

# Habitats Regulations Assessment of the Southbourne Neighbourhood Plan Review

Southbourne Parish Council

Project number: 60571087

February 2021

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## Revision History

Revision	Revision date	Details	Authorized	Name	Position
0	24/07/2020	Draft reviewed by Group	JR	James Riley	Technical Director
1	05/02/2021	Updated version to reflect the submission SNP	JR	James Riley	Technical Director

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# 1. Introduction

## Scope of project

- 1.1 Southbourne Parish Council (SPC) appointed AECOM to undertake a Habitats Regulations Assessment (HRA) of the Southbourne Parish Neighbourhood Plan Review 2019 – 2037. This is to inform the steering group and Chichester District Council of the potential effects of the Southbourne Neighbourhood Plan (SNP) on European Sites. The HRA provides advice on how to adequately address any potential effects within policies contained in the SNP. The SNP will cover the years between 2019 and 2037, the same years as the emerging Chichester Local Plan (CLP). An initial HRA was produced in summer 2020 and consulted upon with Natural England and Chichester District Council. Both bodies agreed with the HRA and its recommendations. This document presents the HRA of the final Neighbourhood Plan.
- 1.2 The parish lies south-east of Westbourne Parish and west of Chidham and Hambrook Parish in a relatively rural area. It is situated in an Area of Outstanding Natural Beauty (AONB), bordering the Chichester and Langstone Harbours SPA / Ramsar and the Solent Maritime SAC. Pagham Harbour SPA / Ramsar, the Portsmouth Harbour SPA / Ramsar and the Kingley Vale SAC also all lie within 10km from Southbourne Parish. Given the proximity of the plan area to sites of significant ecological interest, potential exists for significant effects.
- 1.3 In the adopted CLP, the village of Southbourne is identified as a key strategic area for employment and housing development. Table 7.2 of the CLP shows that a Strategic Allocation of 300 dwellings was to be delivered in Southbourne village pre-2019 early in the plan period, given that the locations were not constrained by wastewater treatment capacity. This strategic development was to be delivered as an integrated extension to Southbourne village and was specifically required to '*mitigate potential impacts of recreational disturbance on the Chichester Harbour SAC/SPA/Ramsar*' (Policy 20 of the CLP). A further 50 dwellings were to be delivered elsewhere in Southbourne Parish.
- 1.4 Chichester District Council intends to extend the Local Plan period to 2035 and the Issues and Options document was subjected to HRA by AECOM in 2017. The impact pathways identified in relation to growth in the district included urbanisation, recreational pressure, loss of functionally linked land, increased water demand, water quality, atmospheric pollution, disturbance of bat flight lines and coastal squeeze. Most impact pathways are also relevant to the SNP, while a few (e.g. disturbance of bat flight lines) are not relevant to the SNP because the distance between the parish and European sites is too great. While the previous HRA assessed a different extent of growth (i.e. all growth across Chichester), it is nonetheless a useful starting point for identifying European sites linked to the Southbourne NP.
- 1.5 The SNP allocates approx. 1,250 homes on land east of Southbourne village, which is growth that is in excess of the growth allocated for Southbourne in the adopted CLP. The site allocated in the SNP was not included in the adopted CLP. Therefore, it represents growth that has not previously been assessed and an HRA is required under the terms of the Conservation of Habitats & Species Regulations 2017 (as amended). This HRA will assess if the residential dwellings allocated and / or any other SNP policies will have Likely Significant Effects (LSEs) and, ultimately, have the potential to cause adverse effects on the integrity of Natura 2000 or European Designated Sites (Special Areas of Conservation, SACs, Special Protection Areas, SPAs, and Ramsar sites designated under the Ramsar convention), either in isolation or in combination with other plans and projects. If this is the case it will evaluate whether site-specific or policy mitigation measures are required.

## Legislation

- 1.6 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 is currently set to end on 31 December 2020. The Withdrawal Act retains the body of



existing EU-derived law within our domestic law. During the transition period EU law applies to and in the UK.

- 1.7 The need for HRA is set out within the Conservation of Habitats & Species Regulations 2017 (as amended) and concerns the protection of European sites (Figure 1). European sites (also called Natura 2000 sites) can be defined as actual or proposed/candidate Special Areas of Conservation (SAC) or Special Protection Areas (SPA). 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 Natura 2000 sites.
- 1.8 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**

- 1.9 It is therefore important to note that this report has two purposes:
  - To assist the Qualifying Body (Southbourne 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 overarching Local Planning Authority (Chichester 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’).
- 1.10 As ‘competent authority’, the legal responsibility for ensuring that a decision of ‘likely significant effects’ is made, for ensuring an ‘appropriate assessment’ (where required) is undertaken, and for ensuring 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 a key purpose of this report.
- 1.11 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 for the overall process and restricts the use of Appropriate Assessment to the specific stage of that name.

## 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.

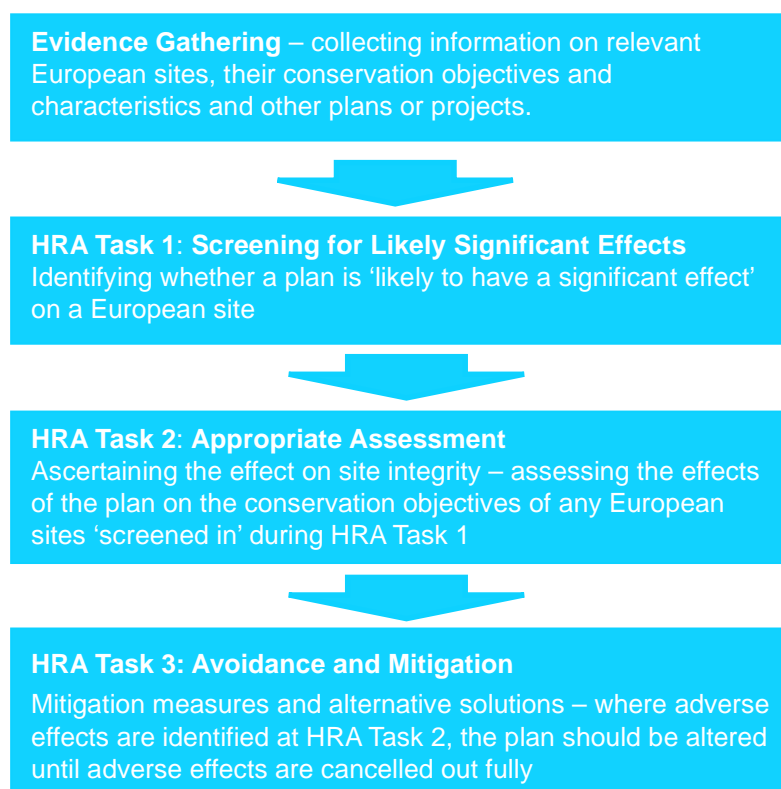


Figure 2: Four Stage Approach to Habitats Regulations Assessment. Source GOV.UK, 2019.

### HRA Task 1 – Likely Significant Effects (LSE)

- 2.2 Following evidence gathering, the first stage of any Habitats Regulations Assessment is a Likely Significant Effect (LSE) 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 with European sites. This stage is undertaken in Chapter 5 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 assessment<sup>1</sup>. Paragraph: 001 Reference ID: 65-001-20190722m 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 the analysis 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 analyses 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 A decision by the European Court of Justice<sup>2</sup> 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. The UK is no longer part of the European Union. However, as a precaution, it is assumed for the purposes of this HRA that EU case law regarding Habitat Regulations Assessment will still be considered informative jurisprudence by the UK courts. That ruling has therefore been considered in producing this HRA.
- 2.8 Also, in 2018 the Holohan ruling<sup>3</sup> was handed down by the European Court of Justice. Among other provisions paragraph 39 of the ruling states that *'As regards other habitat types or species, which are present on the site, but for which that site has not been listed, and with respect to habitat types and species located outside that site, ... typical habitats or species must be included in the appropriate assessment, if they are necessary to the conservation of the habitat types and species listed for the protected area'* [emphasis added]. This has been taken into account in the HRA, specifically regarding habitat that may be functionally linked to Solent's European sites, many of which are designated for mobile waterfowl and waders.

## HRA Task 3 – Avoidance and Mitigation

- 2.9 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.
- 2.10 In evaluating significance, AECOM has relied on professional judgement and the LP HRA regarding development impacts on the European sites considered within this assessment.
- 2.11 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 the Local Development Plan document is a high-level policy document. A Neighbourhood Plan is a lower level constituent of a Local Development Plan.

<sup>1</sup> <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].

<sup>2</sup> People Over Wind and Sweetman v Coillte Teoranta (C-323/17)

<sup>3</sup> Case C-461/17

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

- 2.12 It is a requirement of the Regulations that the impacts of any development plans are not only considered in isolation but in-combination with other plans and projects that may also be affecting the European site(s) in question.
- 2.13 For example, when considering the potential for combined regional housing development across multiple local authorities to impact on European sites, a key emphasis must be on the cumulative impact of visitor numbers (i.e. recreational pressure). While one Parish might only contribute a minor portion of recreational pressure (with no negative impact on a European site), other adjacent Parishes may also each contribute minor 'amounts' of such pressure. Cumulatively, this could result in detectable effects on designated species.
- 2.14 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 negligible.

## 3. European Sites

### Chichester and Langstone Harbours SPA / Ramsar

#### Introduction

3.1 The Chichester and Langstone Harbours SPA / Ramsar is a complex of large, sheltered estuarine basins comprising sand- and mudflats that are exposed at low tide. The two harbours are connected via a stretch of water that separates Hayling Island from the mainland. Some tidal channels drain the basin and reach far inland. The mudflats harbour a rich assemblage of invertebrates and algae, such as *Enteromorpha* spp. and eelgrasses *Zostera* spp. The wide range of habitats present in the Chichester and Langstone Harbours SPA / Ramsar support key animal communities. These include significant numbers of waterbirds during migration and over winter. Furthermore, the site supports important colonies of breeding terns, which are rare in southern England.

#### SPA Qualifying Features<sup>4</sup>

3.2 This site qualifies under **Article 4.1** of the Directive (79/409/EEC) by supporting populations of European importance of the following species listed on Annex I of the Directive:

##### During the breeding season:

- Little tern *Sterna albifrons*; 100 pairs representing up to 4.2% of the breeding population in Great Britain (5 year mean, 1992 – 1996)
- Sandwich tern *Sterna sandvicensis*; 158 pairs representing up to 1.1% of the breeding population in Great Britain (1998)
- Common tern *Sterna hirundo*; 126 pairs (5 year mean, 2011-2015)

##### On passage:

- Little egret *Egretta garzetta*; 137 individuals representing up to 17.1% of the population in Great Britain (Count as at 1998)

##### Over winter:

- Bar-tailed godwit *Limosa lapponica*; 1,692 individuals representing up to 3.2% of the wintering population in Great Britain (5 year peak mean 1991/2 – 1995/6)
- Little egret *Egretta garzetta*; 100 individuals representing up to 20% of the wintering population in Great Britain (Count as at 1998)

3.3 This site qualifies under **Article 4.2** of the Directive (79/409/EEC) by supporting populations of European importance of the following migratory species:

##### On passage:

- Ringed Plover *Charadrius hiaticula*; 2,471 individuals representing up to 4.9% of the Europe/Northern Africa - wintering population (5 year peak mean 1991/2 - 1995/6)

##### Over winter:

- Black-tailed Godwit *Limosa limosa islandica*; 1,003 individuals representing up to 1.4% of the wintering Iceland - breeding population (5 year peak mean 1991/2 - 1995/6)

<sup>4</sup> Available at: <http://jncc.defra.gov.uk/default.aspx?page=2034> [Accessed on the 12/08/2020]

- Dark-bellied brent Goose *Branta bernicla bernicla*; 17,119 individuals representing up to 5.7% of the wintering Western Siberia/Western Europe population (5 year peak mean 1991/2 - 1995/6)
- Dunlin *Calidris alpina alpina*; 44,294 individuals representing up to 3.2% of the wintering Northern Siberia/Europe/Western Africa population (5 year peak mean 1991/2 - 1995/6)
- Grey Plover *Pluvialis squatarola*, 3,825 individuals representing up to 2.5% of the wintering Eastern Atlantic - wintering population (5 year peak mean 1991/2 - 1995/6)
- Redshank *Tringa totanus*; 1,788 individuals representing up to 1.2% of the wintering Eastern Atlantic - wintering population (5 year peak mean 1991/2 - 1995/6)
- Ringed Plover *Charadrius hiaticula*, 846 individuals representing up to 1.7% of the wintering Europe/Northern Africa - wintering population (5 year peak mean 1991/2 - 1995/6)
- Common shelduck *Tadorna tadorna*; 1,096 individuals wintering population (5 year peak mean 2009/10 – 2013/14)
- Eurasian wigeon *Anas Penelope*; 3,947 individuals wintering population (5 year peak mean 2009/10 – 2013/14)
- Eurasian teal *Anas crecca*; 1,953 individuals wintering population (5 year peak mean 2009/10 – 2013/14)
- Northern pintail *Anas acuta*; 338 individuals wintering population (5 year peak mean 2009/10 – 2013/14)
- Northern shoveler *Anas clypeata*; 106 individuals wintering populations (5 year peak mean 2009/10 – 2013/14)
- Red-breasted merganser *Mergus serrator*; 366 individuals wintering population (5 year peak mean 2009/10 – 2013/14)
- Sanderling *Calidris alba*; 216 individuals wintering population (5 year peak mean 2009/10 – 2013/14)
- Eurasian curlew *Numenius arquata*; 3,181 individuals wintering population (5 year peak mean 2009/10 – 2013/14)
- Ruddy turnstone *Arenaria interpres*; 501 individuals wintering population (5 year peak mean 2009/10 – 2013/14)

#### 3.4 **Assemblage qualification: A wetland of international importance.**

The area qualifies under **Article 4.2** of the Directive (79/409/EEC) by regularly supporting at least 20,000 waterfowl

Over winter, the area regularly supports 93,142 individual waterfowl (5 year peak mean 1991/2 - 1995/6) including: Wigeon *Anas penelope*, Bar-tailed Godwit *Limosa lapponica*, Dark-bellied brent Goose *Branta bernicla bernicla*, Ringed Plover *Charadrius hiaticula*, Grey Plover *Pluvialis squatarola*, Dunlin *Calidris alpina alpina*, Black-tailed Godwit *Limosa limosa islandica*, Redshank *Tringa totanus*, Little Grebe *Tachybaptus ruficollis*, Little Egret *Egretta garzetta*, Shelduck *Tadorna tadorna*, Curlew *Numenius arquata*, Teal *Anas crecca*, Pintail *Anas acuta*, Shoveler *Anas clypeata*, Red-breasted Merganser *Mergus serrator*, Oystercatcher *Haematopus ostralegus*, Lapwing *Vanellus vanellus*, Knot *Calidris canutus*, Sanderling *Calidris alba*, Cormorant *Phalacrocorax carbo*, Whimbrel *Numenius phaeopus*.

## Ramsar Qualifying Features<sup>5</sup>

3.5 The Chichester and Langstone Harbours qualify as a Ramsar site under the following criteria:

### Criterion 1

Two large estuarine basins linked by the channel which divides Hayling Island from the main Hampshire coastline. The site includes intertidal mudflats, saltmarsh, sand and shingle spits and sand dunes.

### Criterion 5

#### Assemblages of international importance

Species with peak counts in winter

76,480 waterfowl (5 year peak mean 1998/99 – 2002/03)

### Criterion 6 Species / populations occurring at levels of international importance

#### Qualifying species / populations (as identified at designation):

##### Species with peak counts in spring / autumn

- Ringed plover *Charadrius hiaticula*, Europe / Northwest Africa: 853 individuals, representing an average of 1.1% of the population (5 year peak mean 1998/9 – 2002/3)
- Black-tailed godwit *Limosa limosa islandica*, Iceland / W Europe: 906 individuals, representing an average of 2.5% of the population (5 year peak mean 1998/9 – 2002/3)
- Common redshank *Tringa totanus totanus*: 2,577 individuals, representing an average of 1% of the population (5 year peak mean 1998/9 – 2002/3)

##### Species with peak counts in winter

- Dark-bellied brent goose *Branta bernicla bernicla*: 12,987 individuals, representing an average of 6% of the population (5 year peak mean 1998/9 – 2002/3)
- Common shelduck *Tadorna tadorna*, NW Europe: 1,468 individuals, representing an average of 1.8% of the GB population (5 year peak mean 1998/9 – 2002/3)
- Grey plover *Pluvialis squatarola*, E Atlantic / W Africa – wintering: 3,043 individuals, representing an average of 1.2% of the population (5 year peak mean 1998/9 – 2002/3)
- Dunlin *Calidris alpina alpina*, W Siberia / W Europe: 33,436 individuals, representing an average of 2.5% of the population (5 year peak mean 1998/9 – 2002/3)

#### Species / populations identified subsequent to designation for possible future consideration under criterion 6.

##### Species regularly supported during the breeding season

- Little tern *Sterna albifrons albifrons*, W Europe: 130 apparently occupied nests, representing an average of 1.1% of the breeding population

<sup>5</sup> Available at: <http://jncc.defra.gov.uk/pdf/RIS/UK11013.pdf> [Accessed on the 20/08/2020]

## SPA Conservation Objectives<sup>6</sup>

- 3.6 With regard to the SPA and the individual species and/or assemblage of species for which the site has been classified (the 'Qualifying Features' listed below), and subject to natural change;
- 3.7 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.

## Threats / Pressures to Site Integrity<sup>7</sup>

- 3.8 The following threats and pressures to the integrity of the Chichester and Langstone Harbours SPA have been identified in the Natural England Site Improvement Plan:
- Public access / disturbance
  - Coastal squeeze
  - Fisheries: Commercial marine and estuarine
  - Water pollution
  - Changes in species distribution
  - Climate change
  - Change to site conditions
  - Invasive species
  - Direct land take from development
  - Biological resource use
  - Change in land management
  - Inappropriate pest control
  - Air pollution: Impact of atmospheric nitrogen deposition
  - Hydrological changes
  - Extraction: Non-living resources

## Solent Maritime SAC

### Introduction

- 3.9 The Solent comprises a major estuarine system on the south coast of England with four coastal plain estuaries and four bar-built estuaries. The maritime SAC is the only site that contains a cluster of physiographic sub-types of estuary. Furthermore, in contrast to all other European estuaries, the Solent has a unique hydrographic regime consisting of four tides per day.
- 3.10 The site also harbours a complex array of marine and estuarine habitats. Sediment habitats in the estuarine system include extensive estuarine flats with intertidal areas, supporting eelgrass

<sup>6</sup> Available at: <http://publications.naturalengland.org.uk/publication/5789102905491456> [Accessed on the 20/08/2020]

<sup>7</sup> Available at: <http://publications.naturalengland.org.uk/publication/4692013588938752> [Accessed on the 20/08/2020]

*Zostera* spp., green algae, sand and shingle spits, and shoreline transitions. Mudflat habitats range from low or variable salinity in the upper reaches of the estuaries to fully marine mudflats in Chichester and Langstone Harbours. Unusual species in these habitats include rare sponges, communities of a polychaete *Sabellaria spinulosa* and smooth cord-grass *Spartina alterniflora*.

- 3.11 Within the Solent Maritime SAC, the second-largest aggregation of Atlantic salt meadows in south / south-west England is located. The saltmarsh is present as a large number of disjointed habitat patches. This ungrazed aquatic plant community is dominated by sea-purslane *Atriplex portulacoides*, common sea-lavender *Limonium vulgare* and thrift *Armeria maritima*. Overall, the site is less disturbed by man-made structures than other parts of the southern coast.

## Qualifying Features<sup>8</sup>

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

- Estuaries
- *Spartina* swards (*Spartinion maritimae*)
- Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*)

- 3.13 Annex I habitats present as a qualifying feature, but not a primary reason for selection of this site:

- Sandbanks which are slightly covered by sea water all the time
- Mudflats and sandflats not covered by sea water at low tide
- Coastal lagoons
- Annual vegetation of drift lines
- Perennial vegetation of stony banks
- *Salicornia* and other annuals colonizing mud and sand
- Shifting dunes along the shoreline with *Ammophila arenaria* ('white dunes')

- 3.14 Annex II species present as a qualifying feature, but not a primary reason for site selection

- Desmoulin's whorl snail *Vertigo moulinsiana*

## Conservation Objectives<sup>9</sup>

- 3.15 With regard to the SAC and the natural habitats and/or species for which the site has been designated (the 'Qualifying Features' listed below), and subject to natural change;

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

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

<sup>8</sup> Available at: <http://jncc.defra.gov.uk/protectedsites/sacselection/sac.asp?EUCode=UK0030059> [Accessed on the 20/08/2020]

<sup>9</sup> Available at: <http://publications.naturalengland.org.uk/publication/4857883850178560> [Accessed on the 20/08/2020]



## Threats / Pressures to Site Integrity<sup>10</sup>

3.17 The following threats and pressures to the integrity of the Solent Maritime SAC have been identified in the Natural England Site Improvement Plan:

- Public access / disturbance
- Coastal squeeze
- Fisheries: Commercial marine and estuarine
- Water pollution
- Changes in species distribution
- Climate change
- Change to site conditions
- Invasive species
- Direct land take from development
- Biological resource use
- Change in land management
- Inappropriate pest control
- Air pollution: Impact of atmospheric nitrogen deposition
- Hydrological changes
- Extraction: Non-living resources

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<sup>10</sup> Available at: <http://publications.naturalengland.org.uk/publication/4692013588938752> [Accessed on the 20/08/2020]

## 4. Impact Pathways

### Recreational Pressure

- 4.1 There is concern over the cumulative impacts of recreation on key nature conservation sites in the UK, as most sites must fulfill conservation objectives while also providing recreational opportunity. Various research reports have provided compelling links between changes in housing and access levels<sup>11</sup>, and impacts on European protected sites<sup>12 13</sup>. This applies to any habitat, but recreational pressure from housing growth is of particular significance for European sites designated for their bird interest. Some SPA / Ramsar waterfowl are known to be especially sensitive to disturbance. Different European sites are subject to different types of recreational pressures and have different vulnerabilities. Studies across a range of species have shown that the effects from recreation can be complex. HRAs of planning documents tend to focus on recreational sources of disturbance as a result of new residents<sup>14</sup>.
- 4.2 Human activity can affect birds either directly (e.g. through causing them to flee) or indirectly (e.g. through damaging their habitat or reducing their fitness in less obvious ways e.g. stress). The most obvious direct effect is that of immediate mortality such as death by shooting, but human activity can also lead to much subtler behavioural (e.g. alterations in feeding behaviour, avoidance of certain areas and use of sub optimal areas etc.) and physiological changes (e.g. an increase in heart rate). While these are less noticeable, they might result in major population-level changes by altering the balance between immigration/birth and emigration/death<sup>15</sup>.
- 4.3 Concern regarding the effects of disturbance on birds stems from the fact that they are expending energy unnecessarily and the time they spend responding to disturbance is time that is not spent feeding<sup>16</sup>. Disturbance therefore risks increasing energetic expenditure of birds while reducing their energetic intake, which can adversely affect the 'condition' and ultimately survival of the birds. Additionally, displacement of birds from one feeding site to others can increase the pressure on the resources available within the remaining sites, as they then must sustain a greater number of birds<sup>17</sup>. Moreover, the more time a breeding bird spends disturbed from its nest, the more its eggs are likely to cool and the more vulnerable they, or any nestlings, are to predators. Recreational effects on ground-nesting birds are particularly severe, with many studies concluding that urban sites support lower densities of key species, such as stone curlew and nightjar<sup>18 19</sup>. Recreation disturbance in winter can be more impactful because birds are more vulnerable at this time of year due to food shortages. In contrast, there are often fewer recreational users in the winter months and some effects of disturbance may be reduced because birds are not breeding.
- 4.4 Evidence in the literature suggests that the magnitude of disturbance clearly differs between different types of recreational activities. For example, dog walking leads to a significantly higher reduction in bird diversity and abundance compared to hiking<sup>20</sup>. Scientific evidence also suggests

<sup>11</sup> Weitowitz D.C., Panter C., Hoskin R. & Liley D. 2019. The effect of urban development on visitor numbers to nearby protected nature conservation sites. *Journal of Urban Ecology* 5. <https://doi.org/10.1093/jue/juz019>

<sup>12</sup> Liley D, Clarke R.T., Mallord J.W., Bullock J.M. 2006a. The effect of urban development and human disturbance on the distribution and abundance of nightjars on the Thames Basin and Dorset Heaths. Natural England / Footprint Ecology.

<sup>13</sup> Liley D., Clarke R.T., Underhill-Day J., Tyldesley D.T. 2006b. Evidence to support the appropriate Assessment of development plans and projects in south-east Dorset. Footprint Ecology / Dorset County Council.

<sup>14</sup> The RTP1 report 'Planning for an Ageing Population' (2004) which states that 'From being a marginalised group in society, the elderly are now a force to be reckoned with and increasingly seen as a market to be wooed by the leisure and tourist industries. There are more of them and generally they have more time and more money.' It also states that 'Participation in most physical activities shows a significant decline after the age of 50. The exceptions to this are walking, golf, bowls and sailing, where participation rates hold up well into the 70s'.

<sup>15</sup> Riley, J. 2003. Review of Recreational Disturbance Research on Selected Wildlife in Scotland. Scottish Natural Heritage.

<sup>16</sup> Riddington, R. *et al.* 1996. The impact of disturbance on the behaviour and energy budgets of Brent geese. *Bird Study* 43:269-279

<sup>17</sup> Gill, J.A., Sutherland, W.J. & Norris, K. 1998. The consequences of human disturbance for estuarine birds. *RSPB Conservation Review* 12: 67-72

<sup>18</sup> Clarke R.T., Liley D., Sharp J.M., Green R.E. 2013. Building development and roads: Implications for the distribution of stone curlews across the Brecks. *PLOS ONE*. <https://doi.org/10.1371/journal.pone.0072984>.

<sup>19</sup> Liley D., Clarke R.T. 2003. The impact of urban development and human disturbance on the numbers of nightjar *Caprimulgus europaeus* on heathlands in Dorset, England. *Biological Conservation* 114: 219-230.

<sup>20</sup> Banks P.B., Bryant J.Y. 2007. Four-legged friend or foe? Dog walking displaces native birds from natural areas. *Biological Letters* 3: 14pp.

that key disturbance parameters, such as areas of influence and flush distance, are significantly greater for dog walkers than hikers<sup>21</sup>. Furthermore, differences in route lengths and usage patterns on site is likely to imply that key spatial and temporal parameters (such as the area of a site potentially impacted and the frequency of disturbance) are also likely to differ between recreational activities. This suggests that activity type is a factor that should be taken into account in HRAs.

## Non-breeding birds (September to March)

- 4.5 The Chichester and Langstone Harbours SPA / Ramsar is designated for overwintering waders and waterfowl and this section therefore summarises the academic research available on these groups of birds.
- 4.6 Evans & Warrington<sup>22</sup> found that on Sundays total water bird numbers (including shoveler and gadwall) were 19% higher on Stocker's Lake LNR in Hertfordshire and attributed this to observed greater recreational activity on surrounding water bodies at weekends relative to weekdays displacing birds into the LNR. However, in this study, recreational activity was not quantified in detail, nor were individual recreational activities evaluated separately.
- 4.7 Tuite et al<sup>23</sup> used a large (379 sites), long-term (10-year) dataset (September – March species counts) to correlate seasonal changes in wildfowl abundance with the presence of various recreational activities. They determined that shoveler was one of the most sensitive species to recreational activities, such as sailing/windsurfing and rowing. Studies on recreation in the Solent have established that human leisure activities cause direct disturbance to wintering waterfowl populations<sup>24 25</sup>.
- 4.8 The degree of impact that varying levels of noise will have on different species of bird is poorly understood except that a number of studies have found that an increase in traffic levels on roads does lead to a reduction in the bird abundance within adjacent hedgerows - Reijnen et al (1995) examined the distribution of 43 passerine species (i.e. 'songbirds'), of which 60% had a lower density closer to the roadside than further away. By controlling vehicle usage they also found that the density generally was lower along busier roads than quieter roads<sup>26</sup>. A study on Holt Heath noted reduced levels of fitness due to occupation of sub optimal habitats alongside roads amongst heathland species.
- 4.9 A study on recreational disturbance on the Humber<sup>27</sup> assesses different types of noise disturbance on waterfowl referring to studies relating to aircraft (see Drewitt 1999<sup>28</sup>), traffic (Reijnen, Foppen, & Veenbaas 1997)<sup>29</sup>, dogs (Lord, Waas, & Innes 1997<sup>30</sup>; Banks & Bryant 2007<sup>31</sup>) and machinery (Delaney et al. 1999; Tempel & Gutierrez 2003). These studies identified that there is still relatively little work on the effects of different types of water based craft and the impacts from jet skis, kite surfers, windsurfers etc. (see Kirby et al. 2004<sup>32</sup> for a review). Some types of disturbance are clearly likely to invoke different responses. In very general terms, both distance from the source of disturbance and the scale of the disturbance (noise level, group size)

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<sup>21</sup> Miller S.G., Knight R.L., Miller C.K. 2001. Wildlife responses to pedestrians and dogs. 29: 124-132.

<sup>22</sup> Evans, D.M. & Warrington, S. 1997. The effects of recreational disturbance on wintering waterbirds on a mature gravel pitlake near London. *International Journal of Environmental Studies* 53: 167-182

<sup>23</sup> Tuite, C.H., Hanson, P.R. & Owen, M. 1984. Some ecological factors affecting winter wildfowl distribution on inland waters in England and Wales and the influence of water-based recreation. *Journal of Applied Ecology* 21: 41-62

<sup>24</sup> Footprint Ecology. 2010. Recreational Disturbance to Birds on the Humber Estuary

<sup>25</sup> Footprint Ecology, Jonathan Cox Associates & Bournemouth University. 2010. Solent disturbance and mitigation project – various reports.

<sup>26</sup> Reijnen, R. et al. 1995. The effects of car traffic on breeding bird populations in woodland. III. Reduction of density in relation to the proximity of main roads. *Journal of Applied Ecology* 32: 187-202

<sup>27</sup> Helen Fearnley Durwyn Liley and Katie Cruickshanks (2012) Results of Recreational Visitor Survey across the Humber Estuary produced by Footprint Ecology

<sup>28</sup> Drewitt, A. (1999) Disturbance effects of aircraft on birds. English Nature, Peterborough.

<sup>29</sup> Reijnen, R., Foppen, R. & Veenbaas, G. (1997) Disturbance by traffic of breeding birds: evaluation of the effect and considerations in planning and managing road corridors. *Biodiversity and Conservation*, 6, 567-581.

<sup>30</sup> Lord, A., Waas, J.R. & Innes, J. (1997) Effects of human activity on the behaviour of northern New Zealand dotterel *Charadrius obscurus aquilonius* chicks. *Biological Conservation*, 82,15-20.

<sup>31</sup> Banks, P.B. & Bryant, J.V. (2007) Four-legged friend of foe? Dog-walking displaces native birds from natural areas. *Biology Letters*, 3, 611-613.

<sup>32</sup> Kirby, J.S., Clee, C. & Seager, V. (1993) Impact and extent of recreational disturbance to wader roosts on the Dee estuary: some preliminary results. *Wader Study Group Bulletin* 68: 53-58.

will both influence the response (Delaney et al. 1999<sup>33</sup>; Beale & Monaghan 2005<sup>34</sup>). On UK estuaries and coastal sites, a review of WeBS data showed that, among the volunteer WeBS surveyors, driving of motor vehicles and shooting were the two activities most perceived to cause disturbance (Robinson & Pollitt 2002)<sup>35</sup>.

4.10 Disturbing activities present themselves on a continuum. Generally, activities that involve irregular, infrequent and loud noise events, movement or vibration are likely to be the most disturbing. For example, the presence of dogs around water bodies generate substantial disturbance due the areas accessed and their impact on bird behaviour. Birds are least likely to be disturbed by activities that involve regular, frequent, predictable and quiet patterns of sound, movement or vibration. The further any activity is from the birds, the less likely it is to result in disturbance. Therefore, the factors that determine species responses to disturbance include species sensitivity, timing/duration of the recreational activity and the distance between source and receptor of disturbance.

4.11 The specific distance at which a species takes flight when disturbed is known as the ‘tolerance distance’ (also called the ‘escape flight distance’) and greatly differs between species. Tolerance distances from various literature sources are summarised in Table 1. It is reasonable to assume from this evidence that disturbance is unlikely to be relevant at distances of beyond 200m. Generally, tolerance distances are known for only few species and should not be extrapolated to other species.

**Table 1: Tolerance distances in metres of 21 species of waterfowl to various forms of recreational disturbance, as described in the literature. Where the mean is not available, distances are provided as a range.**<sup>36</sup>

Species	Type of disturbance. <sup>1</sup> Tydeman (1978), <sup>2</sup> Keller (1989), <sup>3</sup> Van der Meer (1985), <sup>4</sup> Wolff et al (1982), <sup>5</sup> Blankestijn et al (1986)		
	Rowing boats/kayak	Sailing boats	Walking
Little grebe		60 – 100 <sup>1</sup>	
Great crested grebe	50 – 100 <sup>2</sup>	20 – 400 <sup>1</sup>	
Mute swan		3 – 30 <sup>1</sup>	
Teal		0 – 400 <sup>1</sup>	
Mallard		10 – 100 <sup>1</sup>	
Shoveler		200 – 400 <sup>1</sup>	
Pochard		60 – 400 <sup>1</sup>	
Tufted duck		60 – 400 <sup>1</sup>	
Goldeneye		100 – 400 <sup>1</sup>	
Smew		0 – 400 <sup>1</sup>	
Moorhen		100 – 400 <sup>1</sup>	
Coot		5 – 50 <sup>1</sup>	
Curlew			211 <sup>3</sup> ; 339 <sup>4</sup> ; 213 <sup>5</sup>

<sup>33</sup> Delaney, D.K., Grubb, T.G., Beier, P., Pater, L.L.M. & Reiser, H. (1999) Effects of Helicopter Noise on Mexican Spotted Owls. *The Journal of Wildlife Management* 63: 60-76.

<sup>34</sup> Beale, C.M. & Monaghan, P. (2005) Modeling the Effects of Limiting the Number of Visitors on Failure Rates of Seabird Nests. *Conservation Biology* 19: 2015-2019.

<sup>35</sup> Robinson, J.A. & Pollitt, M.S. (2002) Sources and extent of human disturbance to waterbirds in the UK: an analysis of Wetland Bird Survey data, 1995/96 to 1998/99: Less than 32% of counters record disturbance at their site, with differences in causes between coastal and inland sites. *Bird Study* 49: 205.

<sup>36</sup> Tydeman, C.F. 1978. Gravel Pits as conservation areas for breeding bird communities. PhD thesis. Bedford College  
Keller, V. 1989. Variations in the response of Great Crested Grebes *Podiceps cristatus* to human disturbance - a sign of adaptation? *Biological Conservation* 49: 31-45

Van der Meer, J. 1985. *De verstoring van vogels op de slikken van de Oosterschelde*. Report 85.09 Deltadienst Milieu en Inrichting, Middelburg. 37 pp.

Wolf, W.J., Reijnders, P.J.H. & Smit, C.J. 1982. The effects of recreation on the Wadden Sea ecosystem: many questions but few answers. In: G. Luck & H. Michaelis (Eds.), *Schriftenreihe M.E.L.F., Reihe A: Agnew. Wissensch* 275: 85-107

Blankestijn, S. et al. 1986. Seizoensverbreding in de recreatie en verstoring van Wulp en Scholkester op hoogwatervluchplaatsen op Terschelling. Report Projectgroep Wadden, L.H. Wageningen. 261pp.

Shelduck	148 <sup>3</sup> ; 250 <sup>4</sup>
Grey plover	124 <sup>3</sup>
Ringed plover	121 <sup>3</sup>
Bar-tailed godwit	107 <sup>3</sup> ; 219 <sup>4</sup>
Brent goose	105 <sup>3</sup>
Oystercatcher	85 <sup>3</sup> ; 136 <sup>4</sup> ; 82 <sup>5</sup>
Dunlin	71 <sup>3</sup> ; 163 <sup>2</sup>

- 4.12 Mitigation measures to avoid recreational pressure effects usually involve a combination of access management, habitat management and provision of alternative recreational space. Access management (restricting access to some or all of a European site) is not typically within the remit of a Parish Council and may contravene a range of Government policies on access to open space and objectives for increasing exercise, improving health etc. However, active management of access may be possible, such as that practised on nature reserves. Habitat management also does not lie within the direct remit of Parish Councils. However, the Council can help to set a framework for improved habitat management by promoting collaboration with neighbouring parishes and Local Planning Authorities. Provision of alternative recreational space can help to attract recreational users away from sensitive European sites and reduce pressure on the sites. However, the location and habitat type of such alternative destinations must be carefully selected to be effective.
- 4.13 The issue at the Solent Coast is addressed in the Solent Recreation Mitigation Strategy<sup>37</sup> and on the website <http://www.birdaware.org/>. The surveys undertaken to identify the mitigation strategy identified that all net new housing within 5.6km of the Solent European sites would result in recreational pressure that required mitigation.
- 4.14 The available baseline information suggests that the Chichester and Langstone Harbours SPA / Ramsar is vulnerable to recreational pressure because of the risk of disturbance to overwintering waterfowl and wader species (e.g. dark-bellied brent goose, dunlin, curlew). Furthermore, the ground-nesting qualifying tern species are especially sensitive to disturbance, particularly from trampling and dog walkers. The SPA / Ramsar directly abuts the Parish of Southbourne and the implementation of the Southbourne NP might therefore lead to an increase in recreational pressure, particularly because distance from home is one of the primary predictors of visitation.
- 4.15 Overall, the following European site within 10km of Southbourne Parish is sensitive to recreational pressure as a result of NP development (the site in bold is taken forward into the following chapters):

- **Chichester and Langstone Harbours SPA / Ramsar (adjoining the southern border of Southbourne Parish)**

## Water Quality

- 4.16 The quality of the water that feeds European sites is an important determinant of the nature of their habitats and the species they support. Poor water quality can have a range of environmental impacts:
- 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 water with nutrients, 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,

<sup>37</sup> Bird Aware Solent. (2017) Solent Recreation Mitigation Strategy. December 2017.

nitrogen is the limiting plant nutrient and so eutrophication is associated with discharges containing bioavailable nitrogen.

- 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.
- 4.17 The most notable issue in relation to the Southbourne NP is the discharge of treated sewage effluent, which is likely to increase the concentration of nutrients (particularly nitrogen concentrations) in local watercourses feeding into Solent's European sites. Nitrogen is the main limiting nutrient in marine ecosystems and is likely to cause eutrophication if it increases significantly. The Solent Maritime SAC is designated for habitats and the Desmoulin's whorl snail, which are all sensitive to an increase in nutrient loadings. Given that Southbourne Parish lies adjacent to the SAC, impacts on the water quality due to surface water runoff from hardstanding within Southbourne also needs consideration.
- 4.18 The NP assessed in this HRA provides for development in the geographic area covered by Portsmouth Water (responsible for the public water supply) and Southern Water (responsible for wastewater treatment). The potential implications of this development are outlined in Table 2.

**Table 2: Wastewater Treatment Works serving development in Southbourne Parish that are in hydrological continuity with the Solent, in particular the Chichester and Langstone Harbours SPA / Ramsar, and the Solent Maritime SAC.**

WwTW Catchment	Residential and employment development quantum allocated in the Southbourne Neighbourhood Plan	HRA implications
Thornham WwTW (operated by Southern Water)	1,250 new residential dwellings and an unspecified amount of employment space	Discharge of treated sewage effluent into local watercourses including Lumley and Ham Brook streams, ultimately feeding into the Solent

- 4.19 The following European site within 10km of Southbourne Parish is sensitive to changes in water quality as a result of NP development (the site in bold is taken forward into the following chapters):
- **Chichester and Langstone Harbours SPA / Ramsar (directly adjacent to Southbourne Parish)**
  - **Solent Maritime SAC (directly adjacent to Southbourne Parish, largely contiguous with the Chichester and Langstone Harbours SPA / Ramsar)**

## Water Level

- 4.20 The water level, its flow rates and the mixing conditions are important determinants of the condition of European sites and its qualifying features. Hydrological processes are critical in influencing habitat characteristics in coastal waters, including current velocity, water depth, dissolved oxygen levels, salinity and water temperature. In turn these parameters determine the short- and long-term viability of plant and animal species, as well as overall ecosystem composition.
- 4.21 A highly cited review paper summarised the ecological effects of reduced flow in rivers. Droughts (ranging in their magnitude from flow reduction to a complete loss of surface water) have both direct and indirect effects on stream communities. For example, a marked direct effect is the loss of water and habitat for aquatic organisms. Indirect effects include a deterioration in water quality, changes to the food resources and alterations in interspecific interactions. An increased stability of baseflow and a reduction in the natural flow variability of rivers has been linked to the excessive growth of macrophytes and a reduction in fish populations.



- 4.22 The Solent Maritime SAC includes habitats and species that are likely to be sensitive to changes in water level, oxygen concentration, salinity and turbidity. The primary mechanism by which the Southbourne NP could affect this would be via a change in the volume of freshwater supplied by local watercourses – most likely a reduction in freshwater input due to water abstraction for the water supply of new residential development. For example, the estuary, and the sand- and mudflat habitats are sensitive to changes in water flow rates, which might potentially lead to sediment accretion or erosion in certain locations. Similarly, the Atlantic salt meadow components might be sensitive to a reduction in water flow rates because of the increased deposition rates of sediments in the habitat. The sensitivity of the Severn Estuary SAC also extends to its animal species, which will depend on sufficient hydrological input to migrate up the Rivers Usk and Wye. Changes to the water flow rate within an estuary can be associated with a multitude of further impact pathways, including substratum loss, smothering and changes in wave exposure, and often interact with coastal squeeze. However, in its current form, the Monmouthshire RLDP does not propose for development that might directly affect these processes in the SAC. The remainder of this section therefore addresses whether the RLDP might affect the water flow rate within the Severn Estuary SAC.
- 4.23 The following European site within 10km of Southbourne Parish is sensitive to changes in the water level, quantity and flow as a result of NP development (the site in bold is taken forward into the following chapters):
- **Solent Maritime SAC (directly adjacent to the southern border of Southbourne Parish)**

## Loss of Functionally Linked Habitat

- 4.24 While most European sites have been geographically defined to encompass the key features that are necessary for coherence of their structure and function, and the support of their qualifying features, this is not necessarily the case. A diverse array of qualifying species including birds, bats and amphibians are not always confined to the boundary of designated sites.
- 4.25 For example, the highly mobile nature of both wildfowl and waders implies that areas of habitat of crucial importance to the maintenance of their populations lie outside the physical limits of European sites. Despite not being designated, these habitats are integral to the maintenance of the structure and function of European sites. Therefore, land use plans that may result in the loss of functionally linked habitat should be subject to further assessment.
- 4.26 There is now an abundance of authoritative examples of HRA cases on plans affecting bird populations, where Natural England recognised the potential importance of functionally linked land<sup>38</sup>. For example, bird surveys in relation to a previous HRA established that approximately 25% of the golden plover population in the Somerset Levels and Moors SPA were affected while on functionally linked land, and this required the inclusion of mitigation measures in the relevant plan policy wording. Another important case study originates from the Mersey Estuary SPA / Ramsar, where adjacently located functionally linked land had a peak survey count of 108% of the 5 year mean peak population of golden plover. Similar to the above example, this led to considerable amendments in the planning proposal to ensure that the site integrity was not adversely affected.
- 4.27 Generally, functionally linked (but non-designated) land parcels may not be immediately obvious. An assessment of existing data sources (e.g. bird atlases showing species distributions, Environmental Record Centre data, results from bespoke bird surveys) might be required to firmly established functional linkage to European sites. In some instances, data may not be available at all, requiring further survey work.
- 4.28 The Chichester and Langstone Harbours SPA / Ramsar is designated for its assemblage of overwintering waterfowl and waders. Dark-bellied brent geese are most dependent on functionally linked grassland and arable land for foraging. However, numerous wader species are known to roost in grassland adjacent to the coast in high-tide conditions. The importance of

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<sup>38</sup> Chapman C & Tyldesley D. 2016. Functional linkage: How areas that are functionally linked to European sites have been considered when they may be affected by plans and projects – A review of authoritative decisions. **Natural England Commissioned Reports** 207: 73pp.



functionally linked habitat outside Solent's European sites for the survival of brent geese and waders, has resulted in the Solent Waders and Brent Goose Strategy (SWBGS), which mapped parcels of importance for SPA / Ramsar species inland from the coastline. The strategy classifies each parcel of importance to one of the following categories: 'Primary Support Area', 'Secondary Support Area', 'Low Use' and 'Candidate', based on a number of key population parameters.

- 4.29 These bird species depend on land beyond the designated site boundaries for their survival. Clearly, residential and employment development within Southbourne Parish, which lies immediately inland from the SPA / Ramsar has the potential to result in the loss of functionally linked habitat for SPA / Ramsar birds.
- 4.30 The following European site within 10km of Southbourne Parish is susceptible to the loss of functionally linked habitat as a result of NP development (the site in bold is taken forward into the following chapters):
- **Chichester and Langstone Harbours SPA / Ramsar (located directly adjacent to the southern boundary of Southbourne Parish)**

## Atmospheric Pollution (through Nitrogen Deposition)

- 4.31 The main pollutants of concern for European sites are oxides of nitrogen (NO<sub>x</sub>), ammonia (NH<sub>3</sub>) and sulphur dioxide (SO<sub>2</sub>) and are summarised in Table 3. Ammonia can have a directly toxic effect upon vegetation, particularly at close distances to the source such as near road verges<sup>39</sup>. NO<sub>x</sub> can also be toxic at very high concentrations (far above the annual average critical level). However, in particular, high levels of NO<sub>x</sub> and NH<sub>3</sub> are likely to increase the total N deposition to soils, potentially leading to deleterious knock-on effects in resident ecosystems. Increases in nitrogen deposition from the atmosphere is widely known to enhance soil fertility and to lead to eutrophication. This often has adverse effects on the community composition and quality of semi-natural, nitrogen-limited terrestrial and aquatic habitats<sup>40 41</sup>.

**Table 3: Main sources and effects of air pollutants on habitats and species<sup>42</sup>**

Pollutant	Source	Effects on habitats and species
Sulphur Dioxide (SO <sub>2</sub> )	<p>The main sources of SO<sub>2</sub> are electricity generation, and industrial and domestic fuel combustion. However, total SO<sub>2</sub> emissions in the UK have decreased substantially since the 1980's.</p> <p>Another origin of sulphur dioxide is the shipping industry and high atmospheric concentrations of SO<sub>2</sub> have been documented in busy ports. In future years shipping is likely to become one of the most important contributors to SO<sub>2</sub> emissions in the UK.</p>	<p>Wet and dry deposition of SO<sub>2</sub> acidifies soils and freshwater, and may alter the composition of plant and animal communities.</p> <p>The magnitude of effects depends on levels of deposition, the buffering capacity of soils and the sensitivity of impacted species.</p> <p>However, SO<sub>2</sub> background levels have fallen considerably since the 1970's and are now not regarded a threat to plant communities. For example, decreases in Sulphur dioxide concentrations have been linked to returning lichen species and improved tree health in London.</p>
Acid deposition	<p>Leads to acidification of soils and freshwater via atmospheric deposition of SO<sub>2</sub>, NO<sub>x</sub>, ammonia and hydrochloric acid. Acid deposition from rain has declined by 85% in the last 20 years, which most of this contributed by lower sulphate levels.</p>	<p>Gaseous precursors (e.g. SO<sub>2</sub>) can cause direct damage to sensitive vegetation, such as lichen, upon deposition.</p> <p>Can affect habitats and species through both wet (acid rain) and dry deposition. The effects of acidification include lowering of soil pH, leaf chlorosis,</p>

<sup>39</sup> [http://www.apis.ac.uk/overview/pollutants/overview\\_NOx.htm](http://www.apis.ac.uk/overview/pollutants/overview_NOx.htm), accessed 01/04/2020.

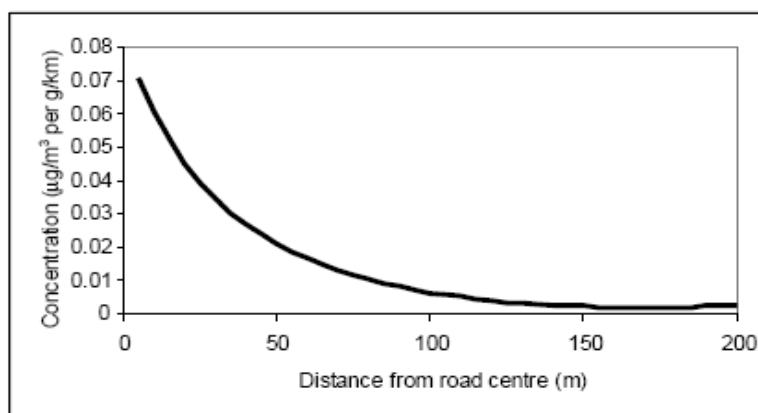
<sup>40</sup> Wolseley, P. A.; James, P. W.; Theobald, M. R.; Sutton, M. A. **2006**. Detecting changes in epiphytic lichen communities at sites affected by atmospheric ammonia from agricultural sources. *Lichenologist* 38: 161-176

<sup>41</sup> Dijk, N. **2011**. Dry deposition of ammonia gas drives species change faster than wet deposition of ammonium ions: evidence from a long-term field manipulation *Global Change Biology* 17: 3589-3607

<sup>42</sup> Information summarised from the Air Pollution Information System (<http://www.apis.ac.uk/>)

Pollutant	Source	Effects on habitats and species
	<p>Although future trends in S emissions and subsequent deposition to terrestrial and aquatic ecosystems will continue to decline, increased N emissions may cancel out any gains produced by reduced S levels.</p>	<p>reduced decomposition rates, and compromised reproduction in birds / plants.</p> <p>Not all sites are equally susceptible to acidification. This varies depending on soil type, bed rock geology, weathering rate and buffering capacity. For example, sites with an underlying geology of granite, gneiss and quartz rich rocks tend to be more susceptible.</p>
Ammonia (NH <sub>3</sub> )	<p>Ammonia is a reactive, soluble alkaline gas that is released following decomposition and volatilisation of animal wastes. It is a naturally occurring trace gas, but ammonia concentrations are directly related to the distribution of livestock.</p> <p>Ammonia reacts with acid pollutants such as the products of SO<sub>2</sub> and NO<sub>x</sub> emissions to produce fine ammonium (NH<sub>4</sub><sup>+</sup>) - containing aerosol. Due to its significantly longer lifetime, NH<sub>4</sub><sup>+</sup> may be transferred much longer distances (and can therefore be a significant trans-boundary issue).</p> <p>While ammonia deposition may be estimated from its atmospheric concentration, the deposition rates are strongly influenced by meteorology and ecosystem type.</p>	<p>The negative effect of NH<sub>4</sub><sup>+</sup> may occur via direct toxicity, when uptake exceeds detoxification capacity and via N accumulation.</p> <p>Its main adverse effect is eutrophication, leading to species assemblages that are dominated by fast-growing and tall species. For example, a shift in dominance from heath species (lichens, mosses) to grasses is often seen.</p> <p>As emissions mostly occur at ground level in the rural environment and NH<sub>3</sub> is rapidly deposited, some of the most acute problems of NH<sub>3</sub> deposition are for small relict nature reserves located in intensive agricultural landscapes.</p>
Nitrogen oxides (NO <sub>x</sub> )	<p>Nitrogen oxides are mostly produced in combustion processes. Half of NO<sub>x</sub> emissions in the UK derive from motor vehicles, one quarter from power stations and the rest from other industrial and domestic combustion processes.</p> <p>In contrast to the steep decline in Sulphur dioxide emissions, nitrogen oxides are falling more due to control strategies being offset by increasing numbers of vehicles.</p>	<p>Direct toxicity effects of gaseous nitrates are likely to be important in areas close to the source (e.g. roadside verges). A critical level of NO<sub>x</sub> for all vegetation types has been set to 30 ug/m<sup>3</sup>.</p> <p>Deposition of nitrogen compounds (nitrates (NO<sub>3</sub>), nitrogen dioxide (NO<sub>2</sub>) and nitric acid (HNO<sub>3</sub>)) contributes to the total nitrogen deposition and may lead to both soil and freshwater acidification.</p> <p>In addition, NO<sub>x</sub> contributes to the eutrophication of soils and water, altering the species composition of plant communities at the expense of sensitive species.</p>
Nitrogen deposition	<p>The pollutants that contribute to the total nitrogen deposition derive mainly from oxidized (e.g. NO<sub>x</sub>) or reduced (e.g. NH<sub>3</sub>) nitrogen emissions (described separately above). While oxidized nitrogen mainly originates from major conurbations or highways, reduced nitrogen mostly derives from farming practices.</p> <p>The N pollutants together are a large contributor to acidification (see above).</p>	<p>All plants require nitrogen compounds to grow, but too much overall N is regarded as the major driver of biodiversity change globally.</p> <p>Species-rich plant communities with high proportions of slow-growing perennial species and bryophytes are most at risk from N eutrophication. This is because many semi-natural plants cannot assimilate the surplus N as well as many graminoid (grass) species.</p> <p>N deposition can also increase the risk of damage from abiotic factors, e.g. drought and frost.</p>
Ozone (O <sub>3</sub> )	<p>A secondary pollutant generated by photochemical reactions involving NO<sub>x</sub>, volatile organic compounds (VOCs) and sunlight. These precursors are mainly released by the combustion of fossil fuels (as discussed above).</p> <p>Increasing anthropogenic emissions of ozone precursors in the UK have led to an increased number of days when</p>	<p>Concentrations of O<sub>3</sub> above 40 ppb can be toxic to both humans and wildlife, and can affect buildings.</p> <p>High O<sub>3</sub> concentrations are widely documented to cause damage to vegetation, including visible leaf damage, reduction in floral biomass, reduction in crop yield (e.g. cereal grains, tomato, potato), reduction in the number of flowers, decrease in forest production</p>

Pollutant	Source	Effects on habitats and species
	ozone levels rise above 40ppb ('episodes' or 'smog'). Reducing ozone pollution is believed to require action at international level to reduce levels of the precursors that form ozone.	and altered species composition in semi-natural plant communities.
4.32	Sulphur dioxide emissions overwhelmingly derive from power stations and industrial processes that require the combustion of coal and oil, as well as (particularly on a local scale) shipping <sup>43</sup> . Ammonia emissions originate from agricultural practices <sup>44</sup> , with some chemical processes also making notable contributions. As such, it is unlikely that material increases in SO <sub>2</sub> or NH <sub>3</sub> emissions will be associated with the Southbourne NP.	
4.33	NOx emissions, however, are dominated by the output of vehicle exhausts (more than half of all emissions). A 'typical' housing development will contribute by far the largest portion to its overall NOx footprint (92%) through the associated road traffic. Other sources, although relevant, are of minor importance (8%) in comparison <sup>45</sup> . Emissions of NOx could therefore be reasonably expected to increase because of a higher number of vehicles due to implementation of the Southbourne NP.	
4.34	According to the World Health Organisation, the critical NOx concentration (critical threshold) for the protection of vegetation is 30 µgm <sup>-3</sup> ; the threshold for sulphur dioxide is 20 µgm <sup>-3</sup> . In addition, ecological studies have determined 'critical loads' <sup>46</sup> of atmospheric nitrogen deposition (that is, NOx combined with ammonia NH <sub>3</sub> ).	
4.35	The Department of Transport's Transport Analysis Guidance stipulates that, beyond 200m, the contribution of vehicle emissions from the roadside to local pollution levels is not significant <sup>47</sup> (Figure 3). This is therefore the distance that has been used throughout this HRA in order to determine whether European sites are likely to be significantly affected by development outlined in the Local Plan.	



**Figure 3: Traffic contribution to concentrations of pollutants at different distances from a road (Source: DfT<sup>48</sup>)**

- 4.36 Exhaust emissions from vehicles are capable of adversely affecting most plant species and overall plant community composition. Considering this, an increase in the net population and employment growth within the Southbourne NP could result in increased traffic alongside several European sites potentially affected by commuter journeys from Southbourne Parish.
- 4.37 The Chichester and Langstone Harbours SPA's / Ramsar's sensitivity to atmospheric pollution depends on the qualifying feature that is being assessed. Many waterfowl and wader species are

<sup>43</sup> [http://www.apis.ac.uk/overview/pollutants/overview\\_SO2.htm](http://www.apis.ac.uk/overview/pollutants/overview_SO2.htm).

<sup>44</sup> Pain, B.F.; Weerden, T.J.; Chambers, B.J.; Phillips, V.R.; Jarvis, S.C. 1998. A new inventory for ammonia emissions from U.K. agriculture. Atmospheric Environment 32: 309-313

<sup>45</sup> Proportions calculated based upon data presented in Dore CJ et al. 2005. UK Emissions of Air Pollutants 1970 – 2003. UK National Atmospheric Emissions Inventory. <http://www.airquality.co.uk/archive/index.php>

<sup>46</sup> The critical load is the rate of deposition beyond which research indicates that adverse effects can reasonably be expected to occur.

<sup>47</sup> <http://www.dft.gov.uk/webtag/documents/expert/unit3.3.3.php#013> [Accessed on the 01/04/2020]

<sup>48</sup> <http://www.dft.gov.uk/ha/standards/dmrb/vol11/section3/ha20707.pdf> [Accessed on the 01/04/2020]

not sensitive to atmospheric nitrogen deposition. Instead, species such as Eurasian teal and Northern pintail may benefit from additional nitrogen due to positive effects on their food supply. In contrast, the breeding tern species are sensitive to nitrogen deposition because they nest in scrapes on bare ground, such as vegetated shingle and sand dune habitat. The Air Pollution Information System (APIS) identifies a critical nitrogen load of 8-10 kg N/ha/yr (the nitrogen critical load class of acidic coastal stable dune grasslands). Likely consequences of exceedance impacts include an increase in tall grasses, a decline in plant diversity, N leaching and soil acidification.

- 4.38 Most qualifying habitats and species of the Solent Maritime SAC have relatively low sensitivity to nitrogen deposition from atmosphere. The most sensitive feature is the perennial vegetation of stony banks (critical nitrogen load of 8-15 kg N/ha/yr). However, APIS identifies that this vegetation has different successional stages and other (higher) critical loads may also apply. Other qualifying features, such as estuaries, coastal lagoons, *Salicornia* and Atlantic salt meadows have a lower sensitivity to nitrogen deposition (a critical load of 20-30 kg N/ha/yr applies to all of these).
- 4.39 Overall, the following European sites adjacent to Southbourne Parish are sensitive to atmospheric pollution and are likely to be linked to development in the Parish (sites in bold are taken forward into the following chapters):
- **Chichester and Langstone Harbours SPA / Ramsar (directly adjacent to the southern border of Southbourne Parish)**
  - **Solent Maritime SAC (directly adjacent to the southern border of Southbourne Parish and largely contiguous with the Chichester and Langstone Harbours SPA / Ramsar)**

## 5. Test of Likely Significant Effects

### Introduction

5.1 The initial scoping of impact pathways and relevant European sites identified that the following require consideration:

#### **Recreational Pressure**

- Chichester and Langstone Harbours SPA / Ramsar

#### **Water Quality**

- Chichester and Langstone Harbours SPA / Ramsar
- Solent Maritime SAC

#### **Water Level**

- Solent Maritime SAC

#### **Loss of Functionally Linked Habitat**

- Chichester and Langstone Harbours SPA / Ramsar

#### **Atmospheric Pollution**

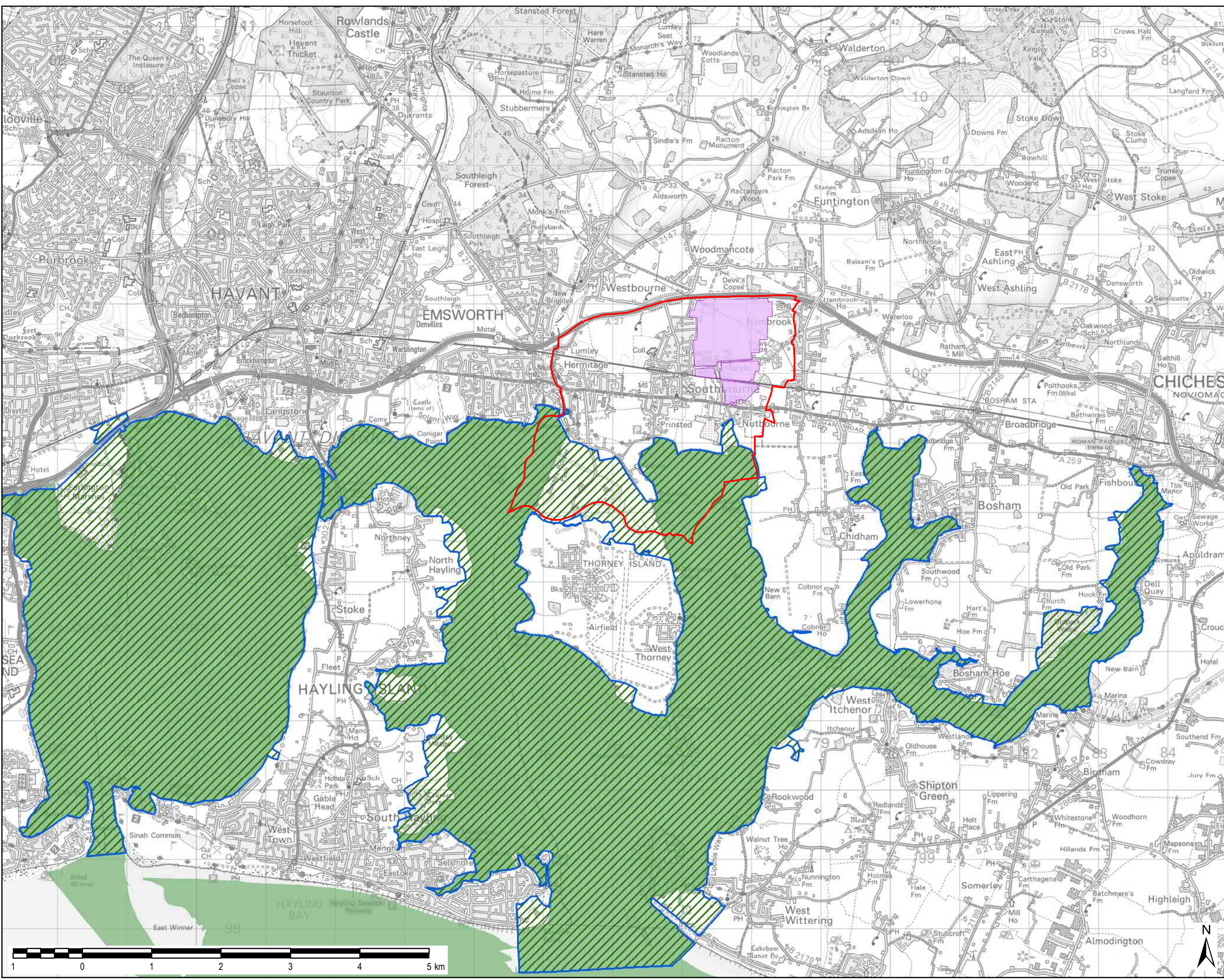
- Chichester and Langstone Harbours SPA / Ramsar
- Solent Maritime SAC

5.2 The policies contained within the Southbourne NP are screened for their Likely Significant Effects (LSEs) on European sites in Appendix A. Figure 4 below shows Southbourne Parish in relation to the European sites identified above.

**Figure 4: Southbourne Parish in relation to identified European Sites.**



File Name: I:\5004 - Information Systems\60571087 - Neighbourhood Plan\_CPB\_2018\_2022\02\_Maps\Southbourne Town Council\Figure 1 - European Sites and Site Allocation.mxd



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- LEGEND**
- Southbourne Neighbourhood Plan Area
  - Residential Site Allocation
  - Chichester and Langstone Ramsar
  - Chichester and Langstone Special Protection Area (SPA)
  - Solent Maritime Special Area of Conservation (SAC)

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Purpose of Issue **DRAFT**

Client **SOUTHBOURNE PARISH COUNCIL**

Project Title **HRA OF THE EMERGING SOUTHBOURNE NEIGHBOURHOOD PLAN**

Drawing Title **MAP OF RELEVANT EUROPEAN SITES AND SITE ALLOCATION CONTAINED IN THE SOUTHBOURNE NP**

Drawn CN	Checked JW	Approved RC	Date 21/09/2020
AECOM Internal Project No. 60571087		Scale @ A3 1:50,000	

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## Recreational Pressure

### Chichester and Langstone Harbours SPA / Ramsar

- 5.3 The following policy has the potential to result LSEs regarding the impact pathway recreational pressure:
- **Policy SB2 – Land East Of Southbourne Village** (provides for approx. 1,250 new dwellings in Southbourne Parish)
- 5.4 The residential site proposed in the Southbourne NP allocates approx. 1,250 new homes, which are likely to result in an increase in recreational demand on nearby greenspaces. The Parish immediately adjoins the Chichester and Langstone Harbours SPA / Ramsar and the allocated site lies only approx. 500m from the European site, which is well within the distance that people are expected to walk from home to undertake recreational activities.
- 5.5 The distances that local residents will travel to undertake recreational activities are likely to vary greatly and depend on the type of recreational activity. For example, dog walkers often tend to undertake frequent and short walks near their home, whereas birdwatchers or people on family outings, are likely to travel further and spend more time in European sites. The short distance between the residential site and the SPA / Ramsar and the attractiveness of the latter likely mean that the Chichester and Langstone Harbours SPA / Ramsar will be a key recreational resource for new residents.
- 5.6 The Chichester and Langstone Harbours SPA / Ramsar is a European site designated for overwintering waders and waterfowl, as well as for ground-nesting terns. Policies that directly influence the number of people living within close proximity to the SPA / Ramsar have the potential for LSEs by causing disturbance to these birds. The terns are particularly sensitive to recreational pressure, especially from people that walk their dogs off-lead. Any prolonged increase in recreational pressure might affect the long-term survival of these qualifying species, ultimately causing adverse effects on site integrity.
- 5.7 Core recreational catchment of up to 10km (based on the 75<sup>th</sup> percentile of visitors) have been identified for many coastal and estuarine SPAs / Ramsars. This reflects the increase in the number of residential dwellings close to the SPA / Ramsar, from which a significant portion of the recreational pressure is likely expected to arise in the future. Considering this evidence base, LSEs on the Chichester and Langstone Harbours SPA / Ramsar cannot be excluded and the site is screened in for Appropriate Assessment. This is in line with the HRA of the overarching Chichester Local Plan Review, which assessed in-combination recreational pressure in more detail.

## Water Quality

### Solent Maritime SAC & Chichester and Langstone Harbours SPA / Ramsar

- 5.8 The following policy has the potential to result LSEs regarding the impact pathway water quality:
- **Policy SB2 – Land East Of Southbourne Village** (provides for approx. 1,250 new dwellings in Southbourne Parish)
- 5.9 As discussed earlier in this HRA, several European sites in the Solent are sensitive to changes in water quality, specifically excess nitrogen input. In relation to the Southbourne NP area, the most relevant European sites geographically are the Solent Maritime SAC and the Chichester and Langstone Harbours SPA / Ramsar. Importantly, the Wastewater Treatment Works (WwTW) responsible for sewage treatment in Southbourne Parish lies directly adjacent to these European sites and could therefore result in increased nitrogen input into the Solent. In line with the Dutch Nitrogen Case, where a site fails to achieve good chemical status, nitrogen input from any new development must therefore be limited.

- 5.10 Policy SB2 provides for 1,250 dwellings to the east of Southbourne Village. These new residential homes will be discharging wastewater via the nearby WWTW at Thornham. Overall, Likely Significant Effects regarding water quality on these European sites cannot be excluded and the sites are therefore screened in for Appropriate Assessment.

## Water Level

### Solent Maritime SAC

- 5.11 The following policy has the potential to result LSEs regarding the impact pathway water quality:

- **Policy SB2 – Land East Of Southbourne Village** (provides for approx. 1,250 new dwellings in Southbourne Parish)

- 5.12 Excessive changes in the water level of European Sites are most likely to be caused by increased water abstraction rates to serve the public water supply and surface water run-off in or near urbanised areas. Southbourne Parish lies directly adjacent to the Solent Maritime SAC and it is therefore possible that increased surface runoff from impermeable urban surfaces will reach the SAC. Furthermore, abstraction of surface water or groundwater for household or industrial supply might result in a decrease in the water level of freshwater bodies and, ultimately, the Solent Maritime SAC via reduced freshwater input rates.

- 5.13 The Solent Maritime SAC depends on an appropriate amount of freshwater input to maintain its salinity at suitable levels for the Desmoulin's whorl snail. Furthermore, the integrity of many of the qualifying habitats (e.g. the intertidal mudflats) and ultimately the qualifying species of the overlapping Chichester and Langstone Harbours SPA / Ramsar depend on the maintenance of natural variation in factors such as sediment mixing, siltation and turbidity.

- 5.14 Given the above, the Solent Maritime SAC is classified as sensitive to potential changes in the volume and rate of freshwater input potentially resulting from the Southbourne NP. The site is screened in for Appropriate Assessment.

## Loss of Functionally Linked Habitat

### Chichester and Langstone Harbours SPA / Ramsar

- 5.15 The following policy has the potential to result LSEs regarding the impact pathway loss of functionally linked habitat:

- **Policy SB2 – Land East Of Southbourne Village** (provides for approx. 1,250 new dwellings in Southbourne Parish)

- 5.16 The Chichester and Langstone Harbours SPA / Ramsar is partly designated for its overwintering populations of dark-bellied brent geese and a variety of other waterfowl and wader species, as well as a waterbird assemblage of European importance. Dark-bellied brent geese in particular rely on functionally linked habitats (mainly grassland for foraging) outside the designated site boundary. The use of habitats outside the SPA / Ramsar by the geese has resulted in the Solent Waders and Brent Goose Strategy (SWBGS) and is mapped online<sup>49</sup> (an update with 2019 bird data has not yet been completed). However, the data provide an extensive evidence base that should inform in-depth assessments of proposed development sites that may also be functionally linked to the Chichester and Langstone Harbours SPA / Ramsar. Furthermore, Natural England's Supplementary Advice<sup>50</sup> for the SPA / Ramsar highlights that some supporting habitats for **all** qualifying species potentially lie outside the site boundary and must be kept in suitable condition for the SPA / Ramsar bird species.

<sup>49</sup> The bird distribution data underpinning the strategy can be accessed at: <https://solentwbgs.wordpress.com/page-2/> [Accessed on the 12/08/2020]

<sup>50</sup> Available at:

<https://designatedsites.naturalengland.org.uk/Marine/SupAdvice.aspx?SiteCode=UK9011011&SiteName=Chichester&SiteNameDisplay=Chichester+and+Langstone+Harbours+SPA&countyCode=&responsiblePerson=&SeaArea=&IFCAAarea=&NumMarineSeasonality=18> [Accessed on the 12/08/2020]

- 5.17 Southbourne Parish lies directly adjacent to the Chichester and Langstone Harbours SPA / Ramsar. SPA / Ramsar are most likely to use suitable land parcels close to the European site to minimise energy lost in flight. Therefore, provided that suitable habitats are available, Southbourne Parish is likely to be one of the primary off-site supporting areas for qualifying SPA / Ramsar bird species, in particular dark-bellied brent geese.
- 5.18 Therefore, LSEs of the Southbourne NP on the Chichester and Langstone Harbours SPA / Ramsar regarding the loss of functionally linked habitat cannot be excluded. The site is screened in for Appropriate Assessment.

## Atmospheric Pollution

- 5.19 The following policy has the potential to result in LSEs regarding the impact pathway atmospheric pollution:
- **Policy SB2 – Land East Of Southbourne Village** (provides for approx. 1,250 new dwellings in Southbourne Parish)
- 5.20 The Southbourne NP is a development plan that is subordinate to the Chichester Local Plan Review (CLPR), which covers the same time period as the NP. The HRA of the CLPR assessed the in-combination atmospheric pollution effects of the allocated growth on European sites. It concluded that the CLPR would have no adverse effects on the site integrity of the Solent Maritime SAC. The assessment concluded that a full Air Quality Impact Assessment (AQIA) was not required. Notwithstanding this, the impact pathway atmospheric pollution is reassessed here in relation to the Southbourne NP.

## Chichester and Langstone Harbours SPA / Ramsar

- 5.21 As identified in the previous chapter on impact pathways, the Chichester and Langstone Harbours SPA / Ramsar is sensitive to atmospheric pollution primarily due to its ground-nesting terns which rely on vegetated shingle, sand dunes or other bare ground nesting habitats. Atmospheric nitrogen deposition beyond the critical load (APIS identifies 8-10 kg N/ha/yr for coastal stable dune grasslands, the most sensitive habitat potentially used by terns) may lead to excessive vegetation growth and, ultimately to the loss of valuable nesting opportunities.
- 5.22 Two major roads traverse the Southbourne Parish on an east-west trajectory and run within 200m of the Chichester and Langstone Harbours SPA / Ramsar at several locations. The A259 (Main Road) runs parallel to the SPA / Ramsar and lies directly adjacent to the site near Bosham. The A27 (Havant Bypass) runs beyond 200m from the SPA / Ramsar but turns south-westerly to the south of Havant, where it lies immediately adjacent to the Farlington Marshes (part of the Chichester and Langstone Harbours SPA / Ramsar). Given the proximity to the proposed residential allocation, both roads are likely to be journey-to-work routes for future residents.
- 5.23 Overall, given the preliminary assessment above, LSEs of the Southbourne NP on the Chichester and Langstone Harbours SPA / Ramsar regarding atmospheric pollution cannot be excluded. The site is screened in for Appropriate Assessment.

## Solent Maritime SAC

- 5.24 The Solent Maritime SAC largely overlaps with the Chichester and Langstone Harbours SPA / Ramsar. As discussed in the earlier impact pathway section, the Solent Maritime SAC is designated for a range of habitats, all of which are sensitive to atmospheric nitrogen deposition. However, the most sensitive habitats (perennial vegetation of stony banks – critical load of 8-15 kg N/ha/yr; shifting dunes with *Ammophila arenaria* – 10-20 kg N/ha/yr) only occur locally in small patches. The most widely distributed qualifying habitats that are sensitive to nitrogen deposition are the Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*) and *Salicornia*, both of which have critical nitrogen loads of 20-30 kg N/ha/yr.
- 5.25 Given the geographic overlap with the Chichester and Langstone Harbours SPA / Ramsar, the two roads identified in relation to the SPA / Ramsar (the A259 near Bosham and the A27 south of Havant) are also the most relevant in relation to the Solent Maritime SAC. Given the proximity

to the proposed residential allocation, both roads are likely to be journey-to-work routes for future residents.

- 5.26 Overall, given the preliminary assessment above, LSEs of the Southbourne NP on the Solent Maritime SAC regarding atmospheric pollution cannot be excluded. The site is screened in for Appropriate Assessment.

## 6. Appropriate Assessment

### Introduction

- 6.1 The law does not prescribe how an Appropriate Assessment (AA) should be undertaken or presented but the AA must consider all impact pathways that have been screened in, whether they are due to policies alone or to impact pathways that 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 Southbourne NP allocates 1,250 dwellings on Land East of Southbourne Village and this extent of growth is large enough to have the potential for Likely Significant Effects (LSEs) alone, such as may be the case regarding the impact pathways recreational pressure and loss of functionally linked habitat (discussed below). Furthermore, LSEs must also be discussed in-combination, taking account of the growth in parishes surrounding Southbourne Parish. The Chichester Local Plan Review (CLPR) provides for 12,478 new dwellings between 2016 and 2035, of which up to 1,250 dwellings are to be provided in Southbourne Parish. Therefore, the CLPR provides an appropriate starting point to assess in-combination effects on European sites. Overall, the growth in Southbourne Parish accounts for significant portion (approx. 10%) of the residential development expected in those parts of Chichester District that fall within the planning control of Chichester District Council, using the figures from the last Local Plan consultation.
- 6.3 The HRA screening exercise undertaken in Chapter 5 and Appendix A Table 5 indicates one policy for which Likely Significant Effects on European Sites cannot be excluded, including the impact pathways loss of recreational pressure, water quality, water level, loss of functionally linked habitat and atmospheric pollution. This is Policy SB2. These impact pathways are discussed in turn below.
- 6.4 The assessment discussed in this section is inherently undertaken 'in combination' with other plans and projects as all the impact pathways discussed (recreational pressure, water quality, water levels and flows and air quality) all only arise when growth across Chichester district and further afield is considered 'in combination' (i.e. cumulatively). The only potential impact pathway that would arise from growth in Southbourne Neighbourhood Plan alone (depending on the location of development sites) is the loss of functionally-linked land for Brent goose and waders.

### Recreational Pressure

#### Chichester and Langstone Harbours SPA / Ramsar

- 6.5 The Chichester and Langstone Harbours SPA / Ramsar lies directly adjacent to the boundary of Southbourne Parish. In particular, the major residential site allocated under Policy SB2 (Land east of Southbourne Village) lies only approx. 934m (measured as a straight-line distance) from the nearest point in the SPA / Ramsar. This is within the distance that new residents are likely to walk from their homes. As such, the Southbourne NP has the potential to lead to an increase in recreational pressure in the SPA / Ramsar, especially in-combination with other residential growth coming forward in the Solent over the NP period. This is particularly important in the context of the existing high visitation rates to the Solent. Recreational pressure is likely to disturb overwintering waterfowl and waders, affecting their foraging patterns and potentially the long-term viability of the SPA / Ramsar bird populations.
- 6.6 The Solent coastline – important feeding grounds for an internationally important assemblage of waders and wildfowl – must fulfil a dual role of nature conservation and provision of recreation opportunities. Given that the coastline is already highly urbanised and frequently accessed, the provision of further housing is likely to result in detrimental effects on the Solent's protected waders and waterfowl. Consequently, the Solent Forum started the Solent Disturbance and Mitigation Project (SDMP) to quantify how human recreation influences birds now and likely will in the future. The SDMP comprises three distinct phases, each with bespoke aims:

- Phase I of the SDMP collated existing data on the distribution of housing and human recreation in the Solent, assessed stakeholder opinion on the importance of human disturbance on birds, collated bird distribution and abundance data, and outlined potential measures to mitigate recreational pressure.
  - Phase II of the SDMP built up a new comprehensive evidence base on recreation effects in Solent's European sites, including a visitor survey to identify access patterns, a survey to evaluate bird responses to disturbance, a household survey to predict future visitor rates with increased housing and a study modelling the effects of disturbance on the survival of SPA / Ramsar birds
  - Phase III of the SDMP set out the cornerstones of an Avoidance and Mitigation Strategy for the Solent, including key interventions such as a delivery officer role, a wardening team, a coastal dog project and provision of Suitable Alternative Greenspaces (SANGs). Those measures within the Solent SPAs are delivered by Bird Aware Solent.
- 6.7 The closest access point to the Chichester and Langstone SPA / Ramsar from Southbourne Parish is a car park to the south of Prinsted (Southbourne / Prinsted; section 72 in Footprint Ecology's 2010 visitor survey), directly adjacent to mudflats that form part of the European site. Compared to other parts of the Solent, particularly in the vicinity of major conurbations, Southbourne / Prinsted was one of the less busy survey locations. The most popular recreational activities undertaken by interviewees were dog walking (27 of 31 interviewees, 87.1%) and walking (26 of 31 interviewees, 83.9%). Interviewees could provide multiple responses to account for recreational activities they might undertake on another visit. The survey report also calculated the linear Euclidean distance travelled from home postcodes of interviewees to the Southbourne / Prinsted survey location. The 75<sup>th</sup> percentile of people visiting by car travelled 9.5km to the survey point, whereas the 75<sup>th</sup> percentile of people visiting on foot walked 0.6km from home. The Southbourne / Prinsted survey point, which is most relevant to the Southbourne NP due to its proximity, provides supporting evidence that coastal European sites attract local residents as well as people from further afield. Clearly, the residential site allocated within the Southbourne NP has the potential to contribute to recreational pressure in the Chichester and Langstone Harbours SPA / Ramsar, although Southbourne's contribution is likely to be much lower than that of the larger settlements along the south coast (e.g. Portsmouth City and the town of Havant). Notwithstanding this, given the existing high levels of recreational use, Southbourne Parish's contribution could be significant 'in-combination' with growth anticipated for the wider Solent region.
- 6.8 A study by Stillman et al. (2012) (part of Phase II of the SDMP) predicted future increase in recreational use along the Solent and the implications of this for SPA / Ramsar birds. The model for Chichester Harbour showed that a 15-20% increase in visitors was predicted, less than for highly urbanised parts of the Solent (e.g. Southampton Water) but more than in the north-west Solent. The same study modelled the predicted visitor rates per ha under different housing scenarios. It was determined that the visitor rate was below 30 people/ha (the visitor rate above which birds may have reduced survival due to disturbance) for most coastal sections in Chichester Harbour, except for Northney to Langstone Bridge and Bosham Shipyard to Southwood Farm. This is important because this indicates that the currently expected future in-combination housing growth is not threatening the SPA's / Ramsar's bird populations. It is to be noted that data from intertidal invertebrate surveys show that there is a relatively low density of worms and bivalves in Chichester Harbour compared to Southampton Water. This likely implies that additional recreational disturbance would have a more profound effect in the SPA / Ramsar as displaced birds may struggle to find sufficient foraging resources in non-disturbed patches of the site.
- 6.9 Phase III of the SDMP focussed on providing an avoidance and mitigation package, tailored to the specific recreational impacts that were identified in Phases I and II. The paper also developed a concept for the implementation, monitoring and management of mitigation, drawing on precedence from the Thames Basin Heaths and the Dorset Heaths. The overall aim of this strategy was to enhance the existing recreation opportunities without compromising the integrity of Solent's European sites. The following key deliverables were proposed:

- Delivery officer role

- Wardening / ranger team
  - Coastal dog project
  - Review of parking across the Solent
  - Review of watersports zones in combination with a permit system / enforcement
  - SANGs / additional greenspaces
  - Site-specific projects (e.g. limiting access to the most sensitive areas)
- 6.10 This extensive evidence base and the strategy proposed to mitigate recreational pressure, culminated in the Solent Recreation Mitigation Strategy (SRMS) published by the Solent Recreation Mitigation Partnership in December 2017 and delivered by Bird Aware Solent. The strategy set out that all housing applications within 5.6km of Solent's European sites are to provide financial contributions to the mitigation package. The averaged baseline contribution to be paid by developers was calculated to be £564 per dwelling, to be increased on the 1<sup>st</sup> of April of each year in line with the Retail Price Index. Because larger developments can accommodate more people it was also decided that a sliding scale of contributions, based on the number of dwellings, would be used (for further details please see the SRMS).
- 6.11 An assessment of the Southbourne NP shows that the plan contains broad protective policy wording regarding the mitigation of recreational pressure. **Policy SB19 (Mitigating Effects on European Designated Sites)** states that '*A. Development involving residential uses will be required to include proposals for avoiding/mitigating their effects on the SPA, SAC and Ramsar site at Chichester Harbour*'. The policy goes on to identify the existing evidence base and mitigation strategy: '*Proposals should be in accordance with the requirements of the Bird Aware Solent Strategy and the Solent Recreation Mitigation Strategy and include measures to avoid recreational disturbance on the Chichester Harbour SPA.*' This is positive policy wording because it obliges residential schemes (including Policy SB2) to pay appropriate financial contributions identified in the SMRS. This strategy has been developed to avoid adverse effects on the site integrity of Solent's European sites and, therefore, adhering to its requirements should protect the Chichester and Langstone Harbours SPA / Ramsar.
- 6.12 **Policy SB2 (Land East Of Southbourne Village)** identifies further detail on the green infrastructure requirements of residential developments. It specifies that '*The layout of the green infrastructure network contributes to the continued delivery of the Green Ring, enhancements to the Public Rights of Way network (PROW) and the Ham Brook Wildlife Corridor... and the policy area comprises at least 60% wildlife friendly green and blue space (excluding residential gardens)*'. This is a critical requirement because it is well known that the provision of locally accessible greenspace is a key step to help mitigate recreational pressure in sensitive European sites.
- 6.13 Overall, it is concluded that the Southbourne NP contains an appropriate policy framework to protect the Chichester and Langstone Harbours SPA / Ramsar from recreational pressure arising from future housing. However, in a previous iteration of the SNP, AECOM recommended to insert a more explicit statement into Policy SB19 to ensure that residential schemes coming forward will pay the appropriate per-dwelling tariff towards the SMRS mitigation package. It was advised that the following text (or similar) should be inserted into the policy: '***In accordance with the Bird Aware Solent Strategy all residential development within 5.6km of the Solent's European sites must pay an appropriate financial tariff (reviewed annually) based on the number of bedrooms in the development***'. **On the provision that this statement was included in the Southbourne NP, it was concluded that there will be no adverse effects on the integrity of the Chichester and Langstone Harbours SPA / Ramsar regarding recreational pressure.**
- 6.14 Review of the submission SNP confirms that the above policy wording has been incorporated into Policy SB19. Therefore, the conclusion of 'no adverse effect' on site integrity is affirmed.



## Water Quality

### Chichester and Langstone Harbours SPA / Ramsar

- 6.15 The Solent region is one of the most important refuges for wildlife in the United Kingdom, particularly overwintering birds of European importance, and comprises several European designated sites, including the Chichester and Langstone Harbours SPA / Ramsar directly adjoining Southbourne Parish. The high levels of nitrogen and phosphorus, deriving mostly from wastewater and agriculture, are currently adversely affecting the water quality in these designated sites by causing eutrophication. While the qualifying features of the European sites are the wildfowl species, changes in the water quality have the potential to reduce the viability of the birds via cascading effects on their food chains. Therefore, it is considered that a further deterioration of the water quality would represent a risk to the long-term integrity of these sites.
- 6.16 An Integrated Water Management Study (IWMS) was commissioned by the Partnership for Urban South Hampshire (PUSH) and demonstrated that there is considerable uncertainty whether new housing development, particularly after 2020, can be accommodated without having a detrimental effect on the water environment. It is also doubtful whether the proposed upgrades to wastewater treatment works will be sufficient to adequately protect the Solent from adverse impacts caused by treated sewage effluent. A review of evidence relating to designated sites in summer 2018, highlighted that many sites are classified as having unfavourable conservation status and are thus at risk from additional nutrient input.
- 6.17 The underpinning scientific evidence for the IWMS originates from a 2018 Designated Sites review, which related the measured nitrogen levels in Solent's harbours to the distribution of phytoplankton and macroalgae, most importantly the percentage cover of opportunistic green macroalgae. The Chichester and Langstone Harbours SPA / Ramsar, the designated site most relevant to residential growth in Southbourne, is largely designated as unfavourable (due to macroalgal cover being > 75%) but recovering, as a large amount of wastewater, and therefore nutrients, is currently being diverted elsewhere.
- 6.18 To help mitigate the water quality crisis, Natural England (NE) has introduced several measures. For example, Defra's Catchment Sensitive Farming (CSF) programme works with farmers to reduce diffuse pollution from fertiliser and slurry run-off. Furthermore, Southern Water is upgrading their sewage treatment works to reduce the amount of phosphorus in sewage effluent. However, it is now known that the dissolved total nitrogen concentration / volume (both organic and inorganic forms) is the main driver of eutrophication in the marine environment.
- 6.19 Consequently, NE advises that new development must achieve nutrient neutrality, supported by nitrogen budget calculations, to ensure that there is no further net nutrient input to the Solent's European sites. These calculations involve key assumptions based on the most recent scientific evidence and research. They must be completed for all sites that will result in a net increase in population (i.e. residential homes, student accommodation, tourism attractions), and commercial / industrial sites with a change in land use that is likely to increase nitrogen output (e.g. pig / poultry farms). A series of Advice Notes on achieving nutrient neutrality for residential development have been published by NE, the latest one dating to June 2020. Effectively this note sets out the following calculation stages:
- Stage 1: Nutrient contribution from future treated wastewater effluent
  - Stage 2: Loss of existing nutrient input from the conversion of current land uses (NB: The greatest nutrient loss is achieved by converting dairy or agricultural land)
  - Stage 3: Nutrient input from future land use (e.g. nutrient leaching from urban surfaces)
  - Stage 4: Bringing Stages 1-3 together to calculate an overall nutrient balance
- 6.20 The 1,250 dwellings allocated under **Policy SB2 (Land East Of Southbourne Village)** represent a significant increase in Southbourne's population and its overall contribution of wastewater to the Chichester and Langstone Harbours SPA / Ramsar. Due to this, and to be in accordance with NE guidance, a nutrient budget for the site was calculated following the latest available Advice Note. The results for this calculation are summarised in Table 4.

**Table 4: Nutrient neutrality calculation for the site allocated in the Southbourne NP.**

Site allocation	Stage 1 – Nitrogen load in future wastewater effluent (kg/TN/day)	– Stage 2 – Loss of nitrogen due to conversion of existing uses (kg TN/ha/yr)	– Stage 3 – Loss of nitrogen input to the leachate of future land uses (kg TN/ha/yr)	– Stage 4 – Overall nutrient budget (kg TN/ha/yr)
SB2 (Land east of Southbourne Village)	843.15	3,050.74	1,146.29	-1061.3

- 6.22 Importantly, the data show that allocation SB2 (Land east of Southbourne village), the only site included in the NP, has a significant nitrogen deficit of 1061.3 kg TN/ha/yr. Therefore, from a nutrient neutrality perspective the Southbourne NP will not result in additional nitrogen discharge into the Chichester and Langstone Harbours SPA / Ramsar. It is to be noted that the site promoter and Chichester District Council have completed their own nutrient budgets for the site. For example, the site promoter’s calculation indicates a higher nitrogen deficit of 1,289.51 kg TN/ha/yr, while the Council’s deficit is lower. The differences in deficits obtained likely relate to differences in the detail on the development layout used in the calculations. Importantly, however, all three calculations forecast a net reduction in nitrogen released from the WwTW into the Chichester and Langstone Harbours SPA / Ramsar.
- 6.23 The large forecast deficit is primarily due to the land converted for the residential development being mainly used for cereal cropping, which has a high nitrogen loss rate of 31.2 kg N/ha. The nitrogen discharged in future wastewater effluent and leaching from urban surfaces is considerably less than the nitrogen currently contributed by the existing farming practices. Given the nitrogen deficit of the site, mitigation measures for the development will not be required.
- 6.24 The Southbourne NP also addresses the issue of nutrient neutrality in **Policy SB19 (Mitigating Effects on European Designated Sites)**: ‘*D. Proposals for development must also demonstrate the effectiveness of their nutrient neutrality measures to ensure no adverse impact on the Chichester Harbour receiving waters in accordance with Natural England’s latest guidance*’. This enables these calculations to be revised as necessary before any development is consented.
- 6.25 Another key prerequisite for maintaining the water quality in the Chichester and Langstone Harbours SPA / Ramsar is that the Wastewater Treatment Works (WwTW) infrastructure is sufficient to process the volume of wastewater from the future residential development. As part of the Environment Agency’s Review of Consents process every WwTW is issued an environmental permit for nitrogen discharge (typically in mg/l). The aim of this is to ensure that the ‘in-combination’ sewage effluent does not compromise the integrity of marine European sites. Therefore, planning consent may require an upgrade of the sewerage system or a more stringent level of nitrogen removal at the WwTW. Southern Water is the company for sewage treatment in Chichester District and will have to be contacted by the site promoter prior to the submission of any planning application.
- 6.26 Amec Foster Wheeler undertook a Water Quality Assessment (WQA) for Chichester District Council, the Local Planning Authority in which Southbourne Parish falls. The report assessed the growth scenarios proposed for Chichester District in the context of existing WwTW infrastructure (including Thornham WwTW) and ecological constraints. Importantly, the report determined that there is insufficient headroom at the WwTW to accommodate the 1,250 dwellings proposed on Land East of Southbourne. In particular, the Dry Weather Flow (DWF) would increase from currently 6,580 to 7,460m<sup>3</sup>/d by the end of the NP period in 2035, which is well above the consented maximum DWF of 6,565m<sup>3</sup>/d. A capacity improvement at Thornham WwTW will be required to accommodate the increase in sewage from future housing development.
- 6.27 The WQA further established that a tighter nitrogen permit may be required to mitigate additional input of nitrogen into the Solent due to this increase in DWF. Several measures to improve the quality of wastewater effluent are available for consideration (although these are less cost-

effective than biological denitrification). Such mitigation interventions at WwTWs may be augmented by catchment-scale approaches, such as agri-environment schemes, use of rural Sustainable Drainage Systems (SuDS) and reductions in fertiliser use. Potential upgrades at Thornham WwTW to accommodate the housing growth in Southbourne include:

- Air stripping of ammonia with high pH adjustment
- Breakpoint chlorination of ammonia into nitrogen gas
- Ion exchange
- Membrane separation (e.g. nanofiltration or reverse osmosis) to remove dissolved nitrogen compounds

6.28 The Southbourne NP already contains policy wording that is relevant to the protection of the water quality in the Solent, although it is not included specifically to address these issues. For example, **Policy SB22 (Adapting to Climate Change – Water Infrastructure and Flood Risk)** stipulates that development proposals will be supported provided *‘the sewer network can accommodate the additional demand for sewerage disposal either in its existing form or through planned improvements to the system to ensure sufficient wastewater treatment is in place in advance of the first occupation of the development.’* This is a key element for the protection of water quality as it ensures that the necessary infrastructure is in place **prior** to residential development being occupied and producing wastewater. Policy wording regarding the water efficiency of residential development is also included: *‘The Water Efficiency Standard of 110 litres per person per day as set out in the National Technical Standards will be achieved in new development to reduce the volume of wastewater entering the foul sewer’*. This part of the policy ensures that the volume of treated sewage effluent entering the Chichester and Langstone Harbours SPA / Ramsar is limited.

6.29 Overall, it is determined that the Southbourne NP contains policy wording that renders the plan compliant with the relevant statutory requirements. The NP ensures sufficient WwTW capacity, while also identifying that all residential developments in Southbourne must achieve nutrient neutrality. In conclusion, the Southbourne NP will not result in adverse effects on the site integrity of the Chichester and Langstone Harbours SPA / Ramsar regarding reduced water quality.

## Solent Maritime SAC

6.30 The Solent Maritime SAC is designated for a range of habitats and the Desmoulin’s whorl snail *Vertigo moulinsiana*. These qualifying features, to varying degrees, are all sensitive to negative changes in water quality. It is considered that the Atlantic salt meadows and annual species (e.g. *Salicornia*) are most likely to be affected by the discharge of treated sewage effluent. As highlighted in the previous section, nitrogen is the main limiting nutrient in the marine environment and Wastewater Treatment Works (WwTWs) are one of its most important contributors.

6.31 The Environment Agency Catchment Data Explorer identified that Southbourne Parish is situated near the outer edge of the Arun and Western Streams management catchment. Of the 40 water bodies in the catchment feeding into the Solent Maritime SAC, a large proportion of streams are not in good ecological status (2 water bodies in bad, 12 water bodies in poor and 24 water bodies in moderate condition). The predominant reason given for not achieving good water quality status is treated wastewater effluent. Furthermore, many of the qualifying habitats are in unfavourable condition (e.g. 100% of its sandbanks). Given the short distance between the WwTW responsible for Southbourne Parish and the SAC, it is also unlikely that natural attenuation processes will prevent most of the nutrients from reaching the intertidal habitats. This evidence highlights the importance for preventing a further deterioration in water quality of Solent’s European sites, especially the Solent Maritime SAC.

6.32 As set out in relation to the Chichester and Langstone Harbours SPA / Ramsar, NE has established a requirement of nutrient neutrality for all new residential dwellings within the catchment of Solent’s European sites, which is acknowledged in **Policy SB19 (Mitigating Effects on European Designated Sites)**. Since this entails that there will be no net increase in nitrogen input into the Solent, this will also protect the integrity of the Solent Maritime SAC. Table 4 shows that the Southbourne NP is in nitrogen deficit and will actually result in a decrease in

nitrogen discharge to the SAC. Furthermore, as was relevant for the Chichester and Langstone Harbours SPA / Ramsar, **Policy SB22 (Adapting to Climate Change – Water Infrastructure and Flood Risk)** of the Southbourne NP ensures that sufficient WwTW infrastructure will be in place to accommodate the wastewater produced as a result of the plan. This implies that the consent limit of the relevant WwTW will not be exceeded.

- 6.33 A significant increase in nutrient supply to the SAC might also lead to a reduction in the dissolved oxygen concentrations through eutrophication (for example through the excessive growth algal mats). Most qualifying features are sensitive to reduced DO concentrations, especially in the summer months. NE advises that the DO concentrations in the SAC should be kept at or above 5.7mg/l for 95% of the year. However, regular monitoring under the Water Framework Directive shows that the SAC has been classified as 'High Ecological Status' for at least 5 years since 2009. Notwithstanding the Southbourne NP, DO levels are not considered to be a current issue for the Solent Maritime SAC.
- 6.34 Overall, it is concluded that the Southbourne NP contains an adequate policy framework to prevent any further deterioration of the water quality in the Solent Maritime SAC. Therefore, it is concluded that there will be no adverse effects of the NP on the site integrity of the Solent Maritime SAC regarding water quality.

## Water Level

### Solent Maritime SAC

- 6.35 The Desmoulin's whorl snail, the only qualifying species of the Solent Maritime SAC, is particularly sensitive to saline conditions and thus to changes in the amount of freshwater that mixes with seawater in the tidal sections of the SAC. NE identifies that maintaining the water supply is critical to the snail and the qualifying habitats of the SAC. All qualifying features of the SAC are also sensitive to prolonged changes in turbidity due to the prevailing suspended solid concentrations. The turbidity is to be kept at natural fluctuations across all habitat features of the SAC.
- 6.36 One pathway through which the Southbourne NP might alter the saline concentration in the SAC is via changes in the volume of freshwater supplied from land sources. For example, new residential development will have to be supplied with potable water from groundwater or riverine abstractions, which could affect the hydrological regime of tributaries and – ultimately – reduce the amount of freshwater flowing into the SAC. Furthermore, an increase in impermeable urban surfaces near the SAC might accelerate surface runoff and could lead to increased turbidity in coastal waters.
- 6.37 A suitable starting point for assessing the potential impacts of water abstractions is the Water Resources Management Plan (WRMP) published by Portsmouth Water, the company responsible for water supply in Southbourne Parish. Considering the water supply-demand balance is critical because it highlights whether the existing abstraction headroom (which has already been consented) is in surplus over the entire NP period. A consistent surplus would mean that there could be no adverse effects on the integrity of the Solent Maritime SAC. However, the 2019 WRMP shows that the plan is in consistent deficit between 2019/20 and 2044/45, meaning that the water resources currently available for use are not sufficient to supply the anticipated growth during the WRMP period (this includes the Southbourne NP period).
- 6.38 Portsmouth Water undertook an appraisal of options that may address the supply-demand imbalance. These include positive improvements to the water supply infrastructure and usage, including water efficiency measures, smart metering, water conservation and leakage fixing. However, the company also proposes to increase the deployable output generated through groundwater abstraction (e.g. by deepening boreholes). An HRA was undertaken to assess the likely impact of increased abstraction volumes on European sites, including the Solent Maritime SAC. It ultimately concluded that the increase in deployable output at the relevant sources would not have a negative impact on European sites, as this still lies within the existing licensed abstraction volumes at the springs.

- 6.39 Given that the proposed site allocation 'Land east of Southbourne Village' is only approx. 590m from the SAC, it is considered that increased surface runoff and sedimentation rates from the new development might also affect the SAC. The Lumley and Ham Brook streams both run through Southbourne Parish and might carry some of the runoff to the Solent Maritime SAC. One of the most widely acknowledged measures to mitigate against surface runoff is the use of Sustainable Drainage Systems (SuDS), which provide a permeable pathway through urban surfaces and promote natural infiltration rates.
- 6.40 The Environment Agency now requires new development to incorporate Sustainable Drainage Systems (SuDS). SuDS are designed to manage stormwater as close to its source as possible, thereby mimicking natural drainage and encouraging infiltration and attenuation. These same systems can be used to manage the pollution risk from urban runoff. The Flood and Water Management Act (2010) makes it a legal requirement to install SuDS for the management of all surface water. Policy EQ1 of the SSLP makes reference to SuDS as a means to reducing flood risk and to mitigate the impacts of climate change.
- 6.41 **Policy SB2 (Land East of Southbourne)** of the initial version of the SNP that was reviewed, identified sustainable drainage as a requirement for the development: '*o) A sustainable drainage strategy is submitted which demonstrates how 4ha of natural flood management features will enhance the Ham Brook Wildlife Corridor and improve water quality in the Ham Brook Chalk Stream and Chichester Harbour*'. It was acknowledged that this already extends some protection to the Solent Maritime SAC regarding its water level. However, as a precautionary measure it was recommended to add an explicit reference to SuDS to the policy wording. This is because these systems use an established sequence of techniques to control flow velocity, including bespoke retention and infiltration systems.
- 6.42 The following adjusted wording was recommended for inclusion to Policy SB2: '***The development will also be required to install Sustainable Drainage Systems (SuDS) to reduce the potential for surface runoff impacts on the marine environment.***' While not introduced specifically regarding the Solent Maritime SAC, this policy wording would also extend protection to the SAC's water levels. **Provided the above policy wording is inserted into the Southbourne NP, it could be concluded that the NP will not result in adverse effects on the site integrity of the Solent Maritime SAC regarding water level.**
- 6.43 Review of the submission SNP confirms that the recommendation for inclusion of SuDS has been addressed in Policy SB2, albeit in slightly different wording. The following statement is now included in Policy SB2: '*A comprehensive drainage masterplan and sustainable drainage (SuDS) strategy is submitted to reduce the potential for surface water run-off impacts on the maritime environment.*' This affirms a conclusion of 'no adverse effect' on the site integrity of the Solent Maritime SAC regarding water level.

## Loss of Functionally Linked Habitat

### Chichester and Langstone Harbours SPA / Ramsar

- 6.44 Many of the Chichester and Langstone Harbour SPA's / Ramsar's qualifying species of waders and waterfowl are highly mobile and frequently travel beyond designated site boundaries. As such there is a mismatch between the coverage of European sites and the actual habitat requirements of some of the SPA / Ramsar bird species, particularly dark-bellied Brent geese. Therefore, it has become obligatory to assess the potential of plans to result in the permanent loss of functionally linked habitat.
- 6.45 Brent geese primarily feed on eelgrass, marine algae and sea lettuce. However, they tend to move to terrestrial feeding sites at high tide. This happens particularly in harsh winters when eelgrass dies back prematurely and competition for intertidal foraging resources increases. The geese preferentially feed on short, lush grassland that provides clear sightlines. However, they may also feed on agricultural land, which may partially regenerate as grassland in winter. Aside from suitable habitat, one of the primary predictors for site selection is distance from the coast. Brent geese expend a significant amount of energy travelling between foraging sites and it is therefore assumed that they seek to minimise flight distance.



- 6.46 Waders primarily rely on functionally linked habitats outside the SPA / Ramsar as roosting grounds at high tide, when foraging in the intertidal mudflats becomes unviable. Most wader species are gregarious and roost in large numbers (dunlin aggregate in their thousands). Roosting sites include saltmarsh, shingle banks and coastal grasslands. While neither Brent geese or waders primarily forage and / or roost on agricultural land, the Solent Waders and Brent Goose Strategy (SWBGS) nevertheless classifies agricultural land parcels as 'more suitable' for all these species. The Parish of Southbourne is relatively rural in nature and has a high coverage of agricultural land and, to a lesser extent, grassland. Therefore, many parts of the parish are potentially suitable as foraging and / or roosting habitat.
- 6.47 The Chichester and the Langstone Harbours SPA / Ramsar directly adjoins Southbourne Parish and it is likely that Brent geese and waders from the SPA / Ramsar would use suitable habitat in Southbourne Parish. A distribution of the terrestrial parcels linked to the Chichester and Langstone Harbours SPA / Ramsar (and other European sites in the Solent) is mapped on the SWBGS website. The current use of land parcels is classified as 'Core Area', 'Primary Support Area', 'Secondary Support Area', 'Low Use' and 'Candidate', which are based on species counts – among other parameters. It is noted that the SWBGS was recently updated and that the mapping does not reflect the most recent use classifications. Notwithstanding this, the data provide the most comprehensive ecological information currently available.
- 6.48 A review of the mapped land parcels within Southbourne Parish reveals that there are 8 functionally linked habitat parcels. Most of these (e.g. the Primary Support Area C9B and the Secondary Support Areas C9C and C41) lie adjacent to the SPA / Ramsar, meaning that birds only have to undertake short flights to reach their foraging grounds. The site allocated for residential development is not identified as functionally-linked land based on available data. However, another site (C45) further inland to the north-west of Southbourne village is identified as a Secondary Support Area. This site lies further away (approx. 683m) from the SPA / Ramsar than the site allocated for residential development (approx. 190m). Furthermore, C45 also comprises agricultural parcels and thus provides similar foraging habitat than the land allocated under Policy SB2 of the Southbourne NP. Therefore, while there is no reason to consider that the development site is functionally-linked land, given its proximity to the SPA and the presence of suitable habitat, surveys will be required to confirm that this does not function as significant functionally-linked habitats. Such survey data would also inform mitigation proposals if surveys do identify significant numbers of SPA birds.
- 6.49 In November 2018 AECOM undertook the HRA on the Chichester Local Plan Review, the strategic overarching planning document that covers the same time period as the emerging Southbourne NP. The HRA stated that '*Southbourne holds pockets of functionally linked habitat ranking from Primary Support Areas to Low Use. It is therefore considered that the allocation of c. 1,250 residential dwellings within the Parish could lead to the loss of this essential habitat*'. Policy text was recommended for the strategic site allocation in Southbourne to ensure the full robustness of the Local Plan Review policy framework: '*Provide mitigation to ensure the protection of the SPA, SAC and Ramsar site at Chichester Harbour including contributing to any... loss of functionally linked supporting habitat*'. However, the need for avoiding or mitigating the loss of functionally linked habitat is not yet reflected in the Southbourne NP. Therefore, it is advised that policy detail on the requirement for bird surveys and cross-referencing to Chichester District's Local Plan Review is inserted into a relevant policy of the NP.
- 6.50 It was recommended that the following text (or similar) is inserted into **Policy SB19 (Mitigating Effects on European Designated Sites)**: '**To meet the requirements of the Habitats Directive, the applicant for Land East of Southbourne Village is required to provide evidence that the development will not result in adverse effects on the integrity of the Chichester and Langstone Harbours SPA / Ramsar regarding the loss of functionally linked habitat. To demonstrate this, a survey of current site use by overwintering SPA / Ramsar birds will be required to assess if the land parcel supports a significant population of designated bird species. These non-breeding bird surveys will need to be undertaken during autumn, winter and spring. If habitat within the site or adjacent land are identified to support significant populations of designated bird species, avoidance measures and mitigation will be required, and the planning application will need to be assessed through a project specific Habitats Regulations Assessment to ensure that the development does not result in adverse effects on site integrity. It is acknowledged that this text is too long**

**to be contained in a policy. Therefore, the issue of functionally linked habitat loss should be acknowledged in Policy SB19 and it is recommended that the above paragraph is included as supporting text.**

- 6.51 Review of the submission SNP indicates that these recommendations have been included in this iteration of the plan. Policy SB19 makes reference to the loss of functionally linked habitat and the above text has been inserted into the supporting text of the policy. This confirms a conclusion of 'no adverse effect' on the integrity of the Chichester and Langstone Harbours SPA / Ramsar regarding the loss of functionally linked habitat.

## Atmospheric Pollution

### Road Network and Commuter Patterns in Relation to Southbourne Parish and Relevant European Sites

- 6.52 The two European sites that are identified as being potentially sensitive to atmospheric pollution arising from the Southbourne NP are the Chichester and Langstone Harbours SPA / Ramsar and the Solent Maritime SAC. As an initial stage of the Appropriate Assessment for this impact pathway, the road traffic network and the pattern of commuter traffic in relation to these European sites is established. Due to the fact that the two sites largely overlap and to avoid repetition, both sites are jointly discussed in this section.
- 6.53 The commuter roads that are likely to be most relevant for Southbourne Parish are the A259 and the A27. Both roads traverse the Parish on a west-east trajectory, offering connectivity with the main urban centres of Portsmouth City (in Portsmouth District), the town of Havant (Havant District) and the town of Chichester. Given that the opportunity for employment is likely to be limited in Southbourne Parish, it is expected that most new residents would commute to one of these conurbations along the Solent coast. The Department for Transport road traffic statistics show that both roads have a high traffic flow. On the A259, the 2018 Annual Average Daily Traffic (AADT) flow at traffic count point 78276 was 13,884 vehicle movements<sup>51</sup>. At count point 36296 on the A27, the AADT for the same year amounted to 69,911 vehicle movements<sup>52</sup>. This is significant because both roads pass within 200m of both the Chichester and Langstone Harbours SPA / Ramsar and the Solent Maritime SAC at several locations.
- 6.54 The commuting patterns involving Chichester District were assessed (note that this data is only available for Local Authorities but not Parishes) using Census 2011 data<sup>53</sup>. Due to the limited number of employment opportunities in Southbourne Parish, it is considered that only the outflow data is relevant to the Southbourne NP as very few individuals are expected to commute into the parish. The top four destinations for commuters from Chichester District (including Southbourne Parish) are Arun District (15.6% of the total of 12,530 out-commuters), Portsmouth District (10.2%), Waverley District (9.8%) and Havant District (9.7%). In relation to the European sites this is particularly important for commuters to the authorities of Arun, Portsmouth and Havant as all of these trips are likely to include either or both of the A259 and the A27.

### Chichester and Langstone Harbours SPA / Ramsar

- 6.55 The Chichester and Langstone Harbours SPA / Ramsar is designated for a wide range of overwintering waterfowl and wader species, and breeding sandwich tern, common tern and little tern. As highlighted in the Appropriate Assessment of water quality, none of these species are directly sensitive to atmospheric nitrogen deposition. Instead the main sensitivity is through indirect negative effects on the broad habitats of the SPA / Ramsar birds. Therefore, this section of the HRA investigates whether atmospheric pollution arising from the Southbourne NP – mainly due to vehicle emissions arising from commuter journeys of new residents – may lead to adverse effects on the site integrity of the Chichester and Langstone Harbours SPA / Ramsar.

<sup>51</sup> Available at: <https://roadtraffic.dft.gov.uk/manualcountpoints/78276> [Accessed on the 29/07/2020]

<sup>52</sup> Available at: <https://roadtraffic.dft.gov.uk/manualcountpoints/36296> [Accessed on the 29/07/2020]

<sup>53</sup> The commuter data for Chichester is available at: <https://www.nomisweb.co.uk/census/2011/WU03UK/chart/1132462326> [Accessed on the 29/07/2020]



- 6.56 Nesting terns are highly sensitive to nitrogen deposition because they lay their eggs in scrapes on bare ground. An increase in tall vegetation cover, the result of exceedances of critical nitrogen loads, will significantly reduce the nesting habitat available to terns and thus may compromise their reproductive rates. The Air Pollution Information System (APIS) identifies several habitat types that are used by terns, including acidic supralittoral sediment with an identified empirical critical nitrogen load of 8-10 kg N/ha/yr (it is to be noted that this is the CL for acid coastal stable dune grasslands, as there is no data for supralittoral sediment). Supralittoral sediment is a broad term encompassing a wide range of habitats above the high-water mark, including mud, sand and shingle.
- 6.57 It is assumed that terns preferentially nest in sand dunes or vegetated shingle. Therefore, detailed habitat mapping within the Chichester and Langstone Harbours SPA / Ramsar was consulted on MAGIC. No sand dune habitat was identified within 200m of the A259 'Main Road', the road most relevant to the proposed residential development in Southbourne. Indeed, the sand dune habitat that is closest to the A259 is a section on Hayling Island, approx. 4.6km from the road. According to [www.magic.gov.uk](http://www.magic.gov.uk) a section of vegetated shingle lies directly adjacent to the A27 in the adjoining Portsmouth District, within Farlington Marshes Nature Reserve. Any new residents of Southbourne that work in Portsmouth City (or elsewhere in that district) would pass this part of the SPA / Ramsar, as this lies along the quickest route identified on navigation software (e.g. Google Maps, Waze). However, scrutiny of aerial photography suggests that this is a mapping area as no vegetated shingle is visible in Farlington Marshes Nature Reserve. The Chichester Local Plan HRA is still ongoing. However, a detailed traffic and air quality impact assessment was undertaken for Havant's Local Plan<sup>54</sup>. This considered the SPA adjacent to the A27. Table 3-6 of that report discusses ground truthing undertaken for the HRA and for the relevant part of Farlington Marshes no vegetated shingle is mentioned, which supports the view that this is a mapping data error.
- 6.58 The Havant report also states that '*BTO core count data indicates no records of little tern or Sandwich tern within Langstone Harbour...*' but that '*There are two local sites within Langstone Harbour which are known to have suitable habitat for supporting tern species and for which anecdotal references to breeding common terns exist. One is West Hayling Local Nature Reserve, [the other is] Langstone Harbour Nature Reserve, an RSPB managed site... to the east and south-east of Farlington Marshes. Management of this site has been undertaken in the last decade to improve the quality of breeding habitat for terns, primarily aimed at encouraging little terns to nest.*
- 6.59 *The areas predicted to exceed the screening thresholds overlap the northern-most island within this reserve; however, no suitable breeding habitat for common tern is present within this area. In addition, BTO core count data indicates records of common tern have only been made for the 14/15 monitoring season at a peak count of 4 individuals. Whilst records of common tern have only been made during one monitoring season in Langstone Harbour, annual recordings of the species have been made at the adjacent Chichester Harbour. Given the isolated single-year record of this species at Langstone Harbour, and the preference of common tern for Chichester Harbour, any impacts to potentially suitable breeding habitat within the areas of exceedance are unlikely to cause adverse effects to this species.'*
- 6.60 This indicates that no adverse effect from traffic growth on the A27 is likely to occur to the tern nesting feature of Chichester & Langstone Harbours SPA and Ramsar site.

## Solent Maritime SAC

- 6.61 The Solent Maritime SAC is designated for several habitats, most importantly including shifting dunes along the shoreline (*Ammophila arenaria*), *Salicornia* colonizing mud and sand and Atlantic salt meadows (*Glauco-Puccinellietalia maritima*). According to APIS the shifting dunes are the most sensitive SAC habitats with a critical nitrogen load of 10-20 kg N/ha/yr. However, relative to the SAC area, these dunes occur in relatively small isolated patches. For the other habitats, APIS identifies 20-30 kg N/ha/yr as the critical nitrogen load representative of saltmarsh. Exceedance impacts of these critical loads include an increase in late successional species, increased ecosystem productivity and an increased dominance of graminoids.

<sup>54</sup> <https://www.havant.gov.uk/sites/default/files/documents/Air%20Quality%20Habitat%20Regulations%20Assessment.pdf>

- 6.62 MAGIC was consulted to identify patches of saltmarsh within 200m of the A259 and the A27, the major roads leading along the Solent Maritime SAC. It was determined that several sections of saltmarsh fall within 200m of these roads. For example, saltmarsh lies adjacent to the A259 to the east of Nutbourne at Prospect Farm and at approx. 150m distance towards Broadbridge. Furthermore, saltmarsh habitat is located within a few metres of the A27 to the south-east of Havant near the Farlington Marshes.
- 6.63 However, the current average deposition rates to the saltmarsh are 10.9 kg N/ha/yr, which is well below the relatively stringent lower critical load level of 20 kg N/ha/yr. Even the maximum nitrogen deposition of 18.4 kg N/ha/yr does not exceed the lower critical threshold. This relatively low deposition rate should be viewed in the context of the improving background air quality as a result of Government initiatives, such as the further roll-out of the Euro6/VI emission standards. This is supported by the deposition trends available on APIS, which show that NO<sub>x</sub> deposition has gradually decreased since 2012, although there has been a very small increase between 2016 and 2017.
- 6.64 Furthermore, as discussed in the HRA of the Chichester Local Plan Review, the experimental studies that have informed the selection of the minimum critical nitrogen load (20 kg N/ha/yr) for saltmarsh did not employ very realistic scenarios. APIS identifies that the studies '*neither used very realistic N doses nor input methods i.e. they have relied on a single large application more representative of agricultural discharge*<sup>55</sup>'. Atmospheric nitrogen deposition rates are likely to be much lower and to occur over a shallower gradient. Furthermore, APIS states that for coastal saltmarshes nitrogen deposition from other sources is likely to be far more impactful than deposition from the atmosphere. For example, saltmarsh is likely to receive much larger nitrogen flushes from marine, fluvial and agricultural sources. This is supported by data on the source apportionment of nitrogen deposition, which lists livestock, European imports, international shipping and fertiliser as greater sources than road transport. APIS also stipulates that '*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*'. Given the relatively low sensitivity of saltmarsh to atmospheric nitrogen deposition, the improving background concentrations of nitrogen and the policy framework contained in the Southbourne NP (discussed in the next section), it is concluded that the NP will not result in adverse effects on the site integrity of the Solent Maritime SAC regarding atmospheric pollution.

## The Southbourne NP

- 6.65 Although no mitigation is identified as being required, the Southbourne NP contains several policies that are likely to improve the air quality and reduce atmospheric nitrogen deposition in the Parish. **Policy SB18 (Sustainable Transport and Active Travel)** stipulates that major developments (such as the one allocated under Policy SB2) must apply Manual for Streets principles, which prioritise pedestrians and cyclists over other road users. Importantly, the layout design of developments must provide permeability through a network of streets and greenspaces. The policy also requires proposals to develop effective travel plans and increase the accessibility to the Southbourne Railway Station. It is considered that these policy requirements are likely to contribute to an improving air quality in the Parish.
- 6.66 Another policy that is likely to have positive impacts on air quality is **Policy SB13 (Green and Blue Infrastructure Network)**. This policy promotes a Green Ring around and through the village of Southbourne, permeated by off-street footpaths and cycleways. The policy text clarifies that '*the Green Ring will form a central and defining multi-functional landscape feature of the new development, creating opportunities to enhance outdoor sport, recreation and play, improve pedestrian and cycle connectivity to the community hub, schools, the railway station and access across the railway line.*' Improving the connectivity around Southbourne Parish is a prerequisite for encouraging new residents to use active travel modes. Improving sustainable access to local facilities is likely to help curb vehicle emissions as these are journeys that residents may undertake several times per day.

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<sup>55</sup> <http://www.apis.ac.uk/node/968> [Accessed on the 29/07/2020]

6.67 Overall, it is concluded that the Southbourne Neighbourhood Plan will not result in adverse effects on the integrity of Chichester & Langstone Harbours SPA/Ramsar or Solent Maritime SAC through traffic related air quality.

## 7. Conclusions

7.1 Overall, this HRA undertook an Appropriate Assessment of the impact pathways recreational pressure, water quality, water level, loss of functionally linked habitat and atmospheric pollution, in relation to the Chichester and Langstone Harbours SPA / Ramsar and the Solent Maritime SAC. While AECOM considered that the SNP already had strong protective policy wording in place, the following three recommendations were made for adjustment to policies and plan text, as follows:

- Regarding recreational pressure, it is recommended to insert a more explicit statement into Policy SB19 to ensure that residential schemes coming forward will pay the appropriate per-dwelling tariff towards the SMRS mitigation package. It is advised that the following text (or similar) is inserted into the policy: *'In accordance with the Bird Aware Solent Strategy all residential development within 5.6km of the Solent's European sites must pay an appropriate financial tariff (reviewed annually) based on the number of bedrooms in the development'*.
- Regarding water quality, the following adjusted wording could be added to Policy SB2: *'The development will also be required to install Sustainable Drainage Systems (SuDS) to reduce the potential for surface runoff impacts on the marine environment.'* While not introduced specifically regarding the Solent Maritime SAC, this policy wording would also extend protection to the SAC's water levels. Provided the above policy wording is inserted into the Southbourne NP, it could be concluded that the NP will not result in adverse effects on the site integrity of the Solent Maritime SAC regarding water level.
- Regarding functionally-linked land, it is recommended that the following text (or similar) is inserted into Policy SB19 (Mitigating Effects on European Designated Sites): *'To meet the requirements of the Habitats Directive, the applicant for Land East of Southbourne Village is required to provide evidence that the development will not result in adverse effects on the integrity of the Chichester and Langstone Harbours SPA / Ramsar regarding the loss of functionally linked habitat. To demonstrate this, a survey of current site use by overwintering SPA / Ramsar birds will be required to assess if the land parcel supports a significant population of designated bird species. These non-breeding bird surveys will need to be undertaken during autumn, winter and spring. If habitat within the site or adjacent land are identified to support significant populations of designated bird species, avoidance measures and mitigation will be required, and the planning application will need to be assessed through a project specific Habitats Regulations Assessment to ensure that the development does not result in adverse effects on site integrity.'* It is acknowledged that this text is too long to be contained in a policy. Therefore, the issue of functionally linked habitat loss should be acknowledged in Policy SB19 and it is recommended that the above paragraph is included as supporting text.

7.2 It was considered that once these changes are made, the Neighbourhood Plan would contain a sufficient policy framework to ensure that no adverse effects would arise on European sites in combination with other plans and projects. Review of the submission version of the SNP highlights that all the above recommendations have now been incorporated in the plan, reaffirming a conclusion of 'no adverse effect' on the Chichester and Langstone Harbours SPA / Ramsar and Solent Maritime SAC.

# Appendix A

**Table 5. Screening table showing the Test of Likely Significant Effects (LSEs) results of policies contained within the Southbourne Neighbourhood Plan. Where a screening result is shaded in green there will be no LSEs on European sites. Orange shading means that there is a potential for LSEs on European sites from the impact pathways identified in the box.**

Policy	Description	Test of Likely Significant Effects (LSEs)
<b>A great place for everyone...</b>		
<b>Policy SB1: Development within and outside the settlement boundaries</b>	<p>A. The Neighbourhood Plan will support sustainable development proposals located inside the Settlement Boundaries of Southbourne/Prinsted, Nutbourne West and Hermitage/Lumley/Thornham, as shown on the Policies Map, provided they accord with other provisions of the Neighbourhood Plan and development plan.</p> <p>B. Development proposals outside the settlement boundaries will be required to conform to development plan policies in respect of the control of development in the countryside. All proposals should avoid the actual or perceived coalescence of the settlements nor should they undermine the distinctive character or qualities of the Chichester Harbour AONB.</p> <p>C. All proposals will be expected to support the delivery of the Green Infrastructure Network and 'Green Ring' as defined in policy SB13 where they lie within or adjacent to its location.</p>	<p>There are no Likely Significant Effects of this policy on European sites.</p> <p>This is a development management policy that sets the requirements development proposals within and outside of settlement boundaries must fulfil to be supported.</p> <p>The policy does not provide for a location and / or quantum of residential or employment development.</p> <p>Policy SB1 is therefore screened out from Appropriate Assessment.</p>
<b>Policy SB2: Land east of Southbourne Village</b>	<p>A. The Neighbourhood Plan allocates land east of Southbourne village, as shown on the Policies Map, for a green infrastructure led, zero carbon, residential mixed use scheme.</p> <p>B. Development proposals will be supported, provided they comprise the following:</p> <p>a) They are supported by a single comprehensive masterplan framework prepared with the active participation of the community in accordance with Local Plan Policy 7 or any successor policy and</p>	<p>Likely Significant Effects of this policy on European sites cannot be excluded.</p> <p>This is a housing policy that delivers approx. 1,250 dwellings on land east of Southbourne village. Importantly, the policy stipulates a requirement for a multifunctional green ring that offers a central point for sports and greenspace for other outdoor activities.</p> <p>Furthermore, the policy also sets out that a nitrate neutrality strategy is required in relation to the nearby Chichester and Langstone Harbour SPA / Ramsar, following Natural England's</p>

submitted for approval to the District Council prior to the determination of any subsequent applications on the allocated land;

b) The developable land will deliver at least 1,250 homes at an average density of 30 dph and of a mix of housing types and tenures which accord with Policy SB4;

c) At least 1 Ha of serviced land provided for self-build/custom build homes to be delivered as part of the first phase with further serviced plots delivered in accordance with the phasing strategy and Policy SB5, and at least 1 Ha of land provided for community-led affordable housing for sale and rent;

d) A minimum of 3.3ha of land that meets the Local Dedication Authority criteria for a 2 Form Entry (FE) expandable to 3FE primary school with on-site early years provision and a special support centre with safe walking and cycling access from both the existing village and the new development;

e) The scheme delivers a centrally located community facility, including health facilities, retail, an enterprise hub including flexible workspace, which together will complement and support the facilities in other parts of Southbourne;

f) A multifunctional "Green Ring" forming a central feature incorporating play, sports pitches and pavillion, allotments, green space and fully accessible footpaths, cycle and bridleways that serves existing and new residents; and,

g) Provision for, and contribute to delivering as soon as possible during the construction period, a new road and cycle bridge over the railway line. In the first phase of development a new station car park and cycle racks to be delivered along with a footbridge to connect to the land safeguarded by SPNP1 at Priors Orchard. Together these will improve connectivity with the rail station and reduce severance between land north and south of the railway line.

C. Development will be subject to the following requirements:

latest guidance on the issue. The scheme is also required to be in keeping with the treatment capacity of the local Wastewater Treatment Works.

Notwithstanding the positive policy framework, Policy SB2 is associated with the following impact pathways:

- Loss of functionally linked habitat
- Recreational pressure
- Water quality
- Water level (through abstraction)
- Atmospheric pollution

Policy SB2 is therefore screened in for Appropriate Assessment.

- h) To manage the proper planning and delivery of the development proposals, the masterplan must incorporate the highest standards of 'place making', address all of the allocated land, and comprise a land budget, infrastructure strategy and phasing plan;
- i) A passive design capacity assessment is prepared at an early stage of masterplanning and submitted to demonstrate how opportunities to reduce the energy use intensity (EUI) of buildings to secure 'zero carbon ready' development over the plan period have been maximised in accordance with the energy hierarchy and other measures set out in Policy SB20;
- j) A landscape and visual impact assessment is submitted setting out how impacts on key views from the South Downs National Park and Chichester Harbour AONB have been protected and enhanced, and coalescence with the settlement of Nutbourne West avoided;
- k) The layout and location maximise the opportunities to connect the scheme into the existing fabric of the village by walking and cycling in line with Policy SB18;
- l) The layout of the green infrastructure network contributes to the continued delivery of the Green Ring, enhancements to the Public Rights of Way network (PROW) and the Ham Brook Wildlife Corridor, as set out in Policy SB13 and the policy area comprises at least 60% wildlife friendly green and blue space (excluding residential gardens) including significant new woodland creation of a type that meets the Woodland Carbon Code for carbon sequestration set out in Policy SB21;
- m) A biodiversity strategy is submitted that demonstrates how at least a 10% biodiversity net gain will be achieved and how existing environmental assets, as set out in Policy SB14, will be protected and enhanced and integrated within the scheme;
- n) A green travel plan is submitted setting out how the scheme will encourage and enable non-car trips within and beyond the village for



	<p>education, commuting, shopping and leisure which contribute to the ‘net’ zero carbon vision;</p> <p>o) A full Transport Assessment is submitted to demonstrate the capacity of the local highway network to accommodate the scale of development proposed, having particular regard to the capacity of the Stein Road and Inlands Road level crossings;</p> <p>p) A full heritage impact assessment is submitted which identifies and assesses the significance of heritage and archaeological assets and, where appropriate, a field evaluation to establish the significance of potential archaeological assets and, where necessary, mitigation measures adopted to conserve them in a manner appropriate to their significance;</p> <p>q) A comprehensive drainage masterplan and sustainable drainage (SuDS) strategy is submitted to reduce the potential for surface water run-off impacts on the maritime environment. This should include approx. 4 Ha of natural flood management features to mitigate existing downstream fluvial flooding, include proposals to enhance the Ham Brook Wildlife Corridor and improve water quality in the Ham Brook Chalk Stream and Chichester Harbour;</p> <p>r) A nutrient neutrality strategy is submitted in accordance with latest Natural England guidance and the phasing of the scheme takes into account the phasing of capacity improvements to the sewerage network and wastewater treatment capacity, and</p> <p>s) A Waste Infrastructure Statement and a Mineral Resource Assessment is submitted which has regard latest Minerals and Waste Safeguarding Guidance.</p>	
<p><b>Policy Protecting and supporting community facilities and local shops</b></p>	<p><b>SB3: and facilities</b></p> <p>A. The retention and enhancement of local services and community facilities including shops, pubs, food outlets, health and commercial services will be supported. Proposals involving the loss of facilities will not be supported unless it can be demonstrated that they are no longer financially viable in line with the provision of the relevant Local Plan policies.</p>	<p>There are no Likely Significant Effects of this policy on European sites.</p> <p>This is a policy that protects existing brownfield sites as community facilities, including shops, village hall and sports facilities. However, since this is existing urban development, it will not add anything to existing impact pathways.</p>

<p>B. In addition, proposals to change the use of a facility or part of a facility that is surplus to requirements must demonstrate that all reasonable steps have been taken to retain its present use and community value as a viable concern.</p> <p>C. Proposals to extend an existing community or retail facility will be supported, provided they are consistent with the relevant policies of the development plan. Expansion of retail facilities must be accompanied by adequate parking.</p>	<p>The policy does not provide for a location and / or quantum of additional residential or employment development.</p> <p>Policy SB3 is therefore screened out from Appropriate Assessment.</p>
<p><b>A great place to live and work...</b></p>	
<p><b>Policy SB4: Meeting local housing need</b></p> <p>A. Proposals for residential development will need to consider a mix of housing types and tenures to reflect the identified local housing needs in the Parish and demonstrate how the types of dwellings provided will help ensure a balanced mix of housing for Southbourne in line with Policy DM2 of the Local Plan Review or successor policy. These should include discounted market sales homes and other affordable routes to home ownership and affordable rent to provide homes for newly forming households in the parish.</p> <p>B. The provision of 2 or 3 bed dwellings suitable for younger households is encouraged to meet the significant local need for smaller dwellings, as are accessible purpose-designed C3 dwellings and extra-care accommodation to enable people to downsize and remain in the parish. The precise housing mix will be determined on a site-by-site basis.</p> <p>C. Policy SB2 requires housing on a minimum of 1ha of land to be controlled by a Southbourne Community Land Trust, or equivalent body, for which an appropriate lettings policy will be agreed between the Trust and the District Council. For the remaining general affordable homes, the adopted Local Lettings Policy will apply.</p>	<p>There are no Likely Significant Effects of this policy on European sites.</p> <p>This is a housing management policy that identifies the housing mix and type of tenure to be delivered, including the provision of 2 or 3 bedroom dwellings for younger households. However, the type of housing has no bearing on the impact pathways identified in relation to Policy SB2.</p> <p>The policy does not provide for a location and / or quantum of additional residential or employment development.</p> <p>Policy SB4 is therefore screened out from Appropriate Assessment.</p>
<p><b>Policy SB5: Self build and custom build housing</b></p> <p>A. The provision of self-build and custom build plots within the SB2 allocation will be supported to meet the identified demand on the District Council's self-build register unless such provision is proven to be unviable. Subject to the identified size and type needed, a mixture of 2, 3 and 4 bed houses and bungalows would be desirable.</p>	<p>There are no Likely Significant Effects of this policy on European sites.</p> <p>This is a development management policy further specifying the nature of some of the housing to be delivered under Policy SB2. However, the nature of housing, such as whether it is self-build or</p>

	<p>B. Serviced plots must be actively marketed to individuals and reasonably priced to reflect prevailing market conditions. Where serviced plots have been made available and marketed appropriately for at least 12 months and have not sold, the plot(s) may either remain on the open market for self-build/custom build or be offered to the Parish Council or a Housing Association for a further six months, before being disposed of or built out by the developer.</p>	<p>custom, has no bearing on the impact pathways identified in relation to Policy SB2.</p> <p>The policy does not provide for a location and / or quantum of additional residential or employment development.</p> <p>Policy SB5 is therefore screened out from Appropriate Assessment.</p>
<p><b>Policy SB6: Using scarce employment land efficiently</b></p>	<p>A. Proposals to intensify employment sites within the settlement boundaries in established employment E, B2, B8 use, including Clovelly Road/Park Road Industrial Estate will be supported provided it can be demonstrated that they can be accommodated without causing significant harm to local amenity.</p> <p>B. Proposals for new employment E and/or B2) uses on brownfield land in the settlement boundaries will be supported to reflect changing trends in employment, provided it can be demonstrated they will achieve a minimum employment density of 1 full time equivalent (FTE) job per 40 sq.m. net internal area and that they accord with all other relevant development plan policies including those intended to safeguard tourism development.</p>	<p>There are no Likely Significant Effects of this policy on European sites.</p> <p>This is a development management policy that supports the intensification of existing employment land and the provision of employment land on existing brownfield sites. However, the respective sites are already developed and have no potential to result in the loss of functionally linked habitat.</p> <p>Importantly, the policy does not provide for an additional quantum of employment development.</p> <p>Policy SB6 is therefore screened out from Appropriate Assessment.</p>
<p><b>Sensitively planned, with our landscape and heritage protected and celebrated...</b></p>		
<p><b>Policy SB7: Managing design in Southbourne Parish</b></p>	<p>A. Development proposals will be supported, providing their scale, density, massing, height, landscape design, layout and materials, including alterations to existing buildings, and reflect and enhance the architectural and historic character of the area. Buildings of an outstanding or innovative design which promote high levels of sustainability or help raise the standard of design will be supported as long as they fit with the overall form and layout of their surroundings.</p> <p>B. All proposals should demonstrate high quality design. Development that fails to take the opportunities available to enhance the local character and quality of the area, or that undermines the landscape character of the gaps between settlements, will not be supported.</p>	<p>There are no Likely Significant Effects of this policy on European sites.</p> <p>This is a design management policy addressing the scale, density, height, landscape design, layout and material use of development proposals. It details that all proposals must be in keeping with the current character of Southbourne Parish and protect the AONB.</p> <p>The policy does not provide for a location and / or quantum of residential or employment development.</p> <p>Policy SB7 is therefore screened out from Appropriate Assessment.</p>

	<p>C. Within the Chichester Harbour AONB and its setting, detailed consideration should be given to the distinctive character and qualities of the AONB consistent with the aims of the AONB Management Plan. Buildings taller than 2 storeys are likely to be visible from the harbour and coastal path and may also be visible from the South Downs National Park. Proposals will be expected to demonstrate how their individual or cumulative effect has avoided significant harm to the AONB or to the long views from the SDNP.</p>	
<p><b>Policy SB8: Managing design and heritage in Lumley</b></p>	<p>A. Development proposals in the Lumley Character Area, as shown on the Policies Inset Map, will only be supported if the nature and location of the proposal has regard to the following essential characteristics of the area:</p> <ul style="list-style-type: none"> <li>i. The loose knit rural nature of the area particularly around the Grade II Lumley Mill;</li> <li>ii. Its predominantly farmland setting;</li> <li>iii. The importance of the established trees and hedgerows in forming enclosure in the south west of the area and the enclosure of Lumley Road in the wider landscape;</li> <li>iv. The significance of well-established trees that provide a setting to Lumley Terrace and Flint Cottages; and,</li> <li>v. The regular plot sizes of the Grade II Lumley Terrace and Flint Cottages and their regular two- storey brick under tile pitched roof form and vernacular features.</li> </ul>	<p>There are no Likely Significant Effects of this policy on European sites.</p> <p>This is a design management policy addressing the scale, density, height, landscape design, layout and material use of development proposals in Lumley. It details that all proposals must be in keeping with the current character of Southbourne Parish.</p> <p>The policy does not provide for a location and / or quantum of residential or employment development.</p> <p>Policy SB8 is therefore screened out from Appropriate Assessment.</p>
<p><b>Policy SB9: Managing design and heritage in Hermitage</b></p>	<p>A. Development proposals in the Hermitage Character Area, as shown on the Policies Inset Map, will only be supported if they have regard to the following essential characteristics of the area:</p> <ul style="list-style-type: none"> <li>i. The significance of Slipper Mill Pond and Peter Pond in providing visual amenity on the western edge of the area;</li> <li>ii. The views south and north from Hermitage Bridge and the views westward from Slipper Road towards the Emsworth Conservation Area;</li> </ul>	<p>There are no Likely Significant Effects of this policy on European sites.</p> <p>This is a design management policy detailing the criteria that development proposals must fulfil in the Hermitage Character Area, such as protecting the views south and north from Hermitage Bridge, and retaining public open spaces.</p> <p>The policy does not provide for a location and / or quantum of residential or employment development.</p>

	<p>iii. The importance of retaining established trees and public open spaces at Mill End given the limited open space within the settlement and particularly to the south of the A259;</p> <p>iv. The importance of re-providing a consistency of open space in development;</p> <p>v. The use of brick, flint and clay tiles in the early cottages and terraces either side of Main Road;</p> <p>vi. The openness of the south of the area and the uninterrupted views towards Chichester Harbour.</p>
<p><b>Policy SB10: Managing design and heritage in the Prinsted Conservation Area</b></p>	<p>A. Development proposals should sustain and enhance the special architectural and historic interest of the designated Prinsted Conservation Area and its setting within the Chichester Harbour AONB.</p> <p>B. The significance of the Conservation Area and its setting are defined by the key characteristics and recommendations of the Prinsted Conservation Area Character Appraisal and Management Proposals and the design guidance set out in the Chichester Harbour AONB Joint Supplementary Planning Document, to which all proposals must have full regard.</p>
<p><b>Policy SB11: Managing design and heritage in Nutbourne West</b></p>	<p>A. Development proposals in the Nutbourne West Character Area, as shown on the Policies Inset Map, will only be supported if the nature and location of the proposal has regard to the following essential characteristics of the area:</p> <p>i. the open spaces either side of the settlement contribute to its distinctive setting and maintain separation between Nutbourne West and Southbourne village (to the west) and Nutbourne East (to the east);</p> <p>ii. the enclosure created by the hedgerows and treelines on the northern edge of the settlement;</p>

Policy SB9 is therefore screened out from Appropriate Assessment.

There are no Likely Significant Effects of this policy on European sites.

This is a design management policy detailing that development proposals in the Prinsted Conservation Area must sustain / enhance its architectural and historic setting within the Chichester Harbour AONB.

The policy does not provide for a location and / or quantum of residential or employment development.

Policy SB10 is therefore screened out from Appropriate Assessment.

There are no Likely Significant Effects of this policy on European sites.

This is a design management policy that defines design and heritage management in the Nutbourne West area of the parish. The policy explicitly protects open spaces, hedgerows and treelines, and the open views to Chichester Harbour in the settlement.

The policy does not provide for a location and / or quantum of residential or employment development.

	<p>iii. the open views to Chichester Harbour to the south;</p> <p>iv. panoramic views southward of Bosham Church and the Chidham Bellcote from the coastal path, westward to the spire of St John's Church, views across Nutbourne Marshes from Farm Lane to the harbour's edge, and views northward to the National Park and Walderton Hill and Bow Hill.</p>	<p>Policy SB11 is therefore screened out from Appropriate Assessment.</p>
<p><b>Policy SB12: Protecting local heritage assets</b></p>	<p>A. The Neighbourhood Plan identifies 23 non-designated Local Heritage Assets, as included in the list in Appendix B, by way of their positive contribution to the character and heritage of the area.</p> <p>B. Proposals that will result in harm to, or unnecessary loss of, a Local Heritage Asset will not be supported, unless it can be demonstrated that there is a public benefit that outweighs the harm or loss.</p>	<p>There are no Likely Significant Effects of this policy on European sites.</p> <p>This is a development management policy that protects 23 non-designated Local Heritage Assets in the parish from negative effects from development proposals. However, these heritage assets have no bearing on the protection of European sites.</p> <p>The policy does not provide for a location and / or quantum of residential or employment development.</p> <p>Policy SB12 is therefore screened out from Appropriate Assessment.</p>
<p><b>A settlement that sits comfortably and sustainably in its Sussex landscape, applauded for its protection and management of its environmental assets, its promotion of the health and wellbeing of residents including its visionary Green Ring and for its status as a haven for nature and wildlife...</b></p>		
<p><b>Policy SB13: Green and Infrastructure Network</b></p>	<p>A. The Neighbourhood Plan designates a Green Infrastructure Network, as shown on the Policies Map, for the purpose of promoting ecological connectivity, outdoor recreation and sustainable movement through the parish and into neighbouring parishes and for mitigating climate change. The Network comprises the continued establishment of the 'Green Ring' around and through the village of Southbourne, and a variety of green spaces, ancient woodland, trees and hedgerow, water bodies, assets of biodiversity value including the Lumley Stream and Ham Brook both chalk streams, children's play areas and off-street footways, cycleways and bridleways.</p> <p>B. Development proposals that lie within or adjoining the Network are required to have full regard to creating, maintaining and improving the Network, including delivering a net gain to general biodiversity value, in</p>	<p>There are no Likely Significant Effects of this policy on European sites.</p> <p>This is an environmental policy setting out a Green Infrastructure Network (GIN) for Southbourne Parish in order to promote ecological connectivity and sustainable movement through the parish.</p> <p>The GIN is likely to have several positive effects for nearby European sites. Firstly, it is likely to reduce the reliance on private car travel by encouraging sustainable travel modes, such as walking and cycling. This may lead to reduced atmospheric nitrogen deposition in European sites.</p>



	<p>the design of their layouts, landscaping schemes and public open space and play provisions.</p> <p>C. In that part of the Green Ring to the east of Southbourne village that runs through the allocation defined by Policy SB2, proposals must have equal regard to accessibility to the Network for both existing and new residents. In this respect, the Green Ring will form a central and defining multi-functional landscape feature of the new development, creating opportunities to enhance outdoor sport, recreation and play, improve pedestrian and cycle connectivity to the community hub, schools, the railway station and access across the railway line.</p> <p>D. Proposals that will prejudice the completion of the Green Ring or lead to the loss of land lying within the Network and that will undermine its integrity will not be supported. Development proposals that will lead to the extension of the Network to create additional recreational opportunities will be supported provided they do not adversely affect the character, environment and appearance of the Chichester Harbour AONB, result in adverse effects on the integrity to the Chichester Harbour SPA, and are consistent with all other relevant policies of the development plan.</p>	<p>Furthermore, the GIN would increase the accessibility of the parish as a whole and various greenspaces, such as ancient woodland, waterbodies (e.g. Lumley Stream, Ham Brook) and children's play areas. This would mean that residents spend more time locally, away from some of the European sites more sensitive to recreational pressure (e.g. the Chichester and Langstone Harbour SPA / Ramsar).</p> <p>The policy does not provide for a location and / or quantum of residential or employment development.</p> <p>Policy SB13 is therefore screened out from Appropriate Assessment.</p>
<p><b>Policy Biodiversity</b></p>	<p><b>SB14:</b> A. Development proposals should take account of the protected and other notable biodiversity species in the neighbourhood area as set out in Appendix C. Development proposals which would affect any of the natural assets as identified in Appendix C will be determined on the basis of the principles in paragraph 175 of the NPPF (2019).</p> <p>B. Development proposals should contribute to, increase and enhance the natural environment by providing additional habitat resources for wildlife and which demonstrate that any potential impacts upon priority species and habitats have been fully assessed and mitigated to deliver at least a 10% net gain in biodiversity<sup>34</sup>.</p>	<p>There are no Likely Significant Effects of this policy on European sites.</p> <p>This is a policy protecting the natural environment by stipulating that all development proposals should increase and enhance the natural environment by providing additional wildlife habitat. Particular regard should be given to protected biodiversity species.</p> <p>The policy does not provide for a location and / or quantum of residential or employment development.</p> <p>Policy SB14 is therefore screened out from Appropriate Assessment.</p>



<p><b>Policy SB15: Trees, woodland and hedgerows</b></p>	<p>A. Development proposals will, wherever possible, ensure the retention of trees, woodland and hedgerows. Particular regard will be given to the protection of these features within the setting of settlements, the protection of ancient woodlands and historic hedgerows and the amenity value of trees within built-up areas.</p> <p>B. Proposals that will result in the loss of trees which have visual and/or amenity value in the Prinsted Conservation Area or mature trees or hedgerows elsewhere in the Parish, either as part of a landscape scheme or as part of the construction works of a development, will not be supported.</p> <p>C. Where the loss of mature trees or hedgerow is proven to be unavoidable, the proposals must make provision on site for like-for-like replacements and of similar ecological function and maturity to re-establish the loss of biodiversity as quickly as possible. Where like for like replacement of a fully mature tree is not achievable then consideration should be given to an increased number of less mature specimens (but not whips) in order to maintain some approximation of ecological value and function.</p> <p>D. Landscaping and tree and hedgerow planting schemes will be required to accompany applications for new development where it is appropriate to the development and its setting.</p>	<p>There are no Likely Significant Effects of this policy on European sites.</p> <p>This policy sets out the protection of trees, woodland and hedgerows. In particular, development proposals must ensure that where the loss of such habitat is unavoidable, like-for-like replacements of similar maturity must be established.</p> <p>The policy does not provide for a location and / or quantum of residential or employment development.</p> <p>Policy SB15 is therefore screened out from Appropriate Assessment.</p>
<p><b>Policy SB16: Local Green Spaces</b></p>	<p>A. The Neighbourhood Plan designates 17 Local Green Spaces in the locations shown in the Local Green Space Report and listed in Appendix E.</p> <p>B. Proposals for inappropriate development in a Local Green Space will only be supported in very special circumstances.</p>	<p>There are no Likely Significant Effects of this policy on European sites.</p> <p>This policy designates 17 Local Green Spaces and protects them from development. Safeguarding the green infrastructure is generally regarded as a positive step towards helping reduce recreational pressure in more sensitive sites.</p> <p>The policy does not provide for a location and / or quantum of residential or employment development.</p> <p>Policy SB16 is therefore screened out from Appropriate Assessment.</p>

<p><b>Policy</b> <b>Achieving dark skies</b></p>	<p><b>SB17:</b> A. All development proposals should be designed to minimise the occurrence of light pollution. The Parish Council will expect such schemes to employ energy-efficient forms of lighting that also reduce light scatter and comply with the current guidelines established for rural areas by the Institute of Lighting Professionals (ILP).</p> <p>B. Proposals for all development will be expected to demonstrate how it is intended to prevent light pollution. Information on these measures must be submitted with applications, and where a major development would potentially impact on light levels in the area, especially on the Chichester Harbour AONB and on the setting of the South Downs National Park, an appropriate lighting scheme will be secured by planning condition.</p>	<p>There are no Likely Significant Effects of this policy on European sites.</p> <p>This is a development management policy stipulating that all development proposals should be designed to minimise the occurrence of light pollution, such as by using energy-efficient lighting that reduces light scatter. Information on measures to reduce light pollution must be submitted with planning applications.</p> <p>While there are no European sites that are especially sensitive to light pollution near Southbourne Parish, this policy is positive for nocturnal insects, birds and mammals, because it minimises disruption to their activity cycles.</p> <p>The policy does not provide for a location and / or quantum of residential or employment development.</p> <p>Policy SB17 is therefore screened out from Appropriate Assessment.</p>
<p><b>Policy</b> <b>Sustainable accessibility and mobility</b></p>	<p><b>SB18:</b> A. Proposals for major development should adopt the Sustainable Accessibility and Mobility Framework and demonstrate how the framework has been applied. The layout design must apply Manual for Streets best practice principles and create a permeable network of streets and spaces that connect to key destinations in the Parish such as the Primary School, Bourne College, new and existing community facilities and the railway station.</p> <p>B. Travel planning is integral to the design and operation of development, and applications for major development must demonstrate through an effective travel plan how new residents will be encouraged to make the fullest possible use of active travel measures, public transport, and ensure that safe and suitable access within and beyond the Parish can be achieved for everyone, whatever their abilities.</p> <p>C. Further improvements to accessibility, including the provision of off road car parking and cycle racks to serve rail passengers, and to the</p>	<p>There are no Likely Significant Effects of this policy on European sites.</p> <p>This is a mobility and travel management policy setting out that all major development proposals must prioritise pedestrians and cyclists in their layout designs, adopting the Sustainable Accessibility and Mobility Framework. Proposals will also need to submit travel plans to demonstrate how new residents will be encouraged to utilise active transport modes.</p> <p>The promotion of sustainable and active travel modes is a positive step towards a healthier population. Furthermore, a reduction in the reliance on private car travel is likely to decrease atmospheric nitrogen deposition in wildlife habitats, including European sites.</p>

<p>quality of Southbourne Railway Station environment, as a key element in our public transport network, will be supported.</p>	<p>The policy does not provide for a location and / or quantum of residential or employment development.</p> <p>Policy SB18 is therefore screened out from Appropriate Assessment.</p>
<p><b>Policy SB19: Mitigating effects on European Designated Sites</b></p> <p>A. Development involving residential uses will be required to include proposals for avoiding/mitigating their effects on the SPA, SAC and Ramsar site at Chichester Harbour;</p> <p>B. Proposals should be in accordance with the requirements of the Bird Aware Solent Strategy and the Solent Recreation Mitigation Strategy and include measures to avoid recreational disturbance on the Chichester Harbour SPA and avoid the loss of functionally linked habitat;</p> <p>C. In accordance with the Bird Aware Solent Strategy all residential development within 5.6km of the Solent's European sites must pay an appropriate financial tariff (reviewed annually) based on the number of bedrooms in the development, and;</p> <p>D. Proposals for development must also demonstrate the effectiveness of their nutrient neutrality measures to ensure no adverse impact on the Chichester Harbour receiving waters in accordance with Natural England's latest guidance<sup>7</sup>.</p>	<p>There are no Likely Significant Effects of this policy on European sites.</p> <p>This is Neighbourhood Plan's key policy extending protection European sites in or near Southbourne Parish. Importantly, the policy explicitly stipulates that all residential developments within 5.6km of the Chichester and Langstone Harbours SPA / Ramsar must avoid / mitigate recreational disturbance in the site, in line with the Solent Recreation Mitigation Strategy. It also provides reference to the Bird Aware Solent Strategy, which sets out the habitat use of qualifying bird species outside the designated site boundary (and potentially within the Parish of Southbourne).</p> <p>Furthermore, this policy also recognises the issue of nutrient pollution in the Solent and refers to Natural England's requirement for achieving nutrient neutrality (effectively nitrogen neutrality in the case of marine sites). All development proposals must demonstrate nutrient neutrality.</p> <p>The policy does not provide for a location and / or quantum of residential or employment development.</p> <p>Overall, Policy SB19 is therefore screened out from Appropriate Assessment. It is a positive policy for European sites.</p>
<p><b>Adapted and prepared for climate change and zero carbon living...</b></p>	
<p><b>Policy SB20: Mitigating climate change – New buildings</b></p> <p>A. Maximise passivhaus and for any building that isn't PH a post occupancy appraisal will be required. If there is a viability issue then the burden falls on the applicant to illustrate this. On development schemes where it is proposed that at least 50% of the building units will be certified to a Passivhaus standard, development proposals will not be required to:</p>	<p>There are no Likely Significant Effects of this policy on European sites.</p> <p>This policy is targeting the mitigation of climate change, including a requirement for development proposals to submit a Whole Life-Cycle Carbon Emission Statement (except if over 50% of building</p>

- Carry out a Whole Life-Cycle Carbon Emissions Assessment of the actions to be taken to reduce life-cycle carbon emissions;
- Provide a BREEAM Assessment with the planning application;
- Make provision for on-site renewable energy generation or make a financial contribution to any off-site renewable energy generation proposal in the period before 2025;
- Make any off-site or other financial contribution to the SPC Carbon Sink Fund; and;
- Calculate carbon emissions from any other part of the development.

B. Where it is proposed to deliver dwellings that will be certified to a Passivhaus standard, the scheme may comprise terraced and/or apartment building forms of a density that is higher than the density of the character area within which the proposal is located, provided it can be demonstrated that the scheme will have a less than substantial effect on the character area.

C. All planning permissions granted for new dwellings will include a planning condition to require the provision of a Post Occupancy Evaluation Report to the local planning authority within a specified period, unless exempted by Clause A. Where the report identifies poor energy performance and makes recommendations for reasonable corrective action, the applicant must demonstrate that those actions have been implemented before the condition will be considered to be discharged.

D. Unless exempted by Clause A, all planning applications for non-householder development are required to be accompanied by a Whole Life-Cycle Carbon Emission Assessment setting out how the proposal will:

- i. minimise energy demand, how it will be supplied with energy, how renewable energy technologies will be used; and

units are developed to Passivhaus standard) and a Post Occupancy Evaluation Report.

The policy does not provide for a location and / or quantum of residential or employment development.

Policy SB20 is therefore screened out from Appropriate Assessment.

	<p>ii. capture its unregulated emissions, its embodied emissions and emissions associated with maintenance, repair and replacement as well as dismantling, demolition and eventual material disposal.</p>	
<p><b>Policy Mitigating change – carbon sinking</b></p>	<p><b>SB21: climate Carbon</b></p> <p>A. For schemes of a gross site area of more than 2 Ha, and where practical, development proposals are required to incorporate woodland planting within their on-site proposals to a standard verified by the Woodland Carbon Code.</p> <p>B. For schemes of a gross site area less than 2 Ha or for schemes of a gross site area of more than 2 Ha but where on site provision is not practical, development proposals are required to make a financial contribution to the Southbourne Area Carbon Sink Fund, which will be used to invest in the improvement, extension and maintenance of those existing and new woodlands of the Green Infrastructure Network of Policy SB13 that function as a carbon sink.</p>	<p>There are no Likely Significant Effects of this policy on European sites.</p> <p>This policy is targeting the mitigation of climate change by obliging schemes over 2ha in area, to provide on-site woodland planting to a standard verified by the Woodland Carbon Code. Sites with an area of less than 2ha are required to make a financial contribution to the Southbourne Area Carbon Sink Fund, which will be used strategically in improving the Green Infrastructure Network.</p> <p>The policy does not provide for a location and / or quantum of residential or employment development.</p> <p>Policy SB21 is therefore screened out from Appropriate Assessment.</p>
<p><b>Policy Adapting to change – infrastructure and flood risk</b></p>	<p><b>SB22: climate Water and</b></p> <p>A. Development proposals will be supported, provided it can be demonstrated that, where appropriate:</p> <p>i. The sewer network can accommodate the additional demand for sewerage disposal either in its existing form or through planned improvements to the system to ensure sufficient wastewater treatment is in place in advance of the first occupation of the development;</p> <p>ii. The Water Efficiency Standard of 110 litres per person per day as set out in the National Technical Standards will be achieved in new development to reduce the volume of wastewater entering the foul sewer;</p> <p>iii. Any development proposed in either flood zone 2 or flood zone 3, on sites over 1ha in flood zone 1, or in a dry island, must be accompanied by a site specific Flood Risk Assessment that demonstrates that proposals will not increase flood risk from fluvial flooding or any other</p>	<p>There are no Likely Significant Effects of this policy on European sites.</p> <p>This is an environmental protection policy relating to the sustainable use and appropriate treatment of water resources in Southbourne Parish. For example, development proposals will only be permitted if they can be accommodated within the existing headroom of, or future improvements to, the sewer network. Furthermore, the integrity of the Lumley Brook and Ham Brook (both flowing into the Chichester and Langstone Harbours SPA / Ramsar) must be protected during and post-construction. Finally, new developments must not direct surface water towards these waterbodies.</p> <p>Overall, this policy protects the water quality (and ultimately the ecological integrity) of Southbourne’s main waterbodies. In turn this will help protect the water quality in the Chichester and</p>



form of flooding and takes opportunities to reduce flood risk where possible; and

iv. Managing flood risk must take account of the impacts of climate change over the lifetime of the development.

B. New development within or adjacent to the Lumley and Ham Brook Chalk Streams must demonstrate the measures that will be taken to ensure that polluted runoff (including suspended sediment) does not leave the site and enter the surrounding waterbodies during either construction or operation.

C. New development within or adjacent to Lumley Stream (Lumley) or the Ham Brook (Nutbourne) Chalk Streams must not direct surface water towards these waterbodies at rates exceeding greenfield run-off as they are already subject to fluvial flooding.

D. Safeguard from development low lying areas outside Settlement Boundaries around Chichester Harbour for climate change adaptation land.

Langstone Harbours SPA / Ramsar for which water quality (particularly nitrogen runoff / discharge) is a major problem.

The policy does not provide for a location and / or quantum of residential or employment development.

Policy SB22 is therefore screened out from Appropriate Assessment. This is a positive policy helping ensure the protection of aquatic European sites.

