish must adhere:

- Policy ENV6: *'Proposals for new development should contribute to an overall flood risk reduction. Development will only be permitted where it would not be at an unacceptable risk of flooding on the site itself, and there would be no increase to flood risk elsewhere.'*
- Policy ENV9: *'All development should include appropriate sustainable drainage systems (SuDS) for the disposal of surface water, in order to avoid any increase in flood risk or adverse impact on water quality, and to mimic the drainage from the pre-developed site.'*
- Policy ENV9: *'Demonstrate that opportunities have been taken to integrate sustainable drainage with biodiversity enhancements through appropriately designed surface water systems, as well as contribute to amenity and open space.'*

6.16 While in practice this will be reassessed in detail at the planning application level (as the precise details of development design are further refined at that stage and definitive assessments cannot be done until the design work is advanced and a contractor identified), it is considered that an explicit reference is required in the Charing Neighbourhood Plan. Policy C2 currently states that *'New developments must ensure sustainable drainage systems to address surface water drainage'* and Policy E8 identifies that *'Development will be supported which ensures appropriate flood defences'*. However, these policy statements solely address flood risk. **It is strongly recommended that wording is also included in Policy C2 to identify that new development will not be supported unless it provides details of the measures that will be taken to ensure that polluted runoff (including suspended sediment) does not leave the site and enter the R. Stour and surrounding waterbodies, both during and post construction.**

Water quality: discharge of treated sewage effluent

6.17 In addition to the water quality characters described above, water quality components also include components such as dissolved oxygen, acidity/alkalinity, levels of other chemicals such as nitrogen and phosphorous, amounts of suspended solids and heavy metals. Dissolved oxygen is affected by the Biochemical Oxygen Demand (BOD); the higher the BOD the lower the dissolved oxygen available in the water for fish and other wildlife. Excess nutrients can lead to various impacts including algal blooms and smothering growth of large algae, while high ammonia concentrations and heavy metals are directly toxic to aquatic life. Each species has its own tolerance range with respect to water quality. For example, fish, such as the salmon, which are totally dependent on water are more sensitive to changes in water quality. Water quality can have other indirect effects, for example high volumes of nitrogen and phosphorous can lead to algal blooms and excessive growth of other water plants.

Background

- 6.18 Increased housing development at Charing village would likely lead to increased sewage production. As such, there is potential risk that increased sewage could degrade the water quality (i.e. through increased phosphorus discharge) of Stodmarsh SAC/SPA/Ramsar when in the absence of environmental mitigation and adequate wastewater treatment works²³.
- 6.19 The high levels of phosphorus in the R. Stour catchment are primarily caused by wastewater from existing housing and agricultural sources, though some local and 'within site' processes can occur and there is suspected mine waste contamination in some areas of the Stour. There are a number of mechanisms already in place to reduce the amount of nutrient inputs within the river and lake catchments and coastal waterbodies. Within the R. Stour catchment both Defra and partnership funded Catchment Sensitive Farming (CSF) programmes work with agriculture to reduce diffuse agricultural sources of pollution, such as fertiliser and slurry run-off. To achieve this goal, the CSF partnership delivers practical solutions and targeted support to farmers and land managers to take voluntary action to reduce diffuse water pollution from agriculture to protect water bodies and the environment. The Stour has been a priority catchment under CSF since phase 1 (2006).
- 6.20 In addition, the Wastewater Treatment Works (WwTWs) that discharge to the catchment of the Stodmarsh SAC/SPA/Ramsar are the subject of an investigation under the Water Industry National Environment Programme (WINEP), which determines the extent of the hydrological connection of WwTWs and sewerage assets to the Stodmarsh lakes. Furthermore, it quantifies the extent to which these assets are contributing to existing and potential future water quality failures.

Discussion

- 6.21 The Environment Agency's Water Industry National Environment Programme (WINEP) aims to investigate the impacts of discharged sewage effluent to Stodmarsh designated sites.
- 6.22 The wastewater treatment works (WwTW) or sewage treatment works (STW) that serves Charing Parish is Charing WwTW, this WwTW feeds into the Great Stour River. As a result of the WwTW location and hydrological relationship to European sites nutrient neutrality calculations were undertaken to investigate if residential development at Charing would impact European Site integrity. Note that these are preliminary calculations and must be re-run for any planning application.
- 6.23 Any new residential or employment development in Charing as a result of the Neighbourhood Plan has potential to result in increased levels of nutrients entering Stodmarsh SAC/SPA/Ramsar. While the level of development in the NP is modest in itself (i.e. 57 dwellings), this will operate 'in combination' with all other existing and future development connected to Charing WwTW.
- 6.24 The overarching LP does afford protection to the Stodmarsh SAC/SPA/Ramsar:
- Policy C2: '*New development proposals must, in liaison with any sewage providers, ensure adequate foul sewage infrastructure and capacity exists to serve the proposal*'.
- 6.25 In addition, provided by the overarching Ashford LP:
- Policy ENV8: '*All development proposals must provide a connection to the sewerage system at the nearest point of adequate capacity wherever feasible, as advised by the service provider, and ensure future access to the existing sewerage systems for maintenance and upsizing purposes*'.
- 6.26 Therefore, it is essential the NP provides appropriate mitigation for the discharge of sewage from the proposed 57 dwellings in Charing and demonstrates this has been assessed alone and in combination.

²³ Jarvie, H. P., Neal, C., & Withers, P. J. (2006). Sewage-effluent phosphorus: a greater risk to river eutrophication than agricultural phosphorus?. *Science of the total environment*, 360(1-3), 246-253.

- 6.27 Achieving nutrient neutrality is one way to address the existing uncertainty surrounding the impact of new development on designated sites. Natural England advises that a nutrient budget (TN and TP) can be calculated for new developments and has provided a guidance document to enable this to be calculated²⁴. Such a calculation has been undertaken for this NP and is included in Appendix A. This can be used to show that development either avoids harm to protected sites from water quality issues or will need to provide mitigation required to ensure that there is no adverse effect with respect to nutrients. It will then be for the applicant to ensure that such mitigation is identified before their planning application is submitted.
- 6.28 Currently, Charing WwTW does not have a nitrogen Environmental Permit (mg/l TN). Therefore, an average figure for Southern Water WwTW of 27mg/l for nitrogen is used, which may change as new evidence becomes available. Using these data, the nutrient calculations for the allocated 57 dwellings indicate that their development would, without mitigation, lead to a net increase in nitrogen of 173.09 kg/TN/yr when compared to the 'no change' in existing land use scenario.
- 6.29 Charing WwTW does have an existing phosphorus permit limit of 0.5mg/l. According to the phosphorus neutrality calculations, the Charing NP would lead to an increase in phosphorus of 4.73 kg/TP/yr when compared to the 'no change' in existing land use scenario. Overall, there will be an increase in nutrient concentrations (both phosphorus and nitrogen) in treated sewage effluent from the Charing WwTW and nutrient neutrality would not be met in the absence of mitigation.
- 6.30 As such, in line with Natural England's nutrient neutrality advice on the Stodmarsh SAC/SPA/Ramsar, the following text is recommended for inclusion in Neighbourhood Plan Policy C2: ***'The development will only be supported if it demonstrates nutrient neutrality regarding Stodmarsh SAC/SPA, both in relation to phosphorus and nitrogen.'***
- 6.31 Assuming the developers' nutrient neutrality calculation confirms that mitigation is required, it is likely that a range of mitigation measures may need to be undertaken. These could be added to the NP as an explanatory note for Policy C2:**The following mitigation measures could be explored:**
- i. **Secured agreement with the wastewater treatment provider that they will maintain an increase in nitrogen/phosphorous removal at the WwTW though this will be unlikely to be successful until after the WINEP study is completed and the measures required to achieve favourable conservation status with regards to treatment works have been agreed.**
 - ii. **Secured agreement with the wastewater treatment provider or others to provide and maintain an increase in nitrogen/phosphorous offsetting from catchment management measures (this may include mini-farm interceptor wetlands). This must take account of the restoration duties and must not hinder the ability to achieve the conservation objectives.**
 - iii. **Provide measures that will remove nitrogen/phosphorous draining from the development site or discharged by the WwTW (such as wetland or reedbed).**
 - iv. **Increase the size of the SANGs and Open Space provision for the development on agricultural land that removes more nitrogen/phosphorous loss from this source.**
 - v. **Establish changes to agricultural land in the wider landholding in perpetuity that removes more nitrogen/phosphorous loss from this source.**
 - vi. **Acquire, or support others in acquiring, agricultural land elsewhere within the river catchment area containing the development site (or the waste water treatment discharge if different), changing the land use in perpetuity (e.g. to woodland, heathland, saltmarsh, wetland or conservation grassland) to remove more nitrogen/phosphorous loss from this source and/or, if conditions are suitable, provide measures that will remove nitrogen/phosphorous on drainage pathways from land higher up the catchment (e.g. interception wetland).**

²⁴ Natural England (2019). *Advice on Nutrient Neutrality for New Development in the Stour Valley Catchment in Relation to Stodmarsh Designated Sites - For Local Planning Authorities*. Available online: <https://www.havant.gov.uk/sites/default/files/documents/SolentNutrientAdviceV2June2019.pdf>, accessed 25/03/2020.

- 6.32 In practice, experience in the Stour catchment indicates that the most effective way to establish nitrogen and (particularly) phosphorus neutrality at an individual development level is to deliver a wetland to treat runoff from the site itself and from surrounding agricultural land such that the net increase in nutrients entering the system from treated sewage effluent is offset by a net reduction in nutrients entering the system from runoff due to the treatment provided by the wetland. Current Natural England guidance is that any such wetland would need to be a minimum of 2ha in size to minimise the risk of the wetland becoming a net exporter of nutrients. As a result, where several small allocations are involved (as here) it may be advisable for individual developers to collaborate on a wetland.

7. Conclusions

- 7.1 HRA of new housing within the draft NP has identified that, based on current information regarding development proposals and phosphate management at Charing WwTW, nutrient neutrality would not be met in the absence of mitigation. As such, there is potential for increased phosphate discharge into the hydrological catchment of Stodmarsh SAC/SPA/Ramsar sites. Note that nutrient neutrality should be re-run for each housing scheme/planning application as each scheme is developed, taking into account scheduled improvements in phosphate removal at Charing WwTW.
- 7.2 Given the potential for increased phosphate discharge into the hydrological catchment of Stodmarsh SAC/SPA/Ramsar sites, appropriate safeguarding policy wording should be added to draft NP Policy C2, such that (following the recommended updated calculations) housing allocations H1 and H3 may require mitigation to be delivered. With the above recommendations incorporated into the Charing Neighbourhood Plan 2011-2030 it is concluded that no adverse effect would occur on the integrity of Stodmarsh SAC/SPA/Ramsar sites.
- 7.3 Other potential impacts such as Recreational pressure, Atmospheric pollution, loss of functionally linked habitat, coastal squeeze, as well as visual and noise disturbance from construction were considered to not have a likely significant effect from the development as they fall outside the range of the disturbance that may be caused. Therefore, no adverse effects would occur through these impact pathways.

Appendix A Phosphorus and Nitrogen Neutrality Calculations

Phosphorus discharge calculations for the two draft NP housing allocations are detailed below. These calculations follow the method described by Natural England²⁵.

Existing land use types and site areas have been judged and measured based on freely available aerial imaging and tools on MAGIC.

H1: Allocation of land at Parsons Mead & Burleigh Bungalow

STAGE 1 - TOTAL PHOSPHORUS LOAD FROM DEVELOPMENT WASTEWATER	
Site allocation	H1
Site name	Allocation of land at Parsons Mead & Burleigh Bungalow
Number of residential dwellings	48
Number of new residents	120
Water consumption (litres/person/day)	110
Total wastewater generated by development (litres/day)	13200
Likely Wastewater Treatment Works (WwTW)	Charing WwTW
TP Environmental permit for WwTW (mg/l TP)	0.5
90% of consent limit	0.45
TP Discharge after WwTW treatment (mg/TP/day)	5940
TP Discharge after WwTW treatment (kg/TP/day)	0.00594
TP Discharge after WwTW treatment (kg/TP/year)	2.1681
STAGE 2 - PHOSPHOROUS LOAD FROM CURRENT LAND USE	
Area of existing agricultural land	1.9
Farm type and average nitrogen-nitrate loss	0.14
Existing phosphorus load	0.266
STAGE 3 - PHOSPHORUS LOAD FROM FUTURE LAND USES	

²⁵ Natural England (2019). *Advice on Nutrient Neutrality for New Development in the Stour Valley Catchment in Relation to Stodmarsh Designated Sites - For Local Planning Authorities*. Available online: <https://www.havant.gov.uk/sites/default/files/documents/SolentNutrientAdviceV2June2019.pdf>, accessed 25/03/2020.

Number of Residential Dwellings	48
Number of new residents	120
New urban area (hectares)	1.9
Phosphorus leachate rate from new urban area	0.83
Phosphorus Load from future urban area	1.577
New SANG/ open space (ha)	0
Phosphorus load from SANG / open space	0
Combined Phosphorus load from future land uses	1.577
STAGE 4 - NET CHANGE IN PHOSPHORUS LOAD FROM THE DEVELOPMENT	
Phosphate Load from future urban area	1.577
Phosphate net change	1.311
Add loading due to new housing wastewater	2.1681
Phosphate budget (no buffer)	3.4791
Divide by 5	0.69582
20% buffer	4.17492

STAGE 1 - NITROGEN LOAD FROM DEVELOPMENT WASTEWATER	
Site allocation	H1
Site name	Allocation of land at Parsons Mead & Burleigh Bungalow
Number of residential dwellings	48
Number of new residents	120
Water consumption (litres/person/day)	110
Total wastewater generated by development (litres/day)	13200
Likely Wastewater Treatment Works (WwTW)	Charing WwTW
TP Environmental permit for WwTW (mg/l TP)	27
90% of consent limit	24.3
TN Discharge after WwTW treatment (mg/TN/day)	320760
TN Discharge after WwTW treatment (kg/TN/day)	0.32076
TN Discharge after WwTW treatment (kg/TN/year)	117.0774

STAGE 2 - NITROGEN LOAD FROM CURRENT LAND USE	
Total area of existing agricultural land	1.9
Farm type and average nitrogen-nitrate loss	5
Multiply area by nitrogen loss	9.5
STAGE 3 - NITROGEN LOAD FROM FUTURE LAND USES	
Number of Residential Dwellings	48
Number of new residents	120
New urban area (hectares)	1.9
Nitrogen leachate rate from new urban area	14.3
Nitrogen Load from future urban area	27.17
New SANG/ open space (ha)	0
Nitrogen load from SANG / open space	0
Combine Nitrogen load from future land uses	27.17
STAGE 4 - NET CHANGE IN NITROGEN LOAD FROM THE DEVELOPMENT	
Nitrogen Load from future urban area	27.17
Nitrogen net change	17.67
Add loading due to new housing wastewater	117.0774
Nitrogen budget (no buffer)	134.7474
Divide by 5	26.94948
20% buffer	161.69688

H3: Allocation of land next to Crofters

STAGE 1 - TOTAL PHOSPHORUS LOAD FROM DEVELOPMENT WASTEWATER	
Site allocation	H3
Site name	Allocation of land next to Crofters
Number of residential dwellings	9
Number of new residents	13.5
Water consumption (litres/person/day)	110
Total wastewater generated by development (litres/day)	1485

Likely Wastewater Treatment Works (WwTW)	Charing WwTW
TP Environmental permit for WwTW (mg/l TP)	0.5
90% of consent limit	0.45
TP Discharge after WwTW treatment (mg/TP/day)	668.25
TP Discharge after WwTW treatment (kg/TP/day)	0.00066825
TP Discharge after WwTW treatment (kg/TP/year)	0.24391125
STAGE 2 - PHOSPHOROUS LOAD FROM CURRENT LAND USE	
Area of existing agricultural land	0.4
Farm type and average nitrogen-nitrate loss	0.28
Existing phosphorus load	0.112
STAGE 3 - PHOSPHORUS LOAD FROM FUTURE LAND USES	
Number of Residential Dwellings	9
Number of new residents	13.5
New urban area (hectares)	0.4
Phosphorus leachate rate from new urban area	0.83
Phosphorus Load from future urban area	0.332
New SANG/ open space (ha)	0
Phosphorus load from SANG / open space	0
Combined Phosphorus load from future land uses	0.332
STAGE 4 - NET CHANGE IN PHOSPHORUS LOAD FROM THE DEVELOPMENT	
Phosphorus Load from future urban area	0.332
Phosphorus net change	0.22
Add loading due to new housing wastewater	0.24391125
Phosphorus budget (no buffer)	0.46391125
Divide by 5	0.09278225
20% buffer	0.5566935

STAGE 1 - TOTAL NITROGEN LOAD FROM DEVELOPMENT WASTEWATER	
Site allocation	H3
Site name	Allocation of land next to Crofters
Number of residential dwellings	9
Number of new residents	13.5
Water consumption (litres/person/day)	110
Total wastewater generated by development (litres/day)	1485

Likely Wastewater Treatment Works (WwTW)	Charing WwTW
TP Environmental permit for WwTW (mg/l TP)	27
90% of consent limit	24.3
TN Discharge after WwTW treatment (mg/TN/day)	36085.5
TN Discharge after WwTW treatment (kg/TN/day)	0.0360855
TN Discharge after WwTW treatment (kg/TN/year)	13.1712075
STAGE 2 - NITROGEN LOAD FROM CURRENT LAND USE	
Total area of existing agricultural land	0.4
Farm type and average nitrogen-nitrate loss	23.5
Multiply area by nitrogen loss	9.4
STAGE 3 - NITROGEN LOAD FROM FUTURE LAND USES	
Number of Residential Dwellings	9
Number of new residents	13.5
New urban area (hectares)	0.4
Nitrogen leachate rate from new urban area	14.3
Nitrogen Load from future urban area	5.72
New SANG/ open space (ha)	0
Nitrogen load from SANG / open space	0
Combine Nitrogen load from future land uses	5.72
STAGE 4 - NET CHANGE IN NITROGEN LOAD FROM THE DEVELOPMENT	
Nitrogen Load from future urban area	5.72
Nitrogen net change	-3.68
Add loading due to new housing wastewater	13.1712075
Nitrogen budget (no buffer)	9.4912075
Divide by 5	1.8982415
20% buffer	11.389449