

# Aldingbourne Neighbourhood Plan Habitats Regulations Assessment

Aldingbourne Parish Council

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# 1. Introduction

## Background to the Project

- 1.1 AECOM was appointed to undertake a Habitats Regulations Assessment (HRA) of Aldingbourne Neighbourhood Plan Group's revised Neighbourhood Development Plan (NDP), which sets out the vision for the parish in the period up to 2034. NDPs stem from the 2011 Localism Act and the government's intent to ensure that local communities are involved in shaping development and growth in local areas. The revised Aldingbourne NDP reflects the views of local people on key themes such as transport, business, tourism, well-being and the natural environment. Neighbourhood Plans are statutory documents that are incorporated into regional-level planning frameworks and the Aldingbourne NDP must therefore be taken into account by Arun District Council when considering planning applications.
- 1.2 The parish of Aldingbourne lies within Arun District and is therefore guided by Arun District Council's Local Plan. It adjoins the South Downs National Park to the north. The Arun Local Plan was adopted in July 2018 and in Policy H SP1 provided for at least 1,250 dwellings as non-strategic allocations to be made through emerging NDPs. Aldingbourne's allocation within the Arun Local Plan was at least 70 dwellings. Consequently, Aldingbourne Parish Council agreed to review its NDP in cooperation with Arun District Council. The NDP was updated primarily with regard to its housing policies, while other policies, which were already subject to extensive consultation previously, were retained. Although many of the NDP's policies remain unchanged compared to the previous iteration of the Plan, all policies are assessed within this HRA. All policies (e.g. the biodiversity corridors) require assessment in light of the new allocated housing sites.
- 1.3 The principal settlement in Aldingbourne Parish is the village of Westergate, which highlights the parish's rural character. Smaller settlements include Aldingbourne, Norton, Nyton, Lidsey and Woodgate, the latter being the settlement in which two residential sites with a total number of 85 dwellings are allocated within the NDP. The total housing to be provided as part of the Aldingbourne NDP therefore slightly exceeds its allocation within the Arun Local Plan, providing a buffer in the event that the total number of allocated dwellings cannot be delivered.
- 1.4 Specifically, the HRA of the Aldingbourne NDP is required to determine if there are any realistic linking impact pathways present between policies outlined in the NDP and European sites where Likely Significant Effects (LSEs) cannot be ruled out. If the presence of LSEs is determined, an Appropriate Assessment must be carried out to evaluate if adverse effects on the integrity of any European sites might occur, both due to the NDP alone or 'in-combination' with other plans and projects. If adverse effects on site integrity are established, appropriate mitigation measures must be put in place to allow development to come forward.

## Legislation

- 1.5 The need for HRA is set out within Article 6 of the EC Habitats Directive 1992 and interpreted into British law by the Conservation of Habitats & Species Regulations 2017 (Figure 1). The ultimate aim of the Habitats Directive is to "*maintain or restore, at favourable conservation status, natural habitats and species of wild fauna and flora of Community interest*" (Habitats Directive, Article 2(2)). This aim relates to habitats and species, not the European sites themselves, although the sites have a significant role in delivering favourable conservation status. 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.
- 1.6 In order to ascertain whether or not site integrity will be affected, a Habitats Regulations Assessment should be undertaken of the plan or project in question:

## Habitats Directive 1992

Article 6 (3) states that:

*“Any plan or project not directly connected with or necessary to the management of the site but likely to have a significant effect thereon, either individually or in combination with other plans or projects, shall be subject to appropriate assessment of its implications for the site in view of the site's conservation objectives.”*

## 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 purposes 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 Appropriate Assessment.**

1.7 It is therefore important to note that this report has two purposes:

- To assist the Qualifying Body (the Neighbourhood Plan Group) in preparing their plan by recommending (where necessary) any adjustments required to protect European sites, thus making it more likely their plan will be deemed compliant with the Conservation of Habitats and Species Regulations 2017 (as amended); and
- On behalf of the Qualifying Body, to assist the Local Planning Authority 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’).

1.8 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 and the Neighbourhood Plan examiner. 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.

1.9 The Habitats Regulations applies the precautionary principle to Natura 2000 sites (SAC and SPA). As a matter of UK Government policy, Ramsar sites are given equivalent status. For the purposes of this assessment candidate SACs (cSACs), proposed SPAs (pSPAs) and proposed Ramsar (pRamsar) sites are all treated as fully designated sites. In this report we use the term “European designated sites” to refer collectively to the sites listed in this paragraph.

1.10 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. This contrasts with the SEA Directive which does not prescribe how plan or programme proponents should respond to the findings of an environmental assessment; merely that the assessment findings (as documented in the ‘environmental report’) should be ‘taken into account’ during preparation of the plan or programme. In the case of the Habitats Directive, 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.

1.11 In 2018, the ‘People Over Wind’ European Court of Justice (ECJ) ruling<sup>1</sup> determined that ‘mitigation’ (i.e. measures that are specifically introduced to avoid or reduce the harmful effects of a plan or project on European sites) should not be taken into account when forming a view on likely significant effects. Mitigation should instead only be considered at the Appropriate Assessment stage. Appropriate Assessment is not a technical term: it simply means ‘an assessment that is appropriate’ for the plan or project in question. As such, the law purposely does not prescribe what it should consist of or how it should be presented; these are decisions to be made on a case by case basis by the competent authority. An amendment was made to

<sup>1</sup> Case C-323/17

the Neighbourhood Planning Regulations in late 2018 which permitted Neighbourhood Plans to be made if they required appropriate assessment.

- 1.12 Over the years the phrase ‘Habitats Regulations Assessment’ has come into wide currency to describe the overall process set out in the Conservation of Habitats and Species Regulations from screening through to Imperative Reasons of Overriding Public Interest (IROPI). This has arisen in order to distinguish the process from the individual stage described in the law as an ‘Appropriate Assessment’. Throughout this report we use the term Habitats Regulations Assessment for the overall process.

## Report Layout

- 1.13 This HRA comprises the following chapters:

- Chapter 2 outlines the methodology of HRA, including the three tasks of screening for Likely Significant Effects (LSEs), Appropriate Assessment and any mitigation measures required in response (note that not all of these are required in every instance);
- Chapter 3 provides detailed background on the impact pathways potentially linking to the Aldingbourne NDP, including evidence from the scientific literature;
- Chapter 4 provides the Test of LSEs, relating policies and any arising impact pathways to relevant European sites;
- Chapter 5 is the Appropriate Assessment, which investigates impact pathways and European sites for which LSEs have been identified in more detail;
- Chapter 6 details the main conclusions and recommendations derived from the main body of text;
- Appendix A shows the European sites within 10km of the Aldingbourne NDP area;
- Appendix B outlines background to European sites, including an introduction, their qualifying features, conservation objectives, and threats and pressures to their site integrity; and
- Appendix C presents the Test of LSEs table, which should be viewed in conjunction with Chapter 4.



## 2. Methodology

### Introduction

- 2.1 This section sets out the approach and methodology for undertaking the Habitats Regulations Assessment (HRA). HRA itself operates independently from the Planning Policy system, being a legal requirement of a discrete Statutory Instrument. Therefore, there is no direct relationship to the National Planning Policy Framework (NPPF) and the ‘Tests of Soundness’.

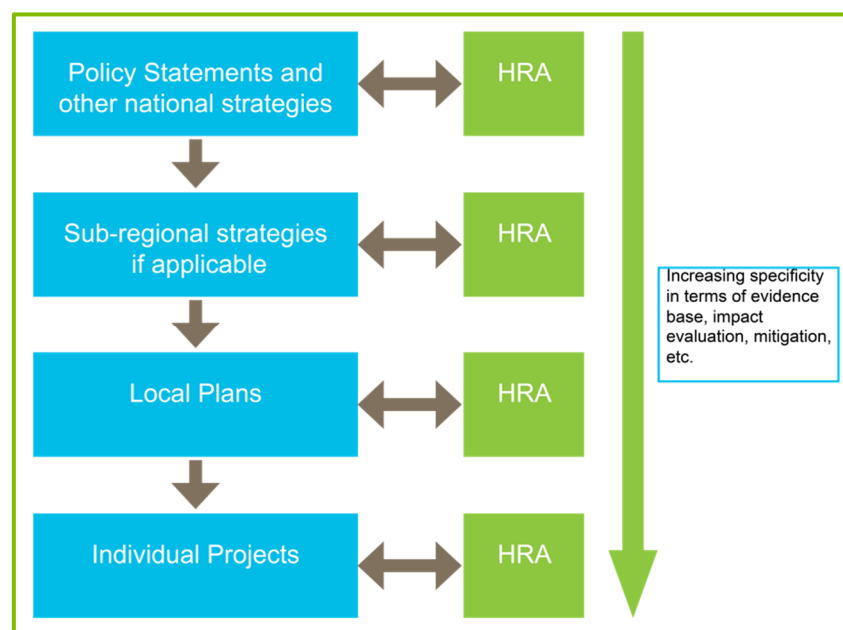
### A Proportionate Assessment

- 2.2 Project-related HRA often requires bespoke survey work and novel data generation in order to accurately determine the significance of effects. In other words, to look beyond the risk of an effect to a justified prediction of the actual likely effect and to the development of avoidance or mitigation measures. However, the draft MHCLG guidance<sup>2</sup> (described in greater detail later in this chapter) makes it clear that when implementing HRA of land-use plans, the Appropriate Assessment (AA) should be undertaken at a level of detail that is appropriate and proportional to the level of detail provided within the plan itself:
- 2.3 *“The comprehensiveness of the [Appropriate] assessment work undertaken should be proportionate to the geographical scope of the option and the nature and extent of any effects identified. An AA need not be done in any more detail, or using more resources, than is useful for its purpose. It would be inappropriate and impracticable to assess the effects [of a strategic land use plan] in the degree of detail that would normally be required for the Environmental Impact Assessment (EIA) of a project.”*
- 2.4 More recently, the Court of Appeal<sup>3</sup> ruled that providing the Council (competent authority) was duly satisfied that proposed mitigation could be “*achieved in practice*” then this would suffice to meet the requirements of the Habitat Regulations. This ruling has since been applied to a planning permission (rather than a Plan document)<sup>4</sup>. In this case the High Court ruled that for “*a multistage process, so long as there is sufficient information at any particular stage to enable the authority to be satisfied that the proposed mitigation can be achieved in practice it is not necessary for all matters concerning mitigation to be fully resolved before a decision maker is able to conclude that a development will satisfy the requirements of reg 61 of the Habitats Regulations*”.
- 2.5 In other words, there is a tacit acceptance that AA can be tiered and that all impacts are not necessarily appropriate for consideration to the same degree of detail at all tiers as illustrated in Figure 2.

<sup>2</sup> MHCLG (2006) Planning for the Protection of European Sites, Consultation Paper

<sup>3</sup> No Adastral New Town Ltd (NANT) v Suffolk Coastal District Council Court of Appeal, 17<sup>th</sup> February 2015

<sup>4</sup> High Court case of R (Devon Wildlife Trust) v Teignbridge District Council, 28 July 2015



**Figure 2: Tiering in HRA of Land Use Plans.**

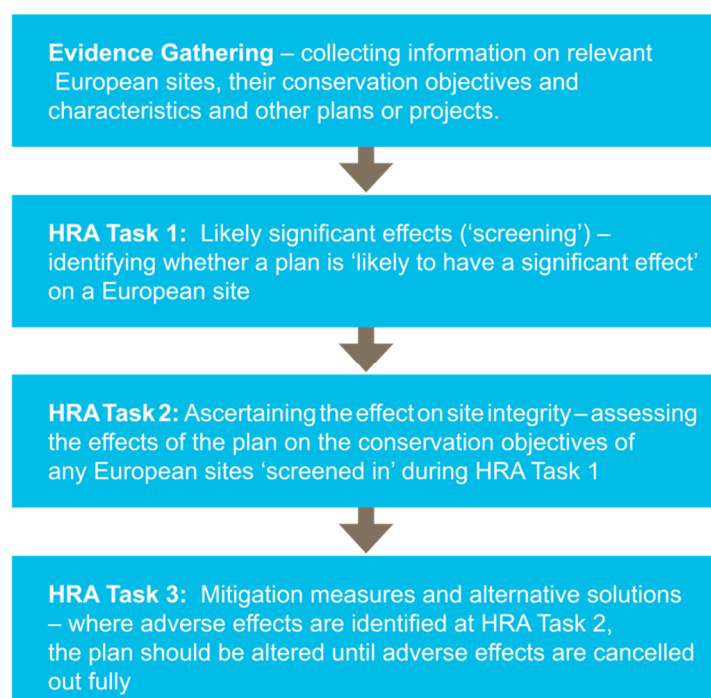
- 2.6 For a plan the level of detail concerning the developments that will be delivered is usually insufficient to make a highly detailed assessment of significance of effects. For example, precise and full determination of the impacts and significant effects of a new settlement will require extensive details concerning the design of the new housing sites, including layout of greenspace and type of development to be delivered in particular locations, yet these data will not be decided until subsequent stages.
- 2.7 The most robust and defensible approach to the absence of fine grain detail at this level is to make use of the precautionary principle. In other words, the plan is never given the benefit of the doubt (within the limits of reasonableness); it must be assumed that a policy/measure is likely to have an impact leading to a significant adverse effect upon an internationally designated site unless it can be clearly established otherwise.

## The Process of HRA

- 2.8 The HRA is being carried out in the continuing absence of formal central Government guidance. The former DCLG (now MHCLG) released a consultation paper on AA of Plans in 2006<sup>5</sup>. As yet, no further formal guidance has emerged from MHCLG. However, Natural England has produced its own informal internal guidance and central government has released general guidance on HRA and appropriate assessment<sup>6</sup>.
- 2.9 Figure 3 outlines the stages of HRA according to the draft MHCLG guidance (which, as government guidance applicable to English authorities is considered to take precedence over other sources of 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 likely significant effects remain.

<sup>5</sup> MHCLG (2006) Planning for the Protection of European Sites, Consultation Paper

<sup>6</sup> <https://www.gov.uk/guidance/appropriate-assessment>



**Figure 3: Four-Stage Approach to Habitats Regulations Assessment**

## Task One: Test of Likely Significant Effect

- 2.10 The first stage of any Habitats Regulations Assessment is a test of Likely Significant Effect - essentially a high level assessment to decide whether the full subsequent stage known as Appropriate Assessment is required. The essential question is:
- 2.11 *"Is the Plan, either alone or in combination with other relevant projects and plans, likely to result in a significant effect upon European sites?"*
- 2.12 In evaluating significance, AECOM have relied on professional judgment and experience of working with the other local authorities on similar issues. The level of detail concerning developments that will be permitted under land use plans is rarely sufficient to make a detailed quantification of effects. Therefore, a precautionary approach has been taken (in the absence of more precise data) assuming as the default position that if a likely significant effect (LSE) cannot be confidently ruled out, then the assessment must be taken the next level of assessment Task Two: Appropriate Assessment. This is in line with the April 2018 court ruling relating to 'People Over Wind' where mitigation and avoidance measures are to be included at the next stage of assessment.

## Task Two: Appropriate Assessment

- 2.13 European Site(s) which have been 'screened in' during the previous Task have a detailed assessment undertaken on the effect of the policies on the European site(s) site integrity. Avoidance and mitigation measures to avoid adverse significant effects are taken into account or recommended where necessary.
- 2.14 As established by case law, 'Appropriate Assessment' is not a technical term; it simply means whatever further assessment is necessary to confirm whether there would be adverse effects on the integrity of any European sites that have not been dismissed at screening. Since it is not a technical term it has no firmly established methodology except that it essentially involves repeating the analysis for the likely significant effects stage, but to a greater level of detail on a smaller number of policies and sites, this time with a view to determining if there would be adverse effects on integrity.
- 2.15 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 actually be an adverse effect on integrity (in other words, disruption of the coherent structure and function of the European site(s)).

## The Geographic Scope

- 2.16 There is no guidance that dictates the physical scope of an HRA of a plan. Therefore, in considering the physical scope of the assessment we were guided primarily by the identified impact pathways rather than by arbitrary “zones”, i.e. a source-pathway-receptor approach. Current guidance suggests that the following European sites be included in the scope of assessment:
- All sites within the Neighbourhood Plan area boundary; and
  - Other sites shown to be linked to development within the Neighbourhood Plan boundary through a known “pathway” (discussed below).
- 2.17 Briefly defined, pathways are routes by which a change in activity within the plan area can lead to an effect upon a European site. In terms of the second category of European site listed above, MHCLG guidance states that the AA should be “*proportionate to the geographical scope of the [plan policy]*” and that “*an AA need not be done in any more detail, or using more resources, than is useful for its purpose*” (MHCLG, 2006, p.6).
- 2.18 Using Defra’s MAGIC website<sup>7</sup>, the following European sites within 10km of the Aldingbourne Parish boundary were identified for further consideration:
- Singleton and Cocking Tunnels SAC
  - Duncton to Bignor Escarpment SAC
  - Arun Valley SPA / Ramsar
  - Pagham Harbour SPA / Ramsar
  - Chichester and Langstone Harbours SPA / Ramsar
  - Solent Maritime SAC
- 2.19 Locations of European sites in relation to Aldingbourne Parish are illustrated in Appendix A and full details of all relevant European sites is discussed in Appendix B, including their qualifying features, conservation objectives, and threats and pressures to site integrity.
- 2.20 It is to be noted that the inclusion of a European sites or pathway below does not indicate that an effect is expected but rather that these are pathways that will be investigated.

## The ‘In Combination’ Scope

- 2.21 It is a requirement of the Regulations that the impacts and effects of a development plan are not only considered in isolation but in-combination with other plans and projects that may also be affecting the European designated site(s) in question.
- 2.22 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 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 would otherwise be screened out because its individual contribution is minimal. The overall approach is to exclude the risk of there being unassessed Likely Significant Effects (LSEs) in accordance with the precautionary principle. This was first established in the seminal Waddenzee<sup>8</sup> case.
- 2.23 For the purposes of this HRA, we have determined that one of the key higher-tier plans with a potential for in-combination effects is the adopted Arun Local Plan (2018). As outlined in the introduction, this Plan sets out the broad spatial development targets for Arun District in the period of 2011 – 2031. The Arun Local Plan provides for at least 20,000 homes and 75ha of employment floorspace in the period up to 2031 (Table 1), in the wider area surrounding Aldingbourne Parish. Within the Arun Local Plan, the residential growth is

<sup>7</sup> The MAGIC website provides authoritative geographic information on the natural environment from across government and is typically the starting point of any HRA. It is available at: <https://magic.defra.gov.uk/> [Accessed on the 05/10/2019].

<sup>8</sup> Waddenzee case (Case C-127/02, [2004] ECR-I 7405)

allocated in several strategic housing sites in the Greater Bognor Regis Urban Area, the Greater Littlehampton Urban Area and Inland Arun. Growth allocated in the Aldingbourne NDP is located within the geographic area covered by the Inland Arun strategic housing site SD5, which allocates residential dwellings in the settlements of Barnham, Eastergate and Westergate.

- 2.24 However, the NDP growth is a non-strategic allocation made in addition to housing provided in SD5. Furthermore, there are several other adjacent authorities along the highly urbanised coastline of southern England, including Worthing, Adur, Horsham and Chichester. Together, these authorities provide for at least 51,182 dwellings and a minimum of 115.7ha of employment space in the forthcoming planning period Table 1. This represents significant urban development, the effect of which needs to be considered within the in-combination scope of this HRA.
- 2.25 Clearly, as can be inferred from the table, residential growth in Aldingbourne only accounts for 0.2% of the overall residential growth in this area of southern England. This is only a fraction of the total urbanisation footprint and needs to be acknowledged when undertaking HRA. Nevertheless, the potential for Aldingbourne's contribution – however small – to an in-combination effect arising from increased development in the wider geographic area, must be considered.
- 2.26 The Arun Local Plan HRA identified that the Arun Local Plan is associated with several impact pathways, including recreational pressure, water quality, water quantity and loss of functionally linked land, and as such similar impact pathways that link the Aldingbourne NDP to nearby European sites. Given the extent of development, both in terms of its volume and geographical distribution, that they propose, the Local Plans identified in Table 1 (and their HRAs) are the most important documents to consider in assessing the in-combination effect of the Aldingbourne NDP.

**Table 1: Summary of the development (residential and employment) in Arun District, the overarching authority of the Aldingbourne NDP area (marked in bold), and other relevant adjacent authorities.**

District	Residential Growth (number of dwellings)	Employment growth (ha)
<b>Arun (2011-2031)<sup>9</sup></b>	<b>20,000</b>	<b>75</b>
Worthing (2016-2033) <sup>10</sup>	4,182	11.6
Adur (2011-2032) <sup>11</sup>	3,718	4.1
Horsham (2011-2031) <sup>12</sup>	16,000	Not Explicitly Stated
Chichester (2014-2029) <sup>13</sup>	7,282	25
<b>All Authorities</b>	<b>51,182</b>	<b>115.7 (minimum)</b>

- 2.27 It should be noted that, while their broad potential impacts will be considered, this document does not carry out a full HRA of these overarching Local Plans. Instead it draws upon existing HRAs that have been carried out on the relevant development Plans prior to their adoption.

<sup>9</sup> Adopted Arun Local Plan, July 2018. Available at: <https://www.arun.gov.uk/adopted-local-plan/> [Accessed on the 07/10/2019].

<sup>10</sup> Worthing Borough Council Reg.18 Draft Local Plan. Available at: <https://www.adur-worthing.gov.uk/media/media.151142.en.pdf> [Accessed on the 07/10/2019].

<sup>11</sup> Adopted Adur District Council Local Plan, December 2017. Available at: <https://www.adur-worthing.gov.uk/media/media.147013.en.pdf> [Accessed on the 07/10/2019].

<sup>12</sup> Adopted Horsham District Planning Framework, November 2015, Available at [https://beta.horsham.gov.uk/\\_data/assets/pdf\\_file/0016/60190/Horsham-District-Planning-Framework-2015.pdf](https://beta.horsham.gov.uk/_data/assets/pdf_file/0016/60190/Horsham-District-Planning-Framework-2015.pdf) [Accessed on the 07/10/2019]. Note that the new Horsham District Local Plan is currently undergoing consultation.

<sup>13</sup> Adopted Chichester Local Plan, July 2015. Available at: <https://www.chichester.gov.uk/newlocalplan> [Accessed on the 07/10/2019]. Note that the new Chichester Local Plan is currently under review.

## 3. Impact Pathways

3.1 The following impact pathways are relevant to the Aldingbourne Neighbourhood Plan:

- Loss of functionally linked land
- Recreational pressure
- Water quantity, level and flow
- Water quality
- Atmospheric pollution
- Construction activities (visual, noise and dust pollution)

### Loss of Functionally Linked Land

3.2 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 always the case. A diverse array of qualifying species including birds, bats and amphibians are not confined to the boundary of designated sites.

3.3 For example, the highly mobile nature of both wildfowl and heathland birds implies that areas of habitat of crucial importance to the maintenance of their populations are outside the physical limits of European sites. Despite not being part of the formal designation, this habitat is still integral to the maintenance of the structure and function of the interest feature on the designated site and, therefore, land use plans that may affect such areas should be subject to further assessment. Examples of other mobile qualifying species are great-crested newts and bats.

3.4 Bats are known to travel considerable distances from their roosts to feeding sites. For example, in a 2001 study, female adult Bechstein's bats regularly undertook commuting distances of up to 1km<sup>14</sup>. Another study found that lesser horseshoe bats generally foraged within 600m of the nursery roost, with a single individual foraging up to 4.2km from the roost<sup>15</sup>. For Bechstein's bats, the Core Sustainance Zone (CSZ) around the Singleton and Cocking Tunnels SAC is 1.5km, within which all habitat suitable for use by foraging Bechstein's bats (primarily broad-leaved woodland) and associated commuting features such as river corridors and mature hedgerows should be preserved. This is based upon radio-tracking evidence for the home ranges of several Bechstein's bat populations. Bechstein bat radio-tracking projects have established that individuals generally remain within approx. 1.5km of their roosts<sup>16</sup>. Furthermore, a 2001 radio-tracking study in the Ebernoe Common SAC, showed that the maximum distance travelled by tagged individuals was 1,407m, with an average of 735.7m<sup>17</sup>.

3.5 However, barbastelle bats, the second qualifying species of the Singleton and Cocking Tunnels SAC, tend to commute much longer distances to their favoured foraging habitats and hibernation sites than Bechstein's bats. A study on barbastelle bats determined that home range distances show considerable inter-individual differences, with bats traveling between 1 and 20km to reach their foraging areas<sup>18</sup>. In 2016, the Bat Conservation Trust published guidelines on how to determine CSZs for bats and highlighted that barbastelles have a mean maximum CSZ of 6.47km<sup>19</sup>. Overall, both spring migrations or regular foraging trips might take bat species relatively far beyond designated site boundaries. Given that the Singleton and

<sup>14</sup> Kerth G., Wagner M. & Koenig B. 2001. Roosting together, foraging apart: Information transfer about food is unlikely to explain sociality in female Bechstein's bats (*Myotis bechsteinii*). Behavioral Ecology and Sociobiology 50: 283-291.

<sup>15</sup> Bontadina F., Schofield H. & Naef-Daenzer B. (2002). Radio-tracking reveals that lesser horseshoe bats (*Rhinolophus hipposideros*) forage in woodland. Journal of Zoology 258: 281-290.

<sup>16</sup> Schofield H. & Morris C. (2000). Ranging Behaviour and Habitat Preferences of Female Bechstein's Bats in Summer. Vincent Wildlife Trust.

<sup>17</sup> Fitzsimmons P., Hill D., Greenaway F. (2002). Patterns of habitat use by female Bechstein's bats (*Myotis bechsteinii*) from a maternity colony in a British woodland.

<sup>18</sup> Zeale M.R.K., Davidson-Watts I. & Jones G. (2012). Home range use and habitat selection by barbastelle bats (*Barbastella barbastellus*): Implications for conservation. Journal of Mammalogy 93: 1110-1118.

<sup>19</sup> Bat Conservation Trust. (2016). Coe Sustainance Zones: Determining zone size. Available at [https://cdn.bats.org.uk/pdf/Resources/Core\\_Sustainance\\_Zones\\_Explained\\_04.02.16.pdf?mtime=20190219173135](https://cdn.bats.org.uk/pdf/Resources/Core_Sustainance_Zones_Explained_04.02.16.pdf?mtime=20190219173135) [Accessed on the 14/10/2019].



Cocking Tunnels SAC is protected for its use as a hibernation site, the main issue for the SAC is the protection of commuting structures in the landscape to ensure that the roost is not isolated.

- 3.6 The following European sites within 10km of Aldingbourne Parish are considered to be potentially susceptible to the loss of functionally linked land as a result of development in the Parish (sites in bold are taken forward into the following chapters; note that there are also no further bat SACs within 12km of Aldingbourne Parish):

- **Singleton and Cocking Tunnels SAC (located approx. 8.3km to the north-west of Aldingbourne Parish)**
- **Arun Valley SPA (located approx. 8.9km to the north-east of Aldingbourne Parish)**
- **Chichester and Langstone Harbours SPA / Ramsar (located approx. 8.1km to the west of Aldingbourne Parish)**
- **Pagham Harbour SPA / Ramsar (located approx. 6.4km to the south-west of Aldingbourne Parish)**

## Recreational Pressure

- 3.7 There is growing 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, and impacts on European protected sites<sup>20 21</sup>. 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 Local Plans tend to focus on recreational sources of disturbance as a result of new residents<sup>22</sup>. Recreational pressure can affect any habitat type, but the impact of housing growth on sites with water bodies (e.g. marine sites, lakes and rivers) is likely to be especially strong, because these habitats have a particularly strong recreational draw. Recreational pressure can manifest in different forms and the following are considered in this HRA:

- Disturbance of breeding or non-breeding birds (discussed below)
- Trampling leading to mechanical damage and erosion (discussed below)
- Dog fouling leading to eutrophication
- Other urban pressures (e.g. cat / dog predation, littering)

## Disturbance of non-breeding birds (September to March)

- 3.8 Human activity can affect birds either directly (e.g. by causing them to flee) or indirectly (e.g. by 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 more subtle 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>23</sup>.
- 3.9 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>24</sup>.

<sup>20</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>21</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>22</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>23</sup> Riley, J. 2003. Review of Recreational Disturbance Research on Selected Wildlife in Scotland. Scottish Natural Heritage.

<sup>24</sup> Riddington, R. *et al.* 1996. The impact of disturbance on the behaviour and energy budgets of Brent geese. *Bird Study* 43:269-279

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>25</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>26 27</sup>. Recreation disturbance in winter can be more adverse because birds are more vulnerable at this time of year due to food shortages.

- 3.10 The potential for disturbance may be different in winter than in summer, in that there are often a smaller number of recreational users. Furthermore, the impacts of disturbance at a population level may be reduced because birds are not breeding. However, recreational disturbance in winter may still have negative impacts, because birds face seasonal food shortages and are likely to be susceptible to any nutritional loss. Therefore, the abandonment of suitable feeding areas due to disturbance can have serious consequences for their ability to find suitable alternative feeding sites.
- 3.11 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 to 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.
- 3.12 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 than hiking<sup>28</sup>. Scientific evidence also suggests that key disturbance parameters, such as areas of influence and flush distance, are significantly greater for dog walkers than hikers<sup>29</sup>. A UK meta-analysis suggests that important spatial (e.g. the area of a site potentially influenced) and temporal (e.g. how often or long an activity is carried out) parameters differ between recreational activities, suggesting that activity type is a factor that should be taken into account in HRAs<sup>30</sup>.
- 3.13 It should be emphasised that recreational use is not inevitably a problem. Many European sites also contain nature reserves managed for conservation and public appreciation of nature. In heathlands a certain level of physical disturbance (that is not continuous in nature) is considered beneficial, as this contributes to the maintenance of the overall habitat diversity and the maintenance of bare ground, the habitat feature that may harbour some of the rarest heathland species<sup>31</sup>. However, the optimum disturbance required has not been quantified and is likely to be confined within narrow limits. Once the optimum recreational pressure is exceeded, negative impacts of recreation are to be expected. The most prominent ones, namely mechanical damage and nutrient enrichment are discussed below.
- 3.14 Given that the European sites within 10km of Aldingbourne Parish are designated for overwintering waterfowl, the following paragraphs discuss academic research available on this functional group of birds. Tuite et al<sup>32</sup> used a large (379 sites), long-term (10-year) dataset (September – March species counts) to correlate seasonal changes in waterfowl abundance with the presence of various recreational activities. They determined that the shoveler was one of the most sensitive species to recreational activities, such as

<sup>25</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>26</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*. doi:10.1371/journal.pone.0072984.

<sup>27</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>28</sup> Banks P.B., Bryant J.Y. 2007. Four-legged friend or foe? Dog walking displaces native birds from natural areas. *Biology Letters* 3: 14pp.

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

<sup>30</sup> Weitowitz D., Panter C., Hoskin R., Liley D. The spatio-temporal footprint of key recreation activities in European protected sites. Manuscript in preparation.

<sup>31</sup> Key R. 2000. Bare ground and the conservation of invertebrates. *British Wildlife* 11: 183-192.

<sup>32</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



sailing/windsurfing and rowing. Studies on recreation in the Solent have established that human leisure activities cause direct disturbance to wintering waterfowl populations<sup>33 34</sup>.

- 3.15 Furthermore, a recent study on recreational disturbance on the Humber<sup>35</sup> assesses different types of noise disturbance on waterfowl referring to studies relating to aircraft (see Drewitt 1999<sup>36</sup>), traffic (Reijnen, Foppen, & Veenbaas 1997)<sup>37</sup>, dogs (Lord, Waas, & Innes 1997<sup>38</sup>; Banks & Bryant 2007<sup>39</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>40</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) will both influence the response (Delaney et al. 1999<sup>41</sup>; Beale & Monaghan 2005<sup>42</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>43</sup>.
- 3.16 As part of the Bird Aware Solent Project, a study monitoring bird disturbance across 20 different locations was undertaken between December 2009 and February 2010<sup>44</sup>. This involved recording all recreational activities and relating these to behavioural responses of birds in pre-defined focal areas of intertidal habitat. The study recorded a total of 2,507 potential disturbance events, generating 4,064 species-specific behaviours. Roughly 20% of recorded events resulted in disturbance of waterfowl, including behaviours such as becoming alert, walking / swimming away, short flights (< 50m) or major flights. Generally, the likelihood of disturbance decreased with increasing distance to the disturbance stimulus (i.e. the recreational activity being undertaken). Importantly, the study also illustrated that recreational activities in the intertidal zone have the highest disturbance potential (41% of recorded events resulted in disturbance), followed by water-based activities (25%) and shore-based activities (12%).
- 3.17 The specific distance at which a species takes flight when disturbed is known as the 'tolerance distance' (also called the 'escape distance') and greatly differs between species. The tolerance distances of the study carried out for the Bird Aware project are summarised in Table 2. It is reasonable to assume from this evidence that disturbance is unlikely to be relevant at distances of beyond 200m. The data show that the sensitivity to disturbance differ between species, but that the intra-specific variation in response to disturbance is equally important. It was also examined how disturbance to different recreational activities varies between species, but for most species the number of recorded events was not enough for comparison (except for brent goose, oystercatcher and redshank). The results suggest that species might respond to recreational activities differently. For example, brent geese responded to dog walkers much further away than oystercatcher and redshank.

**Table 2: Tolerance distances in metres of 16 species of waterfowl to various forms of recreational disturbance, as found in recent disturbance fieldwork<sup>45</sup>. The distances are provided both as a median and a range.**

Species	Disturbance Distance (metres from stimulus)	Activity
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<sup>33</sup> Footprint Ecology. 2010. Recreational Disturbance to Birds on the Humber Estuary

<sup>34</sup> Footprint Ecology, Jonathan Cox Associates & Bournemouth University. 2010. Solent disturbance and mitigation project – various reports.

<sup>35</sup> Helen Fearnley Durwyn Liley and Katie Cruickshanks (2012) Results of Recreational Visitor Survey across the Humber Estuary produced by Footprint Ecology

<sup>36</sup> Drewitt, A. (1999) Disturbance effects of aircraft on birds. English Nature, Peterborough.

<sup>37</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>38</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>39</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>40</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.

<sup>41</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>42</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>43</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>44</sup> Liley D., Stillman R. & Fearnley H. 2011. The Solent Disturbance and Mitigation Project Phase 2: Results of Bird Disturbance Fieldwork 2009/10. Report by Footprint Ecology for the Solent Forum.

<sup>45</sup> Ibid.

	Median	Range	Cycling	Dog walking	Jogging	Walking
Brent goose	51.5	5 - 178	100	95	30	50
Oystercatcher	46	10 - 200	150	45		50
Redshank	44.5	75 - 150	125	50	40	58
Curlew	75	25 - 200				
Turnstone	50	5 - 100				
Coot	12	10 - 20				
Mute swan	12	8 - 50				
Grey plover	75	30 - 125				
Little egret	75	30 - 200				
Wigeon	75.5	20 - 125				
Dunlin	75	25 - 300				
Shelduck	77.5	50 - 140				
Great-crested grebe	100	50 - 100				
Lapwing	75	18 - 125				
Teal	60	35 - 200				
Mallard	25	10 - 50				

- 3.18 The most recent visitor surveys conducted in the Solent in winter 2017 / 2018, indicated that visitors travelled distances between 76m and 300km to visit their Solent destination, with a mean distance of 8.4km and a median distance of 1.4km<sup>46</sup>. While the Solent therefore is clearly visited by people from across England, the recreation patterns are clearly driven by local Solent residents. This is reflected in the Interim Solent Recreation Mitigation Strategy<sup>47</sup>, which established that a zone of influence of 5.6km around the SPAs in the Solent is to be used, comparable to other European sites such as the Thames Basin Heaths SPA and the Dorset Heathlands SPA. All housing developments within this catchment are to provide financial contributions to mitigation measures employed to buffer these sites against adverse effects.

## Trampling / Mechanical Damage

- 3.19 Most aquatic or terrestrial sites can be affected by trampling and other mechanical damage, which in turn causes soil compaction and erosion:

- Wilson & Seney<sup>48</sup> examined the degree of track erosion caused by hikers, motorcycles, horses and cyclists from 108 plots along tracks in the Gallatin National Forest, Montana. Although the results proved difficult to interpret, it was concluded that horses and hikers disturbed more sediment on wet tracks, and therefore caused more erosion, than motorcycles and bicycles.
- Cole et al<sup>49</sup> conducted experimental off-track trampling in 18 closed forest, dwarf scrub and meadow & grassland communities (each tramped between 0 – 500 times) over five mountain regions in the US. Vegetation cover was assessed two weeks and one year after trampling, and an inverse relationship with trampling intensity was discovered, although this relationship was weaker after one year than two weeks indicating some recovery of the vegetation. Differences in plant morphological characteristics were found to explain more variation in response between different vegetation types than soil and topographic factors. Low-growing, mat-forming grasses regained their cover best after two weeks and were considered most resistant to trampling, while

<sup>46</sup> Liley D. & Panter C. 2018. Solent Visitor Surveys, winter 2017-18. Unpublished report by Footprint Ecology for the Bird Aware Solent Project. 81pp

<sup>47</sup> <http://www.birdaware.org/CHttpHandler.ashx?id=27309&p=0> [Accessed 15/07/2019]

<sup>48</sup> Wilson, J.P. & J.P. Seney. 1994. Erosional impact of hikers, horses, motorcycles and off road bicycles on mountain trails in Montana. Mountain Research and Development 14:77-88

<sup>49</sup> Cole, D.N. 1995a. Experimental trampling of vegetation. I. Relationship between trampling intensity and vegetation response. Journal of Applied Ecology 32: 203-214

Cole, D.N. 1995b. Experimental trampling of vegetation. II. Predictors of resistance and resilience. Journal of Applied Ecology 32: 215-224

tall forbs (non-woody vascular plants other than grasses, sedges, rushes and ferns) were considered least resistant. The cover of hemicryptophytes and geophytes (plants with buds below the soil surface) was heavily reduced after two weeks, but had recovered well after one year and as such these were considered most resilient to trampling. Chamaephytes (plants with buds above the soil surface) were least resilient to trampling. It was concluded that these would be the least tolerant of a regular cycle of disturbance.

- Cole<sup>50</sup> conducted a follow-up study (in 4 vegetation types) in which shoe type (trainers or walking boots) and trampler weight were varied. Although immediate damage was greater with walking boots, there was no significant difference after one year. Heavier trampers caused a greater reduction in vegetation height than lighter trampers, but there was no difference in the effect on cover.
- Cole & Spildie<sup>51</sup> experimentally compared the effects of off-track trampling by hiker and horse (at two intensities – 25 and 150 passes) in two woodland vegetation types (one with an erect forb understorey and one with a low shrub understorey). Horse trampling was found to cause the largest reduction in vegetation cover. The forb-dominated vegetation suffered greatest disturbance, but recovered rapidly. Generally, it was shown that higher trampling intensities caused more disturbance.
- In heathland sites, trampling damage can also affect the value of a site to wildlife. For example, heavy use of sandy tracks loosens and continuously disturbs sand particles, reducing the habitat's suitability for invertebrates<sup>52</sup>. Species that burrow into flat surfaces such as the centres of paths, are likely to be particularly vulnerable, as the loose sediment can no longer maintain their burrow. In some instances, nature conservation bodies and local authorities resort to hardening paths to prevent further erosion. However, this is concomitant with the loss of habitat used by wildlife, such as sand lizards and burrowing invertebrates.

3.20 In marine ecosystems there is increasing evidence of negative effects of boating activities (e.g. anchoring, grounding) causing mechanical damage to intertidal habitats. A 2008 study in the Mediterranean Sea found that anchoring represented the largest threat on sensitive features (e.g. the *Posidonia oceanica* meadows) in the study area, resulting in more damage than other water-based activities such as swimming, snorkelling and scuba diving<sup>53</sup>. A negative effect of boating activities, and particularly anchoring, was also reported in a study in the Balearic Islands, Spain<sup>54</sup>. The damage is mainly caused by the abrasive nature of the anchoring, both disturbing the sediment and damaging the plants.

3.21 Overall, the following European sites within 10km of Aldingbourne Parish are considered to be potentially susceptible to recreational pressure arising from development in the Parish (sites in bold are taken forward into the following chapters):

- **Pagham Harbour SPA / Ramsar (located approx. 6.4km to the south-west of Aldingbourne Parish)**
- **Chichester and Langstone Harbours SPA / Ramsar (located approx. 8.1km to the west of Aldingbourne Parish)**
- **Singleton and Cocking Tunnels SAC (located approx. 8.3km to the north-west of Aldingbourne Parish)**
- **Arun Valley SPA (located approx. 8.9km to the north-east of Aldingbourne Parish)**
- Duncton to Bignor Escarpment SAC (located approx. 5.1km to the north-east of Aldingbourne Parish)

<sup>50</sup> Cole, D.N. 1995c. Recreational trampling experiments: effects of trampler weight and shoe type. Research Note INT-RN-425. U.S. Forest Service, Intermountain Research Station, Utah.

<sup>51</sup> Cole, D.N., Spildie, D.R. 1998. Hiker, horse and llama trampling effects on native vegetation in Montana, USA. *Journal of Environmental Management* 53: 61-71

<sup>52</sup> Taylor K., Anderson P., Liley D. & Underhill-Day J.C. 2006. Promoting positive access management to sites of nature conservation value: A guide to good practice. English Nature / Countryside Agency, Peterborough and Cheltenham.

<sup>53</sup> Lloret J., Zaragoza N., Caballero D. & Riera V. 2008. Impacts of recreational boating on the marine environment of Cap de Creus (Mediterranean Sea). *Ocean & Coastal Management* 51: 749-754.

<sup>54</sup> Balaguer P., Diedrich A., Sarda R., Fuster M., Canellas B. & Tintore J. 2011. Spatial analysis of recreational boating as a first key step for marine spatial planning in mallorcs (Balearic Islands, Spain). *Ocean & Coastal Management* 54: 241-249.

- 3.22 While the Duncton to Bignor Escarpment SAC might potentially receive recreational visits from the Aldingbourne residents, the site is not considered further in this HRA. This is primarily because the Natural England Site Improvement Plan does not highlight any threats or pressures for this site. Furthermore, the SAC also lies just outside the 5km core visitor catchment that is typical for most terrestrial European sites and in which Likely Significant Effects would arise.

## Water Quantity, Level and Flow

- 3.23 The unique nature of wetlands combines shallow water, high levels of nutrients and high primary productivity. These conditions are ideal for the growth of organisms at the basal level of food webs, which feed many species of birds, mammals, fish and amphibians. Overwintering and migrating wetland bird species are particularly reliant on these food sources, as they need to build up enough nutritional reserves to sustain their long migration routes.
- 3.24 Winter flooding is integral to the function of most wetlands and essential in maintaining a variety of foraging habitats for SPA birds. Maintaining a steady water supply during key stages of their life cycle will be critical for survival. However, different species vary in their requirements of water levels. Splash and / or shallow flooding is required to provide suitable feeding areas and roosting sites for ducks and waders. In contrast, deeper flooding is essential to provide these habitats for Bewick's swans and some other duck species.
- 3.25 Wetland habitats rely on hydrological connections with other surface waters, such as rivers, streams and lakes. A constant supply of water is fundamental to maintaining the ecological integrity of sites. However, while the natural fluctuation of water levels within narrow limits is desirable, excess or too little water supply might cause the water level to be outside of the required range for SPA birds, their prey items or key plant species. This might lead to the loss of the structure and functioning of wetland habitats. There are two mechanisms through which urban development might negatively affect the water level in aquatic SPAs:
- The supply of new housing with potable water will require an increase in the abstraction of water from surface water and groundwater bodies. Depending on the level of water stress in the geographic region, this is likely to reduce the water level in SPAs that share the same catchment.
  - The expansion of impermeable surfaces in urban areas increases the volume and speed of surface water runoff. As traditional drainage systems often cannot cope with the volume of stormwater, sewer overflows are designed to discharge excess water directly into watercourses. Often this pluvial flooding results in downstream inundation of watercourses and the potential flooding of wetland habitats.
- 3.26 Specifically, the Conservation Objectives Supplementary Advice Note for the Arun Valley SPA / Ramsar highlights the importance of a naturally fluctuating water flow and specific water depth to the qualifying species of the SPA / Ramsar, particularly the Bewick's swans. Increases to the quantity and rate of water delivery can result in summer flooding and prolonged / deeper winter flooding. This in turn results in the reduction of suitable feeding and roosting sites for birds. For example, in areas where water is too deep, most waders will be unable to reach their food sources close to the ground. Generally, wetlands within and downstream of urban areas are likely to have some limited capacity to absorb some of the surface- water runoff from pavement and buildings, thereby providing flood control and preventing water logging of crops. However, if this capacity is exceeded, there might be adverse effects on the integrity of such sites.
- 3.27 The implementation of the Aldingbourne NDP may result in changes to the water quantity, level and flow in the catchment of the Arun Valley SPA / Ramsar. This might alter the water level in the designated site with cascading effects on overwintering wildfowl.
- 3.28 Overall, the following European sites within 10km of Aldingbourne Parish are considered to be potentially susceptible to recreational pressure arising from development in the Parish (sites in bold are taken forward into the following chapters):
- **Arun Valley SPA / Ramsar (located approx. 8.9km to the north-east of Aldingbourne Parish)**

## Water Quality

- 3.29 An increased amount of residential or employment development can lead to reduced water quality of rivers and estuarine environments. Sewage and industrial effluent discharges can result in an increased nutrient input to European sites leading to unfavourable conditions. Diffuse pollution, for example due to urban run-off, has been identified during an Environment Agency Review of Consents process and a joint Environment Agency and Natural England evidence review, as being a major pollutant for aquatic ecosystems.
- 3.30 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 plant nutrients in water, increases all biological activity and leads to significant changes in the composition and structure of aquatic food webs. Two of the most frequent eutrophication effects are shifts in algal species compositions and the frequency of nuisance algal blooms<sup>55</sup>. These blooms have a multitude of consequences, including changes in vascular plant production (and biomass and species composition), reduced water clarity, increased pH, dissolved oxygen depletion and, ultimately, an increased likelihood of death of ecologically and economically important animal species<sup>56</sup>. The decomposition of organic wastes that often accompanies eutrophication deoxygenates water further, augmenting the oxygen depleting effects of eutrophication. In the marine environment, nitrogen is the limiting plant nutrient and so eutrophication is associated with discharges containing available 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.
  - Increased discharge of treated sewage effluent can result in high levels of macroalgal growth, smothering sandflats and mudflats, and in increased scour (as a result of greater flow volumes).
- 3.31 At sewage treatment works, additional residential development increases the risk of effluent escape into aquatic environments in addition to consented discharges to the catchment. In many urban areas, sewage treatment and surface water drainage systems are combined, and therefore a predicted increase in flood and storm events could increase pollution risk.
- 3.32 The most likely problem arising from the Aldingbourne NDP is the discharge of treated sewage effluent, which is likely to increase the input of phosphorus and nitrogen into the Arun Valley SPA / Ramsar and maritime European sites in the Solent. The water quality is listed as one of the main threats to the site integrity of these European sites in the Natural England Site Improvement Plans. Given the relatively long distances between Aldingbourne and the sites listed below, direct surface runoff from urban areas is not considered to be relevant in this instance.
- 3.33 Overall, the following European sites within 10km of Aldingbourne Parish are considered to be potentially susceptible to water quality impacts arising from development in the Parish (sites in bold are taken forward into the following chapters):
- **Pagham Harbour SPA / Ramsar (located approx. 6.4km to the south-west of Aldingbourne Parish)**
  - **Chichester and Langstone Harbours SPA / Ramsar (located approx. 8.1km to the west of Aldingbourne Parish)**
  - **Solent Maritime SAC (located approx. 8.1km to the west of Aldingbourne Parish)**
  - **Arun Valley SPA (located approx. 8.9km to the north-east of Aldingbourne Parish)**

<sup>55</sup> Smith V.H., Joye S.B. & Howarth R.W. 2006. Eutrophication of freshwater and marine ecosystems. *Limnology and Oceanography* 51: 351-355.

<sup>56</sup> Smith V.H., Tilman G.D. & Nekola J.C. 1999. Eutrophication: Impacts of excess nutrient inputs on freshwater, marine, and terrestrial ecosystems. *Environmental Pollution* 100: 179-196.



# Atmospheric Pollution (Atmospheric Nitrogen Deposition)

3.34 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 **Error! Reference source not found..** Ammonia can have a directly toxic effect upon vegetation, particularly at close distances to the source such as near road verges<sup>57</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>58 59</sup>.

**Table 3: Main sources and effects of air pollutants on habitats and species<sup>60</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>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>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, 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</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</p>

<sup>57</sup> [http://www.apis.ac.uk/overview/pollutants/overview\\_NOx.htm](http://www.apis.ac.uk/overview/pollutants/overview_NOx.htm).

<sup>58</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>59</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>60</sup> Information summarised from the Air Pollution Information System (<http://www.apis.ac.uk/>)

Pollutant	Source	Effects on habitats and species
	<p>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>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 slowly 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 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.</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 and altered species composition in semi-natural plant communities.</p>

3.35 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>61</sup>. Ammonia emissions originate from agricultural practices<sup>62</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 available Local Plan Documents.

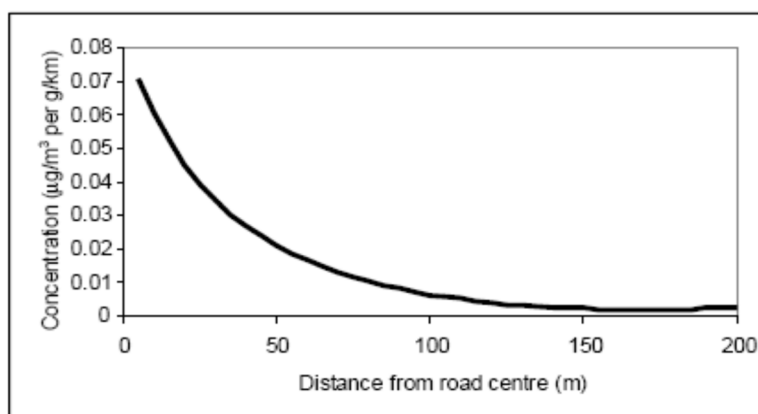
3.36 NO<sub>x</sub> emissions, however, are dominated by the output of vehicle exhausts (more than half of all emissions). A 'typical' housing development will contribute by far the largest portion to its overall NO<sub>x</sub> footprint (92%)

<sup>61</sup> [http://www.apis.ac.uk/overview/pollutants/overview\\_SO2.htm](http://www.apis.ac.uk/overview/pollutants/overview_SO2.htm).

<sup>62</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

through the associated road traffic. Other sources, although relevant, are of minor importance (8%) in comparison<sup>63</sup>. Emissions of NO<sub>x</sub> could therefore be reasonably expected to increase because of a higher number of vehicles due to implementation of the Local Plan Documents.

- 3.37 According to the World Health Organisation, the critical NO<sub>x</sub> 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>64</sup> of atmospheric nitrogen deposition (that is, NO<sub>x</sub> combined with ammonia NH<sub>3</sub>).
- 3.38 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>65</sup> (Figure 4). 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 4: Traffic contribution to concentrations of pollutants at different distances from a road (Source: DfT<sup>66</sup>)**

- 3.39 Exhaust emissions from increased vehicle usage linked to residential and employment development are capable of adversely affecting most plants and potentially altering community composition. Considering this, an increase in the net population and potential employment growth within the Aldingbourne NDP could result in increased traffic adjacent to European sites that are sensitive to atmospheric pollution.
- 3.40 Overall, the following European site within 10km of Aldingbourne Parish is considered to be susceptible to atmospheric pollution arising from development in the Parish (sites in bold are taken forward into the following chapters):

- **Duncton to Bignor Escarpment SAC (located approx. 5.1km to the north-east of Aldingbourne Parish)**

- 3.41 The Duncton to Bignor Escarpment SAC is sensitive to nitrogen deposition due to its qualifying feature *Asperulo-Fagetum* beech forests (empirical critical load of 10-20 kg N/ha/yr)<sup>67</sup>. Likely consequences of exceedance impacts include changes in ground vegetation and mycorrhiza, a nutrient imbalance and changes to the soil fauna.

## Construction Related Activities (dust emissions, water run-off)

- 3.42 The implementation of the Aldingbourne NDP might result in increased emission of dust during the construction, associated with processes such as top soil stripping, digging and the movement of Heavy Duty Vehicles carrying building materials or rubble. Dust emission from construction sites has the potential for an adverse temporary localised effect on plant growth, by coating vegetation, blocking stomata and slowing

<sup>63</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>64</sup> The critical load is the rate of deposition beyond which research indicates that adverse effects can reasonably be expected to occur

<sup>65</sup> <http://www.dft.gov.uk/webtag/documents/expert/unit3.3.3.php#013> [Accessed on the 08/10/2019]

<sup>66</sup> <http://www.dft.gov.uk/ha/standards/dmr/vol11/section3/ha20707.pdf> [Accessed on the 08/10/2019]

<sup>67</sup> <http://www.apis.ac.uk/src/select-a-feature?site=UK0030138&SiteType=SAC&submit=Next> [Accessed on the 08/10/2019]



down photosynthesis. While the death of plants attributed to dust emission might adversely affect the integrity of a European site directly (if these plants are qualifying features), the integrity of a site might also be threatened indirectly through a changed community composition.

- 3.43 According to recent guidance from the Institute of Air Quality Management<sup>68</sup> *“an assessment will normally be required where there is...an ‘ecological receptor’ within: 50m of the boundary of the site; or 50m of the route(s) used by construction vehicles on the public highway...”*. This is based on the view that heavy dust soiling is a threat to vegetation, but only up to a distance of 50m from dust generating activities even in the absence of mitigation measures (e.g. wetting).
- 3.44 Policies that will result in construction-related activities also carry the risk of negative effects on both surface water and groundwater quality through spillage or leaching of fuels or other contaminating substances (e.g. cement or grout) used in construction. Ultimately, diffuse pollution deriving from construction activities therefore has the potential for adverse effects on the integrity of European sites.
- 3.45 However, the closest European site sensitive to dust deposition to Aldingbourne Parish is the Duncton to Bignor Escarpment SAC approx. 5.1km from the Parish boundary at its closest point. Even if a precautionary screening distance of 200m for dust emission is used, all European sites are beyond the distance for which negative impacts relating to dust would be expected.
- 3.46 It is considered that European sites designated for their breeding or overwintering bird species are, in principle, sensitive to noise or visual disturbance arising from construction works. In the case of the Aldingbourne NDP this includes the Pagham Harbour SPA / Ramsar, the Chichester and Langstone Harbours SPA / Ramsar and the Arun Valley SPA / Ramsar. The Waterbird Disturbance Mitigation Toolkit, produced by the Institute of Estuarine & Coastal Studies at the University of Hull, provides useful threshold distances for both visual and noise disturbance. It is generally considered that noise disturbance arising from the noisiest of works (i.e. impact piling) is irrelevant beyond 170m. The closest of the European sites potentially sensitive to such disturbance is the Pagham Harbour SPA / Ramsar, located 6.4km from Aldingbourne. This is well beyond the threshold screening distances for visual and noise disturbance. It is therefore considered that this impact pathway will not be relevant for the Aldingbourne NDP.
- 3.47 Similarly, it is considered that water pollution arising from construction works is unlikely to be a threat for any of the aquatic European sites. Primarily, this is because it is illegal to pollute watercourses (whether or not they are designated as European sites) under the Environmental Damage (Prevention and Remediation) (England) Regulations 2015 and Environmental Permitting (England and Wales) Regulations 2016. Therefore, any site where a risk exists must incorporate protection measures into their construction and operational procedures. Each initiative brought forward will have to provide a Construction Environmental Management Plan (CEMP). The plan will be implemented during construction and will include best practice measures to ensure dust emissions and surface runoff do not result in adverse effects on European sites. Because these measures are not specifically introduced to protect European sites, they fall outside of the 2018 ‘People Over Wind’ European Court of Justice (ECJ) ruling<sup>69</sup> and can thus be included prior to Appropriate Assessment. Furthermore, the long distances between Aldingbourne and the relevant European sites mean that it is unlikely for any construction-related pollutants to actually reach any of these sites.
- 3.48 Overall, due to the long distances between the Aldingbourne NDP area and European sites, and the mitigating role of the Environmental Damage Regulations (2015), the impact pathway ‘construction related activities’ is not considered further in this HRA.

<sup>68</sup> IAQM. (2016) *Guidance on the assessment of dust from demolition and construction*. The Institute of Air Quality Management. Version 1.1.

<sup>69</sup> Case C-323/17

## 4. Test of Likely Significant Effects (LSEs)

### Introduction

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

#### **Loss of Functionally Linked Land**

- Singleton and Cocking Tunnels SAC
- Arun Valley SPA / Ramsar
- Pagham Harbour SPA / Ramsar
- Chichester and Langstone Harbours SPA / Ramsar

#### **Recreational Pressure**

- Arun Valley SPA / Ramsar
- Pagham Harbour SPA / Ramsar
- Chichester and Langstone Harbours SPA / Ramsar

#### **Water Quality**

- Arun Valley SPA / Ramsar
- Pagham Harbour SPA / Ramsar
- Chichester and Langstone Harbours SPA / Ramsar
- Solent Maritime SAC

#### **Water Quantity, Level and Flow**

- Arun Valley SPA / Ramsar

#### **Atmospheric Pollution**

- Duncton to Bignor Escarpment SAC

- 4.2 The policies contained within the Aldingbourne NDP were therefore screened for their potential of Likely Significant Effects (LSEs) on European sites. The full results of the LSEs Test for the Aldingbourne Neighbourhood Plan are presented in Appendix C.

## Loss of Functionally Linked Land

### Singleton and Cocking Tunnels SAC

- 4.3 The Singleton and Cocking Tunnels SAC is designated for its populations of barbastelle bats and Bechstein's bats, which are known to depend on functionally linked land outside the designated site boundary. Natural England's Site Conservation Objectives Supplementary Advice Note highlights that both bat species use flightlines from roosts to surrounding habitat and foraging areas and that these flightlines will extend beyond the site boundary into the wider local landscape. Typical flightlines include linear hedgerows, waterways, scrubland and woodland edges, and tracks.
- 4.4 Furthermore, radio-tracking studies have shown that bats make significant use of land parcels outside the site boundary for foraging activity. This is particularly the case for barbastelle bats, which can forage in wet

meadows and riparian habitats between 10 and 15km from their roost site. In contrast, Bechstein's bats tend to forage in woodland closer to their roost sites, with more limited home ranges.

- 4.5 The Singleton and Cocking Tunnels SAC is located approx. 8.3km to the north-west of Aldingbourne Parish, and as such the Parish is within the screening distance for functionally linked land of the SAC. Due consideration must therefore be given to any development proposals that might result in the loss of greenfield sites and flightlines used by bats originating from the SAC. As such, there is the potential for LSEs of the Aldingbourne Neighbourhood Plan on the Singleton and Cocking Tunnels SAC and the site is screened in for Appropriate Assessment in relation to this impact pathway.
- 4.6 The following policies and site allocations contained within the Plan are screened in for Appropriate Assessment:
- **Policy H1 – Provide housing to meet District Council Allocation** (92 net new dwellings on two allocated sites)
  - **Policy H6 – Windfall Sites** (Provides for residential windfall development on infill and redevelopment sites)
  - **Policy EE1 – Supporting Existing Employment and Retail** (Provides for upgrades and extensions to existing employment sites within Aldingbourne)
  - **Policy LC9 – Allocation for camping / touring caravans site** (Provides for the extension of a camping / touring caravans site in Aldingbourne)

## Arun Valley SPA / Ramsar

- 4.7 The Arun Valley SPA / Ramsar is designated for its overwintering population of Bewick's swan as well as a waterbird assemblage of European importance. Regarding the issue of functionally linked land, Bewick's swans are the SPA's / Ramsar's main feature that requires consideration. Generally, the swans winter on shallow freshwater lakes or marshes, near grasslands that are prone to flooding. However, in recent decades, this species also forages on cultivated land, such as pasture, cereals, stubble fields, sugar beet and oil seed rape. Site-specific evidence for the Arun Valley SPA / Ramsar indicates that Bewick's swans forage in a range of sites to the south of the SPA / Ramsar, between Arundel and Amberley<sup>70</sup>. However, it is also documented that Bewick's swans will fly up to 10km from their roost sites to feed<sup>71</sup>. Using this information, Natural England established two Functionally Connected Land (FCL) Impact Risk Zones:
- Arun Valley SPA FCL Impact Risk Zone 1: This is the core area of supporting habitat for Bewick's swans for which there is good evidence and high probability of usage by SPA / Ramsar birds. For this area any new development outside the built up environment would require bird surveys to demonstrate that a particular land parcel is not used by SPA / Ramsar birds
  - Arun Valley SPA FCL Impact Risk Zone 2: This buffers IRZ 1 by a further 500m and contains additional habitats / areas for which there are records of Bewick's swans. In this zone, only the larger developments are required to undertake bird surveys
- 4.8 Review of the SSSI Impact Risk Zones online indicates that Impact Risk Zone 2 only extends to about 6.5km from the SPA / Ramsar. However, Aldingbourne Parish lies approx. 8.9km to the south-west of the Arun Valley SPA / Ramsar and therefore outside of Impact Risk Zone 2. Even when considering the maximum range of 10km travelled by the brent goose, the sites allocated within the Aldingbourne NDP will lie to the edge of this known maximum foraging range. At this distance, the loss of the relatively small land parcels, are considered to present a low risk to the winter survival of the core SPA population.
- 4.9 It is therefore concluded that there will be no LSEs on the Arun Valley SPA / Ramsar in relation to the impact pathway loss of functionally linked land, both alone and in-combination with other Plans. The site is screened out from Appropriate Assessment regarding this impact pathway.

<sup>70</sup> Thomas, A. (2014). The Birds of Sussex. BTO books. 608pp.

<sup>71</sup> Stroud, D.A., Bainbridge, I.P., Maddock, A., Anthony, S., Baker, H., Buxton, N., Chambers, D., Enlander, I., Hearn, R.D., Jennings, K.R., Mavor, R., Whitehead, S. & Wilson, J.D. (2016). The status of UK SPAs in the 2000s: The Third Network Review. JNCC, Peterborough. 1,108pp.

## Chichester and Langstone Harbours SPA / Ramsar

- 4.10 The Chichester and Langstone Harbours SPA / Ramsar is designated for its wader and waterfowl populations of European significance, including species such as bar-tailed godwit, grey plover, wigeon and shelduck. Many of these species are known to utilise land that is functionally linked to the SPA / Ramsar for roosting and / or foraging. However, the dark-bellied brent goose is arguably the species that is most reliant on functionally linked land outside the SPA's / Ramsar's site boundary. At high tide, this species travels considerable distances from its roost sites to its terrestrial feeding grounds. Overall, the Chichester and Langstone Harbours SPA / Ramsar is considered to be highly sensitive to the loss of functionally linked land.
- 4.11 The Solent Waders and Brent Goose Strategy (SWBGS)<sup>72</sup>, a conservation partnership project focusing particularly on brent geese and wading birds in the Solent, identified the sites that these birds rely on in the Solent, outside of the boundaries of the formal designations. As part of the strategy, surveys were undertaken over three winters between 2016 and 2019. This network of functionally linked feeding and roosting sites has been mapped<sup>73</sup>, identifying Core Areas, Primary Support Areas, Secondary Support Areas, Low Use areas and Candidate areas, which are used for foraging and / or roosting. This HRA has consulted the Solent Waders and Brent Goose Strategy to identify the main parcels of functionally linked land relevant to the Masterplan.
- 4.12 Review of the mapping data available from the Solent Waders and Brent Goose Strategy highlights that the closest parcel identified as functionally linked land for species from any of the Solent European sites, is site C23, a 5.85ha parcel of arable farmland and currently a classification candidate for the strategy. However, this parcel is 7.8km from the boundary of Aldingbourne Parish. It is well known that brent geese preferentially use foraging sites close to the coast. Given that the use of surrounding farmland by wildfowl originating from the Solent SACs is well documented, it is considered very unlikely that brent geese (or another qualifying species) will travel these additional 7.8km to the sites allocated in the Aldingbourne NDP. Therefore, it is concluded that there will be no LSEs on the Chichester and Langstone Harbours SPA / Ramsar in relation to the impact pathway loss of functionally linked land, both alone and in-combination with other Plans. The site is screened out from Appropriate Assessment regarding this impact pathway.

## Recreational Pressure

### Arun Valley SPA / Ramsar

- 4.13 As highlighted in the introduction, the Aldingbourne Neighbourhood Plan allocates 92 net new dwellings on two sites within the Parish, which will increase the local population and is likely to lead to an increased recreational demand in the Parish. The Arun Valley SPA is located 8.9km to the north-east of Aldingbourne and therefore might receive a net increase in visitor pressure due to the implementation of the Plan.
- 4.14 Given the relatively long distance between the Parish and the Arun Valley SPA (8.9km) and the relatively small quantum of housing that is allocated in the Plan, it is considered that the Plan will not result in a material increase in recreational pressure within the SPA. Typical core recreational catchments are roughly 5km, with some estuarine and coastal sites attracting visitors from further away. Aldingbourne Parish is therefore located beyond a typical recreational catchment distance from the Arun Valley SPA.
- 4.15 Furthermore, Natural England's Site Improvement Plan does not note recreational pressure as a concern for the site. This is mainly because Amberley Wild Brooks SSSI, one of the most sensitive parts of the SPA, is managed by the RSPB in order to minimise recreational pressure. For example, access to the site is only possible via the Wey South Path, restricting potential recreational disturbance to a relatively narrow band within the site. Aside from the sound management of the Arun Valley SPA, the recreational pressure impact pathway was also assessed in the South Downs Local Plan HRA, in-combination with growth in other surrounding authorities. The HRA determined that the allocated growth of 46 net new dwellings within 5km of the SPA, and therefore much closer than the growth allocated in Aldingbourne, would lead only to a negligible increase in the number of recreational visits to the site, and that there would be no LSEs on the Arun Valley SPA as a result. This was supported by Natural England, which did not raise concerns regarding the quantum of dwellings to be delivered within 5km of the SPA.

<sup>72</sup> Available at <https://solentwbgs.wordpress.com/> [Accessed 15/07/2019]

<sup>73</sup> Freely available to view online at: <https://solentwbgs.wordpress.com/page-2/> [Accessed 15/07/2019]

- 4.16 Given that recreational pressure in the SPA was not a concern in previous HRAs and Aldingbourne's distance to the site, it is concluded that there will be no LSEs on the Arun Valley SPA in relation to the impact pathway recreational pressure, both alone and in-combination with other Plans. The site is screened out from Appropriate Assessment in relation to this impact pathway.

## Pagham Harbour SPA / Ramsar

- 4.17 The Pagham Harbour SPA / Ramsar is designated for its breeding populations of little and common tern, and overwintering wildfowl species such as the dark-bellied Brent goose. The breeding terns in the SPA / Ramsar are susceptible to egg predation (mostly due to off-lead dogs), trampling damage from recreationists and adverse effects of thermal stress when they are flushed from the eggs. The overwintering wildfowl in the SPA / Ramsar is sensitive to recreational disturbance, particularly from dog walkers, because its foraging or roosting behaviour is likely to be affected, likely leading to reduced calorific intake and / or increased energy expenditure. As such, the Pagham Harbour SPA / Ramsar is considered to be highly sensitive to recreational disturbance arising from new housing development.
- 4.18 Two visitor surveys were undertaken in Pagham Harbour in 2006 and 2012, to get an overview of the recreation patterns in the SPA / Ramsar. The 2012 survey found that proximity to home was the single most important reason for visiting the site, given by 45% of all interviewees. Furthermore, an analysis of the Euclidean linear distances to the visitors' home postcodes revealed that 75% of dog walkers, the group most relevant to recreational disturbance, travelled up to 5.4km to visit the SPA / Ramsar. The 75<sup>th</sup> percentile of all visitor distances is typically used to define the core recreational catchment of a European site. It was decided that a 5km avoidance and mitigation zone around Pagham Harbour SPA / Ramsar was therefore an effective means of addressing impacts resulting from recreational pressure on the site. In 2015, an interim strategic framework was set up in agreement between Arun District Council, Chichester District Council, the RSPB and Natural England, stipulating that all developments resulting in a net increase in dwellings within 5km of the Pagham Harbour SPA / Ramsar, are to make financial contributions (£1,275 per dwelling) towards the Strategic Access Management and Monitoring (SAMM) package for the European site and provide accessible natural greenspace on site. A further meeting in October 2016 confirmed that the 5km mitigation zone was to be upheld.
- 4.19 However, the Aldingbourne Parish boundary is located approx. 6.4km from the Pagham Harbour SPA / Ramsar. Moreover, the residential sites allocated in the Plan lie even further from the site. Given the zone of influence of the SPA / Ramsar, derived from previous visitor surveys, residential growth in Aldingbourne is not considered to have any material effect on recreational pressure in the harbour. As such, by definition, there are no LSEs of the Plan on the Pagham Harbour SPA / Ramsar regarding the impact pathway recreational pressure, both alone and in-combination with other Plans. The site is screened out from Appropriate Assessment regarding this impact pathway.

## Chichester and Langstone Harbours SPA / Ramsar

- 4.20 The Chichester and Langstone Harbours SPA / Ramsar is designated for a range of breeding and overwintering birds. While all of these birds are susceptible to recreational disturbance, this applies particularly to the ground-nesting terns. For example, Natural England's Site Conservation Objectives Supplementary Advice Note<sup>74</sup> highlights that human activity can affect the birds' normal roosting and feeding behaviours to an extent that may ultimately affect their long-term viability. All tern species forage around boats and ships in the SPA / Ramsar, and nest on sites that are accessible to recreationists, with the potential for significant disturbance effects. Therefore, potential effects of the Aldingbourne NDP on recreational patterns in the Chichester and Langstone Harbours SPA / Ramsar require consideration.
- 4.21 The interim strategic framework for the Pagham Harbour SPA / Ramsar provides useful context in which to set the potential recreational pressure effects of the Aldingbourne NDP. It determined a 5km core visitor catchment from which most visitors would originate, which was based on two visitor surveys undertaken in 2006 and 2012. In previous consultations with Natural England, it was advised that similar visitor catchments were relevant to other European sites in the Solent. More recent (2017/2018) visitor surveys in the Solent, undertaken to support the Solent Mitigation Recreation Strategy, have led to a slight expansion of the visitor catchment to 5.6km. However, the Chichester and Langstone Harbours SPA / Ramsar lies 8.1km to the west of Aldingbourne Parish and is therefore well beyond the established visitor catchment zones for European sites in the Solent. As such, by definition, there are no LSEs of the Plan on the Chichester and

<sup>74</sup> Available at <https://designatedsites.naturalengland.org.uk/SiteSearch.aspx> [Accessed on the 08/10/2019]

Langstone Harbours SPA / Ramsar regarding the impact pathway recreational pressure, both alone and in-combination with other Plans. The site is screened out from Appropriate Assessment relating to this impact pathway.

## Singleton and Cocking Tunnels SAC

- 4.22 The Singleton and Cocking Tunnels SAC is designated for its populations of Bechstein's bats and barbastelle bats. As identified in Natural England's Site Improvement Plan, both of these species are potentially susceptible to human disturbance. For example, academic research has shown that human presence in bat hibernacula leads to increased baseline flight movements and general flight activity in hibernating bats<sup>75</sup>. Therefore, the potential for Aldingbourne's NDP to increase the recreational pressure in the Singleton and Cocking Tunnels SAC needs to be assessed.
- 4.23 The Singleton and Cocking Tunnels SAC comprise two disused brick railway tunnels, which are located in rural Sussex. The human access points lie under cover of woodland and have grilles installed. Natural England's Site Conservation Objectives Supplementary Advice Note highlights that these grilles are to be maintained to minimise disturbance of the bats. As such, it is considered that there is currently no recreational use occurring in the Singleton and Cocking Tunnels SAC, and there is no linking impact pathway to the Aldingbourne NDP. Furthermore, the site lies approx. 8.3km to the north-west of Aldingbourne, which would be beyond a reasonable core visitor catchment zone for a European site of this size and make-up. It is therefore concluded that there are no LSEs of the Plan on the Singleton and Cocking Tunnels SAC regarding the impact pathway recreational pressure, both alone and in-combination with other Plans. The site is screened out from Appropriate Assessment relating to this impact pathway.

## Water Quality

### Arun Valley SPA / Ramsar

- 4.24 The Arun Valley SPA / Ramsar is sensitive to negative changes in water quality, because this may affect the prey available to its qualifying wildfowl, cause disease in birds or render habitat unsuitable for use by the birds. Natural England's Site Conservation Objectives Supplementary Advice Note highlights that *Potamogeton* spp. (pond weeds), one of the primary food sources of Bewick's swans, require good water quality. Indeed, good water quality (e.g. adequate, but not excessive nutrient levels) is a requirement of most aquatic plant species. Furthermore, increased plant growth as a result of excess nutrient input is also likely to render habitat unsuitable for some bird species, which may no longer be able to forage efficiently. Therefore, potential effects of the Aldingbourne NDP on the water quality in the Arun Valley SPA / Ramsar require consideration.
- 4.25 The highest risk of adverse effects on site integrity stem from treated sewage effluent discharged by Wastewater Treatment Works (WwTW). Sewage effluent, even after treatment in WwTW, contains high concentrations of phosphorus, which is the limiting nutrient in freshwater ecosystems. Southern Water is the water company that is responsible for wastewater treatment in Arun District, and therefore also in Aldingbourne. The Aldingbourne NDP (p.16) highlights that a large proportion of the Parish is located within the Lidsey wastewater catchment, including the settlements of Woodgate, where the two residential sites are allocated. Sewage from Woodgate is treated in Lidsey WwTW, is then discharged into Lidsey Rife and discharged into the sea east of Bognor Regis. The Arun Valley SPA / Ramsar is located more than 9km upstream to the north-east of Woodgate. There is therefore no hydrological connectivity between the discharge location and the Arun Valley SPA / Ramsar. It is therefore concluded that there are no LSEs of the Aldingbourne NDP on the Arun Valley SPA / Ramsar regarding the impact pathway water quality, both alone and in-combination with other Plans. The site is screened out from Appropriate Assessment regarding this impact pathway.

### Pagham Harbour SPA / Ramsar

- 4.26 The qualifying bird species of the Pagham Harbour SPA / Ramsar are sensitive to changes in water quality. This applies particularly to industrial contaminants, nutrients and dissolved oxygen concentrations, all of which can directly affect the birds' fitness or alter the food webs that the birds depend on. Natural England's Supplementary Advice indicates that the water quality in the SPA / Ramsar is integral to all of its qualifying

<sup>75</sup> Thomas D.W. (1995). Hibernating bats are sensitive to nontactile human disturbance. Journal of Mammalogy 76: 940-946.



features. Therefore, as for the Arun Valley SPA / Ramsar, potential effects of the Aldingbourne NDP on the water quality in the Pagham Harbour SPA / Ramsar require consideration.

- 4.27 In contrast to freshwater habitats, nitrogen tends to be the limiting factor in marine habitats. As treated sewage effluent also contains high concentrations of nitrogen, there is the potential for adverse effects from WwTW on marine sites. However, it should also be noted that nitrogen leachate from agricultural sources is likely to contribute considerably more nitrogen to marine sites than the effluent discharge permitted by the Environment Agency.
- 4.28 As highlighted in the previous section relating to the Arun Valley SPA / Ramsar, development proposed in Woodgate, Aldingbourne falls within the Lidsey wastewater catchment and will be treated in the Lidsey WwTW. From here, treated sewage is discharged to Lidsey Rife, entering the sea east of Bognor Regis. As such there is no direct hydrological connectivity between the location where the effluent enters the sea and the Pagham Harbour SPA / Ramsar. The discharge point is approx. 7.2km from the edge of the Pagham Harbour SPA / Ramsar and it is considered that negative impacts deriving from sewage associated with the Aldingbourne NDP would be attenuated over this distance. This is in line with the Arun Local Plan HRA, which concluded that Lidsey WwTW (responsible for treating Aldingbourne's wastewater) and Ford WwTW (another WwTW responsible for wastewater treatment in Arun District that is not relevant to Aldingbourne) did not warrant further consideration in relation to the impact pathway water quality. Overall, it is therefore concluded that there are no LSEs of the Aldingbourne NDP on the Pagham Harbour SPA / Ramsar regarding the impact pathway water quality, both alone and in-combination with other Plans. The site is screened out from Appropriate Assessment regarding this impact pathway.

## Chichester and Langstone Harbours SPA / Ramsar

- 4.29 The Chichester and Langstone Harbours SPA / Ramsar is designated for a wide range of waterfowl and wader species, including several species of terns. The features of water quality that are likely to impact upon the species in this SPA / Ramsar include contaminants, nutrients and dissolved oxygen levels. For example, contaminants may have a range of effects on the biology of different species, potentially affecting their breeding, roosting, foraging and survival. High concentrations of nutrients can cause eutrophication through phytoplankton and macroalgae blooms, leading to changes in macrophyte community composition and lower dissolved oxygen (DO) levels. In turn low DO concentrations might have sub-lethal or lethal effects on fish and other parts of the fauna. As such, a potential effect of the Aldingbourne NDP on the water quality in the Chichester and Langstone Harbours SPA / Ramsar needs to be considered.
- 4.30 However, as is relevant for the Pagham Harbour SPA / Ramsar, the Lidsey WwTW discharges sewage effluent to the east of Bognor Regis, which is approx. 24km along the coastline from the Chichester and Langstone Harbours SPA / Ramsar. It is therefore considered that the discharge point of sewage effluent deriving from Aldingbourne is not in hydrological connectivity with the Chichester and Langstone Harbours SPA / Ramsar. Furthermore, due to the long distance between Bognor Regis and the SPA / Ramsar, it is considered that any nutrients and / or other pollutants would be attenuated over this distance. Overall, it is therefore concluded that there are no LSEs of the Aldingbourne NDP on the Chichester and Langstone Harbours SPA / Ramsar regarding the impact pathway water quality, both alone and in-combination with other Plans. The site is screened out from Appropriate Assessment regarding this impact pathway

## Solent Maritime SAC

- 4.31 The Solent Maritime SAC comprises a variety of habitats including estuaries and Atlantic salt meadows, which partly rely on the quality of water supplying the SAC. Specifically, the Solent Maritime SAC has been classified as being at risk of eutrophication. In parts of the site, opportunistic macroalgae are exceeding 15% cover and have high biomass. The high nutrient concentrations that cause the excessive algal growth might also lead to low dissolved oxygen concentrations and a high level of turbidity. As such, a potential effect of the Aldingbourne NDP on the water quality in the Solent Maritime SAC needs to be considered.
- 4.32 However, sewage effluent from Aldingbourne enters the sea approx. 23.4km in coastline distance from the Solent Maritime SAC. It is therefore considered that there is no direct hydrological connectivity between the point of discharge and the SAC and that sewage effluent originating from Aldingbourne will have no material effect on the site integrity of the Solent Maritime SAC. Overall, it is therefore concluded that there are no LSEs of the Aldingbourne NDP on the Solent Maritime SAC regarding the impact pathway water quality, both alone and in-combination with other Plans. The site is screened out from Appropriate Assessment regarding this impact pathway

## Water Quantity, Level and Flow

### Arun Valley SPA / Ramsar

- 4.33 The Arun Valley SPA / Ramsar is designated for the Bewick's swan and its significant waterbird assemblage. All these species depend on specific hydrological regimes for nesting, foraging and roosting. Natural England's Site Conservation Objectives Supplementary Advice note highlights that the water levels in parts of the site used for foraging should fluctuate by 5-15% each month, which is particularly important for the semi-aquatic riparian invertebrates. Furthermore, a water depth of 0.5m in minor ditches and 1m in major ditches should be maintained over 90% of the channel length. Given this background evidence, the Arun Valley SPA / Ramsar is considered to be very sensitive to variations in water quantity, level and flow. The Aldingbourne NDP allocates two residential sites, which will need to be supplied with drinking water, abstracted from groundwater and / or surface water sources. Given the high sensitivity of the Arun Valley SPA / Ramsar to changes in the hydrological regime, there is the potential for LSEs of the Aldingbourne NDP. The site is therefore screened in for Appropriate Assessment in relation to this impact pathway.
- 4.34 The following policies contained within the Plan are associated with an increased abstraction of water, and are screened in for Appropriate Assessment:
- **Policy H1 – Provide housing to meet District Council Allocation** (92 net new dwellings on two allocated sites)
  - **Policy H6 – Windfall Sites** (Provides for residential windfall development on infill and redevelopment sites)
  - **Policy EE1 – Supporting Existing Employment and Retail** (Provides for upgrades and extensions to existing employment sites within Aldingbourne)
  - **Policy LC9 – Allocation for camping / touring caravans site** (Provides for the extension of a camping / touring caravans site in Aldingbourne)

## Atmospheric Pollution (Through Nitrogen Deposition)

### Duncton to Bignor Escarpment SAC

- 4.35 The Duncton to Bignor Escarpment SAC is designated for its *Asperulo-Fagetum* beech forests, which are sensitive to atmospheric pollution via nitrogen deposition. According to APIS, the empirical critical nitrogen load is 10 – 20 kg N/ha/yr. Exceedance impacts have been identified as changes in ground vegetation and mycorrhiza, nutrient imbalance and changes in soil fauna. The current nitrogen deposition to the SAC is 22.8 kg N/ha/yr, which lies above the identified critical nitrogen load. Therefore, the potential effect of the Aldingbourne NDP on the Duncton to Bignor Escarpment SAC regarding the impact pathway atmospheric pollution requires consideration.
- 4.36 While it is noted that the Duncton to Bignor Escarpment SAC lies in a relatively rural area of the South Down National Park, it also lies directly adjacent to the A285, which connects the urban centre of Chichester with the northern area of Chichester District. As such, the SAC lies within the 200m screening distance that is used for atmospheric pollution. The A285 runs alongside Aldingbourne Parish (from the south-west to its northern tip) and therefore provides a possible commuting corridor for residents leaving and / or entering Aldingbourne Parish. It is therefore concluded that LSEs of the Aldingbourne NDP on the Duncton to Bignor Escarpment SAC regarding the impact pathway atmospheric pollution cannot be excluded. The site is therefore screened in for Appropriate Assessment.
- 4.37 The following policies contained within the Plan are screened in for Appropriate Assessment:
- **Policy H1 – Provide housing to meet District Council Allocation** (92 net new dwellings on two allocated sites)
  - **Policy H6 – Windfall Sites** (Provides for residential windfall development on infill and redevelopment sites)



- **Policy EE1 – Supporting Existing Employment and Retail** (Provides for upgrades and extensions to existing employment sites within Aldingbourne)
- **Policy LC9 – Allocation for camping / touring caravans site** (Provides for the extension of a camping / touring caravans site in Aldingbourne)

## 5. Appropriate Assessment

### Loss of Functionally Linked Land

#### Singleton and Cocking Tunnels SAC

5.1 The screening for LSEs identified the following policies within the Plan that require Appropriate Assessment regarding the impact pathway loss of functionally linked land:

- **Policy H1 – Provide housing to meet District Council Allocation** (92 net new dwellings on two allocated sites; Wings and Lees Yard)
- **Policy H6 – Windfall Sites** (Provides for residential windfall development on infill and redevelopment sites)
- **Policy EE1 – Supporting Existing Employment and Retail** (Provides for upgrades and extensions to existing employment sites within Aldingbourne)
- **Policy LC9 – Allocation for camping / touring caravans site** (Provides for the extension of a camping / touring caravans site in Aldingbourne)

5.2 Any development on greenfield sites that results in the loss of existing mature vegetation lines or river bank corridors has the potential to affect the commuting and foraging routes of bats for which the SAC is designated. While the direct loss of habitat is most relevant, development proposals might also render habitats or flightlines unsuitable through light and sound pollution.

5.3 Land functionally linked to the Singleton and Cocking Tunnels SAC is under pressure, due to the growth in several surrounding authorities, such as the South Downs National Park (SDNP) authority. Regarding the bat populations of the Singleton and Cocking Tunnels SAC (and two other European sites in the vicinity, namely the Ebernoe Common SAC and the Mens SAC), the South Downs National Park authority and Natural England reviewed existing scientific evidence to produce a guidance document for sustainable development, the Sussex Bat Special Area of Conservation Planning and Landscape Scale Enhancement Protocol<sup>76</sup>. The final version of the protocol identifies two key impact zones surrounding the three SACs that require consideration:

- 6.5km – The key conservation area, in which all impacts must be assessed
- 12km – The wider conservation area, in which significant impacts or severance of flightlines must be assessed

5.4 At 8.3km distance, Aldingbourne Parish falls within the wider conservation area, which is the precautionary area that encompasses the full extent of foraging habitats and commuting corridors, which are likely to be used by bats from the Singleton and Cocking Tunnels SAC. Considering the above enhancement protocol, this is the zone in which the loss of key foraging habitats and flightlines requires consideration. Furthermore, these conservation areas need to be reflected in Aldingbourne's Neighbourhood Plan policy wording.

5.5 To assess whether the proposed residential site allocations are likely to result in the loss of commuting routes and / or foraging habitat, satellite imagery was used. Figure 5 shows the two residential site allocations (land at Wings Nursery, Lidsey Road, land north of Lees Yard, Lidsey Road) and another site, also near Lidsey Road, that is proposed for leisure and tourism. Large portions of land within Aldingbourne Parish comprise agricultural land parcels, which is not considered to constitute suitable foraging habitat for bats. However, linear features (e.g. hedgerows, treelines, tracks) along field margins might be used by commuting barbastelle bats. Figure 5 illustrates that both residential allocations (Wings Nursery and Lees Yard) contained within the Aldingbourne NDP appear to constitute horse pasture. This is not considered to be the preferred foraging habitat for barbastelle bats, which prefer wet grassland and riparian habitats.

<sup>76</sup> Bat Conservation Trust. (2015). Scoping study for the West Sussex Bat Project - Assessing current evidence to recommend conservation measures important to barbastelle and Bechstein's bats of consequence in the project area. A report to Natural England. Bat conservation Trust Core Sustenance Zones  
[http://www.bats.org.uk/data/files/Core\\_Sustenance\\_Zones\\_Explained\\_-\\_04.02.16.pdf](http://www.bats.org.uk/data/files/Core_Sustenance_Zones_Explained_-_04.02.16.pdf).

Review of the satellite imagery indicates that there are few rivers and streams in the wider area, which would sustain extensive wetland habitat. However, both residential allocations contain linear habitat features that could be used as commuting corridors by barbastelle bats to navigate in the wider landscape. For example, Lees Yard is enclosed by treelines on its southern and eastern sides. Similarly, the leisure and tourism site is lined by mature trees in the west and shrubs in the north. As such, it is considered that there is some limited potential for these sites to be used for commuting by barbastelle bats from the Singleton and Cocking Tunnels SAC.



**Figure 5: Detailed location of the two residential allocations (Wings, Lees Yard) and the proposed leisure and tourism site along Lidsey Road. The likely suitability of these allocations for barbastelle bats is discussed further in the text.**

- 5.6 A wider review of greenfield sites and linear habitat features in the area of Westergate, Woodgate and Lidsey, indicates that this area of Aldingbourne Parish does not harbour many areas that might act as commuting corridors or foraging habitat for bats. In particular, there are relatively few clusters of trees, and few suitable wetland and riparian habitats. The main linear features and riparian habitats that are likely to be used by bats in this area of Aldingbourne Parish are two streams to the west and east of Woodgate running southward and a treelined path connecting the two streams to the south of Woodgate near Lidsey. Further suitable bat commuting corridors lie to the north of Westergate, along the treelined Northfields Lane, which leads to clusters of trees south of the A27. The housing allocations do not constitute suitable foraging habitat and are unlikely to interfere with the trajectory of major commuting routes used by barbastelle bats in the area.
- 5.7 In addition, the Aldingbourne NDP contains explicit policy wording, providing protection for the environment and biodiversity. For example, **Policy EH2 (Green Infrastructure and Ecosystem Services)** identifies the importance of green infrastructure corridors (e.g. woodland, mature hedgerows, watercourses) in providing connected habitat to wildlife. To this end, the NDP identifies Biodiversity Corridors (defined on maps A1 and A2 of the Plan), which include most landscape features that are likely to be used by bats. For example, map A2 in the NDP clearly marks strategic commuting corridors around Woodgate, the area where the NDP proposes new housing development. Importantly, it classifies the streams and treelined paths discussed in the previous paragraph as being part of the Biodiversity Corridors. Regarding wildlife corridors **Policy EH2** stipulates that *'New development within, or immediately adjacent to the Biodiversity Corridors identified on*

*Maps A1 and A2 will only be supported where it can be clearly demonstrated that development proposals will not give rise to any significant harm to the integrity or function of the Biodiversity Corridors'.*

- 5.8 Most significantly, under bullet point EH2.3 of **Policy EH2**, the policy makes explicit reference to the 12km Wider Conservation Area identified in the Sussex Bat Special Area of Conservation Planning and Landscape Scale Enhancement Protocol. It states that *'Part of the Plan area falls within the 12km buffer applied to Singleton and Cocking Tunnels SAC created by policy SD10 of the South Downs Local Plan. Protection of the habitats, many of which are located within the biodiversity corridors is important for feeding and roosting sites'*. By identifying the most likely commuting corridors in the Parish and ensuring that any nearby development proposals must demonstrate that they do not impact on the functioning of these Biodiversity Corridors, the Aldingbourne NDP provides adequate protection of landscape features that are likely to be used by bats from the Singleton and Cocking Tunnels SAC.
- 5.9 **Policy EH6 (Protection of trees and hedgerows)** provides further protective policy wording for trees and hedgerows, two habitat features integral to bat commuting and foraging. It states that *'Development that damages or results in the loss of trees of arboricultural and amenity value or loss of hedgerows and/or priority habitat, or which significantly damages ecological networks will be resisted'*. The policy continues to clarify that development proposals must be designed to incorporate biodiversity and enhance ecological networks and that they should also retain valuable trees and hedgerows. As is the case for Policy EH2, Policy EH6 makes specific reference to the 12km Conservation Area surrounding the Singleton and Cocking Tunnels SAC, thereby helping to protect the integrity of the SAC from loss of functionally linked land.
- 5.10 The Aldingbourne NDP also needs to be considered in relation to potential light pollution arising from new residential homes or the extension of existing employment sites. It is well documented that light pollution has impacts on both commuting and foraging behaviour of bats<sup>77</sup>. For example, light pollution that spills on bat commuting routes might cause a spatial avoidance response, thereby leading to a fragmentation of the commuting network. However, it is considered that light pollution arising from the Aldingbourne NDP is unlikely to be an issue for bats from the Singleton and Cocking Tunnels SAC, given that the proposed housing allocations do not appear to be close to obvious bat commuting routes. Furthermore, **Policy EH10 ('Unlit village' status)** provides some protection from the negative impacts of light pollution. It states that *'Development proposals which detract from the unlit environments of the Parish will not be supported. New lighting will be required to conform to the highest standard of light pollution restrictions in force at the time. Security and other outside lighting on private and public premises will be restricted or regulated to be neighbourly in its use including floodlighting at equine establishments and on sports fields or sports grounds'*. While it is recognised that this policy is not introduced explicitly for the protection of bat foraging habitat and commuting routes, it ensures that light pollution in the Parish is minimised, benefitting the bats. However, in order to protect bats explicitly from the impacts of artificial lighting, further policy wording is suggested for inclusion in **Policy EH2** (see the following paragraph).
- 5.11 It is difficult to judge whether a site (or components thereof) is / are used as foraging habitat or commuting routes, solely from satellite imaging. Given that Aldingbourne falls within the 12km Wider Conservation Area surrounding the Singleton and Cocking Tunnels SAC and to be precautionary regarding the potential severance of commuting lines of barbastelle bats, it is recommended that the following text (or similar) is inserted into **Policy EH2 (Green Infrastructure and Ecosystem Services)**, or another appropriate policy, in the next iteration of the Plan: **'In order to be fully compliant with the Habitats Directive relating to the Singleton and Cocking Tunnels SAC qualifying features, proposals for the development of greenfield sites within the Parish (most of which falls within the SAC's 12km Wider Conservation Area) must evaluate whether there is a potential for the loss of suitable foraging habitat and / or the severance of commuting flightlines, such as in the form of mature treelines, hedgerows and watercourses. If so, such features must be preserved unless surveys demonstrate that they are not used by barbastelle bats. Care must also be taken through development design to ensure that such retained features are not subject to artificial lighting.'**

<sup>77</sup> Stone E.L., Harris S. & Jones G. (2015). Impacts of artificial lighting on bats: A review of challenges and solutions. Mammalian Biology 80: 213-219.



## Water quantity, level and flow

### Arun Valley SPA / Ramsar

- 5.12 The screening for LSEs identified the following policies within the Plan that require Appropriate Assessment regarding the impact pathway water quantity, level and flow:
- **Policy H1 – Provide housing to meet District Council Allocation** (92 net new dwellings on two allocated sites; Wings and Lees Yard)
  - **Policy H6 – Windfall Sites** (Provides for residential windfall development on infill and redevelopment sites)
  - **Policy EE1 – Supporting Existing Employment and Retail** (Provides for upgrades and extensions to existing employment sites within Aldingbourne)
  - **Policy LC9 – Allocation for camping / touring caravans site** (Provides for the extension of a camping / touring caravans site in Aldingbourne)
- 5.13 The Arun Valley SPA / Ramsar is sensitive to changes in the hydrological regime due to its qualifying wildfowl species, which require specific nesting and foraging conditions. This Appropriate Assessment will establish whether an increase in water abstraction is likely to adversely affect the integrity of the Arun Valley SPA / Ramsar.
- 5.14 Water is supplied to Aldingbourne Parish by Portsmouth Water, which is responsible for the public water supply in the south and west of Arun District. Notably, the area covered by Portsmouth Water receives water from a wide geographic range, including the Chalk and the Lower Greensand, which underlie the Arun and Western Streams Abstraction Licensing Strategy (ALS) area. According to the Environment Agency (2013), these aquifers account for over 50% of the licensed abstraction volume in this area of England. Most of the water bodies in Arun District are classified as 'restricted water available for licensing' or 'water not available for licensing', which means that it is unlikely that further abstraction licenses will be granted in this ALS.
- 5.15 The company's new draft Water Resource Management Plan (WRMP, 2019) assessed Portsmouth Water's supply-demand balance for the period between 2019/20 and 2044/45. This is based on the Baseline Annual Average Dry Year and shows that the water available for use will exceed the total demand (+ allocated headroom) throughout the forecast period. The modelling exercise indicates that the available surplus will reduce from 8.6 Ml/d in 2019/20 to 3.9 Ml/d. This indicates that the water supplier will be able to meet all predicted customer demand and bulk supply commitments in the period up to 2044/45, which includes the residential growth allocated within the Aldingbourne NDP. Importantly, this indicates that, despite the considerable growth in the company's water supply area, this growth can be accommodated under the current abstraction license.
- 5.16 Sustainable volumes of water abstraction (and indeed sewage effluent) were determined by the Environment Agency's Review of Consents (RoC) process, carried out under the umbrella of the Habitats Directive. The consented abstraction is decided upon such that the integrity of European sites that depend on water supply, is not adversely affected. By remaining within the consented abstraction volume, by definition, there can therefore be no adverse effect on a European site. The previous version of Portsmouth Water's WRMP, which covers the water supply in the Aldingbourne NDP area, was subjected to HRA in 2014. On page 120, the HRA states that *'The schemes will operate within existing abstraction license volumes and there will be no likely significant effects on any European sites as a result of the operation of these schemes, alone or in combination with other plans or projects'*. It further concludes that *'The ... Plan will have no likely significant effects on any European sites as a result of its implementation, alone or in combination with other plans or projects'*.
- 5.17 A Water Level Management Plan (WLMP) is only available for one of the SSSI subunits, the Amberley Wild Brooks SSSI, that form the Arun Valley SPA / Ramsar. The SSSI lies on the Upper Greensand, Gault Clay and Lower Greensand formations, from which it derives most of its water supply. According to the WLMP, the closest groundwater abstraction site 2.5km north of Amberley Wild Brooks SSSI, sources water from the Lower Greensand and is run by Southern Water. However, the Lower Greensand underneath the SSSI is thought to be hydrologically separated from surrounding Lower Greensand formations. As such, it is considered unlikely that the water level in the ditches of the SPA / Ramsar is affected by nearby drinking

water abstractions. Given that the closest abstraction sites for Portsmouth Water are located even further from the Arun Valley SPA / Ramsar, it is considered unlikely that they would affect the water level in the SPA / Ramsar.

- 5.18 Finally, it is also considered that the present WLMP provides an appropriate framework in which the hydrological regime of the Amberley Wild Brooks SSSI, and therefore the wider Arun Valley SPA / Ramsar, can be managed. The water level and ditch management has been carried out according to a Code of Practice since 1978. Existing water control structures within the SPA / Ramsar include a series of sluices controlling outflow to the Wild Brook Stream and the River Arun. Overall, it is considered that these measures maximise the site's water retention capacities in periods when water supply to the SPA / Ramsar might be restricted.
- 5.19 Aside from potentially reducing water levels in European sites due to increased abstraction rates, urban surfaces (e.g. pavements, roads, buildings) are largely impermeable and are therefore likely to lead to increased volumes and magnitudes of surface water run-off, potentially resulting in flooding events downstream of development. The new urban development allocated in the Aldingbourne NDP will increase the areal extent of urban surfaces and therefore will also likely contribute to increased water run-off rates. European sites that are sensitive to changes in hydrological regimes, such as the Arun Valley SPA / Ramsar, might therefore receive excessive amounts of water in a relatively short period of time. However, the Arun Valley SPA / Ramsar is located 8.9km to the north-east of Aldingbourne, which is considered too far for surface water run-off to have a material impact on the SPA / Ramsar.
- 5.20 Regarding potential impacts of surface water run-off on European sites, it should also be noted that the Aldingbourne NDP already provides some protection from potential adverse impacts of surface water discharge. **Policy EH5 (Surface Water Management)** stipulates that '*New development ... will not be permitted unless it is supported by a site-specific Flood Risk Assessment which provides clear evidence to demonstrate that the proposal ... b) would make appropriate provision for accommodating the surface water and foul water arising from the development*'. The policy then goes into further detail by stating that '*Consideration should be given to the use of Sustainable Urban Drainage Systems (SUDS) as alternatives to conventional drainage where appropriate*'. This is an important recommendation because SUDS are an effective tool mitigating surface water run-off rates from urban development, because they promote natural ground infiltration rates and thereby attenuate overland flow. Overall, it is concluded that the Aldingbourne NDP will not result in adverse effects on the integrity of the Arun Valley SPA / Ramsar regarding the impact pathway water quantity, level and flow.

## In-Combination Assessment

- 5.21 The impact pathway water quantity, level and flow was not assessed in relation to the Arun Valley SPA / Ramsar by the Arun Local Plan HRA. Therefore, a higher tier in-combination assessment is not available. However, given the large geographic area over which Portsmouth Water abstracts water and the sensitivity of the SPA / Ramsar to hydrological changes, the Arun Valley SPA / Ramsar is assessed within this HRA. The Portsmouth Water WRMP HRA concludes there will be no adverse effects of the company's abstraction plans, which includes the water supply to parishes surrounding Aldingbourne. Furthermore, the Plans of nearby authorities (both of districts and parishes), will have undergone their own HRA, ensuring that European sites are not adversely affected. It is therefore concluded that the Aldingbourne NDP will have no adverse effects on the site integrity of the Arun Valley SPA / Ramsar, in-combination with other Plans.

# Atmospheric Pollution

## Duncton to Bignor Escarpment SAC

- 5.22 The screening for LSEs identified the following policies within the Plan that require Appropriate Assessment regarding the impact pathway atmospheric pollution:
- **Policy H1 – Provide housing to meet District Council Allocation** (92 net new dwellings on two allocated sites; Wings and Lees Yard)
  - **Policy H6 – Windfall Sites** (Provides for residential windfall development on infill and redevelopment sites)
  - **Policy EE1 – Supporting Existing Employment and Retail** (Provides for upgrades and extensions to existing employment sites within Aldingbourne)

- **Policy LC9 – Allocation for camping / touring caravans site** (Provides for the extension of a camping / touring caravans site in Aldingbourne)

5.23 It is to be noted that an assessment of air quality impacts lies outside the standard remit of a Neighbourhood Plan HRA, as it typically requires an Air Quality Impact Assessment (AQIA) which is done in-combination with the growth in surrounding authorities. The Aldingbourne NDP provides for 92 net new dwellings, which is unlikely to lead to LSEs on the Duncton to Bignor Escarpment SAC in itself but might have in-combination effect with the cumulative growth in the region.

## General Setting of the SAC

5.24 When assessing the potential atmospheric pollution impact of a Plan on a designated site, an initial assessment of the location of the site in relation to the major traffic infrastructure is advised. The Duncton to Bignor Escarpment SAC is located in the eastern part of Chichester District in a relatively rural area of the South Downs National Park. However, it lies directly adjacent to the A285, which runs from Chichester near the south coast to the northern parts of the district. While the A285 lies outside of Aldingbourne parish, Aldingbourne residents might be using the A285 to commute to settlements outside of Arun District, in the north of Chichester District. The A285 connects to the A27 in Aldingbourne via Britten's Lane. As such, new residents from Woodgate (the village where the Aldingbourne NDP allocates new residential development) might be travelling north, using Britten's Lane to connect with the A285.

5.25 There are no traffic count points near the area where the A285 runs parallel to the Duncton to Bignor Escarpment SAC. The closest manual traffic count point is located much further to the south near Halnaker, a settlement to the north-east of Chichester. However, this is considered to be fairly representative of the traffic flow on the A285 near the SAC, as there are no major settlements between the count point and the SAC, which could absorb a significant portion of the traffic volume. Based on the Department for Transport's road traffic statistics<sup>78</sup>, the A285 is a relatively busy 'A' road, potentially acting as a routine commuting route for local residents. Manual traffic count point 36903 indicates that the A285 near Halnaker in 2018 had an annual average daily flow of 4,456 cars, 717 light goods vehicles and 185 heavy goods vehicles. While it is noted that a large proportion of this traffic is likely to flow south into the urban centre of Chichester, at least some of this traffic might flow northward past the Duncton to Bignor Escarpment SAC. The general setting of the SAC in relation to the A285 highlights that atmospheric pollution impacts should be considered in relation to the Aldingbourne NDP, in-combination with the growth in surrounding parishes and districts.

## Commuter Traffic

5.26 A second integral step of the Appropriate Assessment of atmospheric pollution is an analysis of commuter traffic, as this establishes the likelihood of new residents regularly passing (and thereby affecting) the SAC. It is the regular commuting journeys (i.e. potentially passing sensitive sites twice a day) that are likely to contribute the largest proportion to the air quality impact. It is noted that the pattern of commuter traffic analysed here, only reflects the current pattern of motorised travel within the region and it is not necessarily the case that future residents will follow the same transport links. However, given that route choice is likely to be based on minimising journey time and that the prevailing road infrastructure is unlikely to change substantially, journey-to-work data is considered to be a useful starting point for assessing the potential impacts of development plans on the impact pathway atmospheric pollution. Such data is not available for individual parishes and is therefore assessed at the overarching level of districts; in this case Arun District.

5.27 According to Journey to Work data from the 2011 census<sup>79</sup>, considerably more people commute to a destination outside of Arun (20,928 journeys), than people commuting into the authority (7,119 journeys). The three most common destinations for journeys to work arising from Arun are the authorities Chichester (8,199 people, 39.2%), Worthing (4,582 people, 21.9%), and Horsham (1,535 people, 7.3%). Clearly, the largest proportion of Arun residents travels to Chichester District, the authority which the Duncton to Bignor Escarpment SAC is located in. However, it is likely that most of these journeys will be undertaken to the south of Chichester District, including Chichester itself and other urban settlements surrounding it. Except for Midhurst and Petworth, there are very few major settlements in the northern section of Chichester District that are likely to be destinations for Arun residents. However, it cannot be excluded that some of the traffic resulting from the Aldingbourne NDP would go past the Duncton to Bignor Escarpment SAC on the A285.

5.28 Only two of the top ten authorities contributing to commuter traffic inflow into Arun are notable. Of the total daily inflow of 7,119 people, most derive from Worthing (2,472 people, 34.7%) and Chichester (1,955

<sup>78</sup> The road traffic statistics for specified road transects are published annually. They are available at <https://roadtraffic.dft.gov.uk> [Accessed on the 17/09/2019].

<sup>79</sup> Available at <https://www.nomisweb.co.uk/census/2011/wu03uk> [accessed 12/04/2019]

people, 27.5%). Given that the Aldingbourne NDP does not explicitly allocate net new employment development (it only provides for the potential extension of existing employment sites), it is not expected that there will be an increase in the number of journeys into Arun via the identified A285 – Britten's Lane road link as a result of the Plan. It is expected that most of the inward traffic flow from Chichester District to Arun District occurs along the A27, far away from the Duncton to Bignor Escarpment SAC.

- 5.29 It is to be noted that these data do not include journeys to work that both start and end in Arun District and the approximately 12% of commuter trips that are carried out on foot, by bike or by public transport. Therefore, the actual proportion of regular commuter journeys that might pass the Duncton to Bignor Escarpment SAC is likely to be even lower than the relative proportions of car travel that have been assessed in this section.

### **'In-Combination' Air Quality Modelling**

- 5.30 Aldingbourne Parish is covered by Arun Local Plan, which provides the overarching guidance policies for its Parish constituents. The Arun Local Plan HRA does not consider the atmospheric pollution impact pathway and therefore provides no in-combination framework in which to place the Aldingbourne NDP. However, the South Downs National Park (SDNP) Local Plan HRA considered the air quality impacts of the projected growth in the SDNP authority in-combination with the growth in surrounding authorities, which was modelled by AECOM. This would have included growth in Arun District and the area covered by the Aldingbourne NDP.
- 5.31 The AQIA compared the air quality effects of different growth scenarios – The 'Do-Nothing' scenario, which modelled the future traffic flows at identified traffic links without the effects of the emerging Local Plans and the 'Do Something' scenario, which included the 'in-combination' air quality effects of the SDNP and other surrounding authorities. Link 10 of the AQIA investigated the A285, directly adjacent to the Duncton to Bignor Escarpment SAC. The results show that the baseline NO<sub>x</sub> concentrations at Link 10 are below the critical level for vegetation, most likely due to the relatively low traffic flows on this 'A' road. Under the 'Do Nothing' scenario (i.e. no in-combination growth), NO<sub>x</sub> concentrations were modelled to fall by 5.8 µg m<sup>-3</sup> by 2033 and the 'Do Something' scenario only indicated a 0.1 µg m<sup>-3</sup> retardation of this improvement in NO<sub>x</sub> within 10m of the roadside. Similarly, under the 'Do Nothing' scenario, an improvement of 2.72 kg N/ha/yr is forecast, principally due to improvements in vehicle emission technology. This improvement is subject to a 0.01 kg N/ha/yr retardation immediately adjacent to the road under the 'Do Something' scenario. The SDNP Local Plan HRA concluded that this retardation in air quality improvement was not significant in ecological terms and therefore concluded that there would be no adverse effects on the site integrity of the Duncton to Bignor Escarpment SAC due to the in-combination traffic growth.
- 5.32 In addition to the AQIA, which concluded that there were no adverse in-combination effects of the growth in the SDNP on the Duncton to Bignor Escarpment SAC, it also needs to be acknowledged that the Aldingbourne NDP allocates only a relatively small amount of residential development (an additional 92 residential dwellings). This additional housing will contribute relatively little to the total in-combination traffic volume that is to be expected as a result of emerging development plans in southern England. Overall, it is therefore concluded that there will be no adverse effects of the Aldingbourne NDP on the site integrity of the Duncton to Bignor Escarpment SAC regarding the impact pathway atmospheric pollution, alone or in-combination with other Plans.



## 6. Conclusions & Recommendations

6.1 This HRA assessment identified the relevant European sites linking to the Aldingbourne NDP and undertook the screening of the Plan's policies. The European sites that were considered due to being located within 10km of the Aldingbourne Parish boundary and potentially linking to the Plan were:

- Singleton and Cocking Tunnels SAC;
- Arun Valley SPA / Ramsar;
- Pagham Harbour SPA / Ramsar;
- Chichester and Langstone Harbours SPA / Ramsar
- Solent Maritime SAC
- Duncton to Bignor Escarpment SAC

6.2 The following impact pathways were considered in the HRA: loss of functionally linked land, recreational pressure, water quantity, level and flow, water quality, atmospheric pollution (primarily nitrogen deposition) and adverse effects from construction activities (e.g. dust emission, noise and visual disturbance, water surface runoff). Many of the European sites and linking impact pathways were screened out from Appropriate Assessment (see LSEs section) and the following paragraphs summarise only the most significant findings of this HRA.

### Singleton and Cocking Tunnels SAC

6.3 Regarding the loss of land that is functionally linked to the Singleton and Cocking Tunnels SAC it is concluded that the Aldingbourne NDP contains strong and adequate policy wording, in particular protecting the identified Biodiversity Corridors in Aldingbourne Parish. However, given that Aldingbourne falls within the 12km Wider Conservation Area surrounding the Singleton and Cocking Tunnels SAC and to be precautionary regarding the potential severance of commuting lines of barbastelle bats, it is recommended that the following additional text is inserted into **Policy EH2 (Green Infrastructure and Ecosystem Services)**, or another appropriate policy, in the next iteration of the Plan: **'In order to be fully compliant with the Habitats Directive relating to the Singleton and Cocking Tunnels SAC qualifying features, proposals for the development of greenfield sites within the Parish (most of which falls within the SAC's 12km Wider Conservation Area) must evaluate whether there is a potential for the loss of suitable foraging habitat and / or the severance of commuting flightlines, such as in the form of mature treelines, hedgerows and watercourses. If so, such features must be preserved unless surveys demonstrate that they are not used by barbastelle bats. Care must also be taken through development design to ensure that such retained features are not subject to artificial lighting.'** This will ensure that additional protection is given to the Singleton and Cocking Tunnels SAC and their barbastelle bats, which are known to travel long distances from their roost sites. If the above wording is inserted into the next iteration of the Plan, it is concluded that there will be no adverse effects on the site integrity of the Singleton and Cocking Tunnels SAC regarding the impact pathway loss of functionally linked land.

### Arun Valley SPA / Ramsar

6.4 It was also assessed whether the Aldingbourne NDP would have the potential to significantly affect the water quantity, level and flow in the Arun Valley SPA / Ramsar, a site that is known to depend on a narrow hydrological regime. However, following a review of Portsmouth Water's Water Resource Management Plan, the Water Level Management Plan for a SSSI subunit of the SPA / Ramsar and the Aldingbourne NDP's policy wording, it was concluded that there would be no adverse effects on the site integrity of the Arun Valley SPA / Ramsar regarding the impact pathway water quantity, level and flow. This was primarily due to the water company's water supply being in a surplus for the entire planning period, its operation within the Environment Agency's Review of Consents process and its policies advocating Sustainable Drainage Systems.

## Duncton to Bignor Escarpment SAC

- 6.5 The Appropriate Assessment also investigated whether the Aldingbourne NDP would have potential atmospheric pollution effects on the site integrity of the Duncton to Bignor Escarpment SAC, in-combination with the urban growth in surrounding authorities. However, it was concluded that the Aldingbourne NDP would not have in-combination adverse effects on the site integrity of the Duncton to Bignor Escarpment SAC. This was for several reasons, including the general setting of the SAC in relation to Aldingbourne and results of in-combination air quality modelling for the South Downs National Park Local Plan. While the SAC is located directly adjacent to the A285 and the fact that there is a direct connection with Aldingbourne Parish, it was determined that most commuter traffic would occur towards urban Chichester. Furthermore, the air quality modelling showed that the in-combination growth would not result in a significant retardation to air quality improvements in the SAC.

# Appendix A Figures

**Appendix 1: European sites within 10km of the Aldingbourne Neighbourhood Development Plan area.**

# Appendix B European Sites

## Singleton and Cocking Tunnels SAC

### Introduction

- 6.6 The Singleton and Cocking Tunnels SAC comprises two disused brick railway tunnels located in rural Sussex. A large proportion of the tunnels lies within the South Downs National Character Area, but the northern entrance of the Cocking tunnel is within the Wealden Greensand National Character Area. The reason for designation of these tunnels is that they are a primary location for hibernating bats in south-east England. In addition to the two qualifying species, barbastelle and Bechstein's bats, six other species of bat have been documented, including Natterer's bat *Myotis nattereri*, Daubenton's bat *Myotis daubentonii*, brown long-eared bat *Plecotus auritus* and Brandt's *Myotis brandti* / whiskered bat *Myotis mystacinus*.

### Qualifying Features<sup>80</sup>

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

- Barbastelle *Barbastella barbastellus*
- Bechstein's bat *Myotis bechsteinii*

### Conservation Objectives<sup>81</sup>

- 6.8 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;
- 6.9 Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring;
- The extent and distribution of the habitats of qualifying species
  - The structure and function of the habitats of qualifying species
  - The supporting processes on which the habitats of qualifying species rely
  - The populations of qualifying species, and,
  - The distribution of qualifying species within the site.

### Threats / Pressures to Site Integrity<sup>82</sup>

- 6.10 Natural England's Site Improvement Plan identifies the following threats and pressures for the integrity of the Singleton and Cocking Tunnels SAC:
- Habitat connectivity
  - Habitat fragmentation
  - Public access / disturbance
  - Air pollution: Risk of atmospheric nitrogen deposition

<sup>80</sup> <https://sac.jncc.gov.uk/site/UK0030337> [Accessed on the 02/10/2019]

<sup>81</sup> <http://publications.naturalengland.org.uk/publication/6518329883754496> [Accessed on the 02/10/2019]

<sup>82</sup> <http://publications.naturalengland.org.uk/publication/5755291169718272> [Accessed on the 02/10/2019]

# Duncton to Bignor Escarpment SAC

## Introduction

- 6.11 The Duncton to Bignor Escarpment SAC is approx. 214.47ha in size and comprises a variety of habitats including broad-leaved deciduous woodland (80%), heath / scrub (10%) and dry grassland (5%). Most characteristic of the SAC is the mature beech *Fagus sylvatica* woodland on a steep escarpment of the South Downs. The prevailing soil conditions have produced beech-dominated woodland with interspersed ash *Fraxinus excelsior*, scrub and chalk grassland.
- 6.12 Overall, the SAC has a high habitat quality and harbours rare plants such as white helleborine *Cephalanthera damasonium*, yellow bird's nest *Monotropa hypopitys* and limestone fern *Gymnocarpium robertium*. Furthermore, rare animal species are also found in the scrubby woodland, including the rare snail *Helicodonta obvoluta* and a notable assemblage of rare moth species.

## Qualifying Features<sup>83</sup>

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

- *Asperulo-Fagetum* beech forests

## Conservation Objectives<sup>84</sup>

- 6.14 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;
- 6.15 Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring;
- The extent and distribution of qualifying natural habitats
  - The structure and function (including typical species) of qualifying natural habitats, and
  - The supporting processes on which the qualifying natural habitats rely.

## Threats / Pressures to Site Integrity<sup>85</sup>

- 6.16 Natural England's Site Improvement Plan does not identify any current threats / pressures to the site integrity of the Duncton to Bignor Escarpment SAC.

# Arun Valley SPA

## Introduction

- 6.17 The Arun Valley SPA is located north of the South Downs escarpment, comprising low-lying grazing marsh on alluvial soils and peat. The variation in soil type and water supply leads to a range of ecological conditions and a rich biodiversity. In the south the SPA is mainly fed from calcareous springs, while in the north the underlying greensand leads to slightly more acidic conditions.
- 6.18 The plant community composition largely depends on the history of field management and their water levels. Drier fields are dominated by meadow grasses, such as Crested Dog's-tail *Cynosurus cristatus* and perennial rye-grass *Lolium perenne*. In wetter areas, rushes, sedges and tufted hair-grass *Deschampsia cespitosa* are more common. Ungrazed fields have transitioned into fen, scrub and woodland. The

<sup>83</sup> <https://sac.jncc.gov.uk/site/UK0030138> [Accessed on the 02/10/2019]

<sup>84</sup> [http://nepubprod.appspot.com/publication/6492790347268096?category=6528471664689152&\\_sm\\_au=iVVQHJHRNDN6Hsk7](http://nepubprod.appspot.com/publication/6492790347268096?category=6528471664689152&_sm_au=iVVQHJHRNDN6Hsk7) [Accessed on the 02/10/2019]

<sup>85</sup> <http://publications.naturalengland.org.uk/publication/5623422855938048> [Accessed on the 02/10/2019]

woodlands comprise alder *Alnus glutinosa*, willow *Salix* spp., birch *Betula* spp., oak *Quercus robur* and hazel *Corylus avellane*. Overall, the SPA supports important numbers of wintering waterfowl, which feed in the wet, low-lying fields of the site.

## Qualifying Features<sup>86</sup>

- 6.19 The 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:

### Over winter

- Bewick's swan *Cygnus columbianus bewickii*: at time of designation 115 individuals representing at least 1.6% of the wintering population in Great Britain (5 year peak mean for 1992/93 to 1996/97)

### 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 27,241 individual waterfowl (5 year peak mean for 1992/93 to 1996/97) including: shoveler *Anas clypeata*, teal *Anas crecca*, wigeon *Anas penelope*, Bewick's swan *Cygnus columbianus bewickii*.

## Conservation Objectives<sup>87</sup>

- 6.20 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;
- 6.21 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>88</sup>

- 6.22 Natural England's Site Improvement Plan identifies the following threats and pressures to the site integrity of the Arun Valley SPA:
- Inappropriate water levels
  - Water pollution
  - Inappropriate ditch management

<sup>86</sup> <http://archive.incc.gov.uk/default.aspx?page=2079> [Accessed on the 02/10/2019]

<sup>87</sup> <http://publications.naturalengland.org.uk/publication/4567444756627456> [Accessed on the 02/10/2019]

<sup>88</sup> <http://publications.naturalengland.org.uk/publication/5353882309885952> [Accessed on the 02/10/2019]



# Arun Valley SAC

## Introduction

- 6.23 The Arun Valley SAC is a 487.48ha site comprising humid / mesophile grassland (95%), inland water bodies (2%), and bogs and marshes (2%). Regarding its geographic distribution it largely coincides with the Arun Valley SPA. Most of the SAC is low-lying grazing marsh, fed by calcareous springs in the south and the underlying Greensand geology in the north.
- 6.24 The plant community composition largely depends on the historic management of the site and the associated water level. For details on the plant community see the introduction section on the Arun Valley SPA. Notably, the SAC is designated for the Ramshorn snail *Anisus vorticulus*, which occurs at only few sites in south-eastern England. The Arun Valley population in the Arun floodplain is one of the three main populations in the UK.

## Qualifying Features<sup>89</sup>

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

- Ramshorn snail *Anisus vorticulus*

## Conservation Objectives<sup>90</sup>

- 6.26 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;
- 6.27 Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring;
- The extent and distribution of the habitats of qualifying species
  - The structure and function of the habitats of qualifying species
  - The supporting processes on which the habitats of qualifying species rely
  - The populations of qualifying species, and,
  - The distribution of qualifying species within the site.

## Threats / Pressures to Site Integrity<sup>91</sup>

- 6.28 Natural England's Site Improvement Plan identifies the following threats and pressures to the site integrity of the Arun Valley SAC:
- Inappropriate water levels
  - Water pollution
  - Inappropriate ditch management

# Pagham Harbour SPA / Ramsar

## Introduction

- 6.29 Pagham Harbour comprises an extensive area of saltmarsh and tidal mudflats, with additional surrounding habitats including lagoons, shingle, open water, reed swamp and wet permanent grassland. The mud-flats

<sup>89</sup> <https://sac.jncc.gov.uk/site/UK0030366> [Accessed on the 02/10/2019]

<sup>90</sup> <http://publications.naturalengland.org.uk/publication/4924283725807616> [Accessed on the 02/10/2019]

<sup>91</sup> <http://publications.naturalengland.org.uk/publication/5353882309885952> [Accessed on the 02/10/2019]

support rich communities of invertebrates and algae, thereby providing important feeding areas for waterbirds. The lower saltmarsh is dominated by common cord-grass *Spartina anglica* with patches of glasswort *Salicornia* spp. All areas included in the Pagham Harbour designation are important supporting habitats for the breeding little terns, as well as for the over-wintering species brent goose, pintail and ruff.

## SPA Qualifying Features<sup>92</sup>

- 6.30 Pagham Harbour SPA qualifies under **Article 4.1** of the Birds 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*: 12 pairs, representing 0.5% of the breeding population in Great Britain (Count as at 1995);

### Over winter

- Ruff *Philomachus pugnax*: 160 individuals, representing 22.9% of the wintering population in Great Britain.

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

- Pintail *Anas acuta*: 628 individuals, representing at least 1% of the wintering Northwestern Europe population (5-year peak mean 1991/2 – 1995/6).

## Ramsar Qualifying Features<sup>93</sup>

- 6.32 Pagham Harbour is designated as a Ramsar site under the following criterium:

### Ramsar criterion 6 – species / populations occurring at levels of international importance

#### Qualifying species with peak counts in winter:

- Dark-bellied brent goose *Branta bernicla bernicla*: 2,512 individuals, representing an average of 1.1% of the population (5 year peak mean 1998/99 – 2002/03)

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

#### Species with peak counts in winter:

- Black-tailed godwit *Limosa limosa islandica*, Iceland / Western Europe: 377 individuals, representing an average of 1% of the population (5 year peak mean 1998/99 – 2002/03)

## Conservation Objectives<sup>94</sup>

- 6.33 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;

- 6.34 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.

<sup>92</sup> <http://archive.incc.gov.uk/default.aspx?page=2044> [Accessed on the 02/10/2019]

<sup>93</sup> <https://incc.gov.uk/incc-assets/RIS/UK11052.pdf> [Accessed on the 02/10/2019]

<sup>94</sup> <http://publications.naturalengland.org.uk/publication/6147434560356352> [Accessed on the 02/10/2019]

## Threats / Pressures to Site Integrity<sup>95</sup>

6.35 Natural England's Site Improvement Plan identifies the following threats and pressures to the site integrity of the Pagham Harbour SPA:

- Physical modification
- Public access / disturbance
- Water pollution
- Fisheries: Commercial marine and estuarine
- Fisheries: Recreational marine and estuarine
- Change in land management

## Chichester and Langstone Harbours SPA / Ramsar

### Introduction

6.36 The Chichester and Langstone Harbours SPA / Ramsar encompasses two large sheltered estuarine basins: The two harbours are separated by Hayling Island and meet at Langstone Bridge. Both of these harbours, along with the coastal waters in between, form part of the Solent Maritime SAC. Chichester Harbour is a large estuarine basin within which extensive mud- and sandflats are exposed at low tide. The site is important for overwintering wildfowl and waders, but also supports a wide range of habitats with diverse plant communities. The mudflats of the SPA / Ramsar are rich in invertebrates and support extensive beds of algae, especially *Enteromorpha* spp. and eelgrass *Zostera* spp. The Chichester and Langstone Harbours SPA / Ramsar together forms a single system, which is among the ten most important intertidal areas for waders in Britain.

### SPA Qualifying Features<sup>96</sup>

6.37 The Chichester and Langstone Harbours SPA qualifies under **Article 4.1** of the Birds 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

- Common tern *Sterna hirundo*: 0.3% of the breeding population in Great Britain (5-year mean, 1992-1996);
- Sandwich tern *Sterna sandvicensis*: 0.2% of the breeding population in Great Britain (5-year mean, 1993-1997); and
- Little tern *Sternula albifrons*: 4.2% of the breeding population in Great Britain (5-year mean, 1992-1996).

#### Over winter

- Bar-tailed godwit *Limosa lapponica*: 3.2% of the wintering population in Great Britain (5-year peak mean 1991/92-1995/96).

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

<sup>95</sup> <http://publications.naturalengland.org.uk/publication/5799069091889152> [Accessed on the 02/10/2019]

<sup>96</sup> <https://designatedsites.naturalengland.org.uk/Marine/MarineSiteDetail.aspx?SiteCode=UK9011011&HasCA=1&NumMarineSeaSonality=18&SiteNameDisplay=Chichester%20and%20Langstone%20Harbours%20SPA> [Accessed on the 02/10/2019]

## Over winter

- Pintail *Anas acuta*: 1.2% of the population in Great Britain (5-year peak mean 1991/92-1995/96);
- Shoveler *Anas clypeata*: 1% of the population in Great Britain (5-year peak mean 1991/92-1995/96);
- Teal *Anas crecca*: 0.5% of the population (5-year peak mean 1991/92-1995/96);
- Wigeon *Anas penelope*: 0.7% of the population in Great Britain (5-year peak mean 1991/92-1995/96);
- Turnstone *Arenaria interpres*: 0.7% of the population in Great Britain (5-year peak mean 1991/92-1995/96);
- Dark-bellied brent goose *Branta bernicla bernicla*: 5.7% of the population (5-year peak mean 1991/92-1995/96);
- Sanderling *Calidris alba*: 0.2% of the population (5-year peak mean 1991/92-1995/96);
- Dunlin *Calidris alpina alpina*: 3.2% of the population (5-year peak mean 1991/92-1995/96);
- Ringed plover *Charadrius hiaticula*: 3% of the population in Great Britain (5-year peak mean 1991/92-1995/96);
- Red-breasted merganser *Mergus serrator*: 3% of the population in Great Britain (5-year peak mean 1991/92-1995/96);
- Curlew *Numenius arquata*: 1.6% of the population in Great Britain (5-year peak mean 1991/92-1995/96);
- Grey plover *Pluvialis squatarola*: 2.3% of the population (5-year peak mean 1991/92-1995/96);
- Shelduck *Tadorna tadorna*: 3.3% of the population in Great Britain (5-year peak mean 1991/92-1995/96); and
- Redshank *Tringa totanus*: 1% of the population (5-year peak mean 1991/92-1995/96).

6.39 The area also qualifies under **Article 4.2** of the Directive (79/409/EEC) by supporting an internationally important assemblage of birds.

Over winter, the area regularly supports 93,230 individual waterfowl (5-year peak mean 01/04/1998) including: Wigeon, bar-tailed godwit, dark-bellied brent goose, ringed plover, grey plover, dunlin, redshank, shelduck, curlew, teal, pintail, shoveler, red-breasted merganser, sanderling and turnstone.

## Ramsar Qualifying Features<sup>97</sup>

6.40 Pagham Harbour is designated as a Ramsar site under the following criteria:

**Ramsar criterion 1** – a representative, rare or unique example of a natural or near natural wetland type found within the appropriate biogeographic region. The site contains two large estuarine basins linked by the channel, which divides Hayling islands from the main Hampshire coastline. The site includes intertidal mudflats, saltmarsh, sand and shingle spits, and sand dunes.

**Ramsar criterion 2** – supports assemblages of waterbirds of international importance. The site supports 76,480 waterfowl (5 year peak mean 1998/99 – 2002/03)

**Ramsar criterion 3** – regularly supports at least 1% of the individuals in a population of one species or subspecies of waterbird.

**Qualifying species with peak counts in spring / autumn:**

<sup>97</sup> <http://jncc.defra.gov.uk/pdf/RIS/UK11013.pdf> [Accessed on the 02/10/2019]

- Ringed plover *Charadrius hiaticula*: 853 individuals, representing an average of 1.1% of the population (5-year peak mean 1998/99–2002/03).
- Black-tailed godwit *Limosa limosa islandica*: 906 individuals, representing an average of 2.5% of the population (5-year peak mean 1998/99–2002/03).
- Common redshank *Tringa totanus totanus*: 2577 individuals, representing an average of 1% of the population (5-year peak mean 1998/99–2002/03).

#### Qualifying species with peak counts in winter:

- Dark-bellied brent goose *Branta bernicla bernicla*: 12,987 individuals, representing an average of 6% of the populations (5-year peak mean 1998/99–2002/03).
- Common shelduck *Tadorna tadorna*: 1,468 individuals, representing an average of 1.8% of the GB population (5-year peak mean 1998/99–2002/03).
- Grey plover *Pluvialis squatarola*: 3,043 individuals, representing an average of 1.2% of the population (5-year peak mean 1998/99–2002/03).
- Dunlin *Calidris alpina alpina*: 33,436 individuals, representing an average of 2.5% of the population (5-year peak mean 1998/99–2002/03).

#### Qualifying species regularly supported during the breeding season:

- Little tern *Sternula albifrons albifrons*: 130 apparently occupied nests, representing an average of 1.1% of the breeding populations (Seabird 2000 census)<sup>98</sup>

## SPA Conservation Objectives<sup>99</sup>

- 6.41 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;
- 6.42 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>100</sup>

- 6.43 Natural England's Site Improvement Plan identifies the following threats / pressures to the site integrity of the Chichester and Langstone Harbours SPA:
- Public access / disturbance
  - Coastal squeeze
  - Fisheries: Commercial marine and estuarine
  - Water pollution
  - Changes in species distributions

<sup>98</sup> Species identified subsequent to designation for future possible consideration.

<sup>99</sup> <http://publications.naturalengland.org.uk/publication/5789102905491456> [Accessed on the 02/10/2019]

<sup>100</sup> <http://publications.naturalengland.org.uk/publication/4692013588938752> [Accessed on the 02/10/2019]

- 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
- Direct impact from third party
- Extraction: Non-living resources

## Solent Maritime SAC

### Introduction

- 6.44 The Solent Maritime SAC is part of the Solent, a complex site encompassing a major estuarine system in southern England. Its hydrographic regime and complexity of habitats is unique in Europe. Sediment habitats within estuaries include extensive areas of intertidal mudflats, often supporting eelgrass *Zostera* spp., green algae and natural shoreline transitions (e.g. drift line vegetation). All four UK species of cordgrass are present in the Solent, and it is one of only two sites with significant amounts of the native small cordgrass *Spartina maritima*.
- 6.45 The high habitat complexity including intertidal mudflats, saltmarsh, shingle beaches and adjacent coastal habitats (e.g. grazing marsh, reedbeds, damp woodland) support nationally and internationally important assemblages of resident and migratory waders and waterfowl (see the Chichester and Langstone Harbours SPA / Ramsar).

### Qualifying Features<sup>101</sup>

- 6.46 Solent Maritime SAC qualifies under **Article 4.1** of the Birds Directive (79/409/EEC) by supporting the following habitats and / or species

Annex I habitats that are the primary reason for site selection:

- Estuaries;
- Spartina swards *Spartinion maritimae*;
- Atlantic salt meadows *Glauco-Puccinellietalia maritimae*.

Annex I habitats that are present, but not a primary reason for site selection:

- Sandbanks which are slightly covered by sea water all the time;
- Mudflats and sandflats not covered by seawater at low tide;
- Coastal lagoons;
- Annual vegetation of drift lines;

<sup>101</sup> <http://jncc.defra.gov.uk/protectedsites/sacselection/sac.asp?EUCode=UK0030059> [Accessed: on the 02/10/2019].



- Perennial vegetation of stony banks;
- *Salicornia* and other annuals colonizing mud and sand;
- Shifting dunes along the shoreline with *Ammophila arenaria*.

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>102</sup>

- 6.47 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;
- 6.48 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.

## Threats and Pressures<sup>103</sup>

- 6.49 Natural England's Site Improvement Plan identifies the following threats / pressures to the site integrity of the Solent Maritime SAC:
- Public access / disturbance
  - Coastal squeeze
  - Fisheries: Commercial marine and estuarine
  - Water pollution
  - Changes in species distributions
  - 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

<sup>102</sup> <http://publications.naturalengland.org.uk/publication/5762436174970880> [Accessed: on the 02/10/2019].

<sup>103</sup> <http://publications.naturalengland.org.uk/publication/4692013588938752> [Accessed 02/10/2019].

- Hydrological changes
- Direct impact from 3<sup>rd</sup> party
- Extraction: Non-living resources

# Appendix C Policy Screening

Appendix 2: Screening table showing the Test of Likely Significant Effects (LSEs) results of policies contained within the Aldingbourne Neighbourhood Development 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>Housing</b>		
<b>Policy H1 – Provide housing to meet District Council Allocation</b>	<p>Permission will be granted, within the Plan period, for housing on land identified on the Proposals Map as follows:</p> <ol style="list-style-type: none"> <li>1. Land at Wings Nursery, Lidsey Road - 55 dwellings</li> <li>2. Land north of Lees Yard, Lidsey Road - 37 dwellings</li> </ol> <p>Proposals will be expected to conform to the other policies in this Plan and also to provide (through S106 or CIL) funding to deliver improvements to the Aldingbourne Sports and Community Centre.</p> <p>H1.1 2019 ADC Policy H SP1 has given the Parish an allocation of at least 70 houses which the Parish accepts will need to be delivered through the NP process. 25 units have been granted planning permission in 2019 at Nyton Nursery and can be counted towards the allocation. Therefore, with the two additional sites allocated by this policy the Parish will have exceeded its allocation by 47 units and increase of 67%.</p> <p>H1.2 2019 A percentage of housing delivered by both sites will be expected to be delivered through the Aldingbourne, Barnham and Eastergate Community Land Trust.</p>	<p>There is a potential for Likely Significant Effects of this policy on European sites.</p> <p><b>The relevant impact pathways are likely to be:</b></p> <ul style="list-style-type: none"> <li>• <b>Loss of functionally linked land</b></li> <li>• <b>Water quantity</b></li> <li>• <b>Atmospheric pollution</b></li> </ul> <p>This is a housing policy providing for 92 net new dwellings on two land parcels within Aldingbourne. As such, the policy allocates both a quantum and location of residential development.</p> <p>It is therefore screened in for Appropriate Assessment.</p>
<b>Policy H2 – Housing Mix</b>	<p><b>Proposals for new housing must deliver a range of house types, sizes and tenures. Applicants should demonstrate how the proposal will meet local needs. Proposals where at least 25% of dwellings meet Lifetime Home Standards, or its equivalent, will be supported.</b></p>	<p>There are no Likely Significant Effects of this policy on European sites.</p> <p>This is a housing management policy detailing that new housing proposals must deliver a mix of housing types, to accommodate different segments of the population, including young and elderly people.</p>

	<p>H2.1 Sites that are close to a shop will be particularly suited to meeting the needs of smaller households of older or younger people without access to private transport, including older people wishing to downsize.</p> <p>H2.2 Lifetime Standards will assist with the needs of our ageing population. Whilst, the revised Part M of the Building Regulations relates to accessibility, the Lifetime Homes Standards go further, by helping to make dwellings adaptable for differing households' accessibility needs, with potential for improved access to storeys above the entrance level and key facilities. Given the higher than average number of older residents within the parish, the improvements that Lifetime Homes Standards can bring are considered to be part of the way in which the needs of different sectors of the community can be met.</p>	<p>The policy does not provide for a location and / or quantum of residential or employment development.</p> <p>It is therefore screened out from Appropriate Assessment.</p>
<b>Policy H3 – Housing Density</b>	<p><b>The density of new development shall be appropriate to its location by virtue of size, siting and relationship to existing properties.</b></p> <p><b>H3.1</b> To ensure that it does not harm the established character and appearance of the local area by the over development of sites giving rise to cramped and out of character developments.</p>	<p>There are no Likely Significant Effects of this policy on European sites.</p> <p>This is a housing management policy detailing the housing density to be provided for in Aldingbourne. It sets out that the housing density should not harm the established character of the local area.</p> <p>The policy does not provide for a location and / or quantum of residential or employment development.</p> <p>It is therefore screened out from Appropriate Assessment.</p>
<b>Policy H4 – Affordable Housing</b>	<p><b>Any proposal for 10 or more new dwellings should include 40% affordable units, unless this can be demonstrated to make the scheme unviable. The size and tenure of affordable units should reflect latest available housing needs evidence.</b></p> <p><b>H4.1</b> The Housing Needs Survey identified a significant need for affordable housing in the Parish (see Evidence Base 28). Land prices within the Parish are higher than those within the coastal settlements of the District. The latest available evidence (prepared for Arun District Council to support the new local plan) suggests that an affordable housing target set at 40% would generally prove viable. If however, developers can demonstrate clearly that this is not the case, a reduced level of affordable housing would be considered.</p> <p><b>H4.2</b> Affordable units delivered on-site should in general be indistinguishable from the</p>	<p>There are no Likely Significant Effects of this policy on European sites.</p> <p>This is a housing management policy ensuring the provision of affordable housing within the Parish. It sets out that proposals for 10 or more dwellings should include 40% affordable units.</p> <p>The policy does not provide for a location and / or quantum of residential or employment development.</p> <p>It is therefore screened out from Appropriate Assessment.</p>

	<p>market dwellings. Developers will be expected to use the latest available housing needs evidence from Arun District Council to determine the appropriate size and tenure for the affordable homes. Appropriate arrangements should be made to ensure that the affordable housing is delivered and managed in accordance with any relevant adopted guidance produced by Arun District Council.</p>	
<p><b>Policy H6 – Windfall Sites</b></p>	<p><b>Permission will be granted for residential developments on infill and redevelopment sites within the built up area boundary subject to the following conditions being met:</b></p> <ol style="list-style-type: none"> <li><b>The scale and design of the development is appropriate to the size and character of the settlement.</b></li> <li><b>The built and landscape character is conserved or enhanced, especially where the character of the area is specifically recognised, such as the Conservation Areas and Listed Buildings.</b></li> <li><b>The proposal creates safe and accessible environments that offer good access via a range of transport modes;</b></li> <li><b>Land is demonstrated to be used effectively and comprehensively;</b></li> <li><b>Wildlife must be conserved or enhanced</b></li> </ol> <p><b>Applicants should demonstrate how the proposal will integrate effectively with existing development and meet with the requirements of other policies in this Plan. Any new development with a significant traffic impact will only be supported if that impact can be mitigated via developer contributions to measures agreed with the highway authority. Traffic impact includes effects of adverse road safety, congestion and pollution on both the main roads and rural lanes.</b></p> <p>H6.1 Small residential developments on infill and redevelopment sites will come forward during the life of this plan. It is important to the residents that the integrity and character of the built environment is maintained.</p>	<p>There is a potential for Likely Significant Effects of this policy on European sites.</p> <p>This is a housing policy providing for the development of windfall sites within Aldingbourne, if certain conditions are met. As such, the policy provides for potential net additional residential development. Depending on where this windfall is delivered, there might be negative impacts on European sites.</p> <p><b>The relevant impact pathways are likely to be:</b></p> <ul style="list-style-type: none"> <li><b>Loss of functionally linked land</b></li> <li><b>Water quantity</b></li> <li><b>Atmospheric pollution</b></li> </ul> <p>It is therefore screened in for Appropriate Assessment.</p>
<p><b>Policy H7 – Development in the vicinity of businesses</b></p>	<p><b>Proposals for development in the vicinity of businesses which are inherently noisy will not be supported.</b></p> <p><b>H7.1</b> The Parish has a number of noisy business, such as car salvage yards, kennels, farm yards with grain driers and engineering workshops. It is appropriate that their setting at a distance from residential development is protected as this reduces the risk that unavoidable noise will give rise to complaints that could</p>	<p>There are no Likely Significant Effects of this policy on European sites.</p> <p>This is a development management policy outlining that development in the vicinity of noisy businesses will not be supported.</p> <p>The policy does not provide for a location and / or quantum of residential or employment development.</p>

	<p>prejudice their viability. Residential development within the vicinity is of particular risk because sensitivity to noise is subjective and complaints can arise when property changes hands.</p>	<p>It is therefore screened out from Appropriate Assessment.</p>
<p><b>Policy H8 – Outdoor Space</b></p>	<p><b>All new dwellings must include an outdoor amenity space of adequate size and quality, either as a private garden or shared amenity area.</b></p> <p><b>H8.1</b> Proposals for new housing development should include good quality outdoor amenity space – either private gardens or a shared amenity area and should contribute to providing tree cover and improved biodiversity. The amount of land used for garden or amenity space should be commensurate with the size and type of dwelling and the character of the area, and should be of appropriate utility (for play and recreation) and quality having regard to topography, shadowing (from buildings and landscape features) and privacy.</p> <p><b>H8.2</b> Good quality outdoor space improves recreation opportunities for young and old, contributes to the open feel of the village and provides opportunities to increase biodiversity.</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 new residential developments must provide for outdoor amenity space of adequate size and quality. Overall, this is a positive policy, because it ensures that recreational greenspace is provided near new residential development, where it is likely to absorb at least some of the additional recreational demand. This is likely to help reduce recreational pressure in European sites, such as the Pagham Harbour SPA and the Arun Valley SPA.</p> <p>The policy does not provide for a location and / or quantum of residential or employment development.</p> <p>It is therefore screened out from Appropriate Assessment.</p>
<p><b>Policy H9 – Attention to detail</b></p>	<p><b>The following items must be considered early in the design process and integrated into the overall scheme:</b></p> <ul style="list-style-type: none"> <li>• <b>bin stores and recycling facilities</b></li> <li>• <b>cycle stores</b></li> <li>• <b>meter boxes</b></li> <li>• <b>lighting</b></li> <li>• <b>flues and ventilation ducts</b></li> <li>• <b>gutters and pipes</b></li> <li>• <b>satellite dishes and telephone lines.</b></li> </ul> <p><b>H9.1</b> These items are all too easily forgotten about until the end of the design process. By considering them early, it will be possible to meet the following requirements:</p>	<p>There are no Likely Significant Effects of this policy on European sites.</p> <p>This is a design management policy outlining features that should be considered early in the design process of new development, including lighting, gutters and pipes and bin stores. Importantly, particularly for the qualifying species of the Singleton and Cocking Tunnels SAC, the policy identifies that lighting should minimise glare and face away from the open countryside, minimising potential effects of development on bat commuting lines.</p> <p>The policy does not provide for a location and / or quantum of residential or employment development.</p> <p>It is therefore screened out from Appropriate Assessment.</p>



- Bin stores and recycling facilities should be designed to screen bins from public view, whilst being easily accessible for residents. Bin stores must be placed in a position that meets the County Council's Highways standards;
- Meter boxes need not be standard white units: consider a bespoke approach that fits in with the materials used for the remainder of the building. Position them to be unobtrusive;
- Carefully position flues and ventilation ducts, ensuring they are as unobtrusive as possible. Use good quality grilles that fit in with the approach to materials for the building as a whole;
- Ensure that gutters and pipes fit into the overall design approach to the building and aim to minimise their visual impact;
- Lighting schemes that prevent light spillage and glare and face inwards away from open landscapes.

## Environment and Heritage

### Policy EH1 – Built Up Area Boundary

**Proposals for development within the built-up area boundary of Westergate, defined on Map E (as amended 2019) will generally be permitted, subject to meeting the requirements of other policies set out in the Plan.**

**Proposals for development outside of the built-up area boundary, that do not accord with development plan policies in respect of the countryside, will be resisted unless it is for essential utility infrastructure, where the benefits outweigh any harm, and it can be demonstrated that no reasonable alternative sites are available.**

**EH1.1** The boundary sets the distinction between the built form of Aldingbourne and the surrounding countryside and will protect the countryside from unnecessary development.

**EH1.2** The community wish to retain the visual separation and important views between different settlements within and adjacent to the Parish.

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

This is a development management policy identifying that proposals in the built-up area boundary will generally be permitted. It further specifies that proposals outside the built-up area will not be permitted, unless they conform to all policies in respect of the countryside.

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

It is therefore screened out from Appropriate Assessment.

<p><b>Policy EH2 – Green Infrastructure and Ecosystem Services</b></p>	<p><b>New development within, or immediately adjacent to the Biodiversity Corridors identified on Maps A1 and A2 will only be supported where it can be clearly demonstrated that development proposals will not give rise to any significant harm to the integrity or function of the Biodiversity Corridors.</b></p> <p><b>EH2.1</b> Green Infrastructure corridors such as woodland and well maintained hedgerows provide important wildlife habitats and cover for migration of wildlife. The parish of Aldingbourne has a number of small copses, old orchards, mature hedgerows, ponds, watercourses and similar habitats hosting a variety of wildlife. These have potential to enhance biodiversity within the parish and provide important connections between the South Downs and the coast, if they are better connected to form wildlife corridors.</p> <p><b>EH2.2</b> All development with the potential to adversely impact on the areas defined on Map A1 and A2 will be required to demonstrate how the scheme will impact on the integrity and function of the Biodiversity Corridors. Where necessary, this should include the identification of avoidance and mitigation measures sufficient to avoid any significant harm to the designation. Developers are strongly encouraged to also demonstrate how the overall function and integrity of the Biodiversity Corridors may be enhanced to provide a ‘net gain’. Proposals should also include a management plan to ensure that effective long-term management of the key features within the Biodiversity Corridor can be achieved.</p> <p><b>EH2.3</b> Part of the Plan area falls within the 12km buffer applied to Singleton and Cocking Tunnels SAC created by policy SD10 of the South Downs Local Plan. Protection of the habitats, many of which are located within the biodiversity corridors is important for feeding and roosting sites.</p>	<p>There are no Likely Significant Effects of this policy on European sites.</p> <p>This is an environmental protection policy identifying the strict protection of Biodiversity Corridors (Maps A1 and A2) within Aldingbourne from development. It outlines that green infrastructure corridors include woodland, hedgerows, small copses, orchards, ponds and watercourses. Any development proposals in the vicinity must demonstrate that they will not threaten the integrity or function of the Biodiversity Corridors.</p> <p>Importantly, the policy also highlights that the biodiversity corridors partly fall within the 12km buffer zone of the Singleton and Cocking Tunnels SAC, and are therefore important for the SAC bat populations.</p> <p>The policy does not provide for a location and / or quantum of residential or employment development.</p> <p>It is therefore screened out from Appropriate Assessment.</p>
<p><b>Policy EH3 – Development on Agricultural Land</b></p>	<p><b>Proposals for development on the ‘best and most versatile’ agricultural land shown on Map B, the latest available Defra Agricultural Land Classification Map, will be resisted unless it can be demonstrated that it would meet the following criteria:</b></p> <ul style="list-style-type: none"> <li><b>It supports the diversification of an agricultural enterprise or other land-based rural business;</b></li> <li><b>The need for the development clearly outweighs the harm;</b></li> </ul>	<p>There are no Likely Significant Effects of this policy on European sites.</p> <p>This is a development management policy aiming at safeguarding the future food production and detailing the protection of agricultural land in Aldingbourne.</p> <p>The policy does not provide for a location and / or quantum of residential or employment development.</p>

	<p><b>EH3.1</b> In order to safeguard future food production, and in turn, future employment in the locality, and to maintain the rural aspect of the parish.</p> <p><b>EH3.2</b> ‘Best and most versatile’ agricultural land includes the land classified as Grades 1, 2 and 3a on Map B and that graded as ‘excellent’ and ‘very good’ on the Defra Agricultural Land Classification Map for London and the South East (ALC007, published on 24/08/2010).</p>	<p>It is therefore screened out from Appropriate Assessment.</p>
<p><b>Policy EH4 – Protection of watercourses</b></p>	<p><b>Proposals that support and promote river catchment management, wildlife conservation and reduce flood risk will be supported.</b></p> <p><b>EH4.1</b> Across the Worthing, Chichester and East Hampshire Chalk aquifers, inappropriate land management and other practices are leading to rising nitrate levels. The Plan policy seeks to address diffuse pollution issues at source through catchment management schemes, rather than at “end of pipe”.</p> <p>As the chalk aquifer gives rise to the chalk streams flowing through the parish, together they form part of the Arun and Western Streams river catchment area. It is important that there is conformity with neighbouring, “upstream” policies. Sussex Wildlife Trust has identified those streams to the West of the parish as relatively natural but all of them as having potential to be restored to provide greater biodiversity. SWT also noted that an ancient woodland upstream seems to be associated with a more natural state, and may play an important role.</p>	<p>There are no Likely Significant Effects of this policy on European sites.</p> <p>This is an environmental protection policy outlining the protection of watercourses through catchment-scale management schemes and wildlife conservation. It specifically refers to a target of reducing nitrate levels in watercourses.</p> <p>The policy does not provide for a location and / or quantum of residential or employment development.</p> <p>It is therefore screened out from Appropriate Assessment.</p>
<p><b>Policy EH5 – Surface Water Management</b></p>	<p><b>New development, within areas at risk from flooding, will not be permitted unless it is supported by a site-specific Flood Risk Assessment which provides clear evidence to demonstrate that the proposal:</b></p> <p><b>a). Would not give rise to additional risk of flooding, either to the development site or to other land, arising from the carrying out or use of the development;</b></p> <p><b>b). Would make appropriate provision for accommodating the surface water and foul water arising from the development</b></p> <p><b>EH5.1</b> Residents have indicated strongly that they do not want to see further development until work is completed on the Aldingbourne Rife Integrated Flood</p>	<p>There are no Likely Significant Effects of this policy on European sites.</p> <p>This is an environmental protection policy providing a detailed outline for the management of surface water bodies. It stipulates that development proposals should not increase the risk of flooding and should make appropriate provision for accommodating surface water runoff and sewage from the new development.</p> <p>Importantly, the policy identifies that a proposal must provide for surface water management measures to reduce flood risk both on-site and downstream from development. Furthermore, the use of Sustainable Urban Drainage Systems (SUDS) is encouraged, which ensures that water is discharged from urban surfaces at natural rates, further reducing the flood risk associated with development.</p>

Risk Management Plan & Works (ARIFRM) Strategy as surface water run off contributes to flooding in Aldingbourne and to neighbouring parishes.

**EH5.2** The coast to the south and in particular the resorts of Felpham and Bognor Regis are monitored for bathing water quality which plays a part in their status as 'Blue Flag' resorts. Bathing water quality is affected by both the Aldingbourne Rife and surface water drainage, particularly after rainfall. The output from the ARIFRM may also have an impact on ensuring the quality of the water. At times of high stress, sewerage and water is often discharged into the Aldingbourne Rife system by Southern Water.

**EH5.3** Aldingbourne Parish is located on the Arun coastal flood plain and, together with the neighbouring Parishes of Barnham and Eastergate and Walberton, they have experienced numerous incidents of localised flooding over many years during periods of prolonged and heavy rainfall. The most serious resulting in the flooding of residential homes and businesses, surcharging of the local foul sewer network and disruption of the local transport infrastructure.

**EH5.4** Where applicable, surface water management measures will be required for development proposals to ensure that the risk of flooding both on-site and downstream is not increased. No development should be commenced until full details of the proposed surface water drainage scheme have been submitted to and approved in writing by the Local Planning Authority. Developers should expect to carry out winter groundwater monitoring to establish highest annual ground water levels and Percolation testing to BRE Digest 365, or similar, to support the design of any infiltration drainage. The expectation will be that the complete surface water drainage system serving the property is implemented (in accordance with agreed details) before the development is occupied.

**EH5.5** Consideration should be given to the use of Sustainable Urban Drainage Systems (SUDS) as alternatives to conventional drainage where appropriate, but not where the winter water table is less than 0.7 of a metre below ground level. Sustainable drainage systems on private property, whether they are private or adopted, should be approved by the relevant SUDS Lead Local Flood Authority (WSCC) prior to the commencement of development and conform to the recommendations of the latest available SUDS Manual produced by CIRIA.

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

It is therefore screened out from Appropriate Assessment.

	<p><b>EH5.6</b> Where a site specific Flood Risk Assessment is required, this should demonstrate that the development will be safe, including access and egress, without increasing flood risk elsewhere and reduce flood risk overall. Any proposed mitigation measures proposed as part of the Flood Risk Assessment must be deliverable and sustainable, including details for the provision of long term maintenance and management of any new feature for the lifetime of the development.</p> <p><b>EH5.7</b> The Parish Council supports the goal of ensuring that the environment and water quality of the rife system and chalk stream network within the catchment is either maintained or improved to its highest possible level including seeking the enforcement of riparian responsibilities. Wherever possible, culverting and the constricting of watercourses and their immediate environs should be avoided.</p>	
<p><b>Policy EH6 – Protection of trees and hedgerows</b></p>	<p><b>Development that damages or results in the loss of trees of arboricultural and amenity value or loss of hedgerows and/or priority habitat, or which significantly damages ecological networks will be resisted, unless the need for, and benefits of, development in that location clearly outweigh the loss.</b></p> <p><b>Development proposals, where appropriate, must be designed to incorporate biodiversity within and around developments and enhance ecological networks, seeking to retain wherever possible ancient trees, trees of good arboricultural and amenity value and hedgerows to contribute to the Government’s target to halt the decline in biodiversity by aiming for a net gain for nature.</b></p> <p><b>Proposals which affect sites with existing trees or hedgerows should be accompanied by a survey that establishes the health and longevity of any affected trees or hedgerows and a management plan to demonstrate how they will be so maintained.</b></p> <p><b>EH6.1</b> Trees and hedgerows contribute to the open and pleasant feel of the Parish, its play areas and residential properties. The removal of trees to make way for development can completely change the amenities of an area and must be resisted. Loss of areas of ground cover and habitat such as unimproved grassland can have a significant effect on wildlife such as small mammals and</p>	<p>There are no Likely Significant Effects of this policy on European sites.</p> <p>This is an environmental protection policy extending protection to trees and hedgerows in Aldingbourne. The policy outlines that, wherever possible, such features must be retained, and that development proposals must incorporate biodiversity and enhance ecological networks, striving towards a net gain for nature.</p> <p>Importantly, the policy identifies that such trees and hedgerows are important in supporting the bat populations in the Singleton and Cocking Tunnels SAC, providing a link to policy wording contained in policy EH2.</p> <p>The policy does not provide for a location and / or quantum of residential or employment development.</p> <p>It is therefore screened out from Appropriate Assessment.</p>

<p>bats. Aldingbourne is breeding ground for 17 of the 18 UK resident bat species. It is also home to a number of types of owl which feed on small mammals.</p> <p><b>EH6.2</b> Part of the Plan area falls within the 12km buffer applied to Singleton and Cocking Tunnels SAC created by policy SD10 of the South Downs Local Plan. Protection of the habitats, many of which are located within the biodiversity corridors is important for feeding and roosting sites.</p>	
<p><b>Policy EH7 – Renewable and Low Carbon Energy</b></p> <p><b>Proposals for energy generating infrastructure using renewable or low carbon energy sources will be supported provided that:</b></p> <ul style="list-style-type: none"> <li>• <b>The energy generating infrastructure is located as close as practicable and is in proportion, to the scale of the existing buildings or proposed development it is intended to serve</b></li> <li>• <b>The siting, scale, design and impact on heritage assets and their setting, landscape, views and wildlife of the energy generating infrastructure is minimised and does not compromise public safety and allows continued safe use of public rights of way</b></li> <li>• <b>Adjoining uses are not adversely impacted in terms of noise, vibration, or electromagnetic interference</b></li> <li>• <b>Where appropriate, the energy generating infrastructure and its installation complies with the Microgeneration Certification Scheme or equivalent standard</b></li> </ul> <p><b>Proposals for energy generating infrastructure on land in current agricultural production or on ‘best and most versatile’ agricultural land will not be supported (see para EH3.2 above) unless it is utilising the product of farming operations.</b></p> <p>EH7.1 The Arun DC Energy Efficiency and Fuel Poverty Strategy 2014-2019 actively encourages the use of renewable energy schemes and the Parish Council supports this approach.</p> <p>EH7.2 Microgeneration Certification Scheme (MCS) is an internationally recognised quality assurance scheme, supported by the Department of Energy and Climate Change. MCS certifies microgeneration technologies used to produce electricity and heat from renewable sources.</p>	<p>There are no Likely Significant Effects of this policy on European sites.</p> <p>This is a positive development management policy providing for renewable and low-carbon energy within Aldingbourne. Regarding the siting, scale and design of new energy infrastructure, the policy stipulates that impacts on the landscape and wildlife should be minimised. It further establishes that such development must not result in adverse impacts in terms of noise and / or vibration.</p> <p>The policy does not provide for a location and / or quantum of residential or employment development.</p> <p>It is therefore screened out from Appropriate Assessment.</p>



	<p>EH7.3 Maintaining the agricultural land uses surrounding the parish is of paramount importance to this rural parish, not just for the employment that it supports but also the biodiversity it protects. The proximity of much of the parish to the SDNP area would suggest a need to ensure that such infrastructure is sited so as to minimise visual impact.</p>	
<p><b>Policy EH8 – Buildings and structures of character</b></p>	<p><b>Development proposals involving the buildings of local character listed in Schedule D must retain their significance including their contribution to local distinctiveness. Proposals for demolition or alterations that would harm their significance will be resisted unless it can be demonstrated that they cannot be put to an alternative beneficial or viable use or that harm is unavoidable in order to secure significant public benefits.</b></p> <p><b>The buildings and structures listed in Schedule E are also identified Buildings and Structures of Character that merit protection under this policy.</b></p> <p><b>EH8.1</b> Such buildings and structures contribute to the rich history and character of the Parish. A proposal has been submitted to the LPA to add the buildings in Schedule E to the List. The Parish Council will work with the LPA to seek to bring about the use of Article 4 Directions to remove ‘permitted development’ rights which can lead to key features being removed or inappropriate extensions being added which detract from that character.</p>	<p>There are no Likely Significant Effects of this policy on European sites.</p> <p>This is a development management policy protecting buildings and structures of character in Aldingbourne.</p> <p>The policy does not provide for a location and / or quantum of residential or employment development.</p> <p>It is therefore screened out from Appropriate Assessment.</p>
<p><b>Policy EH9 – Conservation Areas</b></p>	<p><b>Development proposals affecting the two Conservation Areas (Evidence Base 16,17) within the Parish will only be supported where they preserve and enhance their character, setting and appearance, and in particular where proposals:</b></p> <ul style="list-style-type: none"> <li><b>protect the distinctive open and rural character of the Conservation Areas and their setting</b></li> <li><b>contribute to sustaining or enhancing the visual connections between the three principal settlements and their rural hinterland, including longer views to the South Downs; and</b></li> <li><b>protect the key view lines into and out of the Conservation Areas.</b></li> </ul> <p><b>EH9.1</b> The settlements of Norton, Aldingbourne, Nyton, Westergate and Woodgate sit in open countryside with views towards and from the Downs. The</p>	<p>There are no Likely Significant Effects of this policy on European sites.</p> <p>This is a development management policy protecting the two Conservation Areas within the Parish from development proposals. This includes the view to and from historic lanes, as well as views over landscapes, such as the Downs.</p> <p>The policy does not provide for a location and / or quantum of residential or employment development.</p> <p>It is therefore screened out from Appropriate Assessment.</p>

	<p>views over the countryside, particularly uninterrupted views towards the Downs and to and from the two Conservation Areas and other historic sites and buildings are important to their setting and to local people. Views to and from historic lanes used for recreational purposes, such as Hook Lane, Northfields Lane, Denmans Lane, Level Mare Lane, and from footpaths towards the Rifles, woodlands and copses are also important to residents and the historical context of the parish.</p> <p><b>EH9.2</b> Arun DC has accepted a proposal to consider the designation of an area at the northern end of Hook Lane as a Conservation Area under the Planning (Listed Buildings &amp; Conservation Areas) Act 1990 given the distinct architectural character, which remains largely intact, and the local historical interest. The area contains an ancient monument and a number of listed buildings. (See Evidence Base 18 for map and details).</p> <p><b>EH9.3</b> An area in Sack Lane, an area at the northern end of Hook Lane and two areas in Westergate Street (see Evidence Base 27A) should be considered for inclusion as Areas of Special Character. The areas proposed meet the criteria laid down in saved policy Area 1 of the ADC Local Plan 2003 and, as such, merit consideration for inclusion. In the case of the Hook Lane area this will provide protection while consideration of the CA designation is considered.</p>	
<p><b>Policy EH10 – ‘Unlit village’ status</b></p>	<p><b>Development proposals which detract from the unlit environments of the Parish will not be supported.</b></p> <p><b>New lighting will be required to conform to the highest standard of light pollution restrictions in force at the time. Security and other outside lighting on private and public premises will be restricted or regulated to be neighbourly in its use including floodlighting at equine establishments and on sports fields or sports grounds.</b></p> <p><b>EH10.1</b> Aldingbourne has a number of areas where light pollution is minimal and the full night sky can be seen. Aldingbourne will seek to develop this status as part of its tourism offering (<a href="http://reference.darkskydiscovery.org.uk">reference darkskydiscovery.org.uk</a>).</p>	<p>There are no Likely Significant Effects of this policy on European sites.</p> <p>This is a development management policy protecting the unlit environments in the Parish. Therefore, new lighting will need to conform to the highest standard of light pollution restrictions. This is a positive policy, because it reduces the light disturbance to potential commuting / foraging routes of bats.</p> <p>The policy does not provide for a location and / or quantum of residential or employment development.</p> <p>It is therefore screened out from Appropriate Assessment.</p>
<p><b>Policy EH11 – Flint Walls</b></p>	<p><b>Development proposals which would seek to remove, or replace the flint walls listed in Schedule F will not be supported. New development proposals in the areas specified in EH11.1 will be required to provide flint walls and/or incorporate flint details into boundary treatments where it is appropriate.</b></p>	<p>There are no Likely Significant Effects of this policy on European sites.</p> <p>This is a development management policy detailing the protection of flint walls in Aldingbourne, which form part of Parish’s character and architectural history.</p>

<p><b>EH 11.1</b> The flint walls in Hook Lane, Westergate Street, Nyton Road, Sack Lane, Level Mare Lane, Church Road, Park Lane, Denmans Lane and Norton Lane contribute to the character of the Parish and its architectural history; they should be maintained and conserved.</p> <p><b>EH11.2</b> It would enhance the vernacular character of the Parish if all development in the areas listed above that require planning consent, provide flint walls and/or incorporate flint details rather than fences and brick walls. The Parish will seek to encourage such provision were possible.</p> <p><b>EH11.3</b> The prevalent and traditional building materials used in the construction of buildings and walls throughout the old parts of the Parish consist of brick and flint walling.</p>	<p>The policy does not provide for a location and / or quantum of residential or employment development.</p> <p>It is therefore screened out from Appropriate Assessment.</p>
<p><b>Getting Around</b></p> <p><b>Policy GA1 – Promoting sustainable movement</b></p> <p><b>Development proposals that increase travel demand will be supported where they can demonstrate that:</b></p> <ul style="list-style-type: none"> <li>• they extend or improve walking and cycling routes by making land available for those purposes or by means of financial contributions through legal agreements or (when adopted for the District) the Community Infrastructure Levy;</li> <li>• they are located in places accessible to public and community transport or can improve the accessibility of the site to public and community transport by contributing to the provision of enhanced services.;</li> <li>• they do not result in the loss of any existing footpaths or cycle paths.</li> </ul> <p><b>GA1.1</b> Connections within the parish and to and from neighbouring villages are important as they share a range of community facilities such as shops, medical facilities and schools. Reduction in traffic volumes and speeds on the narrow B2233 used to access these services must be encouraged.</p> <p><b>GA1.2</b> Improvements to public and community transport will be encouraged, particularly in view of the age profile of local residents and the need for traffic reduction. It is difficult for people from Aldingbourne to access the rail network because there is no local station and infrequent bus services to the coast,</p>	<p>There are no Likely Significant Effects of this policy on European sites.</p> <p>This is a transport management policy providing for sustainable movement patterns within Aldingbourne. Development proposals should demonstrate that they provide access to public and community transport, and they improve walking and cycling routes. Overall, this is a positive policy because it discourages usage of private cars.</p> <p>The policy does not provide for a location and / or quantum of residential or employment development.</p> <p>It is therefore screened out from Appropriate Assessment.</p>

	<p>Chichester and Barnham (where there is pressure on parking), all of which cause people to use cars instead of public transport for journeys.</p> <p><b>GA1.3</b> The Parish will, after completion of the Neighbourhood Plan adopt a Community Action Plan which will identify infrastructure priorities within the parish and target CIL funds accordingly.</p>	
<p><b>Policy GA2 – Footpath and Cycle Path network</b></p>	<p><b>Support will be given to proposals that improve and extend the existing footpath and cycle path network, allowing better access to the local amenities and services, to green spaces, to any new housing and to the open countryside. The loss of existing footpaths and cycle paths will be resisted.</b></p> <p>GA2.1 There are opportunities to upgrade local footpaths to Cycleway standard and connect these to the County Council's proposed route from Barnham to Chichester, which runs from East to West through Aldingbourne parish. These connections are shown on Map D and are as follows:</p> <p>a) Paths 296, 298, 299, 300 and 317, all lying to the south of the E/W route and connecting it to the southern parts of Westergate.</p> <p>b) Path 307 from Nyton Road running south, then southwest to Hook Lane, crossing the E/W route at Nyton Spinney. From this, a crossing of the river would provide a direct connection to the recreation fields, tennis and bowls clubs and the community centre.</p> <p>GA2.2 A connection to the South Downs using Northfield Lane, footpath 315 and Denmans Lane, crossing the A27 and northwards to the parish boundary from where there are options to join the Barnham to Bignor Hill route opened by the County Council in late 2015.</p>	<p>There are no Likely Significant Effects of this policy on European sites.</p> <p>This is a transport management policy outlining support for development proposals that extend the existing footpath and cycle path network. It also stipulates that the loss of existing footpaths will be resisted. Overall, this is a positive policy because it encourages people to walk or cycle to their destination.</p> <p>The policy does not provide for a location and / or quantum of residential or employment development.</p> <p>It is therefore screened out from Appropriate Assessment.</p>
<p><b>Policy GA3 – Parking and new development</b></p>	<p><b>Proposals must provide adequate parking in accordance with the standards adopted at the time. Proposals that would result in a loss of parking spaces either on or off street will be resisted.</b></p> <p>GA3.1 Parking in Aldingbourne is a constant issue with traffic flows interrupted, blocked driveways and parking on pavements. New development must seek to ensure that these problems are not exacerbated.</p>	<p>There are no Likely Significant Effects of this policy on European sites.</p> <p>This is a detailed transport management policy setting the parking standards for new development. It details that development proposals must provide adequate parking capacity and avoid the loss of any parking spaces.</p> <p>The policy does not provide for a location and / or quantum of residential or employment development.</p>

GA3.2 The way in which car parking is designed into new residential development will have a major effect on the quality of development and its ability to blend into its location. There are two principles to designing parking:

- Cars parked on the street and in front of dwellings can seriously detract from the character and quality of the place. Minimising the visual impact of parked cars can let the buildings and landscape dominate instead;
- Residents must be provided with safe and convenient access to their cars. Hiding cars away in rear courtyards can lead to problems of crime and lack of personal security. Residents like to be able to see their parked car from their home.

For in-curtilage parking, the following principles should be incorporated:

- Garages must be large enough to be usable-internal dimensions of 6.5m x 3m are recommended as a minimum;
- Garages should be designed to reflect the architectural style of the house they serve
- Garages should be set back from the street frontage
- Parking spaces should be located in between houses (rather than in front) so that it does not dominate the street scene
- Where parking is located in front of houses, design the street and the landscape to minimise the visual impact e.g. incorporate planting between front gardens.

G A 3.3 Where parking cannot be provided in-curtilage, the following principles should be incorporated:

- Rear parking areas should be kept small and serve no more than six homes so that there is a clear sense of ownership
- Avoid large parking courts to the rear of dwellings
- Design parking into courts and mews to the front of dwellings, where the spaces can form not only a functional space for cars but an attractive setting for the buildings
- Include parking for visitors and deliveries

It is therefore screened out from Appropriate Assessment.

## Employment and Enterprise

<p><b>Policy EE1 – Supporting Existing Employment and Retail</b></p>	<p><b>Development proposals to upgrade or extend existing employment sites and retail units will be supported provided that the impact on the amenities of surrounding properties is acceptable and subject to the other policies in this Plan.</b></p> <p>EE1.1 Encouraging employment opportunities in Aldingbourne is important given the limited amount of employment opportunities. Survey results show that of 31 businesses in the Parish they only employ 65 people from the Parish from a total of 406 (see Evidence base No 36,37). Proposals to upgrade or extend existing employment sites should be encouraged to try to ensure that they remain in the Parish.</p> <p>EE1.2 The village shops in Aldingbourne are an essential part of the fabric of life for many residents with 22% of respondents state that they used them daily. The Plan seeks to support and promote local shops and businesses. Passing trade is also important as out of town shopping makes it hard for small local shops to compete. Any proposal which results in the removal of through traffic would not be supported as this would be likely to have a significant adverse impact on the shops, restaurant and Public House which rely upon passing trade (see also policy GA3).</p>	<p>There is a potential for Likely Significant Effects of this policy on European sites.</p> <p>This is an employment management policy supporting the retention and extension of existing employment and retail units within Aldingbourne. It further stipulates that through traffic must be maintained to protect the integrity of local businesses.</p> <p>If the employment opportunities within Aldingbourne were extended significantly, there might be negative impacts on European sites.</p> <p><b>The relevant impact pathways are likely to be:</b></p> <ul style="list-style-type: none"> <li>• <b>Loss of functionally linked land</b></li> <li>• <b>Water quantity</b></li> <li>• <b>Atmospheric pollution</b></li> </ul> <p>The policy is therefore screened in for Appropriate Assessment.</p>
<p><b>Policy EE2 – Retention of employment land</b></p>	<p><b>Proposals for the redevelopment or change of use of land or buildings in employment or service trade use to non-employment uses will not be permitted, unless the existing use can be shown to be no longer economically viable. Evidence should be provided by the developer that the site has been actively marketed, at the market rate current at the time, for a minimum of 12 months and no sale or let has been achieved.</b></p> <p>EE2.1 Opportunities for employment within the village are limited which contributes to the large amount of out commuting each day. Small scale employment sites contribute to the liveliness and activity in the Parish and also support trade in Parish shops. It should be noted that changes of use from offices or storage/distribution uses to residential use currently benefit from temporary permitted development rights under the Town and Country Planning (General Permitted Development) (England) Order 2015 (as amended). Such changes of uses are subject to certain 'prior notification requirements' but would otherwise not currently require planning permission.</p>	<p>There are no Likely Significant Effects of this policy on European sites.</p> <p>This is an employment management policy protecting all existing employment land from conversion to non-employment uses. Preventing an increase in the number of outward commuters is positive, because this will also prevent an increase in the number of private car journeys.</p> <p>The policy does not provide for a location and / or quantum of residential or employment development.</p> <p>It is therefore screened out from Appropriate Assessment.</p>



<p><b>Policy EE3 – Support for new commercial uses</b></p>	<p><b>Proposals for new commercial development or those involving changes of use to Use Classes B1, B2 and B8 will be supported subject to complying with other policies within this development Plan.</b></p> <p>EE3.1 New commercial development, including offices and light industrial uses will be supported. New development or changes of use to general industrial use (B2) and distribution and storage (B8) may be appropriate where they do not involve any additional heavy goods traffic. Any increase in heavy goods traffic could have a detrimental effect on the Parish and on existing businesses. Proposals resulting in such impacts will generally be resisted unless it can be demonstrated that it satisfies an identified community need.</p> <p>The new Bognor Enterprise zone, 2 miles south of the parish, located adjacent to the Bognor relief road, will provide a more appropriate location for B2 and B8 uses that might generate heavy traffic and noise that could be detrimental to the health of residents and the amenity of the parish.</p>	<p>There are no Likely Significant Effects of this policy on European sites.</p> <p>This is an employment management policy detailing support for new commercial uses (e.g. B1, B2 and B8), but only if such employment use does not involve any additional heavy goods traffic.</p> <p>The policy does not provide for a location and / or quantum of residential or employment development.</p> <p>It is therefore screened out from Appropriate Assessment.</p>
<p><b>Policy EE4 – Local shopping facilities</b></p>	<p><b>Changes of use at ground floor level from Class A1 uses (retail) will be resisted unless it can be demonstrated that the existing use is no longer economically viable. Evidence should be provided to show that the site has been actively marketed, at the market rate current at the time, for at least 12 months and that no sale or let has been achieved during that period.</b></p> <p>EE4.1 The Parish has very limited local shopping facilities and it is important that they be retained. Around 95% of residents agreed that support should be given to local shops and 22% said they used them daily. Use of local village shops saves travel to larger towns which is more sustainable. It should be noted that small retail units (currently of up to 150 square metres) may change to residential use under permitted development rights, subject to a prior approval procedure.</p>	<p>There are no Likely Significant Effects of this policy on European sites.</p> <p>This is an employment management policy protecting all class A1 (retail) employment land from a change in land use.</p> <p>The policy does not provide for a location and / or quantum of residential or employment development.</p> <p>It is therefore screened out from Appropriate Assessment.</p>
<p><b>Policy EE5 – Improving signage</b></p>	<p><b>Proposals for the improvement of signage for local facilities will be supported, provided that they are appropriate to their surroundings.</b></p> <p>EE5.1 Improving signage to promote the facilities available in Aldingbourne will support local shops, businesses and tourism. However, illuminated signage is not appropriate in a rural Parish and will be resisted. There are currently no internally illuminated fascia signs on shopfronts in the Parish.</p>	<p>There are no Likely Significant Effects of this policy on European sites.</p> <p>This is a development management policy outlining improved signage for local facilities within Aldingbourne.</p> <p>The policy does not provide for a location and / or quantum of residential or employment development.</p>

<p><b>Policy EE6 – Sustainable Recreational and tourism activities and Development proposals that provide facilities for recreation and tourist activities will be supported provided that:</b></p> <ul style="list-style-type: none"> <li>• the siting, scale and design respects the character of the surrounding area, including any historic and natural assets;</li> <li>• the local road network is capable of accommodating the additional traffic movements;</li> <li>• adequate parking is provided on the site;</li> <li>• the proposal conforms with other policies of the development Plan.</li> </ul> <p>EE6.1 Sustainable tourism which is appropriate to the overall character of the village will benefit the local economy but must be balanced against the need to protect the existing character of the built environment, the rural landscape and biodiversity.</p> <p>EE6.2 The Parish has a number of large caravan parks but relatively little other tourist accommodation.</p>	<p>It is therefore screened out from Appropriate Assessment.</p> <p>There are no Likely Significant Effects of this policy on European sites.</p> <p>This is a development management policy providing for sustainable recreational and tourism activities within the Parish. Importantly, it identifies that any such development proposals must be balanced against the need to protect biodiversity.</p> <p>The policy does not provide for a location and / or quantum of residential or employment development.</p> <p>It is therefore screened out from Appropriate Assessment.</p>
<p><b>Policy EE7 – Rural Buildings The re-use, conversion and adaptation of rural buildings for small businesses, recreation, or tourism purposes will be supported subject to the following criteria:</b></p> <ul style="list-style-type: none"> <li>• The building is structurally sound and capable of conversion without substantial reconstruction.</li> <li>• The use proposed is appropriate to a rural location.</li> <li>• The conversion/adaptation works respect the local character of the surrounding area and/or buildings</li> <li>• The use proposed will not have an adverse impact on any archaeological, architectural, historic or environmental features</li> <li>• The local road system is capable of accommodating the traffic generated by the proposed new use and adequate parking can be accommodated within the site.</li> </ul>	<p>There are no Likely Significant Effects of this policy on European sites.</p> <p>This is a development management policy detailing the conversion of rural buildings for small-scale businesses, recreation or tourism purposes. Importantly, the policy states that the proposed use must not have an adverse impact on any environmental features.</p> <p>The policy does not provide for a location and / or quantum of residential or employment development.</p> <p>It is therefore screened out from Appropriate Assessment.</p>

	<p>EE7.1 There are a number of farms within the area with buildings which could be suitable for a variety of uses which would be appropriate to a rural location. These could include the following:</p> <ul style="list-style-type: none"> <li>• Small businesses - craft or artisan related workshops, studios and small shops, farm shops, micro breweries</li> <li>• Recreation - Health or exercise studios, rural educational centres, artist studios</li> <li>• Tourism - niche market holiday accommodation, specialist interest holiday bases</li> </ul> <p>Whilst seeking to reuse existing buildings, it is important to retain and protect the existing character of the buildings and to ensure that the development is compatible with its countryside location and designed to minimise potential impact on the countryside. Proposals where substantial re-building works are required will not be supported as these can often intrude on a landscape where there has been no significant structural presence for many years.</p>	
<p><b>Policy EE8</b> <b>Communications infrastructure</b></p>	<p>– <b>All new residential, employment and commercial development must be designed to connect to high quality communications infrastructure. Support will be given for proposals that help to provide improved / additional connectivity for the Parish as a whole.</b></p> <p>EE8.1 Aldingbourne recognises the importance of high quality communications connectivity to allow access to online services, build businesses, improve educational opportunities and for simply keeping in touch with family and friends. The West Sussex County Council Better Connected Broadband Delivery Plan supports the need for high quality communications infrastructure within the county area. The Plan recognises that development proposals can only be required to provide the infrastructure needs to support that development but would welcome appropriate improvement opportunities as this is such an important vehicle for improving educational and employment opportunities.</p>	<p>There are no Likely Significant Effects of this policy on European sites.</p> <p>This is a development management policy outlining that high-quality communications infrastructure will be supported by the Parish Council.</p> <p>The policy does not provide for a location and / or quantum of residential or employment development.</p> <p>It is therefore screened out from Appropriate Assessment.</p>
<p><b>Policy EE9</b> <b>Sustainable Commercial and Employment Buildings</b></p>	<p>– <b>All new commercial and employment development, where it would be appropriate, shall be designed to provide secure parking and storage of bicycles for customers and employees consistent with the relevant standards produced by WSCC.</b></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 new employment development should be sustainable by promoting alternative methods of transport and using renewable energy sources.</p>

	<p><b>Where viable and consistent with other polices within this Plan, energy generating infrastructure using renewable or low carbon energy sources which are incorporated into the design of new commercial development will be supported.</b></p> <p>EE9.1 The Arun DC Energy Efficiency and Fuel Poverty Strategy 2014-2019 actively encourages the use of renewable energy schemes and the Parish Council supports this approach.</p> <p>EE9.2 The Parish supports the provision of renewable energy sources. Designing these into a build at the outset is cheaper than retro adding and improves the design capability. The Parish wants to see renewables used in the development of all new commercial and employment premises to improve sustainability and reduce the burden of energy costs in small businesses.</p>	<p>The policy does not provide for a location and / or quantum of residential or employment development.</p> <p>It is therefore screened out from Appropriate Assessment.</p>
<b>Leisure and Community</b>		
<p><b>Policy LC1 – Support Independent Living</b></p>	<p><b>Proposals for new, converted and extended independent living and care homes will be supported provided that the design and scale of development are in keeping with the character of the location and that the impact on the amenity of surrounding residential properties is acceptable.</b></p> <p>LC1.1 22% of the community are aged over 65 and 8.7% of people under the age of 65 have a limiting long term illness. Provision of services for the elderly and for those with disabilities is limited and not considered sufficient to meet the demands of our population.</p>	<p>There are no Likely Significant Effects of this policy on European sites.</p> <p>This is a development management policy providing support for independent living in the form of care homes, which are in keeping with the character of the location.</p> <p>The policy does not provide for a location and / or quantum of residential or employment development.</p> <p>It is therefore screened out from Appropriate Assessment.</p>
<p><b>Policy LC2 – Healthcare facilities</b></p>	<p><b>Proposals for new medical facilities will be supported.</b></p> <p>LC2.1 There is no medical provision in Aldingbourne. Resident surveys have shown concerns about increased waiting times at GP surgeries and the pressure on services when the additional housing approved in neighbouring parishes is built. The Croft Practice has plans to expand the surgery at Eastergate that will treble the building size, include a larger pharmacy, and increase patient capacity to meet increasing demand. This expansion is subject to funding and agreement for future provision of funds to operate the practice over the next 25 years. This agreement has to be provided by the new body, NHS England with the previous Primary Care Trust not able to provide funding to enable the expansion plans. No timescale is given for expansion at present.</p>	<p>There are no Likely Significant Effects of this policy on European sites.</p> <p>This is a development management policy providing support for new medical facilities.</p> <p>The policy does not provide for a location and / or quantum of residential or employment development.</p> <p>It is therefore screened out from Appropriate Assessment.</p>

<p><b>Policy LC3 – Provision of buildings for community use</b></p>	<p><b>Provision of buildings for community use will be supported provided that:</b></p> <ul style="list-style-type: none"> <li>• <b>their design and scale are in keeping with the local character and;</b></li> <li>• <b>the impact on the residential amenity is acceptable.</b></li> </ul> <p>LC3.1 Surveys have shown how well valued the leisure facilities are to residents and visitors.</p> <p>LC3.2 The facilities at ACSC have been identified as needing improvement and developer contributions will be sought towards this.</p>	<p>There are no Likely Significant Effects of this policy on European sites.</p> <p>This is a development management policy providing support for buildings intended for community use.</p> <p>The policy does not provide for a location and / or quantum of residential or employment development.</p> <p>It is therefore screened out from Appropriate Assessment.</p>
<p><b>Policy LC4 – Provision of allotments</b></p>	<p><b>Proposals that contribute to the provision of allotments either by making land available for those purposes or by means of financial contributions through legal agreements or (when adopted for the District) the Community Infrastructure Levy, will be supported.</b></p> <p><b>The Council will not support development of land currently used as Traditional Orchards (see Evidence Base 24).</b></p> <p>LC4.1 There is currently limited allotment provision within the parish and a waiting list exists. Allotments are a place of social connectivity and not only provide opportunities to grow food but also contribute to local wildlife habitat and improved health and fitness. The existing site in Ivy Lane is well used and the Parish Council is seeking to extend the area to the south to meet demand. The PC will look to the two appeal sites to provide additional resources.</p> <p>LC4.2 The Parish has a number of areas designated as Traditional Orchards which were once a local feature. Their removal, mostly to development, has resulted in a loss of the area's local rural character and agricultural heritage (as well as impacting a priority habitat type). Traditional Orchards were designated as a Priority Habitat under the UK Biodiversity Action Plan. Found across England they are a quintessential component of the historic English landscape. They are also important for the range of species they support, including the rare and endangered noble chafer beetle. Traditional orchards are derived from land management practices which are rapidly disappearing, but which provide excellent conditions for biodiversity to thrive. The habitat is becoming increasingly rare due to neglect, intensification of agriculture and pressure from</p>	<p>There are no Likely Significant Effects of this policy on European sites.</p> <p>This is a development management policy providing support for the provision of allotments. It also specifies that land currently used as Traditional Orchards will be safeguarded. Allotments are considered to be positive features, as these might add value to local wildlife habitat.</p> <p>The policy does not provide for a location and / or quantum of residential or employment development.</p> <p>It is therefore screened out from Appropriate Assessment.</p>

	land development. Since 1950 the overall area of orchards in England has declined by 63%.	
<b>Policy LC5 – Protection of assets of community value</b>	<p><b>Proposals that will enhance the viability and/or community value of any property included in the register of Assets of Community Value will be supported.</b></p> <p><b>Proposals that result in either the loss of the asset or in significant harm to the community value of an asset will be resisted, unless it can be demonstrated that the operation is no longer economically viable. Developers will be expected to provide evidence that the building has been actively marketed for at least 12 months and that no sale or let has been achieved.</b></p> <p>LC 5.1 The buildings listed in Schedule A have been included in the Register of Assets of Community Value held by Arun District Council.</p> <p>LC 5.2 The loss of either of the shops in the village would have a significant impact on the community. The public house is part of the social fabric of the village as is the community hall. The former public house building at the junction of Westergate Street and the B2233 is a significant local landmark and historic building. Each asset is a major feature of daily life for residents and each plays a central part in the vitality of the parish and the sense of community.</p>	<p>There are no Likely Significant Effects of this policy on European sites.</p> <p>This is a development management policy protecting assets of value to the community, including valuable properties such as the former public house at the junction of Westergate Street within Aldingbourne.</p> <p>The policy does not provide for a location and / or quantum of residential or employment development.</p> <p>It is therefore screened out from Appropriate Assessment.</p>
<b>Policy LC6 – Designation of Local Green Space</b>	<p><b>The areas listed in Schedule B and shown on the Local Green Spaces Map are designated as Local Green Space as they are demonstrably special to the local community and hold a particular local significance. Proposals for development of these areas will not be permitted except in very special circumstances.</b></p> <p>LC 6.1 Aldingbourne is a semi rural parish defined by its open spaces, surrounding fields and woodland and views to the south downs. Maintaining existing green spaces encourages biodiversity and reinforces village identity. Each piece of land has been carefully identified with reference to the RNPPF para's 76-78 and a justification for their allocation provided.</p>	<p>There are no Likely Significant Effects of this policy on European sites.</p> <p>This is a development management policy protecting local greenspaces from development and thereby maintaining their value for people and biodiversity. Local greenspaces are important for attracting local residents and may help reduce recreational pressure in European sites sensitive to recreation.</p> <p>The policy does not provide for a location and / or quantum of residential or employment development.</p> <p>It is therefore screened out from Appropriate Assessment.</p>
<b>Policy LC7 – Local Open Space</b>	<p><b>The areas listed in Schedule C and shown on the Local Open Spaces Map are designated as Local Open Space. Proposals for development in these areas will not be permitted unless it can be demonstrated that:</b></p>	<p>There are no Likely Significant Effects of this policy on European sites.</p>



	<ul style="list-style-type: none"> <li>• <b>The benefits of the development outweigh any identified harm;</b></li> <li>• <b>There are no reasonable alternative sites available;</b></li> <li>• <b>It is part of a comprehensive redevelopment of a school that would not result in net loss of playing fields.</b></li> </ul> <p>LC7.1 Our outdoor spaces are vital to maintaining a happy and healthy community. Surveys have shown how much they mean to residents and visitors. These open spaces contribute to the open and pleasant ambience of the area and are used for exercise and children's play but also contribute to wildlife biodiversity and habitat.</p>	<p>This is a development management policy safeguarding local open spaces for the benefit of people, wildlife biodiversity and habitats. Similar to greenspaces, local open spaces are important for attracting local residents and may help reduce recreational pressure in European sites sensitive to recreation.</p> <p>The policy does not provide for a location and / or quantum of residential or employment development.</p> <p>It is therefore screened out from Appropriate Assessment.</p>
<p><b>Policy LC8 – School facilities</b></p>	<p><b>Developments that lead to the provision or improvement of facilities for children to attend primary school in Aldingbourne will be supported subject to compliance with other relevant policies in the development plan.</b></p> <p>LC8.1 Aldingbourne Primary School has capacity for 210 pupils and is currently running at 5 places above capacity with 215 pupils. Applications for places vary annually but average at 40 for the 30 places available. Eastergate Primary School has a current capacity for 140 pupils, with an annual intake of 20 places. Expansion of the school in September 2014 increased its intake to a single form entry of 30 places.</p> <p>LC8.2 The extension of Eastergate Primary School will address shortfalls in that parish and support the 16 new houses to be provided in Eastergate and new housing at Nyton Nurseries granted on appeal. Families living close to Aldingbourne school are having to drive children out of the parish because of lack of places which is not environmentally sustainable. This situation will be exacerbated by the consent on housing land behind the school unless part of that site is allocated for its expansion (see WSCC Letter in Evidence Base No 43).</p>	<p>There are no Likely Significant Effects of this policy on European sites.</p> <p>This is a development management policy relating to the provision of school facilities in Aldingbourne. It details that proposals leading to the provision or improvement of educational facilities will be supported.</p> <p>The policy does not provide for a location and / or quantum of residential or employment development.</p> <p>It is therefore screened out from Appropriate Assessment.</p>
<p><b>Policy LC9 – Allocation for camping / touring caravans site</b></p>	<p><b>Proposals for the provision or extension of a site to serve camping and touring caravans shown on the Map C - Leisure Proposals will be supported, subject to the complying with other policies in the Plan including Policy EE6.</b></p> <p>LC9.1 Permission has been granted for touring caravans on land marked 'A' on Map C. Land to the north and west (labelled 'Proposed Leisure Use' on Map C) is included in the allocation as it offers an opportunity to increase the number of</p>	<p>There is a potential for Likely Significant Effects of this policy on European sites.</p> <p>This is a development management policy providing or extending a camping / touring caravans site within Aldingbourne. This would be to replace the 90 pitches at Rowan Way, Bognor Regis, which are to be redeveloped. As such, this policy might lead to a temporary increase in the number of residents within the Parish.</p>

pitches which will provide employment in the Parish and support local facilities such as the shops, pub and restaurant.

LC9.2 The only touring camping and caravanning provision in the area is at Rowan Way in Bognor Regis. This site has a total of 90 pitches and is only open for nine months of the year. It is due to be redeveloped as part of the Bognor Regis Regeneration plan. This will leave the tourist resort of Bognor Regis with no provision for tourers, one of the fastest growing leisure activities in the country. Use of this site is seen as a way of boosting the tourism economy of the Parish while re-using a former employment site.

LC9.3 Land to the rear of the PH shown as 'B' on Map C benefits from planning permission and is now in use as a camping site and is well used.

**The relevant impact pathways are likely to be:**

- **Loss of functionally linked land**
- **Water quantity**
- **Atmospheric pollution**

The policy is therefore screened in for Appropriate Assessment.



