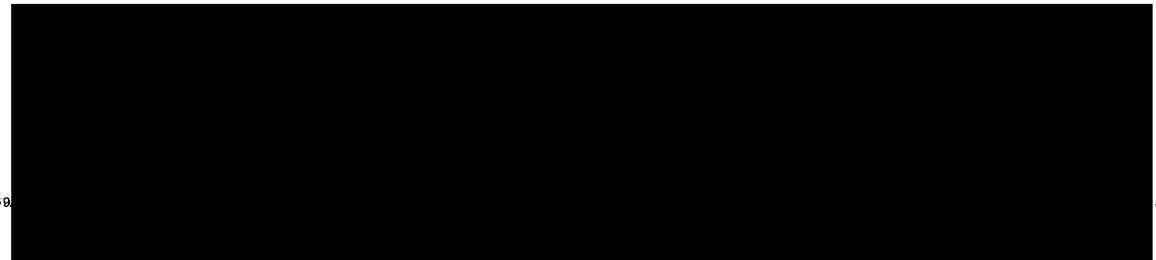
LAND AT YAPTON ROAD, BARNHAM

OUTLINE PLANNING APPLICATION FOR DEVELOPMENT

LANDSCAPE AND VISUAL APPRASIAL

on behalf of Orchestra (Special Projects 1) Ltd

December 2019



ARUN DISTRICT COUNCIL BN/128/19/ , Brighton, BN1 6SB.

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1.0 INTRODUCTION

1.1 Enplan is a multi-disciplinary practice of planners, landscape architects and environmental consultants. Enplan were appointed in April 2019 by Orchestra (Special Projects 1) Ltd Land to undertake a Landscape and Visual Appraisal (LVIA) in support of a planning application for residential development at Land at Yapton Road, Barnham. This report should be read in the context of the drawings for the development produced by Richard Clark Architects.

1.2 The location of the proposed development area is illustrated in **Figure 1: Site Context.** The Site comprises of one pasture field defined by post and rail fence on the northern, eastern and western boundaries and a semi mature hedge along the southern boundary with Yapton Road. The proposed development comprises of a 70 bed Nursing Home and two buildings consisting of 32 Assisted Living Units and associated car parking, circulation and landscape peripheral tree and under storey planting.

1.3 This report sets out a preliminary assessment of the potential landscape and visual effects of developing the land for a Nursing Home and Assisted Loving at Land at Yapton Road. The report defines the existing landscape conditions, assesses the character and quality of the landscape and analyses the visual and landscape effects of the proposal.

1.4 The baseline position against which this assessment has been undertaken is as per the current position on the ground. There are no extant planning permissions for the land.

1.5 The Study Area for this assessment has been defined to incorporate all parts of the landscape that potentially may have a view of the proposals (referred to later in this chapter as the Zone of Theoretical Visibility or ZTV).

1.6 Assessments undertaken within this appraisal have been undertaken in accordance with the 3rd Edition of 'Guidelines for Landscape and Visual Impact Assessment'[1] (GLVIA3). The assessment and landscape design work has been led by Richard Hodgetts BA Hons DipLA CMLI, Landscape Director of Enplan and a Chartered Landscape Architect with over 27 years' experience.

[1] Landscape Institute, Guidelines for Landscape and Visual Impact Assessment 3rd Edition,17 April 2013

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2.0 LANDSCAPE RELATED PLANNING POLICY CONTEXT

2.1 A planning statement has been prepared by Arrow Planning and should be referenced for planning policy relating to this application and report. The designations in and around the site are identified on **Figure 3.0 Designation Plan**.

National Planning Policy Framework:

2.2 The revised NPPF (the Framework) defines three overarching objectives for the planning system to contribute to achieving sustainable development; these are economic, social and environmental. For the environmental objective the planning system should contribute to protecting and enhancing the natural, built and historic environment.

2.3 Within Section 15 "Conserving and enhancing the natural environment", paragraph 170 requires that the planning policies and decisions contribute to and enhance the natural and local environment by, inter alia, "protecting and enhancing valued landscapes…." and by "recognising the intrinsic character and beauty of the countryside". Paragraph 172 accords great weight to the conservation and enhancement of scenic beauty in protected landscapes, such as National Parks and Areas of Outstanding Natural Beauty, highlighting that such landscapes have the "highest status of protection in relation to these issues". The revised Framework, therefore, seeks the protection and enhancement of landscapes/countryside whether designated, valued or otherwise but distinguishes those that are "valued", from those that are not, and attaches greater weight to those that are designated. Within Section 12 '' Achieving well designed places'', paragraph 127 b and c states… are visually attractive as a result of good architecture, layout and appropriate and effective landscaping and are sympathetic to local character and history, including the surrounding built environment and landscape setting, while not preventing or discouraging appropriate innovation or change (such as increased densities).

Planning Background

2.4 A planning statement has been prepared by Arrow Planning and should be referenced for planning policy relating to this report.

The relevant sections of the Development Plan comprise:

- Arun Local Plan 2011-2031 (adopted July 2018);
- Barnham and Eastergate Neighbourhood Development Plan 2014-2029 (May 2014).

Arun Local Plan 2011-2031 (adopted July 2018);

2.5 The main policies of relevance, are the following:

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- CSP1 Countryside: states that land outside of the built up area boundaries will be defined as countryside. Development will be permitted in the countryside of the stated uses and in accordance with other policies in the Plan which refer to a specific use or type of development.

- LAN DM1 Protection of Landscape Character: Development throughout the plan area should respect the particular characteristics and natural features of the relevant landscape character areas and seek, wherever possible, to reinforce or repair the character of those areas;

- D SP1 Design: requires all development proposals to make an efficient use of land, and, inter alia, to reflect the characteristics of the site and local area in their layout and design;

- D DM1 Aspects of form and design quality: sets out the aspects of form and design quality which the Council will have regard to;

- T DM1 Sustainable Travel and Public Rights of Way: New development must ensure ease of movement, prioritising safe pedestrian and cycle access to the green infrastructure network and access to public transport;

- ENV SP1 Natural Environment: states that the Council will, inter alia, promote the enhancement of biodiversity;

- ENV DM5 Development and Biodiversity: states that schemes shall seek to achieve a net gain in biodiversity and protect existing habitats on site;

- W SP1 Water: The Council will encourage water efficiency measures, with development encouraged to make active use of surface water as a design feature;

- W DM3 Sustainable Urban Drainage Systems: requires all development to incorporate a range of Sustainable Urban Drainage Systems (SUDS) appropriate to the size of the development;

- QE SP1 Quality of the Environment: requires all development to contribute positively to the quality of the environment;

Barnham & Eastergate Neighbourhood Development Plan 2014-2029 (May 2014)

2.6 The Neighbourhood Development Plan (NDP) was made in 2014 and therefore predates the Local Plan. However, it remains part of the Development Plan and therefore is a material consideration in the determination of any planning application.

2.7 Policy CLW1 concerns independent living and care homes. The Policy states that new proposals 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 amenity of surrounding residential properties is acceptable.

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3.0 LANDSCAPE CONTEXT

Published Landscape Character Assessments

3.1 The relevant published landscape character data and related assessments include the following:

- National Character Area Profile: South Coast Plain (NCA 126)[2];
- The West Sussex County Council: A Strategy for the West Sussex Landscape (October 2005): South Coast Plan Sheet SC9: Chichester to Yapton Coastal Plain[3].

National Context

3.2 At a national level the application site lies within National Character Area (NCA) 126 South Coast Plain. The key characteristics, relevant to this assessment, are defined as:

- *The plain slopes gently southwards towards the coast. From the coastal plain edge there are long views towards the sea and the Isle of Wight beyond.*
- *The underlying geology of flinty marine and valley gravels extends several miles inland to the dip slope of the South Downs and the South Hampshire Lowlands. This gives rise to deep and well-drained high quality soils.*
- *In places, streams and rivers flow south from the higher land of the Downs to the sea.*
- *Coastal inlets and 'harbours' contain a diverse landscape of narrow tidal creeks, mudflats, shingle beaches, dunes, grazing marshes and paddocks.*
- *There are stretches of farmed land between developed areas, often with large arable fields defined by low hedges or ditches.*

- *There are isolated remnants of coastal heath in the west.*
- *Sand dune grasses and intertidal marsh communities are characteristic of the coastline, while small areas of species-rich meadow remain inland.*

[2] http://publications.naturalengland.org.uk
[3] https://www.westsussex.gov.uk/land-waste-and-housing/landscape-and-environment/landscape-character-assessment-of-west-sussex/

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- *The coastline provides feeding grounds for internationally protected populations of overwintering waders and wildfowl and is also extensively used for recreation.*
- *Along the exposed, open coastal plain and shoreline, tree cover is limited to isolated wind-sculpted woodlands and shelterbelts.*
- *The area has significant urban development, with settlements along the coastline dominated by the Portsmouth conurbation, suburban villages and seaside towns including Bognor Regis, Littlehampton and Worthing linked by major road and rail systems.*

Regional and Borough Context

3.3 In 2005 West Sussex County Council published 'A Strategy for the West Sussex Landscape' which was based upon the Landscape Assessment of West Sussex (1995) This is supported by The Landscape Character Assessment and *Land Management Guidelines* for individual Landscape Character Areas within the county. The Site falls within South Coast Plan Sheet SC9 Chichester to Yapton Coastal Plain.

3.4 The key characteristics, historic features, biodiversity, change, key issues and Landscape and Visual sensitivities of the character area relevant to the Site can be summarised as follows:

Chichester to Yapton Coastal Plain (SC9):

3.5 Key Landscape Characteristics:

- *Low lying flat open landscape.*
- *Meandering rifes and straight drainage ditch systems, with associated unimproved grassland and edged by reed beds.*
- *A low density of hedgerows and hedgerow trees with occasional shelterbelts.*
- *Large-scale arable farming and market gardening. Extensive farms with both traditional and modern farm buildings and silos.*
- *Clusters of glasshouses.*
- *Scattered, historically nucleated villages with mixed building materials of flint, brick, half timber and stone.*
- *Large farmsteads along roads, and on dead-end tracks.*

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- *Long views to Arundel, the Downs and to the distinctive spire of Chichester Cathedral.*
- *The relatively open character of much of the area allows long views so that village church towers are important landmarks in views.*
- *Frequent urban fringe influences of horse paddocks, light industry and disused airfields, with busy minor and major roads.*
- *The urban fringes associated with Bognor are particularly obvious, with sporadic urban development in suburban settlements of Tangmere, Barnham,Yapton, and Westergate.*
- *Large gravel pit lakes around the edge of Chichester.*
- *Few trees or hedgerows, partly as a result of Dutch Elm Disease, from the 1970s and the Great Storm of 1987 and overall high-quality agricultural land, although, where they do exist, they form prominent features.*
- *Light industry in the countryside at Ford and Tangmere.*

3.6 Historic Features:

- *Area settled and resources exploited from prehistoric times onwards. Few visible prehistoric monuments apart from crop marks.*
- *Distinctive medieval manor houses at Shripney and Barnham Court.*
- *Important medieval churches with spires which distinguish this otherwise flat landscape.*
- *Large regular fields, mostly the product of Parliamentary enclosure.*

3.7 Biodiversity:

- *Semi-natural habitats are scarce due to intensive arable agriculture.*
- *Hedgerow pattern is fragmented with occasional isolated woods……*

3.8 Change- Key Issues:

- *Urban development pressures, especially in the gaps between settlements and on the edge of Chichester.*
- *Loss of mature elm trees in the 1970's and 1980's due to Dutch Elm disease.*
- *Loss of tree and hedgerow cover from agricultural intensification since World War II.*

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- *Climate change may increase the risk of storm surges associated with flooding. This will have consequences for inter-tidal habitats, increasing pressure for possibly insensitive coastal defences.*

3.9 Landscape and Visual Sensitivities:

- Key views to the South Downs, Chichester Cathedral and Arundel.
- Fragmentation and loss of hedgerows and connections between hedgerow and woodland.
- Replacement of mature treescape.
- Changes in drainage patterns.
- Loss of archaeological remains to ploughing.
- Development on settlement edges of Bognor and suburban settlements of Tangmere, Barnham, Yapton and Westergate.
- Loss of distinction between different settlements due to urban expansion.
- Changes in transport infrastructure due to urban development pressures.

3.10 The landscape character area then describes the Land Management Guidelines which states that significant views to the South Downs and Chichester Cathedral should be conserved along with the following measures:

- Create a new, large scale tree and hedgerow framework which complements the open intensively farmed landscape, whilst maintaining significant views of Chichester Cathedral, the South Downs and local features.
- Maintain and strengthen field boundaries such as hedgerows and shelterbelts.
- Link up existing remnant hedgerows and tree lines to re-establish coherent field boundaries and wildlife corridors.
- Encourage a full tree survey of the area with a view to conserving and managing existing feature tree groups and individuals.
- Encourage and promote land management schemes to increase species rich grassland areas.
- Promote management and establishment of grassland regimes of grazing, hay cutting and silage.
- Establish landscape management plans for urban edges, notably Bognor Regis, to enhance the distinction between the

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urban and rural landscape.

- Restore and strengthen the landscape of the gaps between settlements.
- Encourage landscape enhancements around villages and on their approaches.
- Establish new vegetation features by the planting of hedgerows and tree clumps in field corners and along roadsides, especially those approaching settlements.
- Encourage the planting of shelter belts around horse paddocks, using native species, to give visual and wildlife benefits.
- Promote sympathetic design of new road schemes, particularly associated with transport infrastructure for Bognor Regis.
- Encourage the production of a colour and design study for new and existing agricultural and industrial buildings.
- Encourage bold tree planting associated with large agricultural buildings, glasshouses and industrial buildings to attempt to assimilate them into the landscape more satisfactorily.
- Restrict extensive areas of tree planting to poorer quality agricultural land.
- Encourage the replacement or restoration of derelict glasshouses where these appear detrimental to the landscape.
- Maintain and enhance the landscape and biodiversity of rifes and other existing habitats. Reprofile banks and encourage more diverse flora by lengthening clearance cycles.
- Enhance the visual prominence of rifes through the establishment of waterside vegetation features.
- Maintain, restore and enhance floodplain woodland and associated species, including native black poplar, where appropriate.

Site Landscape Character

3.11 The proposed development follows the landscape guidelines stated above in Section 3.10 particularly in relation to the creating a new, large scale tree and hedgerow framework which complements the open intensively farmed landscape. Also to maintain and strengthen field boundaries such as hedgerows and shelterbelts and to link up existing remnant hedgerows and tree lines to re-establish coherent field boundaries and wildlife corridors. To restore and strengthen the landscape of the gaps between settlements and encourage landscape enhancements around villages and on their approaches. To establish new vegetation features by the planting of hedgerows and tree

clumps in field corners and along roadsides, especially those approaching settlements and finally to encourage the planting of shelter belts around horse paddocks, using native species, to give visual and wildlife benefits.

The Site and its Landscape Context

3.12 The Land at Yapton Road is located within the village of Barnham on Yapton Road to the south east of the centre of Barnham and the railway station (refer to **Figure 1**). The Site comprises of a rectangular pasture field set at 10m AOD and is flat and is bound by a semi mature clipped hedge along Yapton Road. The eastern, northern and western boundaries comprise of a post and rail fence. The site is not designated. The existing character of the site can be seen on the **Figure 4 Landscape and Visual (Location of Viewpoints and Site Appraisal Views)** for location and **Views A to F on Figures 7-9.**

3.13 There is a public right of way (ref no Barnham 325-1) that runs along the eastern boundary from the Yapton Road in a northerly direction towards the railway line from Barnham to Bognor Regis. (refer to **Figure 4**).

3.14 The Site is contained on its southern boundary by a clipped semi mature hedge running along Yapton Road. There is a gap in the hedge where the existing access into the field is located. The northern boundary comprises of post and rail fence with clear views from it to the north towards the Binsted plant nursery, with the recently constructed Ashwood Development adjacent and the Arun Valley Railway line. The eastern boundary comprises of a post and rail fence with the occasional semi mature tree located along its length. The eastern boundary adjacent to the site is defined by Old Mill Cottage and the hedge and tree planting that define its boundary. The western boundary comprises of a post and rail fence with Highfield House beyond. Some of the ground floor windows face onto the Site. There are local views into the site and these are described in **Section 4.0.** The boundary vegetation can be seen on **Views A to F on Figures 7-9.**

Visual Receptors/ Views

3.15 The Zone of Theoretical Visibility (ZTV) represents the approximate zone within which it may be possible to see any part of the site. Within the ZTV there may be a number of areas from which no views of the site or development will be possible as a result of intervening landform, vegetation or built form, which may obscure views. Outside the defined ZTV, there would be no perceptible views of the site or the development would be very difficult to perceive or distinguish. The starting point for the appraisal of potential visual effects is the identification of a zone of theoretical visibility (ZTV). This is presented as **Figure 4 Zone of Theoretical Visibility (Bare Earth)**.

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3.16 The Zone of Theoretical Visibility was determined by a field survey visit and topographical studies. A draft ZTV was produced which was tested by a field survey visit and refined to produce the final ZTV. Generally in a rural undulating and wooded landscape one would expect the visual influence of a medium scale development to be imperceptible beyond 3.0km. In this case the maximum study area has been defined as 3.0km.

3.17 This section identifies a range of visual receptors based upon the baseline desktop study and site investigation. Visual receptors are people who are likely to experience changes in views or visual amenity as a result of the proposed development. The potential effects are discussed and assessed in later sections. **The Site Context (Location of Wider Viewpoints)** on **Figure 1** and **Landscape and Visual Appraisal (Location of Viewpoints and Site Appraisal Views)** on **Figure 5** shows the location of the viewpoints that are described below.

Potential Receptors: Residential Receptors

3.18 There is no right to a private view in planning terms. Therefore, views from residential properties or their private gardens are not required to be considered as part of this LVIA. The purpose of the LVIA is to consider public views from the adjoining residential areas. The public views from the nearest dwellings are from Old Mill Cottage (to the east) and Highfield House (to the west) These are represented in **Viewpoint 2** and **Views D** and **E** which are representative of Views from Highfield House.

3.19 In addition the following dwellings on Yapton Road will have views looking north towards the development over the existing hedge along Yapton Road. The dwellings affected are Nos 1 and 2 Dunora, Willow Cottgae, Flints, Rose Cottage, Wychwood, Potts, Elfin Hollow, Millview, Inveresk, Wayside, Wahroongai, Clytha Cottage, Crediton, nos 1 and 2 Hope Villas, Milton and Millmead. These are represented in **Viewpoints 1, 10, 11** and **12.**

3.20 Further away to the north there will be two long distance views from the new development called Ashwood looking south towards the proposed Site. These are represented in **Viewpoints 7** and **8.**

3.21 In accordance with the methodology the sensitivity of these individual residential properties to changes in views is thus considered to be **high**

Potential Receptors: Recreational Receptors

3.22 There are a limited number of recreational receptors within the surrounding landscape and these are described below:

- **Viewpoint 2, 3, 4, 5 and 6** from Public Right of Way (ref no Barnham 325-1) looking west and south towards the Site;
- **Viewpoint 13** from Public Right of way (ref no. Barnham 158-3) looking north west in the direction of the Site.

3.23 In accordance with the methodology the sensitivity of these recreational receptors is thus considered to be **high**.

Potential Receptors: Road Users

3.24 Views of the proposed development site are limited to views from:

- The Yapton Road looking north east, north and north west towards the Site **(Viewpoints 1, 9, 10, 11** and **12)**

The sensitivity of these individual road users to changes in views is considered to be **moderate**

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4.0 LANDSCAPE AND VISUAL IMPACT APPRAISAL

4.1 This landscape and visual assessment has been based upon the scheme defined above and as set out in the Planning and Design & Access Statement.

Visual Impact Assessment

4.2 The visual impact assessment of the proposed development is based upon an analysis of the Zone of Theoretical Visibility (ZTV) of the principal features of the scheme and on the individual impact assessment upon the 15 identified representative viewpoints, all of which has been undertaken to the methodology set out in Appendix A. **Figure 3** illustrates the potential ZTV of the development proposals and the locations of the selected representative viewpoints as shown on **Figures 1 and 4**.

4.3 The Visual Impact Assessment Table included in Appendix D sets out a summary for each viewpoint the sensitivity of the viewpoint receptor, the approximate distance of the viewpoint to the nearest part of the proposed development, the nature of the view (if there is a view, whether it is a full view of most or all of the development, or only a partial view and whether it is part of a clear, broad view or a narrower view or 'glimpse', i.e. through gaps in vegetation for example) and the overall impact assessments at the year of opening (i.e. Year 1). The assessment is based on the seasonal conditions at the time of the fieldwork and the illustrated viewpoint photographs, i.e. Summer 2019.

Viewpoint 1: Yapton Road/ Representative view from Milton and Millmead (See Figure 10)

4.4 Receptor 1a: Yapton Road

The sensitivity of the viewpoint for road user receptors is moderate taking account of the criteria set out in Table 7.3 in Appendix A. The receptors will experience glimpses of the development from Yapton Road above the existing hedge along the southern boundary. The magnitude of change will be **Moderate** with a Moderate Effect at Year 1, leading to a **Slight** Minor Effect at Year 15 when assessed against the criteria set out in Table 7.9 in Appendix A. Therefore, the effects at both Year 1 and Year 15 will be **Not Significant** as identified in the methodology in Appendix A. An extensive mitigation strategy is proposed along the southern and eastern boundaries which comprises of indigenous trees and understorey planting and when mature, will provide a visual screen of the proposed development.

4.5 Receptor 1b: Representative Views from dwellings called Milton and Millmead.

The sensitivity of the viewpoint for residential receptors is high taking account of the criteria set out in Table 7.3 in Appendix A. The receptors will only experience glimpses of the development across Yapton Road towards the proposed Development. The magnitude of change will be **Moderate** with a Major/Moderate Effect at Year 1, leading to

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Negligible Moderate Minor Effect at Year 15 when assessed against the criteria set out in Table 7.9 in Appendix A. An extensive mitigation strategy is proposed along the southern and eastern boundaries which comprises of indigenous trees and understorey planting and when mature, will provide a visual screen of the proposed development. Therefore, whilst the effects at Year 1 will be **Significant** at Year 15 they will be **Not Significant** and an improvement to the existing, as identified in the methodology in Appendix A.

Viewpoints 2 and 3: Mill Hill Cottage/ Public Right of Way (ref no. Barnham 325-1) (See Figures 11 and 12)

4.6 The sensitivity of the viewpoints for residential and recreational receptors is high taking account of the criteria set out in Table 7.3 in Appendix A. The receptors will experience full views of the development from the side windows of the dwelling looking across the adjoining Public Right of Way towards the Site. The magnitude of change will be **Substantial** with a Major Effect at Year 1, leading to a **Slight** Moderate Effect at Year 15 when assessed against the criteria set out in Table 7.9 in Appendix A. An extensive mitigation strategy is proposed along the eastern boundary which comprises new tree and understorey planting that will provide a definitive screen of the proposed development and when mature, will provide a visual screen of the proposed development. Therefore, whilst the effects at Year 1 will be **Significant** at Year 15 they will be **Not Significant** and an improvement to the existing, as identified in the methodology in Appendix A.

Viewpoints 4, 5, 7, and 8: Public Right of Way (ref no. Barnham 325-1) and Ashford Vale Developmnet (See Figures 13, 14, 16 and 17)

4.7 The sensitivity of the viewpoints for residential and recreational receptors is high taking account of the criteria set out in Table 7.3 in Appendix A. The receptors will experience full views of the development from the particular viewpoints looking across the landscape towards the northern boundary of the Site with the dwellings alongside Yapton Road breaking the skyline. The magnitude of change will be **Moderate** with a Major/ Moderate Effect at Year 1, leading to a **Slight** Moderate Effect at Year 15 when assessed against the criteria set out in Table 7.9 in Appendix A. An extensive mitigation strategy is proposed along the northern boundary which comprises new tree and understorey planting that will provide a definitive screen of the proposed development and when mature, will provide a visual screen of the proposed development. Therefore, whilst the effects at Year 1 will be **Significant** at Year 15 they will be **Not Significant** and an improvement to the existing, as identified in the methodology in Appendix A.

Viewpoint 6 Public Right of Way (ref no. Barnham 325-1) (See Figure 15)

4.8 The sensitivity of the viewpoint for recreational receptors is high taking account of the criteria set out in Table 7.3 in Appendix A. The receptors will experience glimpsed views

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of the development looking across the landscape towards part of the northern boundary of the Site with the dwellings alongside Yapton Road breaking the skyline. The magnitude of change will be **Slight** with a Moderate Effect at Year 1, leading to a **Negligible** Moderate/ Minor Effect at Year 15 when assessed against the criteria set out in Table 7.9 in Appendix A. An extensive mitigation strategy is proposed along the northern boundary which comprises new tree and understorey planting that will provide a strong screen of the proposed development and when mature, will provide a visual screen of the proposed development. Therefore, the effects at both Year 1 and Year 15 will be **Not Significant** as identified in the methodology in Appendix A

Viewpoint 9: Hill Lane (See Figure 18)

4.9 The sensitivity of the viewpoint for road user receptors is moderate taking account of the criteria set out in Table 7.3 in Appendix A. The receptors will experience glimpses of the development from Yapton Road above the existing hedge along the southern boundary. The magnitude of change will be **Moderate** with a Moderate Effect at Year 1, leading to a **Negligible** Minor Effect at Year 15 when assessed against the criteria set out in Table 7.9 in Appendix A. Therefore, the effects at both Year 1 and Year 15 will be **Not Significant** as identified in the methodology in Appendix A.

Viewpoints 10, 11 and 12 (See Figures 19, 20 and 21)

4.10 The sensitivity of the viewpoints for residential receptors is high taking account of the criteria set out in Table 7.3 in Appendix A. The receptors will experience full views of the development from ground floor windows of the dwellings looking across Yapton Road towards the southern boundary of the proposed Site. The magnitude of change will be **Substantial** with a Major Effect at Year 1, leading to a **Slight** Moderate Effect at Year 15 when assessed against the criteria set out in Table 7.9 in Appendix A. An extensive mitigation strategy is proposed along the southern boundary which comprises new tree and understorey planting that will provide a strong screen of the proposed development and when mature, will provide a visual screen of the proposed development. Therefore, whilst the effects at Year 1 will be **Significant** at Year 15 they will be **Not Significant** and an improvement to the existing, as identified in the methodology in Appendix A.

Viewpoint 13: Public Right of Way (ref no. Barnham 158-3) (See Figure 22)

4.11 The sensitivity of the viewpoints for recreational receptors is high taking account of the criteria set out in Table 7.3 in Appendix A. The receptors from this viewpoint will only get glimpsed views of the development above the dwellings on Yapton Road. The magnitude of change will be **Negligible** with a Moderate/ Minor Effect at Year 1, leading to a **Negligible** Moderate/ Minor Effect at Year 15 when assessed against the criteria set out in Table 7.9 in Appendix A. Therefore, the effects at both Year 1 and Year 15 will be **Not Significant** as identified in the methodology in Appendix A.

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Night Time Illumination

4.12 The Institution of Lighting Engineers (ILE) suggests four environmental zones relating to extant lighting conditions. They are:

- E1: Intrinsically dark landscapes (National Parks, AONBs etc);
- E2: Low district brightness areas (Rural, small village or relatively dark urban locations);
- E3: Medium district brightness areas (Small town centres or urban locations); and
- E4: High district brightness areas (Town/city centres with high levels of night time activity).

For the purposes of this LVIA, the existing conditions in the vicinity of the site are considered to correspond with Environmental Zone E2. Also, low light level lighting is proposed as shown on the illustrative masterplan on **Figure 23.**

Summary of Visual Impact Assessment

4.13 Many of the views towards the proposed development are taken either on the boundary or within 500m of the development thus being local views and thus the impacts are **Significant** at Year 1 as a result of the sensitivity of the receptors and their proximity to the development. These views will experience a temporary substantial or moderate magnitude of change, leading to a major or major/moderate effect that will subsequently be mitigated through an extensive landscape strategy which will integrate the development into the existing landscape fabric. This will mitigate this temporary impact leading to a **slight** magnitude of change, resulting in a **moderate** effect which would result in a **Not Significant** impact.

4.14 All other viewpoints will have a **Not Significant** impact and therefore we conclude that the proposed development with be acceptable in terms of the Landscape and Visual Impact.

4.15 The visual impacts of the construction process are likely to be more visible than the ultimate scheme, although these are of course temporary effects. It is likely that some parts of the construction process would be visible from some of the viewpoints at some time. The impacts of such temporary events are generally considered to be **Not Significant.**

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Landscape Character Impacts

4.16 The application site falls within one national character area National Character Area Profile: South Coast Plain (NCA 126) and one regional character area : South Coast Plan Sheet SC9: Chichester to Yapton Coastal Plain. For the purposes of this report the regional character area describes its character more accurately and has been used to assess the landscape character impact assessment.

4.17 The value of this landscape is defined against the criteria set out at **Table 7.5** within **Appendix A**. In this context this landscape is not designated or recognised otherwise in a planning policy context and, consequently, the landscape is considered to be of **Local Value**, relative to other designated landscapes within the broad context. However, in evaluating the value of undesignated landscapes it is useful to consider other factors (as defined at Box 5.1 of GLVIA3 page 84) to understand the specific aspects of value which an undesignated landscape may have to a greater or lesser degree. Such aspects include landscape condition, scenic quality, rarity, representativeness, conservation interests, recreation value, perceptual aspects and associations. In this regard the landscape of this part of the Chichester to Yapton Coastal Plain is considered to have the following aspects of value:

- **Landscape quality (condition)** – Generally in a reasonable physical state, largely consistent and demonstrates a high level of intactness and condition with few visual detractors;
- **Scenic quality** – Scenic quality is reasonable although the landscape is very flat and long distance views are limited and local;
- **Rarity** – the local landscape has some interesting notable features such as Barnham Windmill;
- **Representativeness** – The site is relatively small in comparison to the wider landscape character of the Chichester to Yapton Coastal Plain however it is representative of the landscape being a low lying flat open landscape with large scale market gardening comprising cluster of glasshouses;
- **Conservation interests** – The ecological integrity is limited as the Site has been managed as pasture farmland;
- **Recreational value** – The presence of a Public Rights of Way along the eastern boundary suggests some local popularity for low-key informal recreation;
- **Perceptual aspects** – The strength of character and intactness of the Chichester to Yapton Coastal Plain is **strong**.
- **Associations** – There are large glasshouses in Barnham as noted in the regional character area.

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4.18 Overall, within the context of a **Local Value** landscape, this part of the Chichester to Yapton Coastal Plain demonstrates aspects of value which are highly representative of this landscape which would suggest that the value remains a ***Local Value.***

4.19 An assessment of the landscape susceptibility of this part of the Chichester to Yapton Coastal Plain to this form of development requires an analysis of the key landscape characteristics and the ability of these to accept the type, scale and form of this development. The key physical characteristics of the Chichester to Yapton Coastal Plain are exhibited in this context and state that the local landscape comprises of a low lying flat open landscape with a low density of hedgerows and hedgerow trees. In addition there are clusters of glasshouses.

4.20 Overall it is considered that the landscape susceptibility of this area of Chichester to Yapton Coastal Plain, is **Slight Susceptibility**, as defined in Table 7.6, in that the clarity of the key characteristics are vaguely expressed and/or their robustness to change is strong and/or views are incidental to landscape character and/or policies and strategies promote or accept that the landscape could evolve, and the changes to landscape character that could be brought about by a development of the type, scale and location proposed would have a good compatibility with these factors.

4.21 Taken together with a ***Local Value***, the ***Slight Susceptibility*** of this landscape to the potential effects of this form of development means that the landscape character of this area of the Chichester to Yapton Coastal Plain is of ***Low Sensitivity*** to new development.

4.22 Assessments of the magnitude of landscape effects are concerned with making "judgements about the size and scale of the effect, the extent of the area over which it occurs, whether it is reversible or irreversible and whether it is short or long term in duration" (GLVIA3 Glossary page 158).

4.23 Changes to the key perceptual characteristics, i.e. how the development is seen and affects the landscape character, can be correlated to a large degree with the results of the visual impact assessment. This indicates the main visual changes would occur at viewpoints in relatively close proximity to the application site and this means that the extent of any perception of landscape change would be similarly restricted to the same limited area.

4.24 For these areas immediately adjacent or close to the proposed development the change in character would be perceived in the context of the adjoining land uses. It is however considered that the proposals would not become a noticeable additional feature in the landscape context and more a change in use within the character of that landscape.

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Overall the magnitude of change on the landscape character in this area is considered to be **Moderate/ Minor** and **Not Significant** on completion of the development. .

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5.0 LANDSCAPE STRATEGY

5.1 The proposed landscape proposals will provide a mitigation strategy that will absorb the proposed buildings into the surrounding landscape.

5.2 This will achieve an attractive setting and to help absorb and assimilate the proposed development into its surroundings. The overriding objectives of the Landscape Strategy are to conserve, manage and enhance the existing features along the Sites boundaries and to introduce new features that are characteristic of the wider landscape and to protect and enhance the visual amenity of local visual receptors. The accompanying **Illustrative Masterplan Figure 23** submitted for approval provides a plan that incorporates the objectives.

5.3 The landscape strategy can be summarised as follows:

- Retention and positive management, where possible, of all trees and hedgerows along the Sites boundaries;
- Additional screen planting along all the boundaries (to mitigate views from the adjoining areas) in the form of tree planting with indigenous understorey;
- New tree planting within the development to soften the proposals
- The hard landscape areas to comprise materials sympathetic to the local landscape

5.4 Improvement of the ecological value and potential of the Site. The landscape strategy highlights the use of native species of local source and the adoption of a landscape maintenance regime designed to encourage wildlife and provide a range of habitat environments.

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6.0 CONCLUSIONS

6.1 The main landscape and visual issues associated with the proposals are considered to be:

- The visual impact on users of the public highways, public rights of way, and on nearby residencies; and
- The character and appearance of the landscape;

6.2 The visual impact assessment has highlighted virtually all the available views of the proposed development from the publicly accessible locations, i.e. those from public rights of way, roads, and nearby residences.

6.3 The preliminary landscape and visual assessment has driven some initial proposals that have been based around a number of principles. These are as follows:

- Retention and positive management, where possible, of all trees and hedgerows along the Sites boundaries;
- Additional screen planting along all the boundaries (to mitigate views from the adjoining areas) in the form of tree planting with indigenous understorey;
- New tree planting within the development to soften the proposals
- The hard landscape areas to comprise materials sympathetic to the local landscape

6.4 In terms of visual effects, no medium and long-distance views are anticipated to be significantly adversely affected. The main visual effects would be experienced at close distances to the site thus being local views and thus the impacts are **Significant** at Year 1 as a result of the sensitivity of the receptors and their proximity to the development. These views will experience a temporary **substantial or moderate** magnitude of change, leading to a **major or major/moderate** effect that will subsequently be mitigated through an extensive landscape strategy which will integrate the development into the existing landscape fabric. This will mitigate this temporary impact leading to a **slight** magnitude of change, resulting in a **moderate** effect which would result in a **Not Significant** impact.

6.5 In respect of the landscape effects of the proposal the assessment concludes that the landscape can absorb the proposed development and that the proposals have been carefully designed so that they can be integrated into the setting of the local landscape character. It, therefore, has a **Moderate/ Minor** and **Not Significant** effect and capacity to accommodate this form of change.

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APPENDIX A: METHODOLOGY

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APPENDIX A: METHODOLOGY

Methodology

The landscape and visual impact assessment has followed established methodologies practised by the landscape profession and in accordance with 'Guidelines for Landscape and Visual Impact Assessment' 3rd Edition, published by The Landscape Institute and Institute for Environmental Management & Assessment (April 2013). The photography has been undertaken in accordance with the Landscape Institute's Advice Note 01/11 'Photography and Photomontage in Landscape and Visual Impact Assessment' (January 2011).

The overall extent of the visibility of the proposals was established; this represents the Zone of Theoretical Visibility (ZTV) for the development. This was determined through a combination of desk top studies checked with fieldwork analysis, including the walking of most of the public highways and rights of way within the area. The desk top study identified the area from which it could potentially be possible to see a part of the development according to Ordnance Survey topographical information. The fieldwork then refined this area taking into account local features that would prevent these views, for example dense vegetation, local topographical changes, buildings or fences

The study area for the landscape and visual impact assessment was determined by the ZTV exercise. It was estimated that an area of 3.0km would be used for this assessment.
Tables 7.1 to 7.3 below set out the criteria for the assessments of the value and susceptibility of visual receptors (i.e. people) and, in combining these, to determine an overall assessment of visual receptor sensitivity. These are compatible with the principles outlined in paragraphs 6.30 – 6.41 of GLVIA3. Such categories are not strict and receptors may be more or less sensitive within each category depending on the particular circumstances. Table 7.4 sets out the terms and criteria used in the visual impact assessment to describe the magnitude of visual effects

Table 7.1: Visual Receptor Value Criteria

Value of Location or View	Description
Very High or National Value	A scenic view in a landscape that has been designated at a national level, e.g. National Parks or Areas of Outstanding Natural Beauty, particularly views from a national long distance trail or promoted routes in these landscapes, or a recognised view to or from a distinctive feature designated at a national level, e.g. Scheduled Ancient Monument, Listed Building and Registered Historic Park & Garden.
High or County Value	A view from within a designated landscape or a popular view recognised in publications and/or visitor guides for promoted routes and locations of interest.
Moderate or Community Value	A view in an undesignated landscape which may be locally valued and displays evidence of responsible use.
Low or Unvalued	Where the landscape has been despoiled and there is evidence that society does not value the view or landscape
Private Value	A private view, e.g. from a residential property, that is likely to be valued by the occupants.

Table 7.2: Visual Receptor Susceptibility

Receptor Group	Location Susceptibility
Residents	High - would view the proposed development in the primary views from their property (e.g. principal living rooms and sitting areas in gardens), would be stationary or moving slowly about their property, would see the development on a daily basis, could be orientated towards the development, and would value these views. High/Moderate - would view the proposed development in the secondary views from their property (e.g. bedrooms and driveway), would be stationary or moving slowly at these locations, would see the development on a daily basis, could be orientated towards the development, and would value these views. Moderate - would view the proposed development from limited locations on their property (e.g. bathrooms and attic windows), would be stationary or moving slowly at these locations, would see the development on a daily basis, could be orientated towards the development, and would value these views.
Recreational Receptors	High - are stationery or moving slowly (e.g. walking, cycling or horse riding), can be orientated towards the development, are at that location primarily in order to enjoy the view/landscape. High/Moderate - are stationery or moving slowly (e.g. walking, cycling or horse riding), can be orientated towards the development, are at that location primarily in order to enjoy the view/landscape but also for other purposes. Moderate - are stationery or moving slowly, can be orientated towards the development, may be at that location in order to enjoy the view/landscape but would have another primary purpose for being there (e.g. playing sport).
Road and rail users (motorists, passengers, bus and train travellers)	High/Moderate – in locations where they are moving steadily/swiftly, can be orientated towards the development, are likely to be at that location primarily in order to enjoy the view/landscape. Moderate - in locations where they are moving steadily/swiftly, can be orientated towards the development, may be at that location in order to enjoy the view/landscape but may also have other purposes (e.g. journey to work). Moderate/Low - in locations where they are moving swiftly, with a direction of travel that is oblique or side-on to the development, are likely to be travelling for a purpose other than in order to enjoy the view (e.g. higher speed long distance travel).
Outdoor workers	Moderate - outdoor workers and school children in locations where they may be moving slowly, can be orientated towards the development, may experience the view on a daily basis, may be at that location in order to enjoy the view but will have other purposes. Medium/Low - outdoor workers in locations where they may be moving slowly, can be orientated towards the development, may experience the view on a daily basis, but are at that location primarily to undertake activities unconnected with the view.
Indoor workers	Low - indoor receptors with limited views in this direction, who are in that location primarily to undertake activities unconnected with the view.

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Table 7.3: Visual Receptor Sensitivity Criteria

Visual Receptor Sensitivity	Description
Very High Sensitivity	Where the receptor would be stationary or moving slowly, would be likely to be exposed for consistent and prolonged periods and/or whose attention or main interest would be likely to be the landscape and views; particularly, but not necessarily limited to, users of promoted Public Rights of Way within landscapes designated at a national level, users of national trails and promoted long distance routes or at heritage assets, in these landscapes or other valued landscapes, where awareness of changes to visual amenity is likely to be acute.
High Sensitivity	Where the receptor would be stationary, moving slowly or steadily, would be likely to be exposed for consistent and prolonged periods and/or whose attention or interest is likely to include the landscape and views; typically residents at home, users of Public Rights of Way and country lanes, where awareness of changes to visual amenity is likely to be elevated.
Moderate Sensitivity	Where the receptor would be moving steadily or swiftly, would be likely to be exposed to the change for infrequent and short periods, and/or whose attention and interest may include the landscape or views but not primarily; typically travellers on roads, rail or other transport routes where awareness of change to visual amenity is likely to be limited.
Low Sensitivity	Where the receptor would be moving swiftly, would be exposed to the change occasionally and for very short periods, and/or whose attention or interest is not on views or landscape; typically people engaged in higher speed travel, engaged in organised outdoor sport (which does not involve an appreciation of views) and outdoor workers where the setting may be of importance to the quality of working life.
Negligible Sensitivity	Where the receptor would be predominantly inside and at their place of work focused on their work activity and where setting is not important to the quality of working life and awareness of change to visual amenity is likely to be negligible.

Table 7.4 Magnitude of Visual Effects Criteria

Magnitude of Change	Description
Very Substantial	Where the proposed development would be perceived to be close to the viewpoint and openly visible in its entirety or near entirety, the development would be in stark contrast to the landscape context such that it would be the dominant feature in the scene.
Substantial	Where the proposed development would be perceived to be in the near or middle distance and visible in its entirety or partly screened, the development would contrast with the landscape context such that it would stand out as a prominent feature in the scene.
Moderate	Where the proposed development would be perceived to be in the middle distance and visible in its entirety or partly screened or at closer distances and more considerably screened, the development may contrast with the landscape context such that it would be evident as a noticeable feature in the scene.
Slight	Where the proposed development would be perceived to be in the distance or far distance and visible in its entirety or partly screened or at closer distances and substantially screened, the development may contrast with the landscape context such that it would be a visible feature in the scene.
Negligible	Where the proposed development would be perceived to be in the far distance, partly or largely screened or at closer distances and almost entirely screened, the development may contrast with the landscape context such that it would be a barely discernible feature

For landscape character effects, as per the principles outlined in paragraphs 5.38 – 5.57 of GLVIA3, assessments have been made as to landscape value and landscape susceptibility and, in combining these, to determine overall landscape sensitivity. The criteria used for assessing these are reproduced at Tables 7.5 to 7.7 below and the magnitude of landscape effects at Table 7.8.

Table 7.5 Landscape Value Criteria

Landscape Value	Description
International Value	Where the landscape has been designated at an international level, e.g. a World Heritage Site, and the purposes of which include landscape and/or recreational opportunities.
National Value	Where the landscape has been designated at a national level, e.g. National Parks (England, Scotland and Wales), Areas of Outstanding Natural Beauty (England, Wales and NI), Heritage Coasts (England and Wales), LANDMAP VSAA Outstanding Overall Evaluation (Wales) or where a landscape feature has been designated at a national level, e.g. Scheduled Ancient Monument, and forms a highly distinctive landscape feature.
County/District Value	Regional Parks, landscape designations in Structure, Unitary or Local Development Plans, LANDMAP VSAA High Overall Evaluation (Wales) or a landscape feature that has been designated at a County/Borough/District level and forms a distinctive landscape feature.
Local Value	For undesignated landscapes and landscape features which are locally valued, LANDMAP VSAA Moderate Overall Evaluation (Wales) and display evidence of responsible use and value.
Unvalued	Where the landscape and/or landscape features have been despoiled and there is evidence that society does not value the landscape and/or landscape features, e.g. fly tipping, abandoned cars, litter, vandalism, etc.

Table 7.6 Landscape Susceptibility Criteria

Landscape Susceptibility	Description
Very Susceptibility	Where the clarity of the key characteristics are very strongly expressed and/or their robustness to change is fragile and/or views are an essential characteristic, and/or policies and strategies aim to achieve "no change" to landscape character, and the changes to landscape character that could be brought about by a development of the type, scale and location proposed would be incompatible with these factors.
Susceptible	Where the clarity of the key characteristics are strongly expressed and/or their robustness to change is weak and/or views are an important characteristic and/or policies and strategies aim to conserve the key characteristics, and the changes to landscape character that could be brought about by a development of the type, scale and location proposed would have a poor compatibility with these factors.
Moderate susceptibility	Where the clarity of the key characteristics are clearly expressed and/or their robustness to change is moderately strong and/or views contribute to landscape character and/or policies and strategies promote or accept limited changes to key characteristics, and the changes to landscape character that

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	could be brought about by a development of the type, scale and location proposed would have a moderate compatibility with these factors.
Slight susceptibility	Where the clarity of the key characteristics are vaguely expressed and/or their robustness to change is strong and/or views are incidental to landscape character and/or policies and strategies promote or accept that the landscape could evolve, and the changes to landscape character that could be brought about by a development of the type, scale and location proposed would have a good compatibility with these factors.
Negligible susceptibility	Where the key characteristics are muddled and/or their robustness to change is very strong and/or views are irrelevant to landscape character and/or policies and strategies promote or accept major changes to key characteristics and the changes to landscape character that could be brought about by a development of the type, scale and location proposed would have excellent compatibility with these factors.

Table 7.7 Landscape Sensitivity Criteria

Landscape Value	Description
Very High sensitivity	A landscape with international or national value and/or with features, elements, areas or special qualities of international or national value, that could be very susceptible to the type, scale and location of development proposed.
High sensitivity	A landscape with national or County/Borough/District value and/or with features, elements, areas or special qualities of national value, that could be susceptible to the type, scale and location of development proposed.
Moderate sensitivity	A landscape with County/Borough/District or local value and/or with features, elements, areas or special qualities of County/Borough/District or local value, that could have a moderate susceptibility to the type, scale and location of development proposed.
Low sensitivity	A landscape with local value and/or with features, elements, areas or special qualities of local value, that could have a slight susceptibility to the type, scale and location of development proposed.
Negligible sensitivity	A landscape that is unvalued and/or with features, elements, areas or special qualities that are unvalued, and that could have a negligible susceptibility to the type, scale and location of development proposed.

Table 7.8 Magnitude of Landscape Effects Criteria

Magnitude of Change	Description
Very Substantial adverse (or beneficial)	Where the proposals would become a defining characteristic of the landscape, would override and be in stark contrast with (or would substantially enhance) the existing landscape context, would be in the context of no similar developments (or would reinstate particularly valued features that had been previously lost or degraded) and would be a dominant additional feature(s).
Substantial adverse (or beneficial)	Where the proposals would become a key characteristic of the landscape, would compete with and detract from (or enhance) the existing landscape context, would be in the context of few similar developments (or would reinstate particularly valued features that had been previously lost or degraded) and would be a prominent additional feature(s).
Moderate adverse (or beneficial)	Where the proposals would become a characteristic of the landscape and would contrast with (or complement) the existing landscape context, may be in the context of a few similar developments (and/or would reinstate valued features that had been previously lost or degraded) and would be a noticeable additional feature(s).

Slight adverse (or beneficial)	Where the proposals would become a characteristic of the landscape and would contrast with (or complement) the existing landscape context, may be in the context of some similar developments (and/or would reinstate features that had been previously lost or degraded) and would be a visible additional feature(s).
Negligible adverse (or beneficial)	Where the proposals) may contrast with (or would complement) the existing landscape context, may be in the context of several similar developments (and/or would reinstate minor features that had been previously lost or degraded) and would be a barely discernible additional feature(s).

What constitutes a significant effect; the meaning of a significant effect in a broad planning context; and what weight should be attached to it, are all matters which do not have any specific definition in any related guidance. GLVIA3 requires the process of the assessment of significance to be clearly defined for each EIA project and to be expressed as transparently as possible. It defines (at Table 5.10 of the GLVIA3) a sliding scale of significance (for landscape effects) and, at Table 7.9 below, a matrix is used to help structure the overall assessment of the significance of landscape or visual effect when the magnitude of change is combined with sensitivity, together with the degree of significance that applies. The gradation invites the decision-maker to consider the amount of weight that should be applied based on the degree of significance as part of the planning balance. However, also identified are those effects which are considered to be significant in the terms required for assessment by the EIA Regulations (those highlighted in bold type and in the darker blue shaded boxes) as distinct from those which are not and the reasoning is set out within the narrative of the assessment.

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Table 7.9 Overall Assessment of Landscape and Visual Effects Criteria (Significance)

	Magnitude of change				
Receptor/ character area sensitivity	Very Substantial	Substantial	Moderate	Slight	Negligible
Very High	Major ++	Major +	Major	Major - Moderate	Moderate
High	Major +	Major	Major - Moderate	Moderate	Moderate - Minor
Moderate	Major	Major - Moderate	Moderate	Moderate - Minor	Minor
Low	Major - Moderate	Moderate	Moderate - Minor	Minor	Minor - Negligible
Negligible	Moderate	Moderate - Minor	Minor	Minor - Negligible	Negligible

Key

	Significant effect
	Potentially significant effect considered with other viewpoint effect evaluations
	Not a significant effect

APPENDIX B

Natural Character Area Profile South Coast Plain (NCA 126)

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National Character Area profile:

126. South Coast Plain



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Introduction

As part of Natural England's responsibilities as set out in the Natural Environment White Paper,[1] Biodiversity 2020[2] and the European Landscape Convention,[3] we are revising profiles for England's 159 National Character Areas (NCAs). These are areas that share similar landscape characteristics, and which follow natural lines in the landscape rather than administrative boundaries, making them a good decision-making framework for the natural environment.

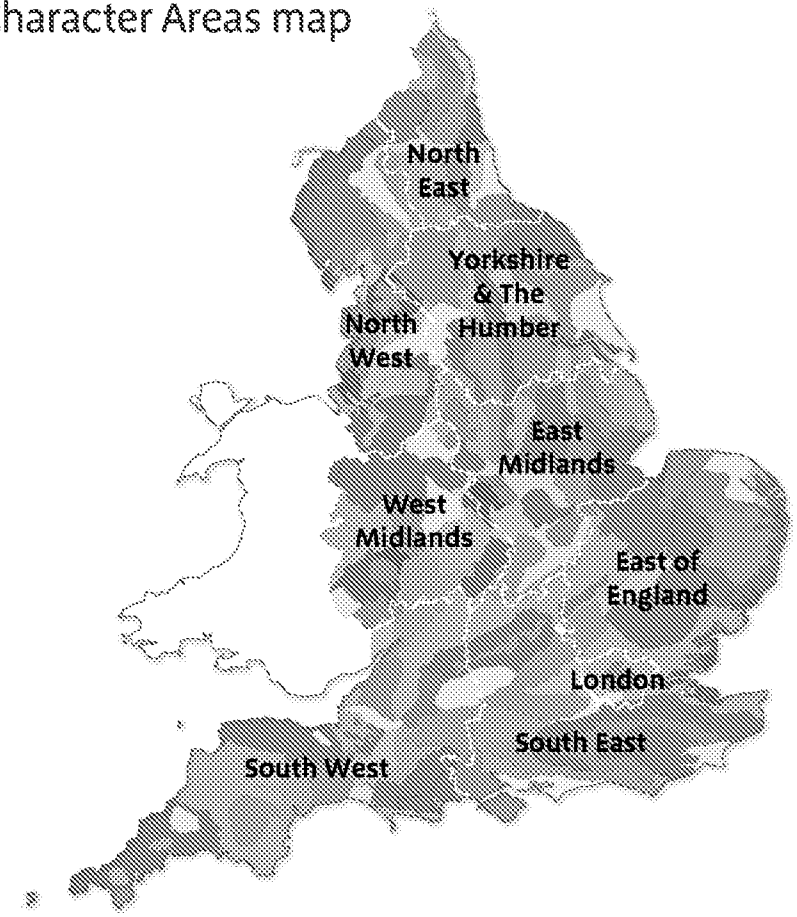
NCA profiles are guidance documents which can help communities to inform their decision-making about the places that they live in and care for. The information they contain will support the planning of conservation initiatives at a landscape scale, inform the delivery of Nature Improvement Areas and encourage broader partnership working through Local Nature Partnerships. The profiles will also help to inform choices about how land is managed and can change.

Each profile includes a description of the natural and cultural features that shape our landscapes, how the landscape has changed over time, the current key drivers for ongoing change, and a broad analysis of each area's characteristics and ecosystem services. Statements of Environmental Opportunity (SEOs) are suggested, which draw on this integrated information. The SEOs offer guidance on the critical issues, which could help to achieve sustainable growth and a more secure environmental future.

NCA profiles are working documents which draw on current evidence and knowledge. We will aim to refresh and update them periodically as new information becomes available to us.

We would like to hear how useful the NCA profiles are to you. You can contact the NCA team by emailing ncaprofiles@naturalengland.org.uk.

National Character Areas map



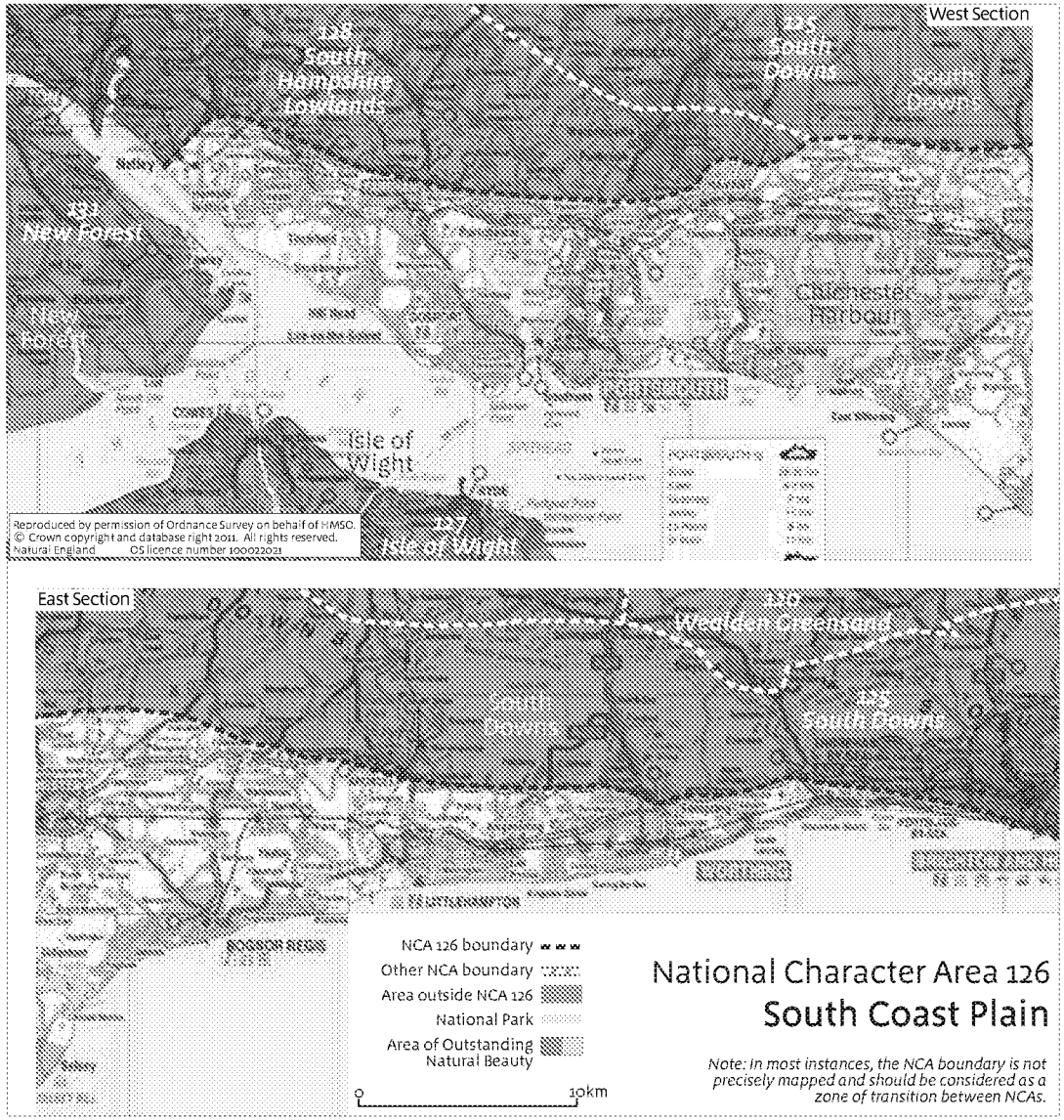
[1] The Natural Choice: Securing the Value of Nature, Defra (2011; URL: www.official-documents.gov.uk/document/cm80/8082/8082.pdf)
[2] Biodiversity 2020: A Strategy for England's Wildlife and Ecosystem Services, Defra (2011; URL: www.defra.gov.uk/publications/files/pb13583-biodiversity-strategy-2020-111111.pdf)
[3] European Landscape Convention, Council of Europe (2000; URL: http://conventions.coe.int/Treaty/en/Treaties/Html/176.htm)

Summary

The South Coast Plain National Character Area (NCA) is a flat, coastal landscape with an intricately indented shoreline lying between the dip slope of the South Downs and South Hampshire Lowlands and the waters the English Channel, Solent and part of Southampton Water. The coastline includes several major inlets which have particularly distinctive local landscapes and intertidal habitats of international environmental import for wildfowl and waders. Chichester Harbour Area of Outstanding Natura Beauty lies within the NCA and the foothills of the South Downs, along th northern boundary, fall within the South Downs National Park.

Some three per cent of the area is designated as a Site of Special Scientific Interest, and there are four Special Protection Areas, two Special Areas of Conservation and four Ramsar sites: Chichester and Langstone Harbour, Pagl Harbour, The Solent and Southampton Water and Portsmouth Harbour.

The harbours and the Manhood Peninsula, a small triangular peninsula sc of Chichester, are the last relatively undeveloped stretches of coastline w the NCA. Elsewhere, there is significant urban development, with settlem along the coast dominated by the Portsmouth conurbation, trunk roads, suburban villages and an extensive string of seaside towns between Brigh and Southampton. Modern marinas and boatyards have also added to th harbour landscape. Although heavily developed and highly populated, th is a feeling of openness, particularly where sea views reveal wide expans sea and sky, with the Isle of Wight forming a backdrop in the west of the a Long, linear shingle beaches and more locally, sand dunes, are important coastal features.



Statements of Environmental Opportunities:

- **SEO 1:** Plan for and manage the effects of coastal change by allowing the operation of natural coastal processes and improving the sustainability of current management practices along the diverse coastline to successfully integrate the needs of the natural environment, landscape, local communities, agriculture, tourism and recreation amid significant urban stretches.

- **SEO 2:** Plan for the creation of a strong landscape framework within and around major settlements and identified growth areas, while managing and enhancing existing greenspace and access, and balancing the needs of agriculture, communities and the natural environment.

- **SEO 3:** Manage and significantly enhance the area's rivers and chalk streams and their wetland valley habitats to provide resilience against climate change and improve flood protection and water quality, particularly in the internationally designated sites such as Chichester and Pagham harbours, for the benefit of local communities and wildlife.

- **SEO 4:** Manage the rich archaeological and historic resource and geological exposures within the farmed, coastal and peri-urban landscape, including the longstanding associations of horticultural and maritime industries and the military, enhancing a strong sense of place.



Hamble Estuary.

Description

Physical and functional links to other National Character Areas

The South Coast Plain National Character Area (NCA) is a narrow strip running along the Hampshire and Sussex coast from the edge of Southampton in the west to Brighton and Hove in the east. The South Hampshire Lowlands NCA rises gently in the north until Portsmouth, after which the higher South Downs NCA forms the backdrop along the remaining northern boundary. The underlying geology is part of the Hampshire Basin which stretches to Dorset and the northern half of the Isle of Wight, within the chalk borders of the Purbeck Hills, Cranborne Chase, South Downs and Salisbury Plain.

The Arun, Adur, Hamble and Meon rivers drain south from the higher ground of the Downs, through this NCA to the coast, along with other smaller streams and rifes. Public water supply relies on surface water abstractions and groundwater from the Lower Greensand aquifer and the Worthing and Chichester chalk blocks. The Solent and Southampton Water Special Protection Area (SPA) and Solent Maritime Special Area of Conservation (SAC) connect this coastline with the South Hampshire Lowlands NCA and New Forest NCA in the west and the Isle of Wight, to which it is also connected by Solent and Isle of Wight Lagoons SAC.

In the west, there are views to the Isle of Wight across the Solent and to the New Forest NCA across Southampton Water. East–west trunk roads define the northern boundary; the M27 starts at Portsmouth and runs west to the New Forest NCA and the A27 runs east to Brighton and Hastings. The A3(M) cuts north through the Downs, linking this NCA with Surrey and London. The West Coastway Line railway runs between Southampton and Brighton and the port of Portsmouth provides international links.

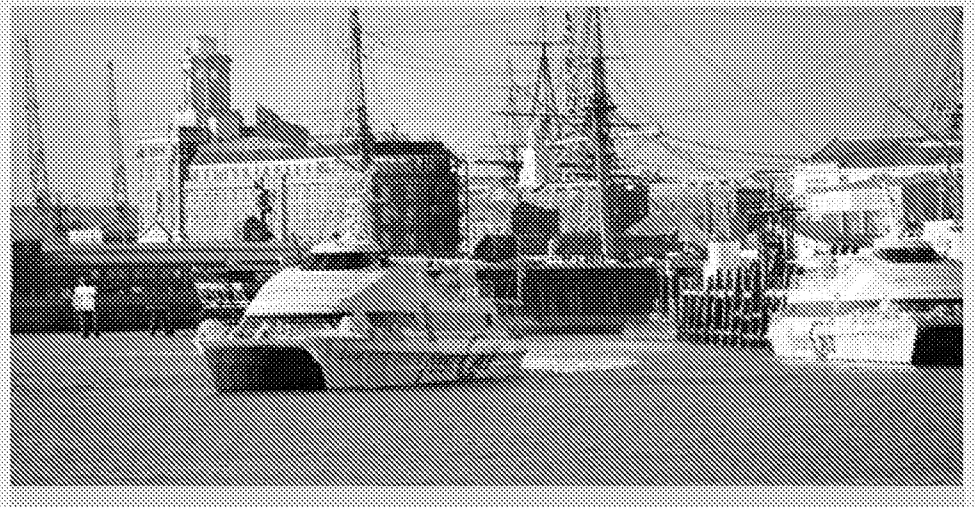
The Manhood Peninsula is a small triangular peninsula south of Chichester and remote from the rest of the NCA. Its southern headland, Selsey Bill, is a prominent coastal deposition feature, which projects out into the Solent well beyond the line of the rest of the coast. It is one of the last, and largest, relatively undeveloped stretches of coastline between Newhaven and Southampton.

Distinct areas

- Manhood Peninsula.

Key characteristics

- The plain slopes gently southwards towards the coast. From the coastal plain edge there are long views towards the sea and the Isle of Wight beyond.
- The underlying geology of flinty marine and valley gravels extends several miles inland to the dip slope of the South Downs and the South Hampshire Lowlands. This gives rise to deep and well-drained high-quality soils.
- In places, streams and rivers flow south from the higher land of the Downs to the sea.
- Coastal inlets and 'harbours' contain a diverse landscape of narrow tidal creeks, mudflats, shingle beaches, dunes, grazing marshes and paddocks. These include the internationally important Chichester, Langstone, Portsmouth and Pagham harbours, the Hamble Estuary and the recent coastal realignment site at Medmerry between Chichester Harbour and Selsey.
- There are stretches of farmed land between developed areas, often with large arable fields defined by low hedges or ditches.
- There are isolated remnants of coastal heath in the west.
- Sand dune grasses and intertidal marsh communities are characteristic of the coastline, while small areas of species-rich meadow remain inland.
- The coastline provides feeding grounds for internationally protected populations of overwintering waders and wildfowl and is also extensively used for recreation.
- Along the exposed, open coastal plain and shoreline, tree cover is limited to isolated wind-sculpted woodlands and shelterbelts.
- The area has significant urban development, with settlements along the coastline dominated by the Portsmouth conurbation, suburban villages and seaside towns including Bognor Regis, Littlehampton and Worthing linked by major road and rail systems.
- Historic fortifications along the coast include the Roman fort at Portchester and 19th-century defences and later naval installations built to protect the Portsmouth naval dockyard.



Catamaran departing Portsmouth Harbour.

South Coast Plain today

The South Coast Plain NCA is broadly divided into the coastal margins which are heavily influenced by the sea; the expansive lower coastal plain which occupies most of the area; and the upper coastal plain which forms the transition between the lower plain and the chalk dip slopes of the South Downs and the South Hampshire Lowlands. Superficial deposits have given rise to a range of fertile soils which combine with the flat terrain and favourable climatic conditions to result in high-quality agricultural land. The east–west fold of chalk known as the Littlehampton anticline forms an isolated ridge to the north of Portsmouth, known as Portsdown, which forms a prominent setting to the harbour. Elsewhere, the Downs form a strong backdrop to the whole plain, while there are extensive views to the Isle of Wight.

The plain is crossed by rivers flowing south from the Downs to the sea, including the Meon, Hamble, Adur and Arun, which locally form wide alluvial flood plains. It is also cut by southward-facing chalk streams which each have dry headwater extensions over the upper plain and on into the dip slope of the South Downs. Flooded gravel pits, a legacy of historic extraction, make up some of the largest areas of freshwater in the region.

The lower coastal plain is heavily urbanised. In between development and transport links is a farmed landscape of large open fields with few trees or hedgerows. Drainage ditches, wire fences or low banks are more usual as field boundaries.

To the north and east of the area, the upper coastal plain comprises flat, regular patterns of large fields with the gentle forms and patterns, blending into the openness of the lower dip slope of the South Downs with a small part of the South Downs National Park falling within the NCA. Here the landscape is varied, incorporating both open arable farmland and low-density settlements, with a more wooded and semi-enclosed (somewhat suburban) character locally, particularly to the west of Chichester. Along the north of the area there is a network of small- and medium-sized broadleaved woodlands, including ancient and semi-natural, well linked by hedgerows and garden exotics providing an enclosed field framework. Elsewhere tree cover varies. This is a fertile area that supports intensive arable farming and horticulture, particularly soft fruit. There are concentrations of glasshouses in some areas and increasing use of polytunnels. Areas where soils are shallow, stony and poorly drained – such as the Arun flood plain – often support good-quality permanent grassland. The thicker gravel deposits support a mixture of high- and medium-quality soils which are intensively farmed where the soils are flintier.

East of Chichester the exposed shoreline is an open, linear landscape of shingle and sand. To the west, the coastline is deeply indented by three natural harbours separated by the Portsmouth and Hayling Island peninsulas. Here broad expanses of sheltered water are edged by an attractive mix of mudflats, marshes, wetland scrub and low-lying fields occasionally interrupted by creeks. Chichester Harbour, for example, is one of the largest natural harbours along the south coast with a diverse landscape of numerous inlets interspersed with fairly open agricultural peninsulas and wind-sculpted woodlands. It is an Area of Outstanding Natural Beauty (AONB) and one of four Ramsar sites and two SPA in this NCA, designated primarily for internationally important numbers of wildfowl and waders, including Brent

geese and dunlin. There are also two SAC – Solent Maritime and Solent and Isle of Wight Lagoons. Along the coastline itself, the vegetation is typified by a scant covering of low-growing, often mat-forming, specialised plants which can tolerate the saline conditions and mineral substrate. On the newly formed ground of the mudflats in the inlets, pioneering intertidal marsh communities have colonised and these demonstrate a well-defined succession of plant types and species towards the land.

Generally the impression is of an overwhelmingly urban landscape, dominated by the Portsmouth conurbation, the city of Chichester and suburban villages, including a few traditional flint hamlets and farm buildings and fragmented by trunk roads and infrastructure. The west is dominated by historic fortifications and marine infrastructure from all periods, reflecting the enduring importance of Portsmouth as the home of the Royal Navy. Portsmouth Harbour has a heavily developed shoreline with docks and associated industrial development dominating the landscape. East along the coast, extensive seaside towns form one of the most concentrated stretches of shoreline ribbon development in Britain. Each coastal town or village has developed almost to the high water mark and there are also caravan parks between some settlements. The harbours and the Manhood Peninsula are the only relatively undeveloped sections. Picturesque harbourside settlements are typically clustered around small boatyards and marinas while moored sailing boats dot the harbour edge. Some inlets, such as Pagham Harbour, still retain an overriding sense of remoteness contrasting with Portsmouth Harbour and the bustling Solent, constantly busy with sailing boats, cross-channel ferries and naval warships and the influence of seaside activities and recreational sailing all along the coast.

The long history of intervention to reduce the risk of flooding and erosion means that the shoreline is generally in a highly modified form and realignment schemes protect the coast, including the country's first managed realignment on the open coast at Medmerry.



Titchfield Haven National Nature Reserve.

The landscape through time

Structurally, the South Coast Plain is part of the larger Hampshire Basin formed when the underlying chalk rocks were folded and faulted by the Alpine Orogeny (mountain-building episode) approximately 15 million years ago. The landform is dominated by the low relief of Tertiary sands, silts and clays that overlie the chalk. An initial fall in sea level, approximately 54–51 million years ago, saw the deposition of the Lambeth Group sands and clays. These are exposed on the shore at Felpham, east of Bognor Regis, and contain a unique diversity of fossil flora. A rise in sea level led to the deposition of the London Clay, a sequence of dark marine clays rich in fossil plants typical of a subtropical rainforest, yielding many type specimens of fossil birds, insects, fish and plants, particularly at Bognor Reef. The overlying Bracklesham Group of sediments were then deposited in alternating intertidal and offshore environments.

Earth movements, associated with the Alpine Orogeny, folded this sequence of rocks, producing the Littlehampton chalk ridge and a parallel ridge to the south, remnants of which now form the Isle of Wight chalk downs. The ancient Solent River flowed between these two ridges until rising sea levels eventually isolated the Isle of Wight from the mainland. Terrace gravels marking the historic shore of the Solent River contain vertebrate remains associated with warmer phases between ice ages, known as interglacials, during the Pleistocene Period 350,000–125,000 years ago. These gravels – exposed on the coast at Lee-on-the-Solent, Bracklesham Bay and Selsey – contain important Pleistocene vertebrate remains and Palaeolithic artefacts. The remains of a nomadic hunter-gatherer ('Boxgrove Man') found in the gravel deposits of a raised beach represent the earliest known human occupation of the British Isles.

The sand and shingle beaches have been shaped by successive processes of erosion and deposition since the last major change in sea level, forming spits across river mouths and inlets.

Neolithic clearance of woodland first opened up the landscape to allow farming of the fertile soils and evidence shows continuous and increasing occupation during the Bronze and Iron ages. The Romans established Chichester as an important new market town and military centre within 20 years of invading, and evidence of continued occupation is reflected by the Roman Palace at Fishbourne, villa and farmstead sites, a temple on Hayling Island and Portchester Castle, developed as one of the Saxon Shore forts.

The coastal plain continued to be densely settled in the Saxon and medieval periods as market towns increased. Some Saxon towns such as Littlehampton developed detached ports. Important examples of Anglo-Saxon architecture survive at sites such as Titchfield Church. In the west, distinctly urban settlements developed during the medieval period. Richard I ordered the construction of a dockyard at Portsmouth and granted the town its first charter in 1194. Havant, Emsworth, Fareham, Gosport and Titchfield developed into market towns and a string of fishing villages developed along the coast.

Portsmouth's strategic location on the south coast of England, protected by the natural defence of the Isle of Wight, made it an ideal base for England's (and later Britain's) Navy. Defensive structures were built to protect the area from the 14th century onwards in response to French raids. Most visible is the 19th-century ring of forts that extend onto Portsdown in the South Hampshire Lowlands NCA. Non-military operation – such as passenger

steamers, fishing and recreational sailing – also flourished, and maritime and associated industries continue to dominate the landscape and economy.

The coastal plain's fertile soils, along with grazing on the adjacent Downs and timber and stock rearing on the Weald, allowed the economy to diversify and the number of market towns to expand.

The agriculture of the area was stimulated by demand from the dockyard and its victualling yard at Gosport, a town which also developed around its military barracks, hospitals and ordnance depots. The area was also important for market gardening. Soft fruits have been harvested in the Hamble Valley for over 150 years, giving it the title of the 'Strawberry Coast'. The thin, stony soils suited shallow-rooted strawberries and the warm prevailing wind coming over the Solent reduced the risk of early frosts. Railways enabled fruit to be delivered across the country on 'strawberry specials' from the mid 1800s.

The coast continued to be of strategic importance during the 20th century. Fortifications were increased during both the First and Second World Wars, such as anti-tank beach block defences at Eastney and pillboxes. Military air bases were established in the First World War and played a significant role in national defence during the Second World War, for example the Battle of Britain airfield at Tangmere, now marked by its control tower and museum. Portsmouth remains the home of the Royal Navy and its historic dockyard and attractions such as HMS Victory and the Mary Rose entice thousands of visitors to the area every year.

This is an area of competing pressures for land. The rich arable lands combined with access to local urban markets and London allowed many farmers to re-build their farmsteads, particularly in the 18th and 19th centuries. As a result there are very few pre-1750 farm buildings. During the 19th and 20th centuries, medieval towns expanded to the extent that few areas of countryside remain near the Hampshire coast. To the east, development of seaside resorts also resulted in the spread of urban areas such as Worthing, particularly after the coming of the railways in the 19th century. The depression of the interwar years, disease, higher wages for agricultural workers and competition from abroad forced many fruit growers out of business during the 20th century, while cheap imports and improved storage and transportation systems also led to a decline in local cereal production and sheep grazing. By the 1980s much of the land previously covered by the vast strawberry fields was developed for housing.

The high rate of urbanisation, coupled with a continued reduction of agriculture and grasslands and combined with coastal squeeze, has led to increasing fragmentation of semi-natural habitats. Farlington Marshes, for example, is surrounded by motorways and housing on three sides while threatened by the rising sea on the other.

In 2005, the 170-metre Spinnaker Tower opened as part of the redevelopment of Portsmouth Harbour. It is visible from miles around, including from the Manhood Peninsula and Isle of Wight.

Realignment schemes, such as at Medmerry and Cobnor Point, continue to alter the coastline and provide opportunities for habitat creation and recreational provision as well as flood protection.

Ecosystem services

The South Coast Plain NCA provides a wide range of benefits to society. Each is derived from the attributes and processes within the area. These benefits are known collectively as 'ecosystem services'. The predominant services are summarised below. Further information on ecosystem services provided in the South Coast Plain NCA is contained in the 'Analysis' section of this document.

Provisioning services (food, fibre and water supply)

- **Food provision:** The fertile soils of the lower plain support intensive arable farming and horticulture, with some dairy, beef and poultry. Permanent grassland is a feature of the poorer quality land. Mixed farming occurs on the thicker gravel deposits.

  Fish are an important food source. Shellfish are harvested from the harbour areas and fish landed from the open sea. During the oyster fishing season of 2012/13, 60 tons of oysters were harvested from Chichester Harbour.[4] The harbours are also vital nursery areas for species including bass, bream, mullet, sole and plaice.

- **Water availability:** Public water supply relies on surface water abstraction and groundwater from the Lower Greensand aquifer and the Worthing and Chichester chalk blocks. Water supply is under pressure throughout the area.

- **Genetic diversity:** The Home Farm of the Goodwood Estate favours rare breeds such as pedigree Southdown sheep, continuing a tradition long held by the dukes of Richmond.

Regulating services (water purification, air quality maintenance and climate regulation)

- **Climate regulation:** The soils in this NCA predominantly have low levels of soil carbon (0–5 per cent). However, there are some very small patches, in the west, that reach carbon levels of up to 20–50 per cent. The relatively large areas of flood plain grazing marsh have additional locked-up carbon stores, as do the small areas of woodland.

- **Regulating soil erosion:** Lighter soils make up just under half of the NCA and exposed soils are at risk of erosion on sloping land, exacerbated where organic matter levels are low after continuous arable cultivation or where soils are compacted. Sand dune soils are very unstable, with the extent of erosion depending on the degree to which vegetation has stabilised the dune system.

- **Regulating water quality:** There are three main sources of groundwater pollution within the NCA – agricultural activities, saline intrusion and urban-related activities such as sewage leakage, road run-off and weed control. All the area's rivers are subject to diffuse pollution arising from outside the NCA, including the catchment of Chichester and Pagham harbours, which is of particular concern given their international designations. There are a number of ongoing initiatives to improve water quality in this area.[5]

- **Regulating water flow:** Much of the flood storage capacity has been lost through drainage of marshlands and conversion to intensive agriculture or development both within and upstream of this NCA, particularly affecting the Arun's wide flood plain. Many settlements within the NCA are protected by flood banks.

[4] Sussex Inshore Fisheries and Conservation Authority (URL: www.sussex-ifca.gov.uk/)

[5] Downs and Harbours Clean Water Partnership (www.cleanwaterpartnership.co.uk/here.html)

Policies to reduce flood risk include the storage of water within the Adur catchment on the South Downs (outside this NCA), as well as encouraging the creation of sustainable urban drainage systems and the River Lavant Flood Alleviation Scheme.

- **Pollination:** Nearly 2,000 ha of grassland provides important sources of nectar for pollinating insects, along with hedges, which are vital for the success of many of the area's horticultural crops.

- **Regulating coastal flooding and erosion:** Large lengths of this complex stretch of coastline are in an unnatural form. Much of the coastal frontage has been developed so only limited sections of the shoreline are free to erode naturally, meaning little sediment material goes into the coastal system. As a result of higher water levels, 'coastal squeeze' will occur. This will lead to beaches, intertidal areas and amenity value being reduced or lost. Defences are in place to protect the vulnerable clay headland of Selsey Bill from erosion though not necessarily trying to lock the feature into its present size, shape and orientation.

Reclamation of former coastal lowland for development has produced many areas where the shoreline is artificially seaward of its natural position. Rising sea levels will increase the probability of flooding for low-lying areas. The relevant Shoreline Management Plans are pursuing an overall policy of 'holding the line' and 'managed realignment' such as at the scheme at Medmerry which was the first of its kind on the open coast.

Cultural services (inspiration, education and wellbeing)

- **Sense of place/inspiration:** Views of the sea and maritime and seaside influences generally have inspired artists from Oscar Wilde to Eric Coates, who was inspired to write 'Sleepy Lagoon' (the theme tune for BBC Radio 4's Desert Island Discs) while watching the sea from Selsey.



Sea wall at Southsea, Portsmouth.

- **Sense of history:** The area is rich in historical evidence from all ages including the internationally important Fishbourne Roman Palace. Chichester has enjoyed continuous occupation since it was founded by the Romans as Noviomagus Reginorum, and is dominated by its medieval cathedral, described by Pevsner as 'the most typical English cathedral'.[6] The area has a long history of maritime activity. Portsmouth's historic dockyard, with attractions including Nelson's flagship HMS Victory and the Mary Rose, entices thousands of visitors to the area every year. Further east, a string of fishing villages grew into popular seaside towns from the Georgian period and include Bognor Regis, Littlehampton and Worthing.

- **Tranquillity:** Tranquillity is a scarce but greatly prized resource within this heavily urbanised NCA. Only 7 per cent of area is classed as undisturbed, while 35 per cent of the area is classified as urban. Pockets of tranquillity are associated with the central rural areas, the Manhood Peninsula and undeveloped harbours, including Chichester Harbour AONB.

- **Recreation:** Coastal and water-borne activities are popular in this NCA and are an important contributor to the local economy. Chichester Harbour alone has over 5,200 moorings and marina berths and 16 sailing clubs. Chichester Harbour AONB has approximately 1.5 million visitors each year. Walkers, cyclists, artists and birdwatchers all enjoy the area. Many just sit and enjoy the view. East Head is one of the most popular recreation sites in the South East. Along the coast, tourism is also vital to the economies of seaside towns such as Worthing and Littlehampton.

- **Biodiversity:** Three per cent (1,700 ha) of the area is designated as Sites of Special Scientific Interest (SSSI) and there are four Special Protection Areas (SPA, two Special Areas of Conservation (SAC and four Ramsar sites. Priority habitats include around 2,000 ha of coastal and flood plain grazing marsh and 1,000 ha of reedbeds.

  Chichester Harbour has been designated as a wetland of international importance under the Ramsar Convention (1971) as it regularly holds 20,000 or more wildfowl and waders in winter. It has the third largest population of dark-bellied Brent goose in the country[7] and supports internationally important populations of dunlin and black-tailed godwit. It also has a small resident harbour seal population. Pagham, Langstone and Portsmouth harbours also have wildfowl numbers of national or international importance and the whole area is important for breeding terns.

  A survey of the fish population of Chichester Harbour carried out in 2004 by the University of Portsmouth recorded 32 species, with sand goby, painted goby and black bream the most abundant. Also numerous at some sites were bass, ballan wrasse and corkwing wrasse. Twenty-two species were identified in 2012. The harbours are also vital nursery areas for species such as bass, bream, mullet, sole and plaice which make use of the seagrass beds.

- **Geodiversity:** This NCA includes the site of the remains of Homo heidelbergensis, the world-famous 'Boxgrove Man', found in river gravels overlying chalk in a gravel pit just outside Chichester. Terrace gravels marking the historic shore of the Solent River contain important Pleistocene vertebrate remains and Palaeolithic (Early Stone Age) artefacts.

[6] The Buildings of England: Sussex, N Pevsner and I Nairn (1965)

[7] Wetland Bird Survey data (URL: www.bto.org/volunteer-surveys/webs/data)

Statements of Environmental Opportunity

SEO 1: Plan for and manage the effects of coastal change by allowing the operation of natural coastal processes and improving the sustainability of current management practices along the diverse coastline to successfully integrate the needs of the natural environment, landscape, local communities, agriculture and recreation amid significant urban stretches.

For example, by:

- Supporting the adaptability of coastal features and habitats to sea level rise and enhancing/creating opportunities for natural adaptation and/or migration where appropriate, to aid the long-term alleviation of coastal flooding in accordance with the strategies of the Shoreline Management Plans.[§]
- Conserving coastal geomorphological features (and the natural processes needed to sustain them).
- Enhancing the area's internationally important natural coastal landscapes, namely Chichester and Langstone harbours, Pagham Harbour, Solent and Southampton Water, and Portsmouth Harbour Special Areas of Protection (SPA), significantly restoring and expanding their coastal habitats – including intertidal mudflats, coastal salt marsh, saline lagoons and coastal grazing marsh – to improve resilience to climate change while aiding flood alleviation and contributing significantly to biodiversity.
- Where existing flood defences are reinforced, working with partners to limit adverse impacts on biodiversity, public access and historic interest.
- Maintaining sites of geomorphological importance and coastal exposures of Lower Tertiary deposits with diverse fossil assemblages, such as at Felpham, Bognor Reef and Bracklesham Bay.
- Identifying further opportunities to create compensation habitats for those lost to 'coastal squeeze', aiming to ensure no net loss of habitat, benefiting biodiversity and the regulation of coastal erosion and flooding.
- Working in partnership to monitor the impact of erosion, particularly at East Head, and responding to change, for example by developing a strategy for managing coastal footpaths at risk from rising sea levels and failing sea defences.
- Promoting access opportunities which educate people about the vulnerability of the coastal habitats in the National Character Area (NCA) and encourage visits of a low-impact nature that avoid any adverse impacts on agricultural management, landscape, habitats and wildlife.
- Improving access to the coast for walking, cycling and disabled people and encouraging reduced car use; and securing opportunities for the public to enjoy the natural environment through the implementation of the England Coast Path while ensuring appropriate protection of sensitive sites.

[§] South East Coastal Group Shoreline Management Plans (URL: www.se-coastalgroup.org.uk/bh-to-sb-2006/); North Solent Shoreline Management Plan (URL: www.northsolentsmp.co.uk/index.cfm?articleid=6554&articleaction=nthsInt&CFID=8104695&CFTOKEN=57030621)

SEO 2: Plan for the creation of a strong landscape framework within and around major settlements and identified growth areas, while managing and enhancing existing greenspace and access, and balancing the needs of agriculture, communities and the natural environment.

For example, by:

- Developing a comprehensive framework of green infrastructure throughout the NCA and the creation/improvement of other green spaces that link into the heart of urban areas and contribute to urban greening, meeting Accessible Natural Green Space Standards (ANGSt) where possible.
- Working in partnership with local authorities to develop effective solutions to address negative impacts of recreational pressure on bird populations as identified by the Solent Disturbance and Mitigation Project.[9]
- Seeking potential compensation sites and ensuring that adequate mitigation is provided for development that will cause significant adverse impact upon the area's internationally important bird populations.
- Ensuring that all coastal development and access provision respects the area's particular sensitivity to bird disturbance issues.
- Creating new areas of multifunctional greenspace within and surrounding identified growth areas, including community food gardens and significant areas of new saline and freshwater wetlands forming sustainable urban drainage systems to improve water quality, provide a local recreational resource, enhance landscape setting and aid flood alleviation.
- Working with local groups such as the Local Enterprise Partnerships, Local Nature Partnerships, Chichester Harbour Conservancy, local planning authorities and individual businesses to take a strategic view of commercial opportunities that can be delivered in a way that supports the natural environment.
- Engaging early in the scoping of new developments to ensure that they maximise their contribution to sustainable development.
- Seeking to maintain and enhance areas of open countryside in this heavily urbanised NCA, to preserve the distinct settlement pattern and ensure that local communities have access to greenspace for their wellbeing and enjoyment.
- Encouraging a strategic approach to the planning of land use around Chichester and Langstone harbours and the Manhood Peninsula to address the pressures of climate change and development, ensuring that natural processes continue to function and the comparatively wild and tranquil character is retained.
- Ensuring that development and its associated infrastructure (including light, noise and air pollution) does not intrude on the special qualities of Chichester Harbour Area of Outstanding Natural Beauty (AONB) and the South Downs National Park; and ensuring that the landscape character within these areas and their settings is conserved, restored, reinforced or created as appropriate to reflect the ambitions of their respective management plans.
- Promoting and enhancing the rights of way network throughout the area, especially along the coast and linking to the South Downs, while developing new permissive access that links towns and settlements to quality greenspace and other areas of interest as part of a cohesive network of inspiring access provision for all.

[9] Solent Disturbance and Mitigation Project (URL: www.solentforum.org/forum/sub_groups/Natural_Environment_Group/Disturbance_and_Mitigation_Project/)

SEO 3: Manage and significantly enhance the area's rivers and chalk streams and their wetland valley habitats to provide resilience against climate change and improve flood protection and water quality, particularly in the internationally designated sites such as Chichester and Pagham harbours, for the benefit of local communities and wildlife.

For example, by:

- Working with the Solent Water Quality Association and other partners to achieve the highest water quality and the aims of the Water Framework Directive.
- Promoting the installation of holding tanks for recreational vessels and seeking to provide the necessary infrastructure to pump out holding tanks; ensuring that there are adequate reception facilities for vessel-landed waste and maintaining a Maritime and Coastguard Agency-compliant Port Waste Management Plan.
- Reducing the amount of nutrients entering the harbours from domestic and industrial sources by engaging with the planning process to ensure that new developments incorporate the best possible waste reduction measures, including sustainable urban drainage systems.
- Reducing the amount of nutrients entering the harbours from agricultural sources by continuing with catchment initiatives that engage with and challenge farmers to reduce nutrient leaching, pesticide contamination and soil erosion, especially by establishing buffers of permanent grassland alongside watercourses.
- Seeking opportunities to increase capacity and improve the level of treatment for waste water treatment works discharging into the harbours.
- Expanding and re-linking lowland meadows, flood plain grazing marsh, saline lagoons and other wetland habitats found on the flood plains of the rivers Meon, Adur and Arun and the chalk streams, to enhance adaptation to climate change, increase flood storage capacity, improve water quality and provide wildlife corridors for biodiversity.
- Seeking opportunities to restore natural river geomorphology, bringing rivers back into continuity with their flood plains and re-creating backwaters as a refuge for aquatic species in times of drought.
- Creating wide grassland buffer strips running across slopes and alongside watercourses in areas of arable production, especially within the Arun priority catchment, to provide a buffer to soil erosion and nutrient run-off thereby further helping to improve river water quality.
- Minimising the risk of spreading non-native invasive species to new sites through human activity, for example by promotion of the 'Check, Clean, Dry' campaign[10] and working with partners to co-ordinate and promote control measures for non-native invasive species.
- Working to improve and protect the area's chalk streams, for example by reviewing ecological designations and expanding areas of semi-natural habitat in chalk stream flood plains, within the NCA and upstream. This will to act as pollution filtration while also providing biodiversity benefits and information about chalk stream ecology and the negative impacts of unsustainable water use.

[10] The Check, Clean Dry campaign, Environment Agency (URL: http://www.environment-agency.gov.uk/homeandleisure/wildlife/129217.aspx)

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- Targeted expansion of woodland on steeper slopes and adjacent to watercourses to reduce soil erosion, especially within the catchments of the Arun and Meon and the Pagham and Chichester harbours, which may also provide a local source of wood fuel where managed by coppicing.
- Restoring hedgerow boundaries, where they will help to impede cross-land flows within the catchments of the Arun and Meon. This will aid improvements in water quality and provide food sources for pollinating insects, as well as restoring the character of native hedgerows and traditional field patterns – especially where lost in peri-urban areas.
- Seeking appropriate levels of commercial use of the harbours, balancing the need to maintain a vigorous tourism industry with preserving the natural beauty and ecology of the areas; working with partners to educate groups using the water bodies on the needs of others and to give guidance on behaviour and good practice; and supporting changes which encourage users to enjoy congested areas such as Chichester Harbour outside peak times.
- Engaging with local communities and schools to increase appreciation and understanding of their local rivers and water resources.



Portsmouth Harbour and Spinnaker Tower.

SEO 4: Manage the rich archaeological and historic resource and geological exposures within the farmed, coastal and peri-urban landscape, including the longstanding associations of horticultural and maritime industries and the military, enhancing a strong sense of place.

For example, by:

- Promoting the heritage of the urban areas, including the strong maritime and military associations; and engaging communities with their local history and strengthening the physical links with the important historic landscapes that surround them.
- Promoting and protecting the historic environment along the coast – notably Portchester Castle and military remains, including the Napoleonic coastal fortification – and recording heritage features at risk of sea level rise.
- Providing educational opportunities and interpretation of historic and geological features to improve understanding and enjoyment.
- Restoring the traditional field patterns of the rural peninsulas, such as Chichester Harbour AONB and the Manhood Peninsula, through the replacement of lost hedgerows and improvement in the condition of existing hedgerows through replanting gaps.
- Supporting the use of traditional breeds and varieties to provide distinct quality produce to encourage marketing initiatives.
- Working with partners and local interest groups to promote an appreciation and understanding of the geodiversity of the NCA and connecting communities with their local heritage.
- Considering reversion of arable to pasture and scrub clearance where current land cover threatens the integrity of earthworks and monuments, including numerous Roman and medieval remains.
- Maintaining the setting of the cathedral city of Chichester and long views to its prominent cathedral spire, viewed from the Chichester Harbour AONB to the south and the South Downs National Park to the north, and wider views out over the sea.
- Maintaining important inland geology exposed in pits and quarries, for example Downend Chalk Pit Site of Special Scientific Interest, helping to promote an appreciation and understanding of the geodiversity of the NCA and connecting communities with their local heritage.
- Encouraging the use of traditional building materials (such as timber frame, flint, cob and thatch) in conservation projects and promoting the use of the Chichester Harbour AONB design guidance for replacement dwellings in the AONB.
- Supporting the work of partners including Chichester Harbour Conservancy and environmental education groups to establish closer links between the education service and the local farming community, sustainable schools, healthy eating programmes and community services.

Supporting document 1: Key facts and data

South Coast Plain National Character Area (NCA): 52,245 ha

1. Landscape and nature conservation designations

Eight per cent (4,186 ha) of the NCA falls within the Chichester Harbour Area of Outstanding Natural Beauty (AONB).

- www.conservancy.co.uk

Source: Natural England (2011)

1.1 Designated nature conservation sites

The NCA includes the following statutory nature conservation designations:

Tier	Designation	Designated site(s)	Area (ha)	% of NCA
International	Ramsar sites	Chichester and Langstone Harbours; Pagham Harbour; Solent and Southampton Water; Portsmouth Harbour	1,288	2
European	Special Protection Area (SPA)	Chichester and Langstone Harbours SPA; Pagham Harbour SPA; Solent and Southampton Water SPA; Portsmouth Harbour SPA	1,271	2
	Special Area of Conservation (SAC)	Solent Maritime SAC; Solent and Isle of Wight Lagoons SAC	238	<1
National	National Nature Reserve (NNR)	Titchfield Haven NNR	120	<1
National	Site of Special Scientific Interest (SSSI)	A total of 22 sites wholly or partly within the NCA	1,688	3

Source: Natural England (2011)

Please note: (i) Designated areas may overlap (ii) all figures are cut to Mean High Water Line, designations that span coastal areas/views below this line will not be included.

There are 253 local sites in South Coast Plain covering 2,827 ha, which is 5 per cent of the NCA.

Source: Natural England (2011)

- Details of individual Sites of Special Scientific Interest can be searched at: http://www.sssi.naturalengland.org.uk/Special/sssi/search.cfm
- Details of Local Nature Reserves (LNR) can be searched at: http://www.lnr.naturalengland.org.uk/Special/lnr/lnr_search.asp
- Maps showing locations of Statutory sites can be found at: http://magic.defra.gov.uk/website/magic/ – select 'Rural Designations Statutory'

1.1.1 Condition of designated sites

Condition category	Area (ha)	% of SSSI land in category condition
Unfavourable declining	65	4
Favourable	1,056	63
Unfavourable no change	73	4
Unfavourable recovering	476	29

Source: Natural England (March 2011)

- Details of SSSI condition can be searched at: http://www.sssi.naturalengland.org.uk/Special/sssi/reportindex.cfm

2. Landform, geology and soils

2.1 Elevation

Elevation ranges from below sea level (areas by the coast) to a maximum of 99 m across the plain slopes. The average elevation of the landscape is 12 m above sea level.

Source: Natural England 2010, South Coast Plain Countryside Character Area description

2.2 Landform and process

Landform is dominated by the low relief of Tertiary sands, silts and clays that overlie the Chalk. The east-west fold of Chalk known as the Littlehampton anticline forms an isolated ridge to the north of Portsmouth known as Portsdown Hill. This rises from near sea level to over 100 m and creates a dramatic backdrop to Portsmouth Harbour.

Source: South Coast Plain Countryside Character Area description

2.3 Bedrock geology

Structurally, the South Coast Plain is part of the larger Hampshire Basin which was formed when the underlying chalk rocks were folded and faulted by the Alpine Orogeny (mountain-building episode). The Littlehampton anticline, an east-west fold of chalk, forms an isolated ridge called Portsdown Hill to the north of Portsmouth.

During the Tertiary, sediments of the Thanet Sands Formation and Lambeth Group sands and clays were deposited onto the Chalk in a shallow marine setting. As sea levels rose and the sea deepened, the fossiliferous London Clay was laid down. Subsequently, as the sea became shallower again, the Bracklesham Group of clays, silts and sands were deposited in an intertidal and offshore environment on a large coastal plain. Bracklesham Bay is the type locality for these deposits, and together with the foreshore deposits of this type near Gosport they have yielded fossil fish, bird and plant remains.

Source: South Coast Plain and Hampshire Lowlands Natural Area Profile, South Coast Plain Countryside Character Area description, British Geological Survey maps

2.4 Superficial deposits

Terrace gravels marking the historic shore of the Solent River contain vertebrate remains associated with warmer phases between ice ages, known as interglacials, during the Pleistocene period, 350,000 to 125,000 years ago. These gravels, exposed on the coast at Lee-on-the-Solent, Bracklesham Bay and Selsey contain important Pleistocene vertebrate remains and Palaeolithic (Early Stone Age) artefacts.

The entrances to Chichester, Langstone and Pagham Harbours and the Hamble estuary are guarded by classic sand dune and shingle spit features. At Browndown, west of Gosport, and at other points along the coast, shingle deposits form well developed shingle features, those at Browndown showing clearly defined apposition ridges that have been deposited over many centuries. Further sand dune formations occur at Climping, west of Bognor Regis, where the dunes have formed at the mouth of the River Arun. The estuaries within the area also contain many important examples of salt marshes of differing age and state of evolution. The area provides classic examples of coastal features and valuable opportunities to study modern coastal processes at work.

Source: South Coast Plain and Hampshire Lowlands Natural Area Profile, South Coast Plain Countryside Character Area description, British Geological Survey maps

2.5 Designated geological sites

Designation	Number
Geological Site of Special Scientific Interest (SSSI)	5
Mixed interest SSSI	4

There are no Local Geological Sites within the NCA

- Details of individual Sites of Special Scientific Interest can be searched at: http://www.sssi.naturalengland.org.uk/Special/sssi/search.cfm



Chichester Harbour AONB.

2.6 Soils and Agricultural Land Classification

Over the superficial gravel lie deep and well-drained brown earths which occur widely over much of the area. Chalky thinner soils have formed over the chalk outlier of Highdown Hill. The range of fertile soils throughout the area combined with the flat terrain and favourable climatic conditions result in high quality agricultural land. Grade 1 land is found predominantly through a central strip, east of Chichester Harbour. Grade 2 is found predominantly east of Chichester Harbour. Grade 3 and 4 land is found in patches mainly to the east of the NCA.

Source: South Coast Plain and Hampshire Lowlands Natural Area Profile, South Coast Plain Countryside Character Area description

The main grades of agricultural land in the NCA are broken down as follows (as a proportion of total land area):

Agricultural Land Classification	Area (ha)	% of NCA
Grade 1	6,911	13
Grade 2	12,832	25
Grade 3	10,798	21
Grade 4	1,866	4
Grade 5	40	<1
Non-agricultural	3,781	7
Urban	15,370	29

Source: Natural England (2010)

- Maps showing locations of statutory sites can be found at: http://magic.defra.gov.uk/website/magic/ - Select 'Landscape' (shows ALC and 27 types of soils)

3. Key water bodies and catchments

3.1 Major rivers/canals

The following major rivers/canals (by length) have been identified in this NCA.

Name	Length in NCA (km)
Chichester Canal	6
River Arun	3
River Meon	6

Source: Natural England (2010)

Please note: other significant rivers (by volume) may also occur. These are not listed where the length within the NCA is short.

The rivers crossing the plain locally form wide alluvial flood plains. Southward facing streams, that are locally referred to as 'rifes', cut through the lower plain. Flooded gravel pits comprise some of the largest areas of freshwater in the region.

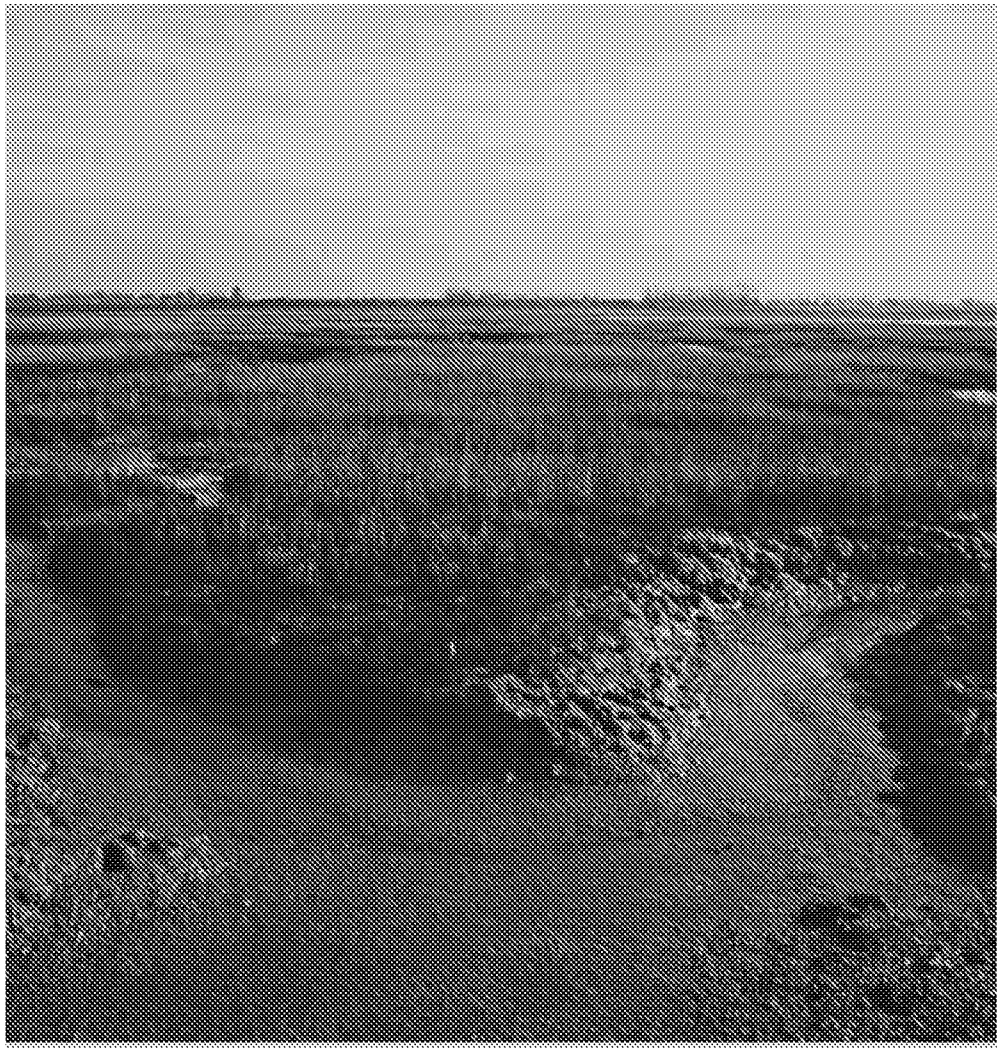
3.2 Water quality

The total area of Nitrate Vulnerable Zone is 37,784 ha, or 72 per cent of the NCA.

Source: Natural England (2010)

3.3 Water Framework Directive

Maps are available from the Environment Agency showing current and projected future status of water bodies at: http://maps.environment-agency.gov.uk/wiyby/wiybyController?ep=maptopics&lang=_e



Saltmarsh at East Head.

4. Trees and woodlands

4.1 Total woodland cover

The NCA contains 2,633 ha of woodland (where woodlands are over 2 ha in size), covering 5 per cent of the NCA and including 780 ha of ancient woodland.

Source: Natural England (2010), Forestry Commission (2011)

4.2 Distribution and size of woodland and trees in the landscape

There is a strong network of small and medium sized broadleaf woodlands throughout the upper coastal plain. The landscape pattern comprises some ancient woodland, coniferous plantations and small fields, hedgerows and woods. In contrast, the lower coastal plain is relatively treeless and entails a typically homogenous landscape of large fields with few hedgerows or trees. Small areas of wind-sculpted woodland persist on some coastal fringes, particularly around the sheltered inlets.

Source: Natural England (2010)

4.3 Woodland types

A statistical breakdown of the area and type of woodland found across the NCA is detailed below.

Area and proportion of different woodland types in the NCA (over 2 ha).

Woodland type	Area (ha)	% of NCA
Broadleaved	2,241	4
Coniferous	139	<1
Mixed	68	<1
Other	185	<1

Source: Forestry Commission (2011)

Area and proportion of Ancient Woodland and Planted Ancient Woodland within the NCA:

Type	Area (ha)	% of NCA
Ancient semi-natural woodland	620	1
Ancient re-planted woodland (PAWS)	160	<1

Source: Natural England (2004)

5. Boundary features and patterns

5.1 Boundary features

The lower coastal plain has few trees or hedgerows and drainage ditches, wire fences or low banks are more usual as field boundaries. In contrast the upper coastal plain is more wooded and well linked by hedgerows.

Source: South Coast Plain Countryside Character Area description; Countryside Quality Counts (2003)

5.2 Field patterns

Fields throughout the lower coastal plain tend to be large and arable. In contrast, the upper coastal plain typically has smaller fields. The fields largely appear to have been created through a process of enclosure by agreement, with some small areas of more regular enclosure. Typically the fields surrounding settlements are small.

Source: South Coast Plain Countryside Character Area description; Countryside Quality Counts (2003)

6. Agriculture

The following data has been taken from the Agricultural Census linked to this NCA.

6.1 Farm type

Horticulture is the most common farm type in terms of number of holdings (89), followed by cereals (73) and then grazing livestock (55). Between 2000 and 2009 horticulture lost the most number of holdings, falling by 73 holdings or 45 per cent. Both cereals and grazing livestock gained holdings, by 7 and 8 respectively. Most other farm types lost holdings, including mixed farms (9 holdings), general cropping (6) and dairy (2).

Source: Agricultural Census, Defra (2010)

6.2 Farm size

The small farm sizes are most numerous in terms of numbers of holdings, with 78 holdings under 5 ha and 97 holdings between 5 ha and 20 ha, although together these account for just 6 per cent of the farmed area. There are 67 holdings over 100 ha size, which by contrast make up 70 per cent of the farmed area. Farms under 5 ha declined dramatically, losing 74 holdings or around 50 per cent. Farms of over 100 ha also declined by 8 holdings. Farms sized between 20 ha and 50 ha gained the most number of holdings (18), while farms sized between 50 ha and 100 ha also increased by 10 holdings.

Source: Agricultural Census, Defra (2010)

6.3 Farm ownership

2009: Total farm area = 19,824 ha; owned land = 12,007 ha
2000: Total farm area = 22,194 ha; owned land = 14,292 ha

Source: Agricultural Census, Defra (2010)

6.4 Land use

Cereals and grassland dominate this area in roughly equal proportions, with cereals covering 6,950 ha (35 per cent of the farmed area) and grass and uncropped land covering 6,681 ha (34 per cent). Other arable crops cover 1,642 ha (8 per cent). There are also significant areas of vegetables (1,555 ha or 8 per cent) and oilseeds (1,433 ha or 7 per cent). The most significant change between 2000 and 2009 was the decline in cereals, which reduced by 2,506 ha or 26 per cent. Other arable crops also declined by 368 ha. Grass and uncropped land by contrast increased slightly by 274 ha, as did oilseeds which increased by 309 ha.

Source: Agricultural Census, Defra (2010)

6.5 Livestock numbers

Sheep are the most numerous of the livestock (7,100) followed by cattle (5,700) and then pigs (407). All types of livestock fell in numbers between 2000 and 2009, with pigs becoming near absent, falling by 10,500 or 96 per cent. Sheep numbers fell by 3,100 (30 per cent) and cattle numbers by 1,300 (18 per cent).

Source: Agricultural Census, Defra (2010)

6.6 Farm labour

The figures suggest that the majority of holdings are run by principal farmers (440) compared with salaried managers (228). There are more full-time workers (824) than part-time workers (157). There are also 1,050 casual/gang workers. Trends between 2000 and 2009 show a decrease in the number of principal farmers by 148 and an increase in salaried managers by 6. Full-time worker and part-time worker numbers both decreased (by 374 and 285 respectively), while the number of casual/gang workers remained roughly constant (increased by 8).

Source: Agricultural Census, Defra (2010)

Please note: (i) Some of the Census data is estimated by Defra so will not be accurate for every holding (ii) Data refers to Commercial Holdings only (iii) Data includes land outside of the NCA belonging to holdings whose centre point is within the NCA listed.

7. Key habitats and species

7.1 Habitat distribution/coverage

There is a scanty covering of low growing, saline tolerant plants along the coastline. Sand dunes and shingle beaches are found along the shoreline. The most extensive and well developed occur at the mouths of the main harbours such as shingle beaches at Pagham Harbour and sand dunes at East Head at the entrance of Chichester Harbour.

Saline lagoons are found in areas along the coast, including within Pagham Harbour, Birdham Pool in the north-eastern edge of Chichester Harbour and the entrance of Portsmouth Harbour. Salt marshes occur along the harbours and estuaries, particularly within Chichester Harbour. Scrub and small areas of wind-sculpted woodland occur on some coastal fringes. There are a small number of isolated coastal heaths and woodlands on the open plain. A network of broadleaved woodlands, including ancient woodland, is present in the upper coastal plain. Areas of medium quality agricultural land support good quality grassland such as in the Arun flood plain. In addition the NCA contains important arable habitats. These support nationally important assemblages of arable birds.

Source: South Coast Plain and Hampshire Lowlands Natural Area Profile

7.2 Priority habitats

The Government's new strategy for biodiversity in England, Biodiversity 2020, replaces the previous Biodiversity Action Plan (BAP) led approach. Priority habitats and species are identified in Biodiversity 2020, but references to BAP priority habitats and species, and previous national targets have been removed. Biodiversity Action Plans remain a useful source of guidance and information. More information about Biodiversity 2020 can be found at;

http://www.naturalengland.org.uk/ourwork/conservation/biodiversity/protectandmanage/englandsbiodiversitystrategy2011.aspx

The NCA contains the following areas of mapped priority habitats (as mapped by National Inventories). Footnotes denote local/expert interpretation. This will be used to inform future national inventory updates.

Priority habitat	Area (ha)	% of NCA
Coastal and flood plain grazing marsh	2,085	4
Broadleaved mixed and yew woodland (broad habitat)	1,462	3
Reedbeds	274	1
Lowland meadows	188	<1
Coastal vegetated shingle	122	<1
Coastal sand dunes	108	<1
Fens	98	<1
Saline lagoons	64	<1
Lowland dry acid grassland	64	<1
Mudflats	48	<1
Lowland heathland	45	<1
Lowland calcareous Grassland	38	<1
Purple moor grass and rush pastures	1	<1

Source: Natural England (2011)

Maps showing locations of priority habitats are available at

- http://magic.defra.gov.uk/website/magic/ select 'Habitat Inventories'

7.3 Key species and assemblages of species

- Maps showing locations of priority habitats are available at: http://magic.defra.gov.uk/website/magic/
- Maps showing locations of S41 species are available at: http://data.nbn.org.uk/

8. Settlement and development patterns

8.1 Settlement pattern

The lower coastal plain is dominated by suburban villages and extensive seaside towns between Brighton and the edge of Southampton. Smallholdings and bungalows are scattered along Southampton Water, but merge with the suburban outreaches of Fareham towards the Solent. East of Chichester numerous villages form a fairly continuous sprawl, including some farm buildings and traditional flint hamlets. Settlement is more dispersed to the north of the chalk dip slope.

Source: South Coast Plain Countryside Character Area description; Countryside Quality Counts (2003)

8.2 Main settlements

Main towns/cities within and adjacent to the NCA (with populations recorded in 2001) are; Southampton (304,400), Fareham/Portchester (56,160), Gosport (69,348), Havant (45,435), Portsmouth (187,056), Chichester (27,477), Bognor Regis (62,141), Littlehampton (55,716), Worthing (96,964), Brighton (134,293), and Hove (72,335). The total estimated population for this NCA (derived from ONS 2001 census data) is: 505,822.

Source: ONS 2001 Census, Natural England (2012)

8.3 Local vernacular and building materials

Building materials within the coastal margins traditionally reflect the proximity of the sea for importing raw materials, such as timber frames, thatch, flint and cob. Timber framing was widely used for houses until after the 17th century, after which brick was a more common option. The medieval churches around the harbours are made of flint and stone. Many of the villages have retained their medieval core and are often arranged round a market or green area. The varied vernacular architecture reflects strong ties with its region.

Source: South Coast Plain Countryside Character Area description; Countryside Quality Counts (2003)



View of harbour and Old Portsmouth from fortifications.

9. Key historic sites and features

9.1 Origin of historic features

Evidence of Mesolithic people has been discovered from the mud of areas such as Langstone Harbour. Settlements, such as the palace at Fishbourne and civitas capital of Chichester, reflect that the coastal landscape was well occupied in the Roman period. There are still some existing examples of Anglo-Saxon work, such as in Portchester and Titchfield church. The strategic importance of the area has resulted in significant defence works along the coast. Portchester Castle dates from the Roman period but from the 14th century onwards measures to defend the important naval base of Portsmouth have been constructed, most visibly the 19th century ring of forts that extend onto Portsdown in the South Hampshire Lowlands character area. Other military features include several hospitals and First and Second World War airfields at Tangmere and Shoreham.

Source: Countryside Quality Counts Draft Historic Profile, Countryside Character Area description

9.2 Designated historic assets

This NCA has the following historic designations:

- 10 Registered Parks and Gardens covering 427 ha
- No Registered Battlefields
- 99 Scheduled Monuments
- 3,619 Listed Buildings

Source: Natural England (2010)

- More information is available at the following address: www.english-heritage.org.uk/caring/heritage-at-risk/
- www.english-heritage.org.uk/professional/protection/process/national-heritage-list-for-england/

10. Recreation and access

10.1 Public access

- Three per cent of the NCA ha is classified as being publically accessible.
- There are 673 km of public rights of way at a density of 1.3 km per km2.
- There are no National Trails within the South Coast Plain NCA.

Source: Natural England (2010)

The following table shows the breakdown of land which is publically accessible in perpetuity:

Access designation	Area (ha)	% of NCA
National Trust (Accessible all year)	120	<1
Common Land	61	<1
Country Parks	83	<1
CROW Access Land (Section 4 and 16)	232	<1
CROW Section 15	95	<1
Village Greens	29	<1
Doorstep Greens	0	0
Forestry Commission Walkers Welcome Grants	629	1
Local Nature Reserves (LNR)	933	2
Millennium Greens	0	0
Accessible National Nature Reserves (NNR)	120	<1
Agri-environment Scheme Access	0	0
Woods for People	416	<1

Sources: Natural England (2011)

Please note: Common Land refers to land included in the 1965 commons register; CROW = Countryside and Rights of Way Act 2000; OC and RCL = Open Country and Registered Common Land.

11. Experiential qualities

11.1 Tranquillity

Based on the CPRE map of tranquillity (2006) it appears that the lowest scores for tranquillity are associated with the major urban areas, particularly along the coast from Portsmouth and Southampton to Brighton. The highest scores for tranquillity are associated with land north of Selsey.

A breakdown of tranquillity values for this NCA are detailed in the table below:

Category of tranquillity	Score
Highest	35
Lowest	-105
Mean	-21

Sources: CPRE (2006)

More information is available at the following address: www.cpre.org.uk/what-we-do/countryside/tranquil-places/in-depth/item/1688-how-we-mapped-tranquillity

11.2 Intrusion

The 2007 Intrusion Map (CPRE) shows the extent to which rural landscapes are 'intruded on' from urban development, noise (primarily traffic noise), and other sources of visual and auditory intrusion. This shows that there is very little undisturbed land within the NCA as it covers the large urban areas of Southampton and Portsmouth and the arterial route of the A/M27 runs the length of it. A breakdown of intrusion values for this NCA is detailed in the following table:

Intrusion category	1960s (%)	1990s (%)	2007 (%)	Percentage change (1960s-2007)
Disturbed	44	58	58	14
Undisturbed	28	11	7	-21
Urban	23	24	35	12

Sources: CPRE (2007)

Notable trends from the 1960s to 2007 are the dramatic loss of undisturbed areas (a loss of 21 per cent).

- More information is available at the following address: www.cpre.org.uk/resources/countryside/tranquil-places



Worthing seafront.

12. Data sources

- British Geological Survey (2006)
- Natural Area Profiles, Natural England (published by English Nature 1993-1998)
- Countryside Character Descriptions, Natural England (regional volumes published by Countryside Commission/Countryside Agency 1998/1999)
- Joint Character Area GIS boundaries, Natural England (data created 2001)
- National Parks and AONBs GIS boundaries, Natural England (2006)
- Heritage Coast Boundaries, Natural England (2006)
- Agricultural Census June Survey, Defra (2000,2009)
- National Forest Inventory, Forestry Commission (2011)
- Countryside Quality Counts Draft Historic Profiles, English Heritage (2004)*
- Ancient Woodland Inventory, Natural England (2003)
- Priority Habitats GIS data, Natural England (March 2011)
- Special Areas of Conservation data, Natural England (data accessed in March 2011)
- Special Protection Areas data, Natural England (data accessed in March 2011)
- Ramsar sites data, Natural England (data accessed in March 2011)
- Sites of Special Scientific Interest, Natural England (data accessed in March 2011)
- Detailed River Network, Environment Agency (2008)
- Source protection zones, Environment Agency (2005)
- Registered Common Land GIS data, Natural England (2004)
- Open Country GIS data, Natural England (2004)
- Public Rights of Way Density, Defra (2011)
- National Trails, Natural England (2006)
- National Tranquillity Mapping data, CPRE (2007)
- Intrusion map data, CPRE (2007)
- Registered Battlefields, English Heritage (2005)
- Record of Scheduled Monuments, English Heritage (2006)
- Registered Parks and Gardens, English Heritage (2006)
- World Heritage Sites, English Heritage (2006)
- Incorporates Historic Landscape Characterisation and work for preliminary Historic Farmstead Character Statements (English Heritage/Countryside Agency 2006)

Please note all figures contained within the report have been rounded to the nearest unit. For this reason proportion figures will not (in all) cases add up to 100 per cent. The convention <1 has been used to denote values less than a whole unit.

Supporting document 2: Landscape change

Recent changes and trends

Trees and woodlands

- An increase in Woodland Grant Schemes suggests that the character of the area's woodlands is probably being maintained. Both the restoration of existing woodlands and coppice management have been identified as being of high priority within the area, as well as the high potential for the creation of new woodlands.

- Dutch elm disease and storm events have also had a significant visual impact, with the loss of many of the characteristic, wind-shaped trees and woodlands.

Boundary features

- Between 1999 and 2003, Environmental Stewardship capital agreements for linear features included fencing (14 km), hedge management (4 km), hedge planting and restoration (21 km) and restored boundary protection (8 km). The estimated boundary length for the NCA is 1,347 km. Total length of agreements between 1999 and 2003 is equivalent to about 4 per cent of this total.

- By 2011 a further 200 km of hedges had been brought into management through Environmental Stewardship.

- Many hedgerows are in need of restoration.

Agriculture

- According to Countryside Quality Counts data there has been a continued reduction in agricultural area and extent of grasslands between 1990 and 2003 suggesting that the erosion of agricultural character (coupled with that of boundary features) was ongoing, albeit at a reduced rate.

- Hampshire Fare is a successful campaign championing local produce established in 1991.

- Goodwood Farm achieved full organic status in 2004, becoming the largest lowland organic farm in the UK.

- Uptake of agri-environment schemes has been good within the AONB since 2005 with 11 farms and 998 ha within Entry Level (including organic), five farms and 592 ha within the Higher Level tier (including organic) and 1,023 ha with older schemes such as Countryside Stewardship.

Settlement and development

- The area has a high rate of change to urban, with most of the larger settlements showing evidence of extension of urban and fringe into peri-urban. However, extent of new development beyond the peri-urban is limited and so overall character has probably been maintained.

- The South East Plan originally identified significant areas of growth throughout and surrounding the NCA.

- The Solent Disturbance and Mitigation Project[8] has produced evidence regarding visitor access patterns from current and future housing around the coast and how their activities and the distances and time for which different bird species respond to different activities.

- The realignment scheme at Medmerry will create footpaths, bridleways and viewpoints to enjoy, which will be an asset for the local community and local tourism.

Semi-natural habitat

- The extent of agri-environment agreements for management of grazing marshes is limited. Littoral sediment SSSI are mostly in favourable or recovering condition. Character of the resource has probably been maintained.

- The coastal realignment scheme at Medmerry will create 183 ha of new intertidal habitat and up to 300 ha of other wetland habitats. This will make a significant contribution to intertidal habitat gains in the Solent. The site will be managed by the Royal Society for the Protection of Birds under a management plan.

- The scheme removes the need to manage shingle defences. This will allow the Medmerry beach to develop and evolve naturally with coastal processes and form a more sustainable and valuable vegetated shingle habitat.

Historic features

- In 1918 about 2 per cent of the NCA was historic parkland. By 1995 it is estimated that 53 per cent had been lost. About 28 per cent of the remaining parkland is covered by a Historic Parkland Grant, and about 15 per cent is included within an agri-environment scheme.

- About 68 per cent of historic farm buildings remain unconverted. About 93 per cent are intact structurally. These data suggest that important aspects of the historic landscape remain neglected.

- The remains of Homo heidelbergensis were first found at Boxgrove in 1994, comprising the partial tibia of a male. In 1996 two incisor teeth from another individual were found. In 2003 English Heritage announced it would buy the remains of the quarry to ensure the preservation of the site complex.

- The historic dockyard in Portsmouth Harbour was restored as one of the Millennium Projects and there are a number of other projects planned within the area, including the establishment of a research and teaching centre for maritime heritage studies.

- Significant archaeological discoveries at the Medmerry site may revise traditional views regarding the historical development of the area. Investigation of the medieval fish weir is increasing understanding of how this structure was used to corral fish and a bronze-age cremation area is also being excavated and researched.

[11] Solent Disturbance and Mitigation Project (URL: www.solentforum.org/forum/sub_groups/Natural_Environment_Group/Disturbance_and_Mitigation_Project/)

- The Heritage Lottery funded 2004 Archaeological Research Framework and accompanying 2007 Research Synthesis provide a comprehensive baseline of the archaeological resource of the AONB. The HLF programme developed a strong archaeology partnership through a steering group that continues to oversee research.

Coast and rivers

- The Medmerry managed realignment scheme between Chichester Harbour and Selsey Bill was the first of its kind on the open coast and one of the most significant flood management achievements on the south coast to date in terms of climate change adaptation and managing the effects of coastal change. It involved the realignment of the coastline to a newly constructed floodwall several kilometres long and one kilometre inland, providing flood protection for over 300 homes, the local water treatment works and the only road in to Selsey. It also created over 183 ha of new intertidal habitat and over 300 ha of new terrestrial wetland habitats.

- Medmerry will create important new wildlife habitats and open up new footpaths, cycleways and bridleways. There is another habitat creation project at Cobnor Point.

- There is limited uptake of management agreements for coastal and riverine habitats. The biological river water quality in 1995 was predominantly good and it has been maintained. The chemical water quality in 1995 was predominantly very good and it has been maintained.

- In 2008, a £29m nitrogen removal scheme to improve the quality of treated wastewater at Peel Common Treatment Works at Fareham was completed.

- 2009 saw the launch of the Downs and Harbours Clean Water Partnership set up to tackle diffuse water pollution issues affecting the quality of ground, surface and coastal waters in West Sussex and East Hampshire.[12]

- Preparation work for major dredging of Portsmouth Harbour to allow passage of the Royal Navy's 65,000-tonne aircraft carriers has begun.

- The Arun and Rother Connections project (ARC), is a HLF funded collaborative project involving all interested partners to improve water quality and flow in the catchments and encourage local people to appreciate the services provided by these rivers. It involves major works to ease fish passage, river and chalk stream restoration, surveys and removal of non-native invasive aquatic plant species, wetland habitat and heathland restoration as well as engaging communities and landowners and improving access and interpretation.

Minerals

- Lidsey Oil Field has been in production since 2008. Lidsey has one vertical producing well in the Jurassic, Great Oolite reservoir.

[12] Downs and Harbours Clean Water Partnership (URL: www.cleanwaterpartnership.co.uk/here.html)

Drivers of change

Climate change

- As a low-lying coastal area in south-east England, this NCA is vulnerable to the effects of climate change, particularly sea level rise, increased severity and frequency of storm events and drought.

- The coastline is particularly vulnerable to sea level rise, with flooding a major issue for the future of the urban-dominated area. Accurate measurements from the tidal gauge at Portsmouth show that since1991, sea level has risen by 10 cm, an increase of 6.6 mm a year. Sea level rise is inevitably worrying in a landscape where ground height differences are measured in only a few metres. Relatively small increases in sea level will have an impact on the coastal communities, habitats and the species they support and how people currently use and manage the land.

- North Solent Shoreline Management Plan (SMP) aims to identify sustainable coastal defence options based upon economic criteria, while having an overview of both the natural environment and the human and built environment.

- Important semi-natural habitats, including those of the designated natural harbours of Chichester and Langstone, may suffer. Mudflats, salt marsh and shingle habitats may be adversely affected by coastal squeeze where flood defences prevent migration. There may also be loss of coastal grazing marsh, reedbeds and saline lagoons where coastal realignment is permitted. Further realignments are required to ensure that losses of intertidal habitat in the Solent between 2025 and 2100 are offset. Finding and implementing further sizable opportunities in the Solent is a considerable challenge.

- Flooding due to increased autumn/winter rainfall and more frequent, more intense storm events could also potentially affect stretches of the area's rivers, including the Arun, Adur, Meon and Hamble, while hotter, drier summers could lead to summer drought, exacerbated by increased demand for irrigation with a resulting deterioration of semi-natural wetland habitats along the flood plain, including species-rich meadows and field ponds, as well as remnant areas of heath along the coast.

- A longer growing season with increasing temperatures may encourage the introduction of novel crops such as sunflowers, navy beans and soya and different crop timings into the arable-dominated landscape, altering its character.

- The composition of the semi-natural woodlands of the upper coastal plain may be affected by increased storminess, periods of drought and the prevalence of pests and diseases. Rising sea levels and coastal erosion may also lead to the loss of coastal oaks.

- The south coast generally is liable to be first point of entry for new species moving north from the continent.

- Most of the area's coastal footpath network is located along existing sea defences, embankments or the foreshore itself. Options will need to be sought to relocate footpaths and other recreational resources inland if significant change seems likely.

Other key drivers

- The Solent coastline provides feeding grounds for internationally protected populations of overwintering waders and wildfowl and is also extensively used for recreation. The Solent Disturbance and Mitigation Project resulted in comprehensive research to assess human activity on bird populations and there is support for a mitigation and avoidance plan to minimise impact.

- Portsmouth is identified as a centre of significant change, a regional hub and an international gateway, and is expected to accommodate around 20 per cent of the new dwellings planned for the South Hampshire sub-region as a whole by 2026.



The area supports internationally important populations of bird species including the black-tailed godwit.

- An urban extension is planned at Chichester, with over 7,000 new dwellings to be accommodated, while significant growth is also planned for the coastal settlements that dominate the east, including Worthing, Shoreham (a growth point) and Brighton and Hove (lying just outside the boundary).

- A strategic development area (SDA) will be allocated within Fareham Borough, north of the NCA, to comprise 10,000 new dwellings, with significant employment land to be provided on greenfield sites.

- Just outside the NCA in the South Hampshire Lowlands, the city of Southampton is identified as a regional hub and centre of significant change.

- There are various discharges of waste into the NCA from urban populations, roads, industry and through dispersed inputs such as agricultural run-off. The area includes part of one of the world's busiest shipping lanes and there are resulting problems with litter disposal as well as the constant danger of serious pollution incidents (and the 'clean-up' operations which follow them which may also be damaging) all of which can threaten the fragile ecology of the designated sites

- Most of the NCA is densely populated and includes what amounts to a linear conurbation which is under constant pressure for further development.

- There is likely to be further pressure for solar arrays in this area due to its geographical location.

Supporting document 3: Analysis supporting Statements of Environmental Opportunity

The following analysis section focuses on a selection of the key provisioning, regulating and cultural ecosystem goods and services for this NCA. These are underpinned by supporting services such as photosynthesis, nutrient cycling, soil formation and evapo-transpiration. Supporting services perform an essential role in ensuring the availability of all ecosystem services.

Biodiversity and geodiversity are crucial in supporting the full range of ecosystem services provided by this landscape. Wildlife and geologically-rich landscapes are also of cultural value and are included in this section of the analysis. This analysis shows the projected impact of Statements of Environmental Opportunity on the value of nominated ecosystem services within this landscape.



Sailing in Chichester Harbour AONB.

Statement of Environmental Opportunity	Food provision	Timber provision	Water availability	Genetic diversity	Biomass provision	Climate regulation	Regulating water quality	Regulating water flow	Regulating soil quality	Regulating soil erosion	Pollination	Pest regulation	Regulating coastal erosion	Sense of place / inspiration	Sense of history	Tranquility	Recreation	Biodiversity	Greodiversity
SEO 1: Plan for and manage the effects of coastal change by allowing the operation of natural coastal processes and improving the sustainability of current management practices along the diverse coastline to successfully integrate the needs of the natural environment, landscape, local communities, agriculture, tourism and recreation amid significant urban stretches.	↗ *	↔ **	↔ **	O *	↔ ***	↑ ***	↗ **	↑ ***	↑ **	↑ ***	↗ *	↗ **	↑ ***	↑ ***	↗ **	↗ *	↑ ***	↑ **	↗ **
SEO 2: Plan for the creation of a strong landscape framework within and around major settlements and identified growth areas, while managing and enhancing existing greenspace and access, and balancing the needs of agriculture, communities and the natural environment.	↗ *	↗ ***	↔ **	↗ *	↔ **	↗ **	↗ ***	↗ ***	↗ **	↗ **	↗ ***	↗ ***	↑ ***	↑ ***	↗ **	↗ **	↑ ***	↑ ***	↔ *
SEO 3: Manage and significantly enhance the area's rivers and chalk streams and their wetland valley habitats to provide resilience against climate change and improve flood protection and water quality, particularly in the internationally designated sites such as Chichester and Pagham harbours, for the benefit of local communities and wildlife.	↗ **	↔ **	↗ ***	↗ ***	↗ ***	↑ ***	↑ ***	↑ ***	↑ ***	↑ ***	↑ ***	↑ ***	↗ ***	↑ ***	↑ ***	↑ ***	↑ ***	↑ ***	↔ ***
SEO 4: Manage the rich archaeological and historic resource and geological exposures within the farmed, coastal and peri-urban landscape, including the longstanding associations of horticultural and maritime industries and the military, enhancing a strong sense of place.	↗ ***	↔ ***	↔ ***	↑ ***	↔ ***	↗ ***	↗ ***	↔ ***	↗ ***	↗ ***	↗ ***	↗ ***	↔ ***	↑ ***	↑ ***	↗ ***	↑ ***	↗ ***	↑ ***

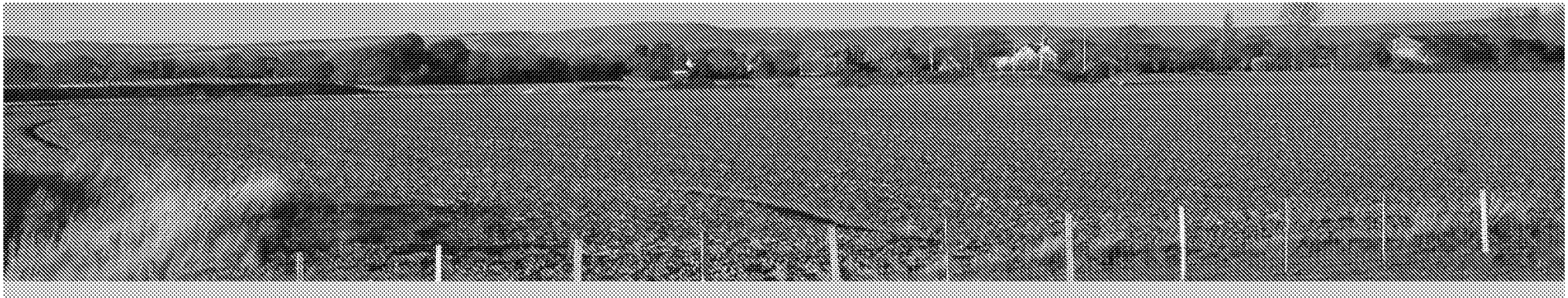
Note: Arrows shown in the table above indicate anticipated impact on service delivery: ↑ = Increase ↗ = Slight Increase ↔ = No change ↘ = Slight Decrease ↓ = Decrease. Asterisks denote confidence in projection (*low **medium***high) ° symbol denotes where insufficient information on the likely impact is available.

National Importance; Regional Importance; Local Importance

Landscape attributes

Landscape attribute	Justification for selection
Coastal inlets and 'harbours' contain a diverse landscape of narrow tidal creeks, mudflats, shingle beaches, dunes, grazing marshes and paddocks.	▧ Internationally designated wetland and coastal habitats. ▧ Picturesque harbourside settlements. ▧ The coastal area (particularly in and around Langstone Harbour) has extensive palaeoenvironmental evidence. ▧ Future changes in sea level may become an important issue given that the South Coast Plain is flat and low-lying. ▧ Pressures for recreational uses and marina/harbour developments along the coast. ▧ The conservation of wetlands, including those of the intertidal zone, is important to the area.
Major urban development including Portsmouth and Worthing linked by the A27/M27corridor dominate much of the South Coast Plain.	▧ Small villages engulfed by the expansion of urban coastal developments with many locally valued 'strategic gaps'. ▧ Ribbon development of seaside towns and caravan parks. ▧ Pressures for recreational uses and marina/harbour developments along the coast. ▧ Major east–west road and rail routes.
Fertile soils support a prosperous market garden and horticultural trade reflecting the relatively warm temperatures and long growing season.	▧ Concentrations of large modern glasshouses and small but increasing use of polytunnels. ▧ Historically associated with fruit growing, especially strawberries for London, the passenger steamer trade and the Royal Navy. ▧ Successful schemes to boost local produce. ▧ Loss of hedges and hedgerow trees owing to field enlargement. ▧ Areas of medium-quality agricultural land where soils are shallow, stony and poorly drained often support good quality permanent grassland.
The Plain is crossed by several rivers in places forming wide alluvial flood plains.	▧ The lower plain is cut by southward-flowing streams, locally termed 'rifes', each of which have dry headwater extensions over the upper plain. ▧ Many chalk streams. ▧ Some projects to improve water quality such as ARC (Arun and Rother Connections). ▧ The chalk rivers of the NCA are of importance for several key wetland and aquatic species.
The landscape is part of a broad plain of flinty marine and valley gravels extending several miles inland.	▧ Historic mineral extraction, landfill and flooded gravel pits. ▧ Flooded gravel pits make up some of the largest areas of freshwater in the region.
Open and exposed coastal landscape.	▧ Views to the Isle of Wight. ▧ Rock islands as coastal protection measures immediately off the coast have a major visual influence.

Landscape attribute	Justification for selection
Important historical sites from all periods.	▧ Defensive structures demonstrating the area's long association with the military (especially Royal Navy) and strategic importance. ▧ Many significant Roman sites including Fishbourne Roman Palace. ▧ Medieval buildings including Chichester Cathedral. ▧ Bosham is traditionally the place where King Canute demonstrated that he was unable to hold back the sea. ▧ Surviving field barns are an important remnant of a once widespread building type. ▧ Dovecotes are found on some high status farms.
Areas of remnant heathland.	▧ Once a common and widespread feature of the landscape in the Hampshire Basin and now confined to small isolated fragments within the NCA such as Hamble Common. ▧ Remaining sites offer considerable potential for heathland restoration.
Large flocks of wildfowl.	▧ The Solent coastline provides feeding grounds for overwintering waders and wildfowl and is also extensively used for recreation. ▧ Internationally important numbers of several overwintering species including dark-bellied Brent geese, black-tailed godwit and dunlin. ▧ Also significant breeding area for many species, such as terns. ▧ The southern tip of the Manhood Peninsula is a favoured migratory point for many species of birds and insects.



Arable fields in the South Coast Plain with the South Downs in the background.

Landscape opportunities

- Manage the coastal habitats and features that include intertidal sand and mud, coastal salt marsh, coastal sand dunes coastal vegetated shingle, coastal heathland, beaches, coastal and flood plain grazing marsh and saline lagoons including areas of international importance, promoting opportunities for natural regeneration/migration where appropriate or possible and/or creating compensation habitats in areas of managed realignment to ensure no net loss of habitats such as salt marsh and mudflats.

- Manage and improve the productive agricultural landscape, including the creation of arable field margins, restoration of hedgerows and conservation headlands that help to support the area's farmland bird populations and pollinators.

- Promote and enhance the area's surviving historic environment that includes important Roman remains across the area, as well as the significant military and maritime heritage assets, historic parkland and traditional buildings.

- Plan for the creation of significant new landscapes that provide a framework for new and existing development and its associated infrastructure.

- Ensure realignment site management allows intertidal habitats to develop and expand effectively to support and enhance the biodiversity interest and characteristic landscape.



Coastal realignment at Medmerry.

Ecosystem service analysis

Service	Asset/attributes: main contributors to service	State	Main beneficiary	Analysis	Opportunities	Principal services offered by opportunities
Food provision	Soils Climate – relatively high temperatures and long growing season Market gardening Dairy, sheep and pigs Arable Vineyards Poultry Fish	High proportion (38 per cent) of Grade 1 and 2 land in between large urban centres. This is a fertile area which supports intensive arable farming and horticulture, with some dairy, beef and poultry. Areas of medium-quality agricultural land where soils are shallow, stony and poorly drained often support good quality permanent grassland such as on the Arun flood plain. Fish, and particularly shellfish, are widely harvested from the harbour areas. The Selsey crab is a particular delicacy.	Regional	The western part of the NCA falls into an area known as 'highlight zone' – south-facing landscape reflecting light off Solent and protected by Isle of Wight creates ideal conditions, particularly for fruit. Vineyards are increasing in popularity and there have been experiments with other more exotic crops such as olives. County food group Hampshire Fare is a not-for-profit community interest company established in 1991, representing around 200 producers, hospitality venues, shops and cookery schools, which campaigns to heighten the awareness and consumption of Hampshire's quality produce. Goodwood Farm achieved full organic status in 2004, becoming the largest lowland organic farm in the UK. Milk and cream from the Dairy Shorthorn herd are processed at the farm, including being made into traditional cheeses. Produce is sold locally or used in facilities on site or during events. During the oyster fishing season of 2007/08, 58 tons of oysters were harvested from Chichester Harbour. Seven charter fishing boats operate within Chichester Harbour. Deterioration in water quality in the harbours would threaten this service.	Support safeguarding high-quality agricultural land and encourage land management practices which protect soil assets and the benefits they provide. Manage the agricultural landscape in sustainable ways to improve soil and water regulation and improve long-term viability of agriculture and yields, protecting the natural assets of the area. There is a need to safeguard soils and high quality agricultural land when planning development. Crop diversity within the farming system could also be beneficial for maintaining soil quality. Opportunities to enhance the agricultural landscape through creation of habitat mosaics where forage and nesting sites are provided for pollinators such as conservation headlands, arable field margins and wildflower mixes. Support measures to protect and improve water quality to the harbours such as modifications to water treatment works and control of agricultural run-off through the catchment sensitive farming scheme to allow the harvesting of seafood to continue. Support sustainable harvest of native oysters.	**Food provision** **Regulating soil quality** **Regulating water flow** **Regulating water quality** **Biodiversity** **Sense of place/ inspiration**

Service	Asset/attributes main contributors to service	State	Main beneficiary	Analysis	Opportunities	Principal services offered by opportunities
Timber provision	Parkland Woodland	Woodland cover for this NCA is 5 per cent, covering a strong network of small and medium sized broadleaf woodlands	Local	This NCA is sparsely wooded and there are few suitable locations to extend woodland.	There are limited opportunities to improve management of broadleaf woodlands in this NCA to produce more timber.	**Timber provision**
Water availability	Chichester aquifer Rivers Chalk streams	Public water supply relies upon surface water abstractions and groundwater from the Lower Greensand aquifer and the Worthing and Chichester chalk blocks. Most of the area overlies post-Carboniferous rock, although there are small areas to the east that overlie an important chalk aquifer. Water supply is under pressure throughout the area, with the River Meon in the west mostly classed as over-abstracted, and most of the remaining area classed as over-licensed or no water available (including the groundwater units around Portsmouth and North Hayling). The Chichester chalk aquifer supports baseflows to spring fed rivers such as the rivers Ems and Lavant.	Regional	The main abstractions in the Arun and West Sussex Streams are for public water supply followed by industry and agriculture while in the west, it is for public water supply followed by fish farming and watercress growth. Consequently, summer flows are naturally low. Exploitation of the aquifer to supply potable water is seriously threatening this natural resource of chalk rivers and spring fed fens and fen-grasslands that are dependent upon the continual supply of unpolluted chalk spring water. This is likely to be an increasing problem as drought caused by climate change and increasing population put extra pressure on water supply.	Action to reduce demand would ease pressure on supplies that, in some case, are already fully exploited in dry years. Encourage the incorporation of sustainable drainage systems into all new developments. Ensure that sufficient water levels are maintained in ecologically sensitive and important streams and rivers. Seek opportunities to restore natural river geomorphology, bringing rivers back into continuity with their flood plains and re-creating backwaters as a refuge for aquatic species in times of drought. Encourage cultivation practices that reduce demand for water for irrigation of crops.	**Water availability** **Regulating water quality** **Regulating soil quality** **Biodiversity**

Service	Asset/attributes main contributors to service	State	Main beneficiary	Analysis	Opportunities	Principal services offered by opportunities
Genetic diversity	Traditional breeds Local varieties	The Home Farm of the Goodwood Estate favours rare breeds such as Dairy Shorthorn and Sussex cattle, Southdown sheep and Tamworth and Saddleworth pigs.	Regional	The pedigree Southdown sheep are also shown locally, continuing a tradition long held by the dukes of Richmond.	Opportunities exist to build on the Hampshire Fare campaign to promote more use of traditional breeds to produce high-quality produce.	**Genetic diversity** **Food production** **Sense of history** **Sense of place/ inspiration**
Biomass energy	Fertile soils Woodland	5 per cent of the area is woodland and biomass from existing woodland sources will be limited.	Local	Potential miscanthus yield is predominantly high as a result of the fertility of the soil, with areas of low/medium potential around Portsmouth and Chichester harbours and the urban areas to the east, while short rotation coppice yields may be restricted close to the coast due to prevailing salt laden winds. For information on the potential landscape impacts of biomass plantings within the NCA, refer to the tables on the Natural England website.[13]	There are potential opportunities for both short rotation coppice and miscanthus to be accommodated but these would need to be located appropriately within the landscape.	**Biomass energy**
Climate regulation	Soils Wetlands, including grazing marsh Woodland	The soils in this NCA predominantly have low levels of soil carbon (0–5 per cent). However, there are some very small patches, in the west, that reach carbon levels of up to 20–50 per cent. 2,000 ha of grazing marsh contribute significantly to carbon sequestration.	Regional	The relatively large areas of flood plain grazing marsh have additional locked up carbon stores, as do the small areas of woodland. Realignment schemes, such as Medmerry, can increase the extent of wetland habitats which will help compensate for the effects of climate change.	Where habitats are lost to coastal squeeze, compensation habitats have to be sought where natural regeneration is not possible or practical. There is potential to increase organic matter levels on arable land. Improvements in soil structure will also help improve water quality.	**Climate regulation** **Regulating soil quality** **Regulating water quality** **Regulating soil erosion**

[13] URL: www.naturalengland.org.uk/ourwork/farming/funding/ecs/sitings/areas/default.aspx

Service	Asset/attributes/ main contributors to service	State	Main beneficiary	Analysis	Opportunities	Principal services offered by opportunities
Regulating water quality *continued on next page*	Rivers and chalk streams Estuaries Aquifers Treatment works	72 per cent of the area is a nitrate vulnerable zone. All the area's rivers are subject to diffuse pollution arising from outside the NCA.[14] There are three main sources of groundwater pollution within the unit: agricultural activities, saline intrusion and urban related activities (sewage leakage, road run-off, weed control etc.). Potentially polluting agricultural activities include the application of organic and inorganic fertilisers and the use of pesticides and herbicides. The pollution risks from agricultural sources are locally a real threat to groundwater quality due to the large expanses of arable land and the nature of the chalk aquifer and soils which allow rapid leaching of pollutants. Where groundwater quality has been assessed it is generally good with an area of poor quality in the centre of the NCA. The ecological quality of the area's rivers is more varied, with stretches classed as either moderate or bad towards the east but good in the west.	Regional	The area is heavily urbanised and intensive agriculture, recreational activities and transport systems all add to pressures on water quality. These are likely to increase with further planned development and effects of climate change such as drought causing low flows and more frequent storm events leading in increased run-off. As well as recreational sailing in the harbours, the area includes part of one of the world's busiest shipping lanes and there are resulting problems with litter disposal as well as the constant danger of serious pollution incidents (and the 'clean-up' operations which follow them and may also be damaging) all of which can impact upon water quality and threaten the fragile ecology of the designated sites. The River Arun suffers from the effects of diffuse agricultural pollution largely arising in the wider catchment outside this NCA, forming part of the Arun and Western Rother Defra Priority Catchment. Equally the River Meon and the catchments of Chichester and Pagham harbours are vulnerable to diffuse agricultural pollution arising from outside the NCA. This is of particular concern given the international designations of these harbours as SPAs. Many of the rivers are heavily modified. In 2008, a £29m nitrogen removal scheme to improve the quality of the treated wastewater returned to the environment at Peel Common was completed.	Work with water companies to investigate and implement innovative solutions to point source pollution and untreated waste water. Consider reviewing ecological designations for the area's chalk streams. Work with partners to expand areas of semi-natural habitat in chalk stream flood plains, within the NCA and upstream, to act as pollution filtration. Provide information about chalk stream ecology and the negative impacts of unsustainable water use. Reduce the amount of nutrients entering the harbours from domestic and industrial sources by engaging with the planning process to ensure that new developments incorporate the best possible measures for reducing problems from waste, including sustainable drainage systems (SuDS). Promote the installation of holding tanks for recreational vessels and seek to provide the necessary infrastructure to pump out holding tanks. Ensure adequate reception facilities for vessel landed waste and maintain a Maritime and Coastguard Agency-compliant Port Waste Management Plan. Increase the amount of farmland in and upstream of this NCA managed under principles established by the Catchment Sensitive Farming Programme or its water company equivalent.	**Regulating water quality** **Regulating soil quality** **Regulating soil erosion** **Biodiversity** **Recreation**

[14] Defra catchment priorities identified under the England Catchment Sensitive Farming Project

Service	Asset/attributes main contributors to service	State	Main beneficiary	Analysis	Opportunities	Principal services offered by opportunities
Regulating water quality *continued from previous page*				Serious concerns have been raised at the ability of waste water treatment facilities to cope with current and future housing development. The quality of water in Chichester Harbour is not statutorily assessed as bathing water and is not therefore monitored in accordance with the EC Bathing Water Directive by the regulator. However, the discharge of sewage into the Harbour may have environmental health implications particularly for people enjoying activities on the water such as sailing and kayaking. There have been a number of efforts to improve water quality in this area including Portsmouth Water's Downs and Harbours Clean Water Partnership The Arun and Rother Connections project (ARC), is a HLF funded project to improve water quality and flow in the catchments and encourage local people to appreciate the services provided by their river. It involves major works to ease fish passage, river and chalk stream restoration, surveys and removal of non-native invasive aquatic plant species, wetland habitat restoration (fen, reedbed, species rich flood plain meadow and wet woodland) and heath restoration as well as engaging communities and landowners and improving access and interpretation.	Buffer watercourses with semi-natural vegetation – permanent grassland, scrub, woodland – to intercept diffuse pollution by sediment run-off and nutrients, particularly upstream beyond the borders of the NCA. Seek opportunities to restore natural river geomorphology, bringing rivers back into continuity with their flood plains. Expand and link lowland meadows, flood plain grazing marsh and other wetland habitats found on the flood plains of the rivers and chalk streams. Work with the Solent Water Quality Association and other partners to achieve the highest water quality and achieve the aims of the Water Framework Directive. Control the amount of nutrients entering the harbours from agricultural sources by encouraging catchment initiatives that engage and challenge farmers to reduce nutrient leaching, pesticide contamination and soil erosion.	

Service	Asset/attributes main contributors to service	State	Main beneficiary	Analysis	Opportunities	Principal services offered by opportunities
Regulating water flow	Rivers Flood plains Wetland Harbours Coast	The Arun has a wide flood plain with slow river flows, although much of this flood storage capacity has been lost through drainage of marshlands and conversion to intensive agriculture both within and upstream of this NCA. The Meon runs over chalk, rainfall soaks into the ground here instead of running off into the river. A tidal sluice on the Lower Meon maintains the freshwater marsh of Titchfield Haven, with storage of water identified as being important to both long-term flood alleviation and wetland conservation. There are also several chalk fed streams that run in this NCA such as the Lavant and the Bosham stream. Settlements within the NCA, such as Arundel and Littlehampton, are protected by flood banks. The River Lavant has a long history of flooding in Chichester.	Regional	Significant flood events have occurred several times in the last 40 years in the Arun and Western streams catchments and river banks need repair and maintenance. The River Lavant Flood Alleviation Scheme is designed to divert flows away from Chichester and then safely discharge them into Pagham Harbour. Policies to reduce flood risk in Worthing, Shoreham and Brighton include the storage of water within the Adur catchment on the South Downs (outside this NCA) and encouraging the adoption of Sustainable Urban Drainage Systems. Major dredging work has begun in Portsmouth Harbour to enable it to accommodate new 65,000-tonne aircraft carriers.	Explore and where appropriate implement water retention measures to help maintain water levels in rivers during periods of drought. Seek opportunities to restore natural river geomorphology, bringing rivers back into continuity with their flood plains and re-creating backwaters as a refuge for aquatic species in times of drought. Incorporate sustainable drainage systems (SuDS) in all new development, including features such as porous surfaces, swales, green roofs and more green space. Plan for and manage for the effects of coastal change by allowing the operation of natural coastal processes and the creation of new habitats to reduce flooding to built-up areas. Ensure that realignments are managed so that intertidal habitats can develop and expand effectively.	**Regulating water flow** **Regulating water quality** **Biodiversity**

Service	Asset/attributes (main contributors to service)	State	Main beneficiary	Analysis	Opportunities	Principal services offered by opportunities
Regulating soil quality	Soils Rivers Coastal salt marshes Harbours	High proportion (38 per cent) of Grade 1 and 2 land in between large urban centres. There are nine main soilscape types in this NCA: ▧ Freely draining slightly acid loamy soils, covering 43 per cent of the NCA. ▧ Loamy soils with naturally high groundwater (33 per cent). ▧ Loamy and clayey soils of coastal flats with naturally high groundwater (7 per cent). ▧ Slowly permeable seasonally wet slightly acid but base-rich loamy and clayey soils (7 per cent) ▧ Loamy and clayey flood plain soils with naturally high groundwater (2 per cent). ▧ Shallow lime-rich soils over chalk or limestone (1 per cent). ▧ Sand dune soils (1 per cent). ▧ Freely draining slightly acid but base-rich soils (1 per cent). ▧ Freely draining very acid sandy and loamy soils (1 per cent).	Regional	The freely draining slightly acid loamy soils may be valuable for aquifer recharge, requiring the maintenance of good structural conditions to aid water infiltration and requiring the matching of nutrients to needs to prevent pollution of the underlying aquifer. The loamy soils with naturally high groundwater have a low bearing strength where groundwater remains high and are therefore at increased risk of soil compaction from mechanised operations, stock grazing or recreational use in wetter conditions. Diffuse pollution (such as from applied manures and very fine sediments) is also possible as a result of run-off due to persistently high groundwater levels or from local flooding. Both of these soils may have potential, especially under arable cropping, for increased organic matter levels through management interventions. The large urban centres and transport links surrounding agricultural land mean that pollution of soils via run-off from roads is a constant problem. Maintaining quality of soils will help safeguard future yields and wider ecosystem service provision.	Continue to apply the principles and best practices employed through initiatives such as Catchment Sensitive Farming. Identify areas where soils are most at risk of damage from cultivation and work with landowners and farmers to adopt sensitive soil management practices as appropriate. Work to improve treatment of waste water and prevent run-off from roads by promoting measures such as extending verges and hedgerows. Maintain salt marsh and other intertidal habitats as a buffer between the sea and agricultural land and to protect against saline intrusion. Seek to keep the highest quality soils in agricultural production.	**Regulating soil quality** **Food provision** **Regulating soil erosion** **Biodiversity** **Regulating water quality**

Service	Asset/attributes main contributors to service	State	Main beneficiary	Analysis	Opportunities	Principal services offered by opportunities
Regulating soil erosion	Soils Rivers	The River Arun forms part of the Arun and Western Rother Defra Priority Catchment under the England Catchment Sensitive farming and suffers from sedimentation largely as a result of soil erosion higher in the catchment outside this NCA. Many parts of the area are susceptible to flooding.	Local	The lighter soils make up just under half of the NCA (dominated by freely draining slightly acid loams), and have enhanced risk of soil erosion on moderately or steeply sloping land where cultivated or bare soil is exposed, often exacerbated where organic matter levels are low after continuous arable cultivation or where soils are compacted. There is also the potential for wind erosion on some coarse textured cultivated variants of the freely draining slightly acid loams. Sand dune soils are very droughty and unstable, with the extent of erosion depending on the degree to which vegetation has stabilised the dune system. A few of the component soils of the freely draining base-rich soils (just 1 per cent of the NCA) may be susceptible to capping and slaking, increasing the risk of soil erosion, and these soils need to be managed carefully to reduce risks with careful timing of cultivations and maintenance of vegetation cover. The remaining soils have a low risk of soil erosion, except where coarser textured variants of loamy soils with naturally high groundwater occur on sloping or uneven ground. The light soils of the coastal plain may be susceptible to wind erosion in the future under climate change. Coastal flooding can damage soils and cause erosion.	Continue to apply and extend the reach of tried and tested techniques for reducing soil erosion resulting from agriculture that are being promoted among the farming community by projects such as Catchment Sensitive Farming. Opportunity to create areas of semi-natural habitat and low-input grasslands (including grassland buffer strips) to minimise soil compaction, allow dense vegetation to improve water retention to minimise soil run-off and improve water quality. Promote the retention of mudflats, coastal salt marshes and sand dunes to provide a cost effective defence against soil erosion and prevent saline intrusion from damaging soils.	**Regulating soil erosion** **Regulating water quality** **Regulating soil quality** **Regulating water flow**

Service	Asset/attributes main contributors to service	State	Main beneficiary	Analysis	Opportunities	Principal services offered by opportunities
Pollination	Grassland parks and gardens Hedges Heathland	With nearly 2,000 ha of grassland, this area provides important sources of nectar for pollinating insects. Gardens and allotments within urban areas also provide food sources for pollinating insects	Regional	In a productive agricultural area, including soft fruit, pollinators are critical for the future of insect dependent crops and increases in this service may be required in order to provide greater options for future cropping. This service could be increased by restoration of wetland habitats, and the creation of conservation headlands and arable field margins. This could have a beneficial impact on biodiversity by linking habitats and creating network of habitats in close proximity.	Opportunities to enhance the agricultural landscape through creation of habitat mosaics where forage and nesting sites are provided for pollinators such as conservation headlands, arable field margins and wildflower mixes providing additional environmental benefits. Seek opportunities to increase field margins, species-rich hedgerows and beetle banks to encourage a network of habitats and food sources for pollinating insects close to areas of agricultural production.	**Pollination** **Food production** **Biodiversity**
Pest regulation	Grassland Wetland Woods Rivers Field margins Parks and gardens	The semi-natural habitats adjacent to arable farmland support populations of pest regulating invertebrate, bird and mammal species.	Local	This service could be increased by restoration of wetland habitats, verges, conservation headlands and arable field margins creating connecting networks of habitats.	Opportunities for a landscape scale approach which provides the necessary connectivity and extent of habitats to sustain populations of predators and enable them to move between sites. Manage semi-natural habitats to increase diversity of structure and composition and increase populations of pest-regulating species. Seek opportunities to increase field margins, species-rich hedgerows and beetle banks to encourage a network of habitats for pest regulating species close to areas of agricultural production.	**Pest regulation** **Food production** **Biodiversity**

Service	Area/attributes main contributors to service	State	Main beneficiary	Analysis	Opportunities	Principal services offered by opportunities
Regulating coastal erosion and flooding	Coastal vegetated shingle Intertidal sand and mudflats Coastal sand dunes Shingle beaches Hard sea defences Estuaries	A complex stretch of coastline including river estuaries and shingle beaches. Much of the coastal frontage is developed, with the major settlements including Portsmouth, Worthing and Bognor Regis. Large lengths of this shoreline are in an unnatural form and the reclamation of extensive areas of former coastal lowland for development has produced many areas where the shoreline is artificially seaward of its natural position. The clay headland of Selsey Bill shelters the coastline to the immediate east from the predominant south-westerly storms; sea defences are in place to protect the vulnerable cliffs from erosion.	Regional	The relevant shoreline management plans are pursuing an overall policy of 'holding the line' and 'managed realignment'[15] such as the scheme at Medmerry which was the first of its kind on the open coast.[16] Some of the coastal features are highly valued for their geodiversity and the rare plants and animals they support. Because it is highly developed, limited sections of the shoreline are free to erode naturally meaning that there is little material going into the system. Changing climatic patterns are likely to result in increased weathering of coastal cliffs and more extreme weather events, which will test coastal defences. As a result of higher water levels 'coastal squeeze' will occur. This will lead to beaches, intertidal areas and amenity value being reduced or lost. This is particularly threatening to low lying tidal mudflats and salt marshes in areas of conservation importance, especially Chichester and Pagham harbours that are internationally designated as an SPA and Ramsar site, supporting bird populations that are highly dependent on the habitats provided by the intertidal areas. An issue of special interest to local residents and boat owners in the AONB is the continued erosion of East Head. Proposals for the medium to long-term management of East Head are contained within the Pagham to East Head Coastal Defence Strategy.[17] This is a complex problem as any major defence works would undermine the area's character and the reasons for its nature conservation designations. The Strategy proposes a scheme of Adaptive Management that seeks to respond to change and to preserve the social, economic, environmental and amenity value of East Head for the 100-year life of the Strategy. The emphasis will not necessarily be on trying to lock the feature into its present size, shape and orientation.	Opportunities to create compensation habitats for those lost to 'coastal squeeze', aiming to ensure no net loss of habitat, benefiting biodiversity and the regulation of coastal erosion and flooding. Ensure that realignment sites are managed to develop their full potential to support and enhance the biodiversity interest and characteristic landscape.	**Regulating coastal erosion and flooding** **Recreation** **Biodiversity**

[15] South Downs Shoreline Management Plan, South Downs Coastal Group (URL: www.sdcg.org.uk/)
[16] Medmerry managed realignment scheme (URL: www.environment-agency.gov.uk/homeandleisure/floods/109062.aspx)
[17] Pagham to East Head Coastal Defence Strategy, Environment Agency (2009; URL: www.environment-agency.gov.uk/static/documents/Leisure/PEHCDS_StAR_v5_Final_-_compressed.pdf)

Service	Asset/attributes main contributors to service	State	Main beneficiary	Analysis	Opportunities	Principal services offered by opportunities
Sense of place/ inspiration	Coastal landscape Harbours Views of Isle of Wight and the South Downs	Sense of place is provided by the sea and intricately indented shoreline of the exposed coastal landscape, and notably the natural harbours of Chichester and Pagham. Across the Solent, the Isle of Wight forms a distinctive backdrop. There are also a few surviving traditional settlements displaying a unifying local vernacular of timber frame, flint, cob and thatch. This is further supported by the pattern of large rectilinear fields enclosed by drainage ditches, remnant tracts of valley meadow and coastal heath.	Regional	In such an urban area, sense of place is achieved primarily by views of the sea, which are possible from most places within the NCA. Eric Coates was inspired to write 'Sleepy Lagoon', the theme tune for Desert Island Discs, while watching the sea from Selsey. Portsmouth, with its importance as a major route to the continent and military connections, was a frequent inspiration to artists and writers during the 19th century. In Jane Austen's novel Mansfield Park, Portsmouth is the hometown of the main character Fanny Price, Dickens' Nicholas Nickleby joins a theatre troupe in the town and Gilbert and Sullivan's HMS Pinafore is set in the harbour. Oscar Wilde wrote The Importance of Being Earnest during a visit to Worthing. Spinnaker Tower is a 170-metre tower opened in 2005 as part of the redevelopment of Portsmouth harbour. It is visible from miles around and affords 360-degree views of the surrounding area, including from the Manhood Peninsula and Isle of Wight.	Encourage a strategic approach to the planning of land use around Chichester and Langstone harbours and the Manhood Peninsula to address the pressures of climate change and development, ensuring that natural processes continue to function and the comparatively wild and tranquil character is retained. Ensure that realignment sites are managed to develop their full potential to support and enhance the characteristic landscape.	**Sense of place/ inspiration** **Tranquillity** **Sense of history** **Biodiversity**

Service	Asset/attribute's main contributors to service	State	Main beneficiary	Analysis	Opportunities	Principal services offered by opportunities
Sense of history	Roman sites Historic buildings Naval defences Harbour settlements Traditional buildings Parkland	Several important Roman sites and medieval buildings. Small flint villages, isolated dwellings and farm buildings. Military sites and structures from all periods. About 68 per cent of historic farm buildings remain unconverted. About 93 per cent are intact structurally. The Heritage Lottery Funded 2004 Archaeological Research Framework and accompanying 2007 research synthesis provide a comprehensive baseline of the archaeological resource of the AONB. There are 10 registered parks and gardens within the NCA covering 427 ha.	International	Archaeological and historical features include Roman villa sites such as Fishbourne Roman Palace, Chichester cathedral set within the historic city of Chichester and a post-medieval abbey at Titchfield. Picturesque harbourside settlements such as Bosham and isolated hamlets in rural areas provide additional historic context. There are also numerous historic naval associations at Portsmouth including Napoleonic fortifications such as the distinctive line of round Napoleonic forts that march out across the Solent guarding its eastern entrance and the entrance to Portsmouth Harbour, locally known as Palmerston's Follies. The area also has strong associations with aerial combat, with Goodwood Aerodrome, Shoreham Airport and Lee-on-Solent still operational. The former First World War, Second World War and Cold War airfield at Tangmere now houses an aviation museum. Displays include the aircraft in which world air speed records were achieved in 1946 and 1953 along the coast at Littlehampton. Shoreham is the oldest licensed airfield in the UK and has a Grade II* listed Art Deco style terminal building. The rich arable lands combined with access to local urban markets and London allowed many farmers to re-build their farmsteads, particularly in the 18th and 19th centuries. This re-building means that there are very few pre-1750 farm buildings. Buildings for cattle are predominantly 19th century. Earlier cattle buildings would be considered important. Traditional building materials are of timber frame, flint, cob and thatch that all contribute to the area's sense of place. Many villages have retained their attractive medieval and late medieval core. A number of historic settlements and heritage assets now subsumed into the larger conurbation are considered at risk of losing their identity and historical context. The HLF programme developed a strong archaeology partnership through a steering group that continues to oversee research within the AONB which informs engagement with local schools, visitors, landowners and residents within the AONB to help develop a wider understanding and appreciation of the historical value.	Opportunities should be sought to enhance the setting, interpretation and condition of the remaining assets. The restoration and conversion of vernacular buildings should be sympathetic to local distinctiveness and use local materials where possible. Encourage partners to use the results of the Archaeological Framework when prioritising and commissioning research both within and around the AONB, to guide the management of the historic environment. Encourage and support communities to seek funding to develop local heritage projects and initiatives. Encourage interpretation to improve understanding of the area's heritage including internationally recognised assets such as Portsmouth historic dockyard, Fishbourne Roman Villa and Chichester Cathedral. Support initiatives to improve sustainable transport links between these sites.	**Sense of history** **Recreation** **Sense of place/ inspiration**

Service	Asset/attributes main contributors to service	State	Main beneficiary	Analysis	Opportunities	Principal services offered by opportunities
Tranquillity	Harbours Coastline Woodland	Only 7 per cent of the area is classed as undisturbed, down from 28 per cent in the 1960s; 35 per cent of the area is classified as urban. The main areas of low level tranquillity are around the major towns – Portsmouth, Chichester, Fareham, Bognor Regis and Worthing and along road corridors such as the A27, M27 and the M275.	Local	Tranquillity is a scarce resource within this heavily urbanised NCA. Pockets of tranquillity are associated with the central rural areas and undeveloped harbours, including parts of Chichester Harbour. Tranquillity is also associated with the edges of remoter ancient woodlands at the foothills of the South Downs.	Encourage a strategic approach to the planning of land use around Chichester and Langstone harbours and the Manhood Peninsula to address the pressures of climate change and development, ensuring that natural processes continue to function and the comparatively wild and tranquil character is retained.	**Tranquillity** **Sense of place/ inspiration** **Biodiversity**

Service	Asset/attributes main contributors to service	State	Main beneficiary	Analysis	Opportunities	Principal services affected by opportunities
Recreation *continued on next page*	Coastline Harbours Rights of way Open access land One National Nature Reserve (NNR) Parks and gardens Historic attractions Wildlife	Recreation is dominated by the seaside resorts of the urban east (such as Worthing and Bognor Regis) as well as the caravan parks, ribbon development and harbourside tourism that characterise much of the rest of the coast. There is a 670 km rights of way network at a density of 1.29 km per km^2 and 230 ha of open access land, covering 0.45 per cent of the NCA. Titchfield Haven NNR is managed by Hampshire County Council. Water-borne recreation is popular in this NCA. Chichester Harbour with 28 km^2 of water, 27 km of well marked and lit channels and with easy access to the Solent is an ideal water recreation centre. The Harbour has over 5,200 moorings and marina berths, and 16 sailing clubs. Chichester Harbour AONB has approximately 1.5 million people visiting each year. The internationally designated wildlife sites make this a popular area for birdwatching.	National	With a low beach gradient and the lack of any obvious dangers such as rips or obstacles, East Wittering and the whole stretch of Bracklesham Bay is a favourite with surfers with one of the UK's longest running surf clubs, Shore Surf Club, founded in 1969. Most of the coastal footpath network is located along existing sea defences, embankments or the foreshore itself. Should significant changes appear likely, options will need to be sought to relocate footpaths and other recreational resources inland. Popular birdwatching areas outside the internationally designated sites include Titchfield Haven, which has a network of accessible routes and a hide. Chichester Harbour AONB is one of the most important areas for water recreation in the country. There is considerable congestion and overcrowding on the water, particularly at weekends in the summer and conflict between different types of harbour user. Chichester Canal is currently under-used Walkers, cyclists, artists and birdwatchers are among those who enjoy Chichester Harbour AONB. There are strong indications that the number of visitors will continue to increase. Continuing development within and adjacent to the AONB is likely to lead to increased population pressure. Visitor impact needs to be monitored and addressed to minimise the effect on the very resource people come to enjoy.	Secure the long-term future of the coastal footpaths, investigating managed realignment and permissive route options where possible. Develop a strategy for managing those at risk from rising sea levels and failing sea defences. Support the provision of a high-quality network of footpaths, cycle routes and wheelchair paths through the Rights of Way Improvement Plans and other initiatives. Promote the Solent Disturbance Mitigation Project as a basis for formulating coherent policies for minimising impact of increased development and recreation provision on internationally important bird populations. Work with partners to educate groups using the water bodies on the needs of others and to give guidance on behaviour and good practice and balance the demand for more and improved boating facilities with environmental considerations. Support changes which encourage users to enjoy congested areas such as Chichester Harbour outside peak times. Support the use of Chichester Canal to link Chichester to the AONB through the Chichester Canal Trust.	**Recreation** **Sense of place/ inspiration** **Sense of history** **Biodiversity**

Service	Asset/attributes main contributors to service	State	Main beneficiary	Analysis	Opportunities	Principal services affected by opportunities
Recreation *continued from previous page*		In response to concerns over the impact of recreational pressure on birds within protected areas in the Solent, the Solent Disturbance and Mitigation Project was initiated to determine visitor access patterns around the coast and how their activities may influence the birds.	National	Much work has already been undertaken by Chichester Harbour Conservancy in association with Action in Rural Sussex, Age Concern and other local organisations to further the work of the Local Strategic Partnership group to reduce isolation among older people. Goodwood Estate runs an extensive education programme including forest schools and hands-on sessions at its farm. The peregrine falcon nest on the spire of Chichester Cathedral is widely viewed via a webcam each spring and receives great attention from local and national media. The Solent Disturbance and Mitigation Project (SDMP) provides evidence that recreational pressures from new development within 5.6 km of the Solent coastline may have an adverse affect on internationally protected birds.	Support the work of partners including Chichester Harbour Conservancy and Environmental Education Groups to establish closer links between the harbour education service and the local farming community, sustainable schools and healthy eating programmes and community services. Ensure that realignment sites are managed to develop their full potential to support and enhance access and interpretation where appropriate. Work with partners to develop a plan for avoidance and mitigation to minimise impact of recreational activities on internationally protected bird population.	

Service	Asset/attributes main contributors to service	State	Main beneficiary	Analysis	Opportunities	Principal services offered by opportunities
Biodiversity *continued on next page*	Internationally designated sites SSSI One NNR Coastal habitats Grazing marsh Heathlands Meadows Woodlands Gardens	Some 3 per cent (1,700 ha) of the area is designated as Site of Special Scientific Interest (SSSI) and there are four Special Protection Areas (SPAs), two Special Areas of Conservation (SAC) and four Ramsar sites. The marine environment of Chichester Harbour AONB is afforded protection through the Solent Maritime SAC European designation. Horsea Island is one of the sites chosen by Butterfly Conservation for trials of disease resistant elms for the benefit of white-letter hairstreak butterfly since 2000. Relatively small fragments of coastal grazing marsh occur, with larger areas at Farlington Marshes and the marshes on the eastern side of Hayling Island. Heathland is no longer a significant habitat within the area, although pockets such as Hamble Common survive.	International	Chichester Harbour has been designated as a wetland of international importance under the Ramsar Convention (1971) as it regularly holds 20,000 or more wildfowl and waders in winter, has the third largest population of dark-bellied Brent geese in the country (with Pagham, Langstone and Portsmouth harbours also in the top 12) and has internationally significant populations of Dunlin and black-tailed godwit. It is also an important site for nesting terns. A subtidal survey of habitats and species within the harbour identified 200 maritime taxa including invertebrates, algae and fish. There is also a colony of harbour seals and water voles are regularly seen. In recent years Chichester Harbour has not regularly supported significant numbers of breeding terns, probably due to a combination of disturbance and erosion of historical breeding sites. However, the NCA as a whole is important for breeding terns. Between Shoreham and Bognor Regis the coastline supports fringing shingle beaches where pioneer plant communities survive in places. These contain characteristic plants such as yellow-horned poppy and sea kale as well as rarities such as starry clover. The relict dunes at Bognor Reef support the nationally rare childing pink, as does Pagham Beach where the long-winged conehead, sand dart and Matthew's wainscot moth can also be found. The Hampshire Wildlife Trust reserve at Farlington Marshes and the marshes on the eastern side of Hayling Island provide some more extensive and well developed examples of coastal grazing marsh.	Ensure that realignments are managed so that intertidal habitats can develop and expand effectively. Where existing flood defences are reinforced, work with partners to limit adverse impacts on biodiversity. Improve water quality by reducing the amount of nutrients entering the harbours from domestic and industrial sources by engaging with the planning process to ensure that new developments incorporate the best possible measures for reducing problems from waste, including SUDS. Improve water quality by reducing the amount of nutrients entering the harbours from agricultural sources by continuing with catchment initiatives that engage and challenge farmers to reduce nutrient leaching, pesticide contamination and soil erosion. Seek to secure the future of breeding terns (particularly Little Terns) in the harbours. There are opportunities to extend and possibly link areas of coastal grazing marsh as part of flood defence measures. Preserve scarce areas of heathland and seek opportunities to improve and extend.	**Biodiversity** **Food production** **Regulating water quality** **Regulating water flow** **Regulating coastal erosion and flooding** **Recreation** **Sense of place/ inspiration**

Service	Asset/attributes/ main contributors to service	State	Main beneficiary	Analysis	Opportunities	Principal services offered by opportunities
Biodiversity *continued from previous page*		European native oyster populations have experienced an acute decline since the 19th century due to the combination of over-fishing and associated habitat loss, combined with the anthropogenic and environmental pressures of pollution, disease and the presence of non-native species.		Historically heathland was much more extensive, linking with the hunting forests of Bere and Waltham Chase in south Hampshire so there may be opportunities to extend or re-create small areas. There is increasing concern at the disturbance caused to nature conservation interests by increased recreational pressure from housing development. IFCA identified 22 species of fish within Chichester Harbour. A survey carried out in 2004 by the University of Portsmouth recorded 32 species, with sand and painted gobies and black bream the most abundant. Also numerous at some sites were bass, ballan wrasse and corkwing wrasse. Several species, such as the bass, bream, mullet, sole and plaice use the harbour as a nursery area with a large percentage of juveniles making up the survey samples.[18] The Solent oyster population has declined in the last decade and shows no sign of broad scale recovery. The Chichester oysters are considered to be a component of this wider population. The native oyster fishery has been locally important in Chichester Harbour since at least Roman times. Closer scrutiny of the impact of activities, such as oyster dredging and bait digging, on the subtidal and intertidal biodiversity within the AONB may be required in future to determine the impact on favourable conservation status.	Support inclusion of high-quality greenspace within new and extended development for the wellbeing of local communities and to provide links between important biodiversity sites. Support the Sussex Sea Fisheries Committee in maintaining the bass nursery area. Support management of native oysters in Chichester Harbour, including implementation of temporary closure of fisheries to allow populations to recover when necessary.[19] Support the bait digging Code of Conduct and work within the SEMS Management Scheme to monitor the level and impact of bait digging.	

[18] A survey of the fish population of Chichester Harbour, P Farrell, University of Portsmouth (2005)
[19] Chichester Harbour Oyster Partnership Initiative (URL: www.sussex-ifca.gov.uk/index.php?option=com_content&view=article&id=132&Itemid=204)

Service	Assets/attributes: main contributors to service	State	Main beneficiary	Analysis	Opportunities	Principal services offered by opportunities
Geodiversity	Upper raised beach deposits Coastal exposures	Remains of Homo heidelbergensis were first found at Boxgrove in 1994, comprising the partial tibia of a male. In 1996 two incisor teeth from another individual were found. In 2003 English Heritage announced it would buy the remains of the quarry to ensure the preservation of the site complex.	International	Boxgrove is a site of national archaeological importance because of the discovery in 1994 and 1995 of 500,000 year old human fossils of a nomadic hunter-gatherer ('Boxgrove Man' and associated artefacts), found in the gravel deposits of a raised beach which remain the oldest such fossils ever discovered in the UK. There were also animal bones which are the oldest found specimens of their species, such as the wing bone of the great auk found at the site in 1989. The coastal exposures of Lower Tertiary deposits reveal diverse fossil assemblages, such as at Felpham, Bognor Reef and Bracklesham Bay. Selsey is a key Quaternary site for a sequence of freshwater and estuarine deposits of Ipswichian Interglacial age. Mammal remains including rhinoceros, horse and hippopotamus have also been recorded from the deposits. Much potential exists for vertebrate research at this locality, particularly with regard to stratigraphy and pollen zonation. East of Langstone a low cliff line at high water mark exhibits a complex of Brickearth and Coombe Rock deposits and at East Head there is a sizeable sand dune and shingle system both of which are of geomorphological importance. Pagham Harbour is a key site for coastal geomorphology and also has an outstanding palaeobotanical site of great importance to studies of Tertiary floras. Generally a good place to study coastal processes at work.	Interpret and promote the Boxgrove site to encourage interest and understanding of the area's geodiversity. Maintain coastal exposures of Lower Tertiary deposits revealing diverse fossil assemblages, such as at Felpham, Bognor Reef and Bracklesham Bay. Maintain important inland geology exposed in pits and quarries, such as Downend Chalk Pit SSSI, helping to promote an appreciation and understanding of the geodiversity of the NCA and connecting communities with their local heritage. Conserve coastal geomorphological features (and the natural processes needed to sustain them) including sand dune systems, sand and shingle spits and banks (for example East Head). Encourage the use of traditional building materials in conservation projects (for example timber frame, flint, cob and thatch) and promoting the use of the Chichester Harbour AONB Design Guidance for replacement dwellings in the AONB. Continue to research, monitor and record geomorphological processes to inform management decisions. Provide access to sites of geological interest where appropriate and interpret the geological features and dynamic coastal processes to improve understanding and appreciation. Encourage research, monitoring and recording of geomorphological processes.	**Geodiversity** **Recreation** **Sense of place/ inspiration** **Sense of history**

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APPENDIX C

The West Sussex County Council: A Strategy for the West Sussex Landscape (October 2005): South Coast Plan Sheet SC9: Chichester to Yapton Coastal Plain

Sheet SC9

Chichester to Yapton Coastal Plain

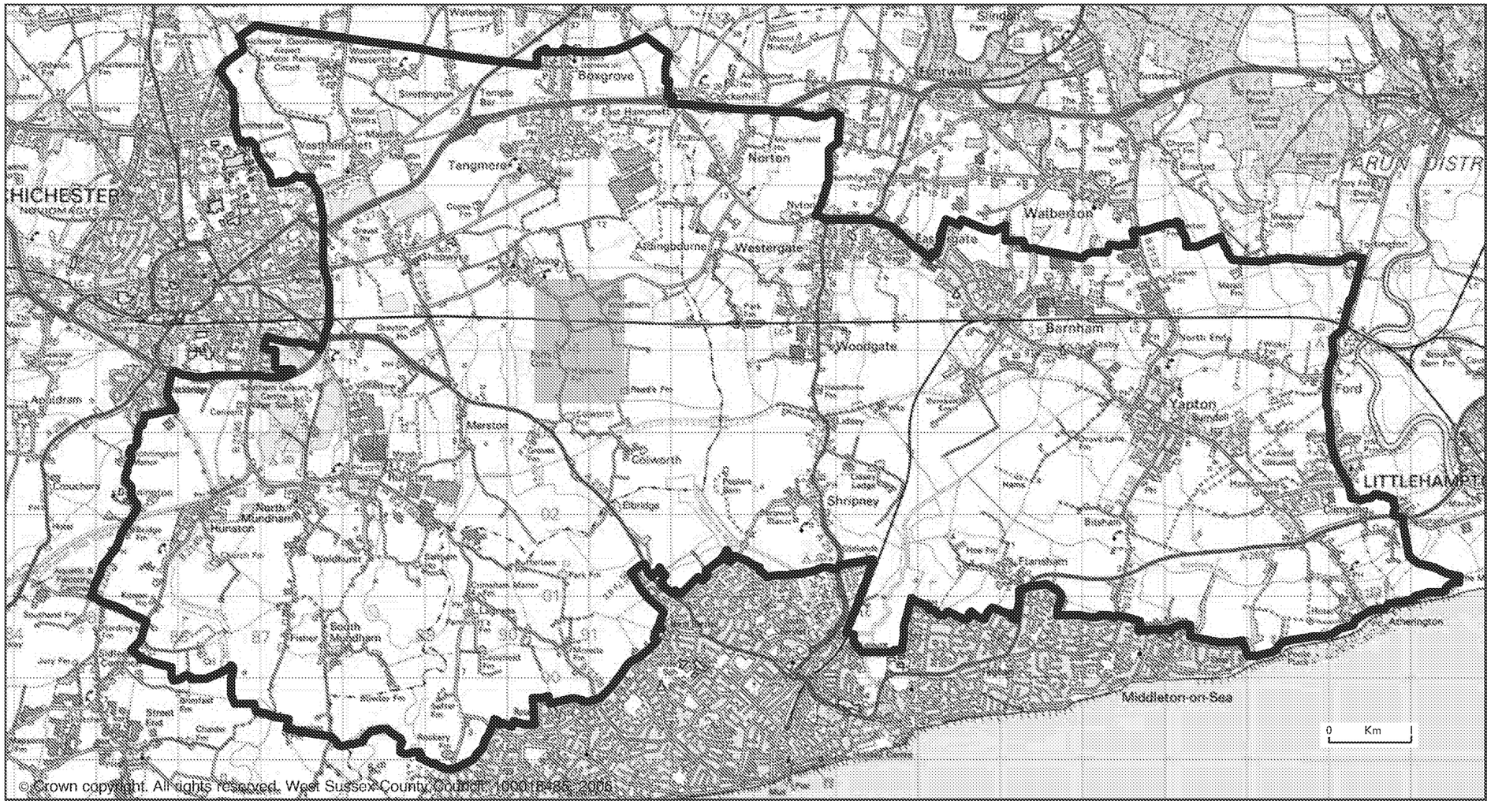
South Coast Plain

Overall Character

This Character Area extends from Chichester in the west to the edge of the Arun Valley in the east, and around Bognor Regis to the south. Over time a large part of this area has been reclaimed from the sea, and remains below the current high spring tide level. It comprises a mainly flat, open landscape crossed by meandering rifes. Dominated by highly productive arable fields and modern farm buildings, it has a fragmented hedgerow and hedgerow tree pattern. The spire of Chichester Cathedral is a widely visible feature. Rows of large light reflecting glasshouses, equestrian facilities, horse paddocks and industrial buildings, for instance in the Ford and Tangmere areas, are strong suburban elements. Where these occur, they create visual confusion and poor definition between town and countryside, and erode distinctive landscape character. Major suburban settlements in the area are Tangmere, Barnham, Yapton, and Westergate. In contrast, there are areas of a smaller scale, more varied rural landscape with quiet hamlets and traditional villages enclosed by small pastures.

Key Characteristics

- Low lying flat open landscape.
- Meandering rifes and straight drainage ditch systems, with associated unimproved grassland and edged by reed beds.
- A low density of hedgerows and hedgerow trees with occasional shelterbelts.
- Large-scale arable farming and market gardening. Extensive farms with both traditional and modern farm buildings and silos.
- Clusters of glasshouses.
- Scattered, historically nucleated villages with mixed building materials of flint, brick, half timber and stone.
- Large farmsteads along roads, and on dead-end tracks.
- Long views to Arundel, the Downs and to the distinctive spire of Chichester Cathedral.
- The relatively open character of much of the area allows long views so that village church towers are important landmarks in views.
- Frequent urban fringe influences of horse paddocks, light industry and disused airfields, with busy minor and major roads.
- The urban fringes associated with Bognor are particularly obvious, with sporadic urban development in suburban settlements of Tangmere, Barnham, Yapton, and Westergate.
- Large gravel pit lakes around the edge of Chichester.
- Few trees or hedgerows, partly as a result of Dutch Elm Disease, from the 1970s and the Great Storm of 1987 and overall high quality agricultural land, although, where they do exist, they form prominent features.
- Light industry in the countryside at Ford and Tangmere.



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The area covered by the Sheet is derived from:

Chichester to Shoreham Coastal Plain (C1) Landscape Character Area as defined in the unpublished **West Sussex Landscape Character Assessment** (November 2003).



west sussex county council

SC9

ARUN DISTRICT COUNCIL BN/128/19/OUT

Historic Features

- Area settled and resources exploited from prehistoric times onwards. Few visible prehistoric monuments apart from crop marks.
- Distinctive medieval manor houses at Shripney and Barnham Court.
- Important medieval churches with spires which distinguish this otherwise flat landscape.
- Large regular fields, mostly the product of Parliamentary enclosure.
- Remains of the line of the Arundel to Chichester Canal. This formed part of an important late 18th century barge route.
- Excavations at Westhampnett, in advance of the bypass, demonstrated that Roman, iron age and earlier settlement evidence may lie just below plough soil level.
- At Aldingbourne, beside the Rife, lie the remains of a medieval castle. In those days Aldingbourne Rife was a navigable waterway.
- Disused airfields, such as at Tangmere and Yapton.

Biodiversity

- Semi-natural habitats are scarce due to intensive arable agriculture.
- Hedgerow pattern is fragmented with occasional isolated woods, for example, Hunston Copse (Site of Nature Conservation Importance, SNCI).
- Low lying species-rich grasslands adjacent to the rifes, artificial water bodies of Chichester canal (SNCI) and gravel pits together with remnant semi-natural broadleaved woodlands form pockets of high nature conservation importance.
- Occasional species-rich meadows along rifes, for example, Kingston Manor meadows, Runcton.
- Artificial lakes of the Chichester Gravel Pit complex are particularly important for wintering and breeding birds as the largest collection of inland water bodies in the county.
- Occasional village ponds and greens provide local havens for wildlife.
- Invasive floating pennywort in Pagham Rife.

Change - Key Issues

- Urban development pressures, especially in the gaps between settlements and on the edge of Chichester.
- Major road improvements.
- Loss of mature elm trees in the 1970's and 1980's due to Dutch Elm disease.
- Loss of floodplain and wet woodland due to changes in agricultural drainage practices.
- Loss of tree and hedgerow cover from agricultural intensification since World War II.
- Conversion of agricultural buildings to light industrial uses.
- Farm diversification and garden centres leading to introduction of signs and fencing.
- Introduction of large scale industrial buildings and glasshouses with distribution sheds.
- Derelict glasshouses.
- Climate change may increase the risk of storm surges associated with flooding. This will have consequences for inter-tidal habitats, increasing pressure for possibly insensitive coastal defences.
- Management and possible realignment of sea defences due to predicted sea level rises will have significant implications for landscape over the coming decades.

Landscape and Visual Sensitivities

Key sensitivities are:

- Key views to the South Downs, Chichester Cathedral and Arundel.
- Fragmentation and loss of hedgerows and connections between hedgerow and woodland.
- Replacement of mature treescape.
- Changes in drainage patterns.
- Industry in the countryside associated with horticulture and light industry, resulting in large clusters of glasshouses and industrial buildings.
- Loss of archaeological remains to ploughing.
- Development on settlement edges of Bognor and suburban settlements of Tangmere, Barnham, Yapton and Westergate.
- Loss of distinction between different settlements due to urban expansion.
- Changes in transport infrastructure due to urban development pressures.
- Managed retreat of the coastline may be particularly influential in the future, providing opportunities for the creation of new coastal and inter-tidal habitats, and could result in a more naturally functioning landscape.



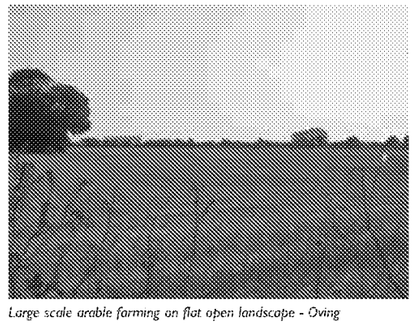
Scattered villages - Merston



Gravel Pit Lakes - Chichester

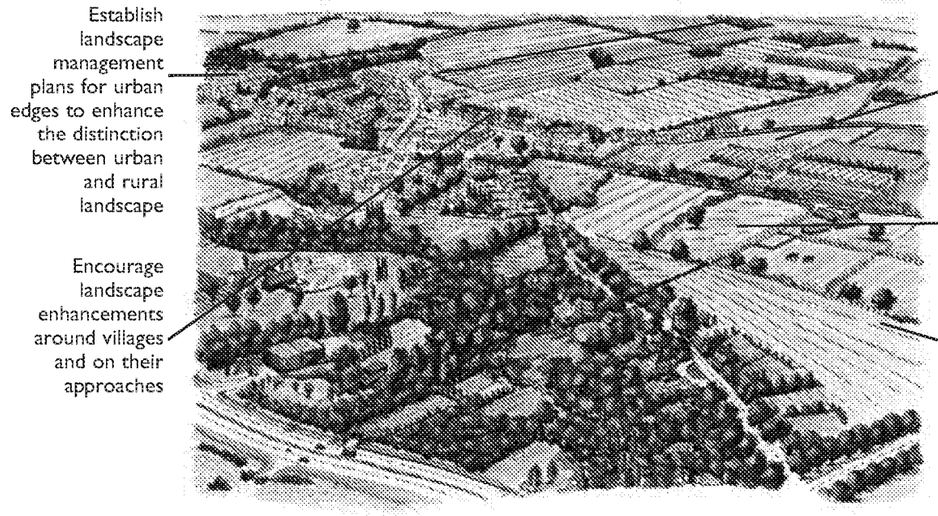


Clusters of glasshouses - Barnham



Large scale arable farming on flat open landscape - Oving

Land Management Guidelines



Conserve the significant views to Chichester Catherdral and the South Downs.

- Create a new, large scale tree and hedgerow framework which complements the open intensively farmed landscape, whilst maintaining significant views of Chichester Cathedral, the South Downs and local features.
- Maintain and strengthen field boundaries such as hedgerows and shelterbelts.
- Link up existing remnant hedgerows and tree lines to re-establish coherent field boundaries and wildlife corridors.
- Encourage a full tree survey of the area with a view to conserving and managing existing feature tree groups and individuals.
- Encourage and promote land management schemes to increase species rich grassland areas.
- Promote management and establishment of grassland regimes of grazing, hay cutting and silage.
- Establish landscape management plans for urban edges, notably Bognor Regis, to enhance the distinction between the urban and rural landscape.
- Restore and strengthen the landscape of the gaps between settlements.
- Encourage landscape enhancements around villages and on their approaches.
- Establish new vegetation features by the planting of hedgerows and tree clumps in field corners and along roadsides, especially those approaching settlements.
- Encourage the planting of shelter belts around horse paddocks, using native species, to give visual and wildlife benefits.
- Promote sympathetic design of new road schemes, particularly associated with transport infrastructure for Bognor Regis.
- Encourage the production of a colour and design study for new and existing agricultural and industrial buildings.
- Encourage bold tree planting associated with large agricultural buildings, glasshouses and industrial buildings to attempt to assimilate them into the landscape more satisfactorily.
- Restrict extensive areas of tree planting to poorer quality agricultural land.
- Encourage the replacement or restoration of derelict glasshouses where these appear detrimental to the landscape.
- Maintain and enhance the landscape and biodiversity of rifes and other existing habitats. Reprofile banks and encourage more diverse flora by lengthening clearance cycles.
- Enhance the visual prominence of rifes through the establishment of waterside vegetation features.
- Maintain, restore and enhance floodplain woodland and associated species, including native black poplar, where appropriate.

The Guidelines should be read in conjunction with:

- County-wide Landscape Guidelines set out in *A Strategy for the West Sussex Landscape* (November 2005) published by West Sussex County Council.
- Climate Change Adaptation Management Plan, 2006.
- South Downs Shoreline Management Plan - Beachy Head to Selsey Bill (under review).
- Black Poplar Species Action Plan for Sussex, June 2005.

For further information call 01243 642119 or visit www.westsussex.gov.uk

ARUN DISTRICT COUNCIL BN/128/19/OUT

APPENDIX D:
Visual Impact Assessment Table

ARUN DISTRICT COUNCIL BN/128/19/OUT

VISUAL IMPACT ASSESSMENT TABLE

Viewpoint	Range	Sensitivity of Viewpoint/ Type Full/ Partial/Glimpse	Magnitude of Change at Year 1	Impact Effect and Significance Year 1	Magnitude of Change at Year 15	Impact Effect and Significance Year 15
1. Yapton Road	40m	Moderate (Road) Glimpse	Moderate	Moderate Not Significant	Slight	Moderate/Minor Not Significant
Representative of Milton and Millmead		High (Residential) Glimpse	Moderate	Major/ Moderate Significant	Negligible	Moderate/ Minor Not Significant
2. Mill Hill Cottage	4m	High (Residential) Full	Substantial	Major Significant	Slight	Moderate Not Significant
Public Right of Way (ref no. 325-1)	1m	High (Recreational) Full	Substantial	Major Significant	Slight	Moderate Not Significant
3. Public Right of Way (ref no. 325-1)	1m	High (Recreational) Full	Substantial	Major Significant	Slight	Moderate Not Significant
4. Public Right of Way (ref no. 325-1)	133m	High (Recreational) Full	Moderate	Major/ Moderate Significant	Slight	Moderate Not Significant
5. Public Right of Way (ref no. 325-1)	200m	High (Recreational) Full	Moderate	Major/ Moderate Significant	Slight	Moderate Not Significant
6. Public Right of Way (ref no. 325-1)	300m	High (Recreational) Glimpse	Slight	Moderate Not Significant	Negligible	Moderate/ Minor Not Significant
7. Ashford Vale	300m	High (Residential) Full	Moderate	Major/ Moderate Significant	Slight	Moderate Not Significant
8. Ashford Vale	355m	High (Residential) Full	Moderate	Major/ Moderate Significant	Slight	Moderate Not Significant
9. Hill Lane	60m	Moderate (Road)	Moderate	Moderate	Negligible	Minor

		Glimpse		**Not Significant**		**Not Significant**
10. Representative of Dwellings on Yapton Road	**10m**	**High (Residential) Full**	**Substantial**	**Major Significant**	**Slight**	**Moderate Not Significant**
11. Representative of Dwellings on Yapton Road	**10m**	**High (Residential) Full**	**Substantial**	**Major Significant**	**Slight**	**Moderate Not Significant**
12. Public Right of Way (ref no. 158-3)	**10m**	**High (Recreational) Full**	**Substantial**	**Major Significant**	**Slight**	**Moderate Not Significant**
13. Public Right of Way (ref no. 158-3)	**10m**	**High (Recreational) Glimpse**	**Negligible**	**Moderate/ Minor Not Significant**	**Negligible**	**Moderate/ Minor Not Significant**

ARUN DISTRICT COUNCIL BN/128/19/OUT

APPENDIX E:
Landscape Supporting Graphics



KEY

- Site Boundary
- Location of Wider Viewpoint (14)
- Kilometre line from centre of the Site
- Public Right of Way

revision	date	description	dwn	chkd

Gloucester House,
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project

Land at Yapton Road

scale
1:25000 @ A3

date
18.10.2019

title

Site Context
(Location of Wider Viewpoints)

drawn by
ML

checked
RH

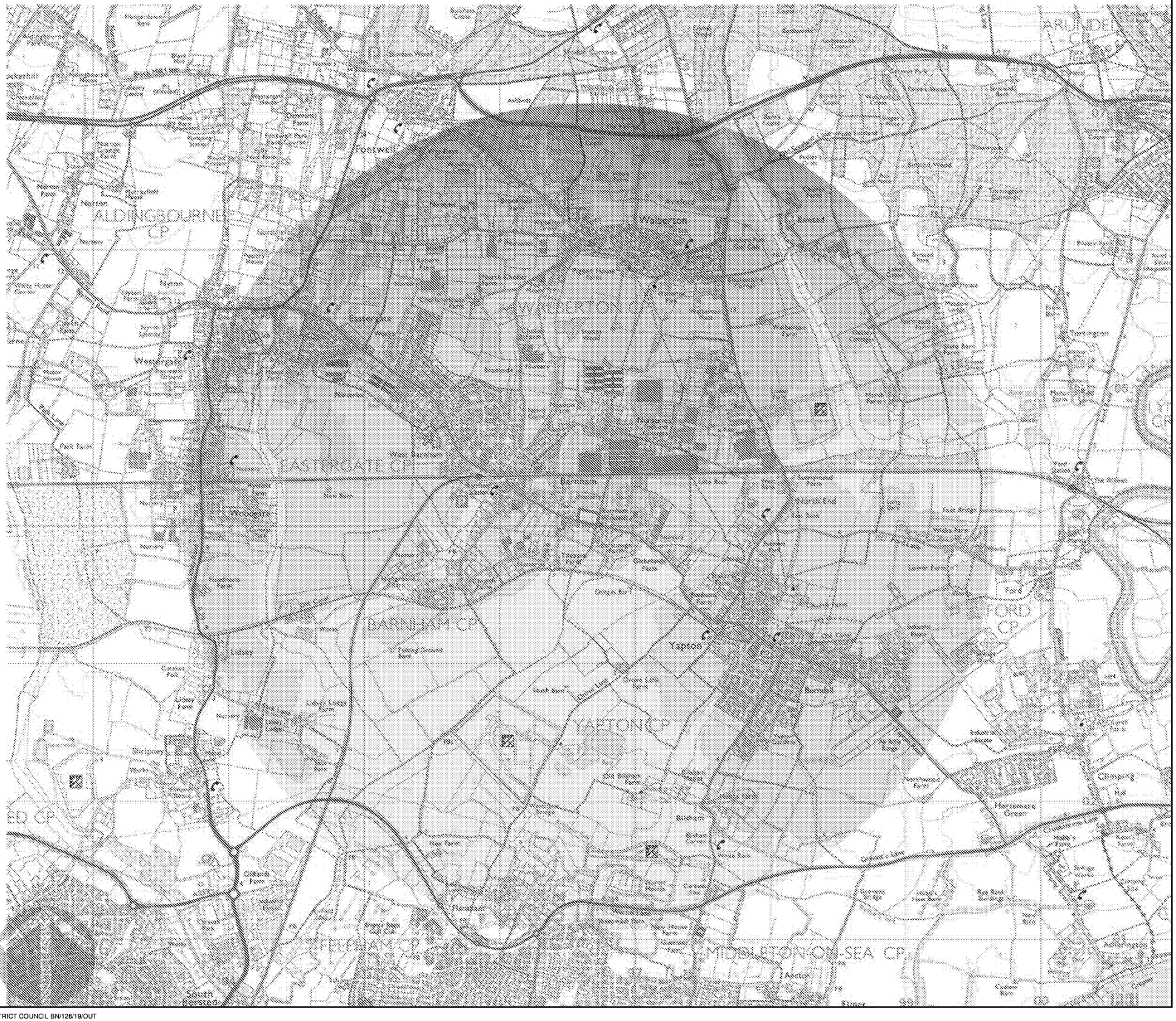
drawing number

revision

Figure 1

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KEY

- Site Boundary
- 0-5m AOD
- 5-10m AOD
- 10-15m AOD
- 15-20m AOD
- 20-25m AOD
- 25-30m AOD

revision	date	description	dwn	chkd

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Topography Plan

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Figure 2

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KEY

- Site Boundary
- Extent of ZTV
- Location of reference markers
- Radius lines from site centre in km (1Km)

Notes:

Zone of Theoretical Visibility (ZTV)

The reference marker could possibly be seen from within the area shaded red. The reference marker is at the highest point of the proposed building 7.5m above existing ground level.

A ZTV map illustrates the potential (or theoretical) visibility of an object in the landscape. The phrase "potential visibility" is used to describe the result because the analysis does not take into account any landscape features such as trees, woodland or buildings, etc. The analysis is made on the basis of topography alone using O.S Terrain 5 data.

revision	date	description	dwn	chkd

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Zone of Theoretical Visibility (ZTV) Bare Earth

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Figure 3

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KEY

- Site Boundary
- Location of Site Views
- Location of Wider Viewpoint
- Public Right of Way

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date
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title

Landscape and Visual
(Location of Viewpoints and Site Appraisal Views)

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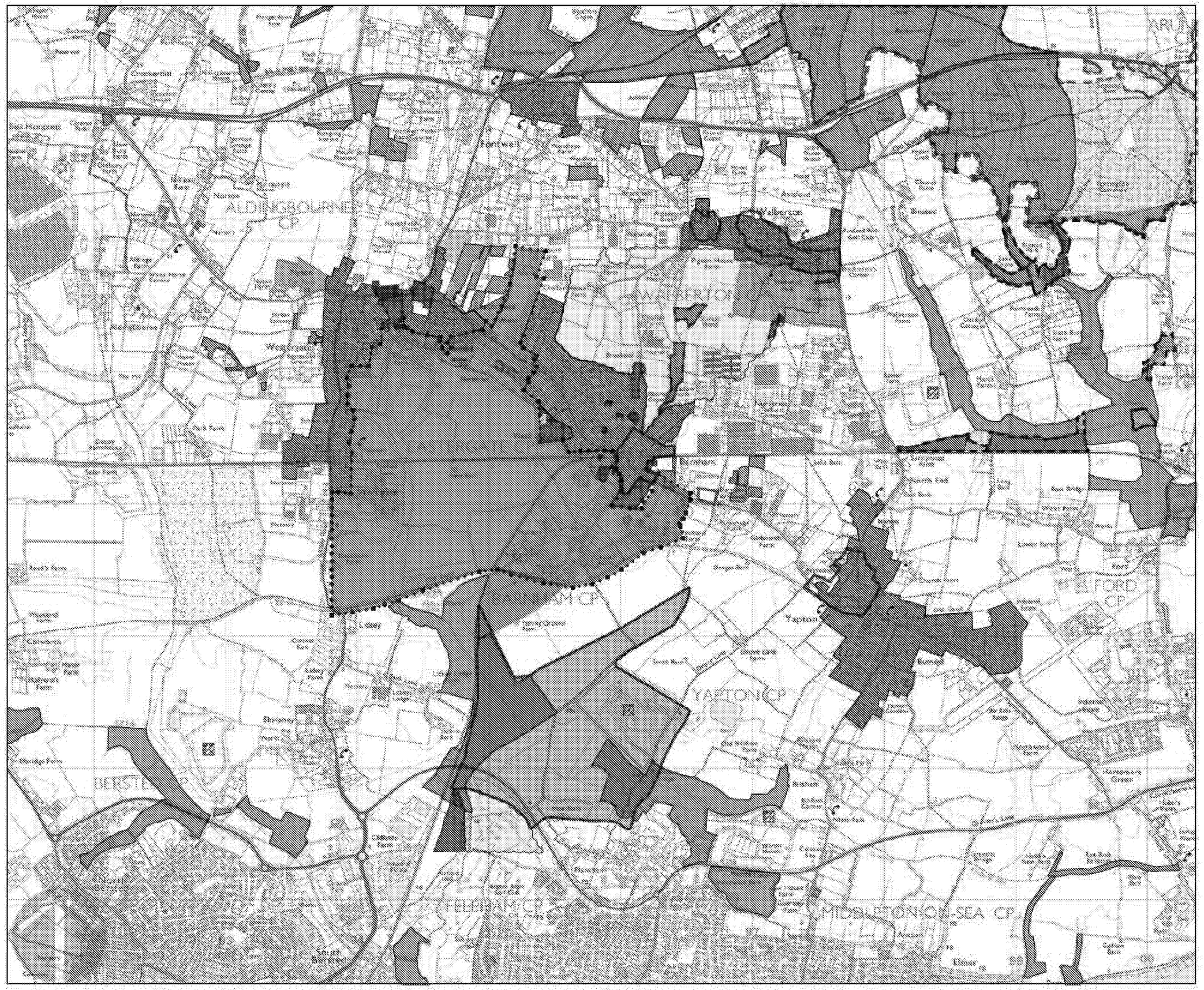
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revision

Figure 4

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KEY

- Site Boundary
- Priority Habitat Inventory - Coastal and Floodplain Grazing Marsh
- Priority Habitat Inventory - Deciduous Woodland
- Ancient Woodland
- National Forest Inventory
- Priority Habitat Inventory - Traditional Orchards
- Woodpasture and Parkland BAP Priority Habitat
- Priority Habitat Inventory - No main habitat but additional habitat exists (England)
- Existing Open Spaces
- Green Infrastructure Corridor (GIC) - Type B (also subject to Community Infrastructure and Housing Growth)
- Green Infrastructure Corridor (GIC) - Type A
- Biodiversity Opportunity Area
- Built-up Area
- Conservation Area

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SCALE

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18.10.2019

title
Landscape Designations

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Figure 5

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KEY

- Site Boundary
- SC9- Chichester to Yapton Coastal Plain
- SC8- Fontwell Upper Coastal Plain
- SC7- Halnaker Upper Coastal Plain
- SD1- Western Downs
- Build Up Area

revision	date	description	dwn	chkd

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Land at Yapton Road

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SCALE

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title

Landscape Character Areas

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Figure 6

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View A - Viewpoint looking north west across the Site taken from the eastern boundary



View B - Viewpoint taken looking south west looking across the Site from the north eastern boundary

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Viewpoint A & B

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Land at Yapton Road,
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scale
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08.02.2018

drawing number
Figure 7

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View C - Viewpoint looking south across the Site from the northern boundary



View D - Viewpoint looking south west across the Site from the north western boundary

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Viewpoint C & D

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date
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drawing number
Figure 8

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View E - Viewpoint taken looking north east across the Site taken from the south western boundary



View F - Viewpoint taken looking north from the southern boundary of the Site

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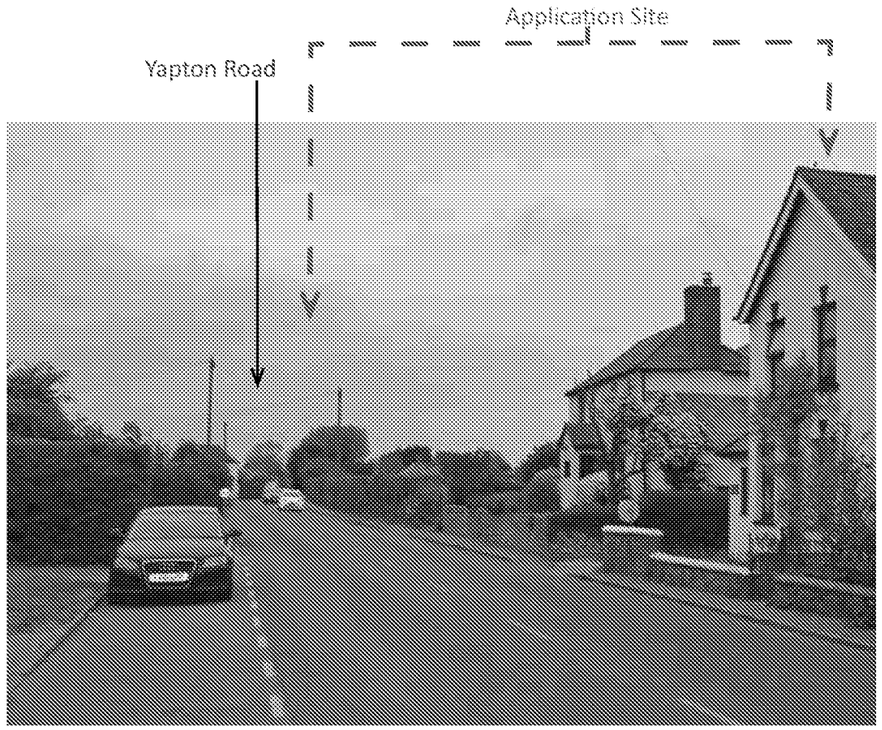
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date
08.02.2018

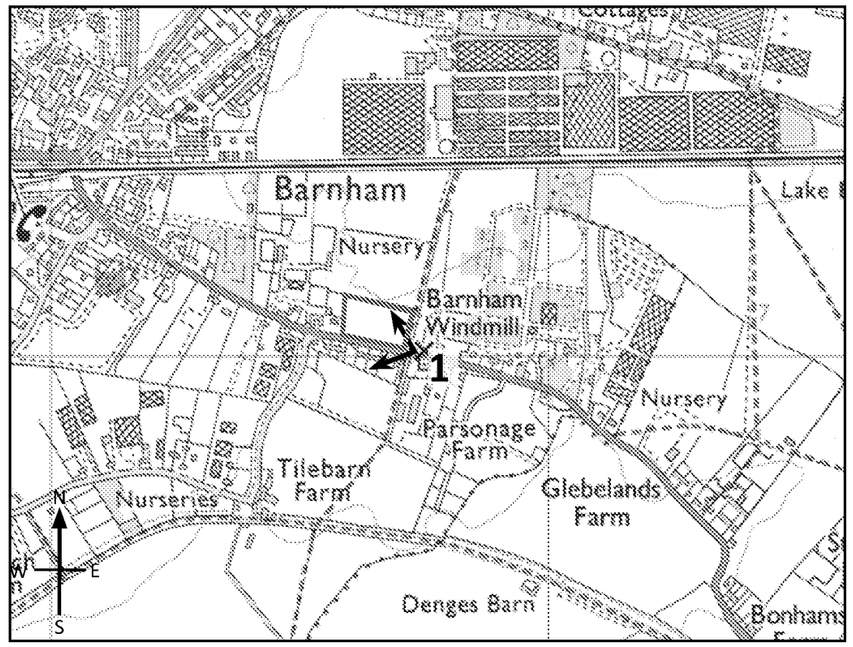
drawing number
Figure 9

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Viewpoint 1	Viewpoint taken from Yapton Road (representative views from Mitton and Millmead) looking north west towards the Site (Movement Corridor andResidential)
Visual Sensitivity	Moderate (Users of Public Highway) High (Residential)
Camera Type	Nickon D3100 with 35mm lens equivalent
Date	03.05.2019
Approx Elevation	10m AOD
Distance to Site	40m



revision	date	description	dwn	chkd

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Viewpoint 1

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Land at Yapton Road, Arun District

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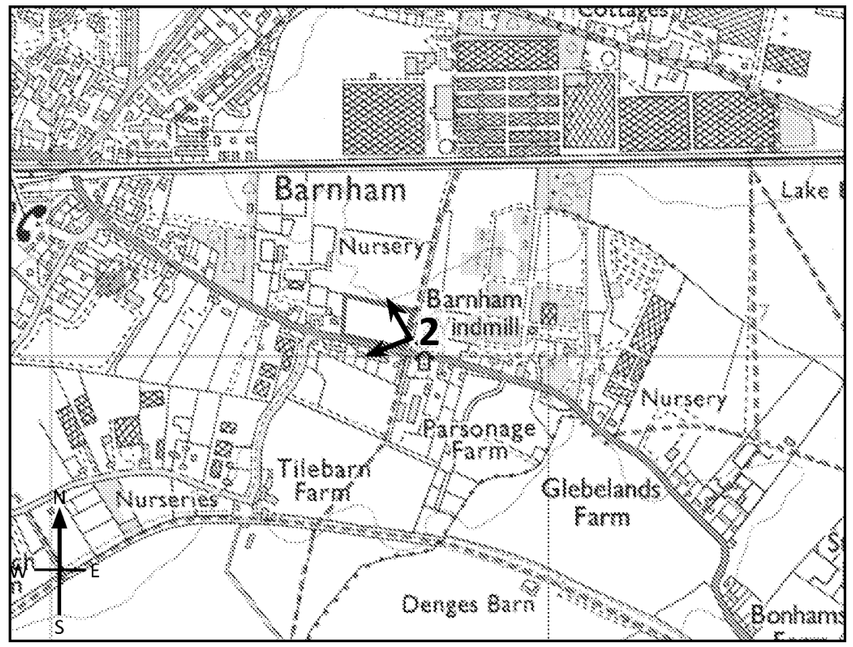
drawing number
Figure 10

revision

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Viewpoint 2	Viewpoint taken from Public Right of Way ref no. Barnham 325-1 and Old Mill Cottage looking east towards the Application Site (Recreational and Residential)
Visual Sensitivity	High (Users of the Public Right of Way) High (Residential)
Camera Type	Nikon D3100 with 35mm lens equivalent
Date	03.05.2019
Approx Elevation	10m AOD
Distance to Site	1m



revision	date	description	dwn	chkd

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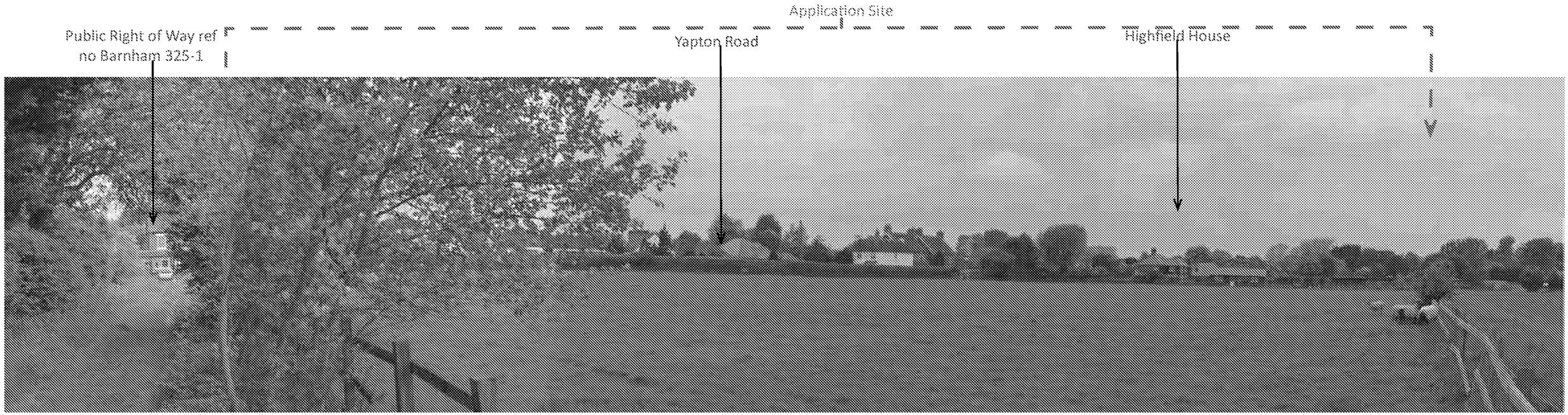
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date
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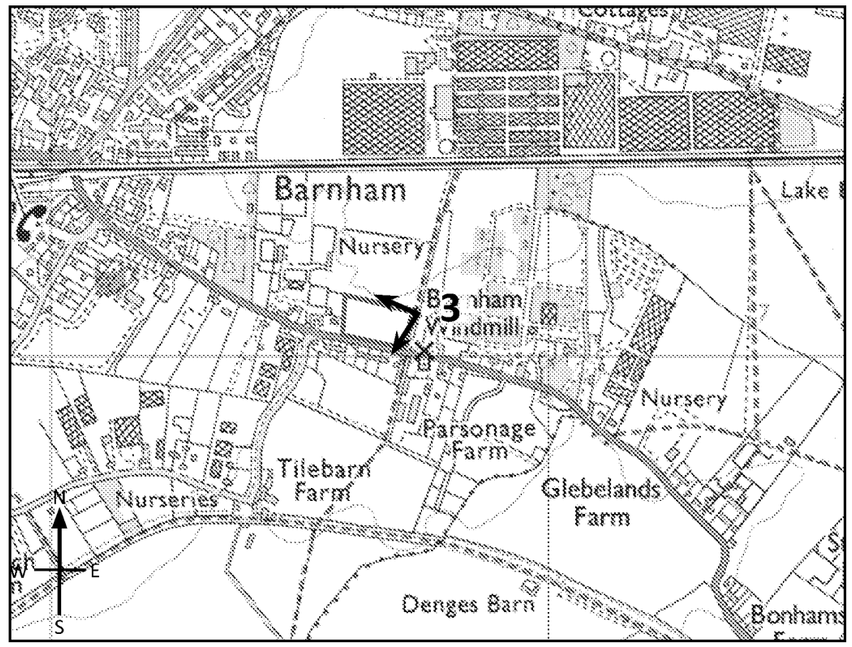
drawing number
Figure 11

revision

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Viewpoint 3	Viewpoint taken from Public Right of Way ref no Barnham 325-1 looking east towards the Application Site (Recreational)
Visual Sensitivity	High (Users of the Public Right of Way)
Camera Type	Nikon D3100 with 35mm lens equivalent
Date	03.05.2019
Approx Elevation	10m AOD
Distance to Site	1m



revision	date	description	dwn	chkd

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Viewpoint 3

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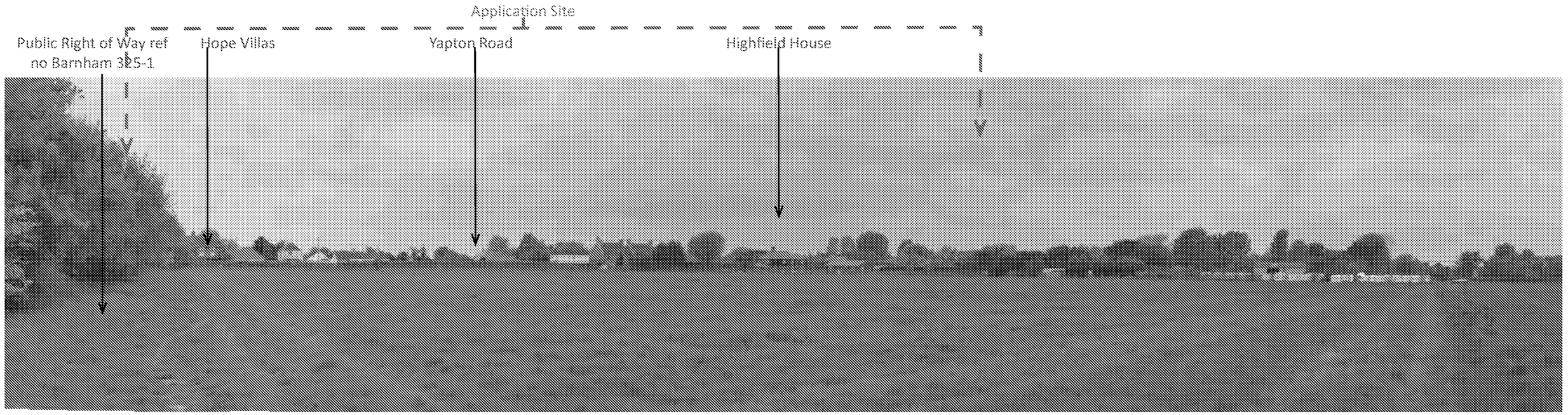
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date
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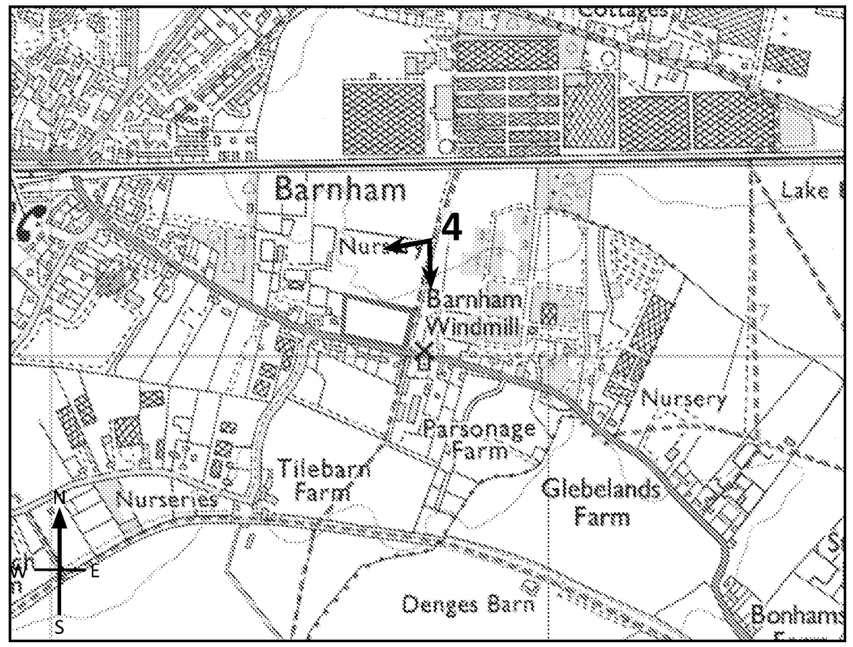
drawing number
Figure 12

revision

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Viewpoint 4	Viewpoint taken from Public Right of Way ref no Barnham 325-1 looking south west towards the Application Site (Recreational Corridor)
Visual Sensitivity	High (Users of the Public Right of Way)
Camera Type	Nikon D3100 with 35mm lens equivalent
Date	03.05.2019
Approx Elevation	10m AOD
Distance to Site	133m



revision	date	description	dwn	chkd

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Viewpoint 4

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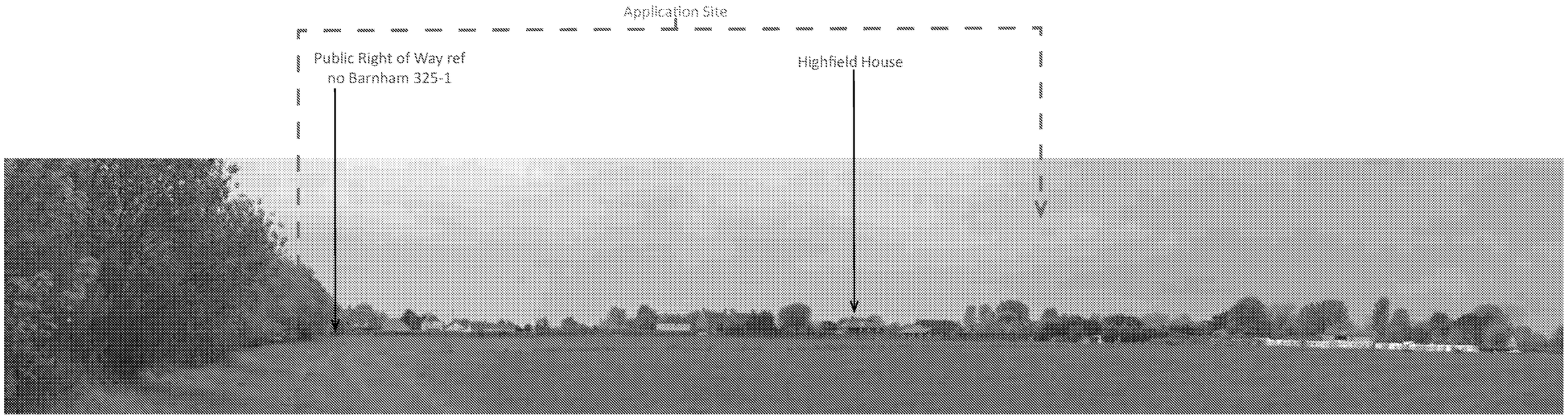
scale
NTS

date
08.02.2018

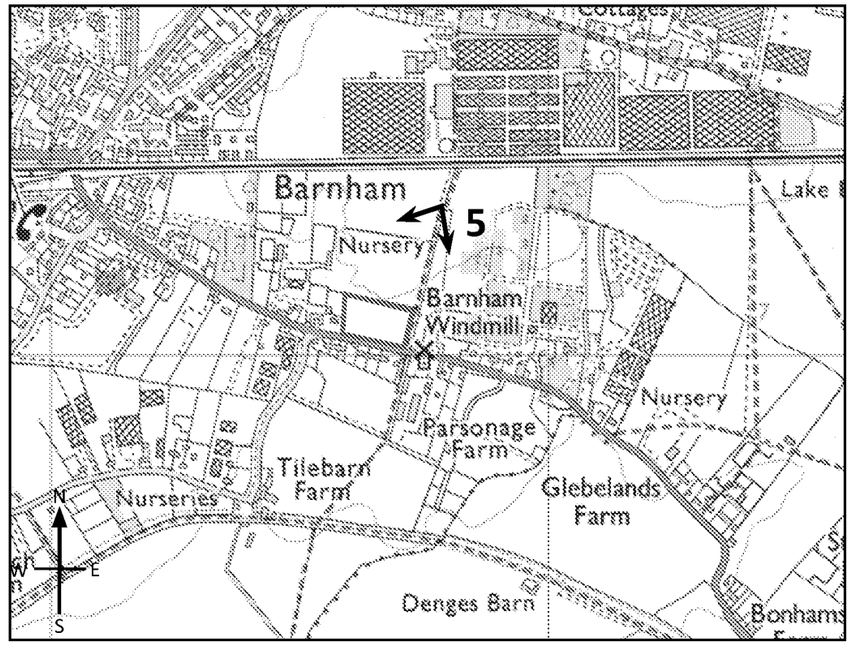
drawing number
Figure 13

revision

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Viewpoint 5	Viewpoint taken from the Public Right of Way ref. no. Barnham 325-1 looking south west towards the Application site (Recreational Corridor)
Visual Sensitivity	High (Users of the Public Right of Way)
Camera Type	Nikon D3100 with 35mm lens equivalent
Date	03.05.2019
Approx Elevation	10m AOD
Distance to Site	200m



revision	date	description	dwn	chkd

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Viewpoint 5

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Land at Yapton Road, Arun District

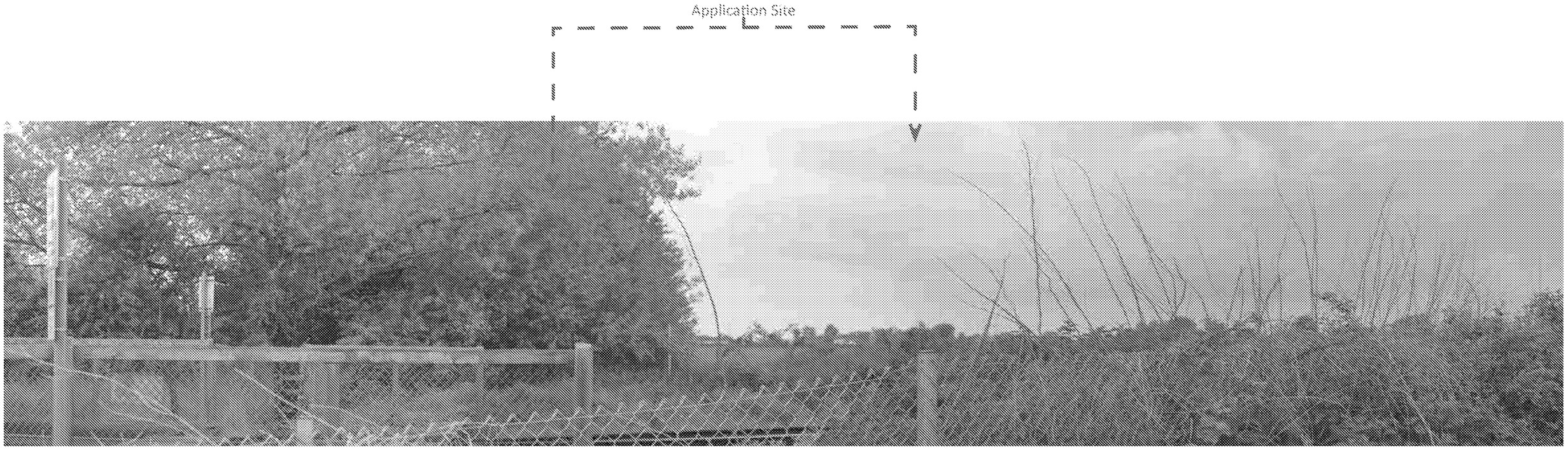
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NTS

date
08.02.2018

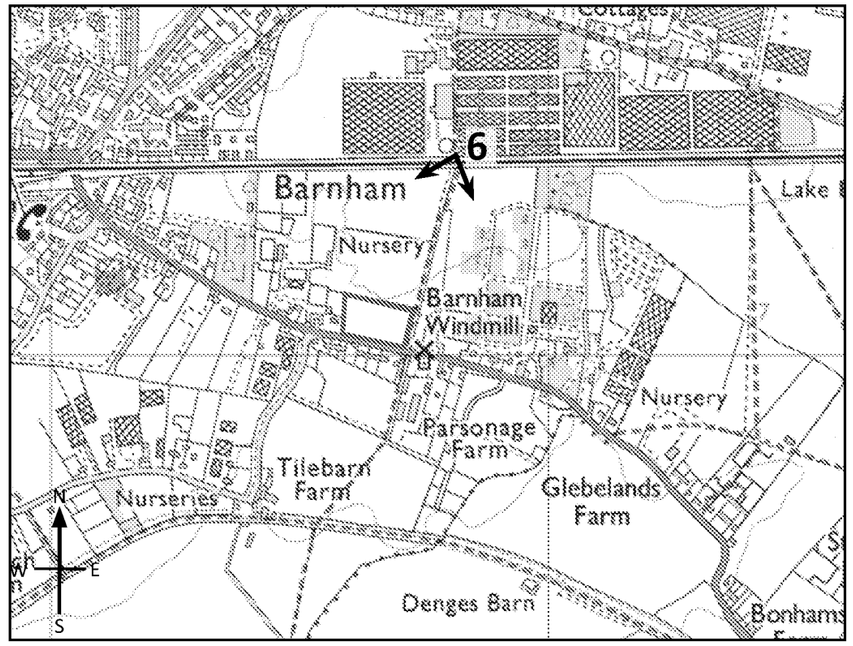
drawing number
Figure 14

revision

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Viewpoint 6	Viewpoint taken Public Right of Way ref. no. Barnham 325-1 looking south towards the Application Site (Recreational Corridor)
Visual Sensitivity	High (Users of the Public Right of Way)
Camera Type	Nikon D3100 with 35mm lens equivalent
Date	03.05.2019
Approx Elevation	15m AOD
Distance to Site	300m



revision	date	description	dwn	chkd

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Viewpoint 6

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project
Land at Yapton Road,
Arun District

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NTS

date
08.02.2018

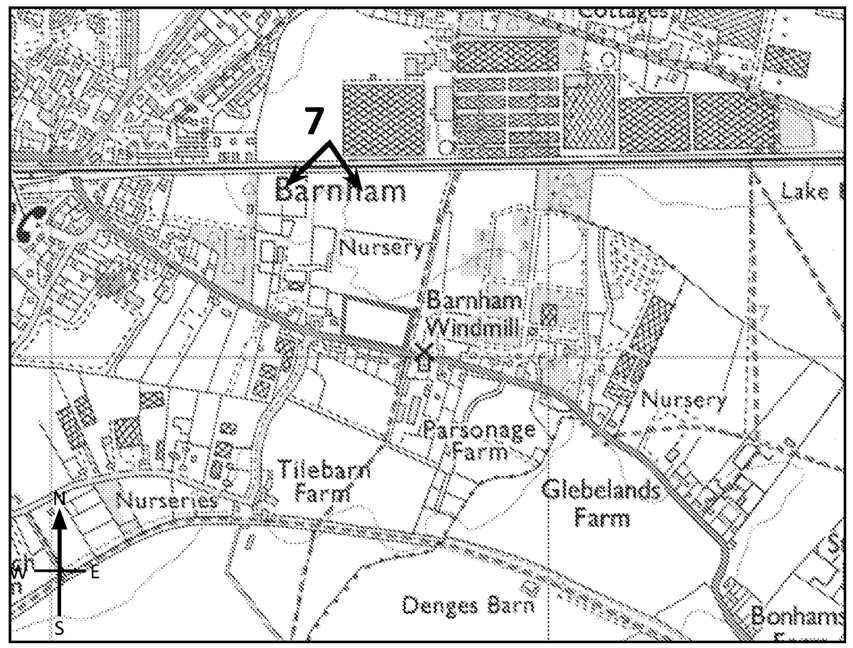
drawing number
Figure 15

revision

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Viewpoint 7	Viewpoint taken from the Ashdown Vale new development, adjacent to Binsted Nursery, looking south towards the Application Site (Residential)
Visual Sensitivity	High (Residential)
Camera Type	Nikon D3100 with 35mm lens equivalent
Date	03.05.2019
Approx Elevation	15m AOD
Distance to Site	300m



revision	date	description	dwn	chkd

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Viewpoint 7

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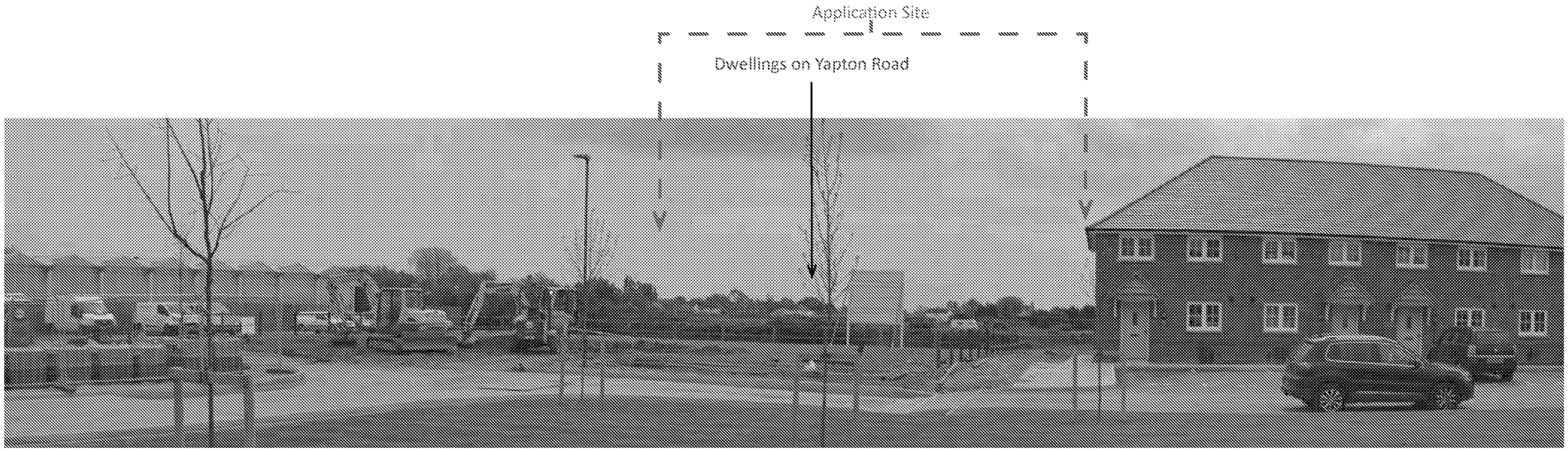
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date
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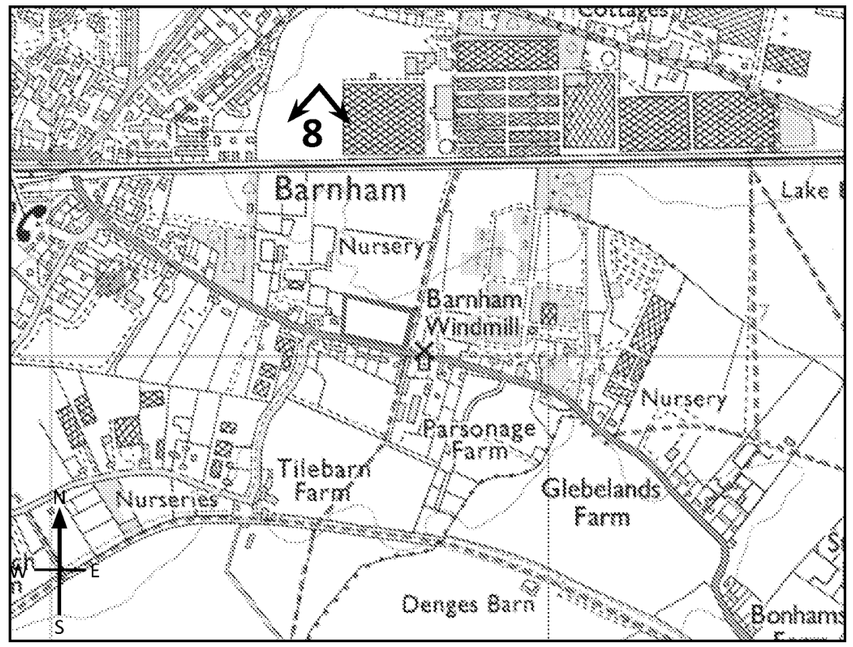
drawing number
Figure 16

revision

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Viewpoint 8	Viewpoint taken the new Ashdown Vale developmnet looking south towards the Application Site (Residential Corridor)
Visual Sensitivity	High (Residential)
Camera Type	Nikon D3100 with 35mm lens equivalent
Date	03.05.2019
Approx Elevation	15m AOD
Distance to Site	355m



revision	date	description	dwn	chkd

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title
Viewpoint 8

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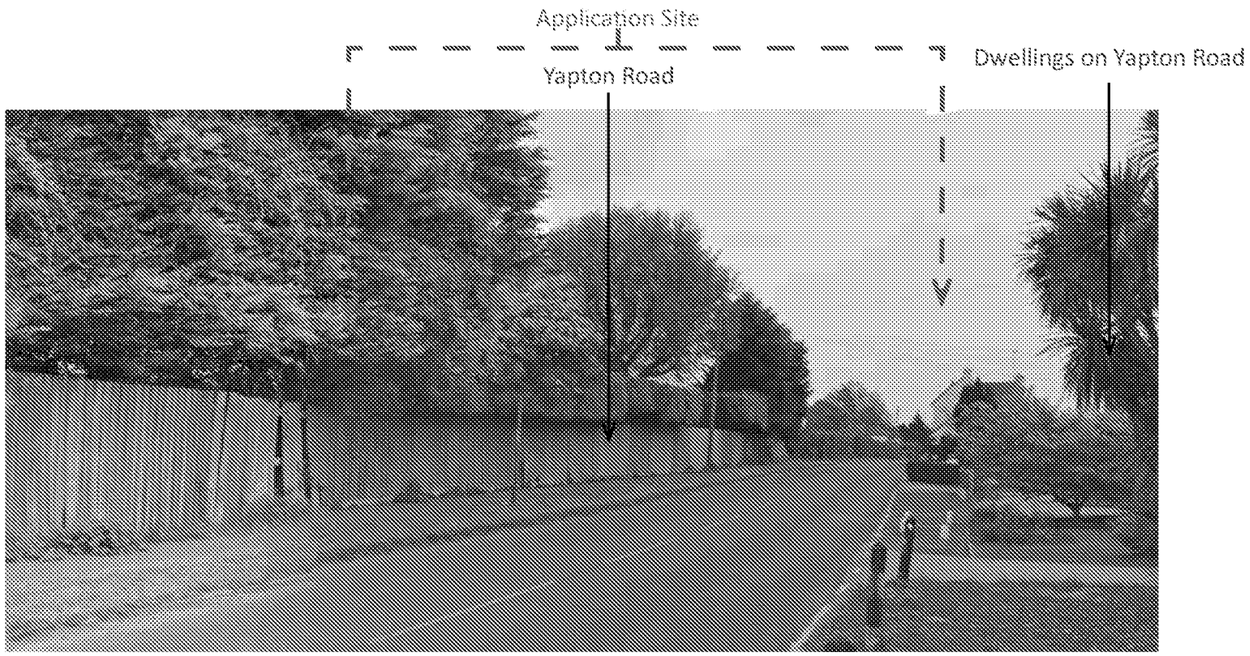
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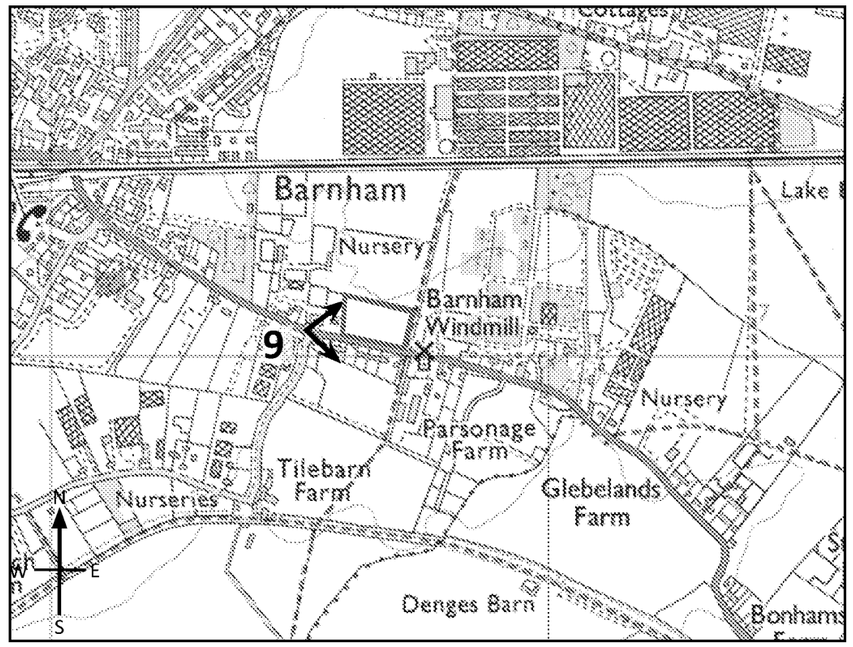
drawing number
Figure 17

revision

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Viewpoint 9	Viewpoint taken from Hill Lane looking south west towards the Application Site (Movement Corridor)
Visual Sensitivity	Moderate (Users of the Public Highway)
Camera Type	Nikon D3100 with 35mm lens equivalent
Date	03.05.2019
Approx Elevation	10m AOD
Distance to Site	60m



revision	date	description	dwn	chkd

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title
Viewpoint 9

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project
Land at Yapton Road, Arun District

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NTS

date
08.02.2018

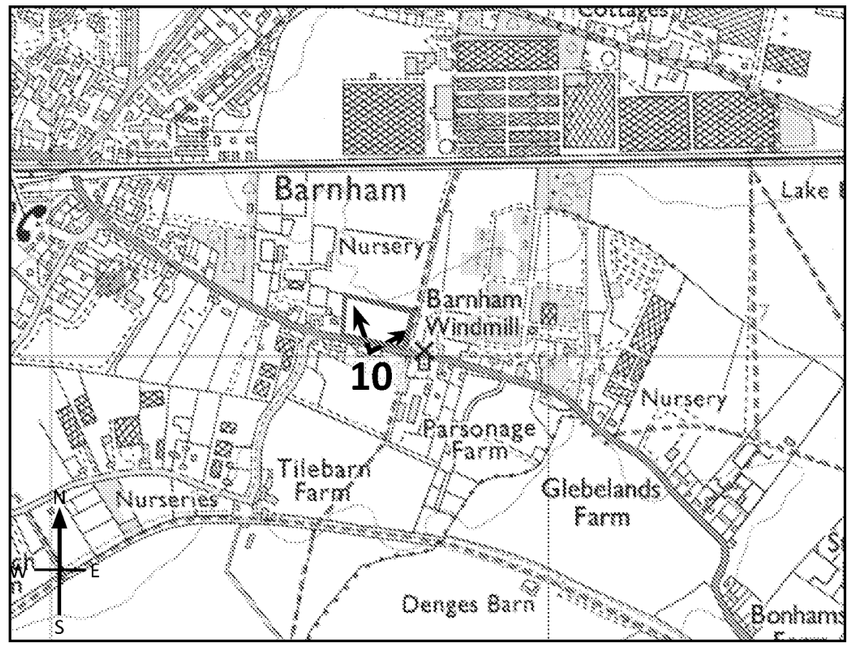
drawing number
Figure 18

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Viewpoint 10	Viewpoint taken the Yapton Road adjacent to the dwelling called Inveresk looking north towards the Application Site (Residential and Movement Corridor)
Visual Sensitivity	High (Residential) Moderate (Users of the Public Highway)
Camera Type	Nikon D3100 with 35mm lens equivalent
Date	03.05.2019
Approx Elevation	10m AOD
Distance to Site	10m



revision	date	description	dwn	chkd

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Viewpoint 10

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Land at Yapton Road,
Arun District

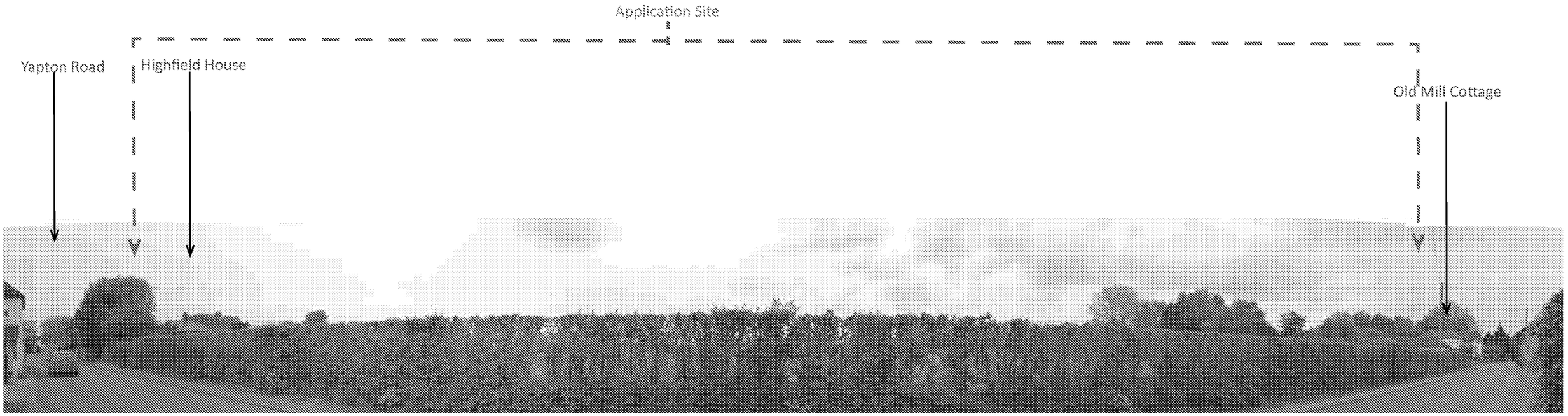
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date
08.02.2018

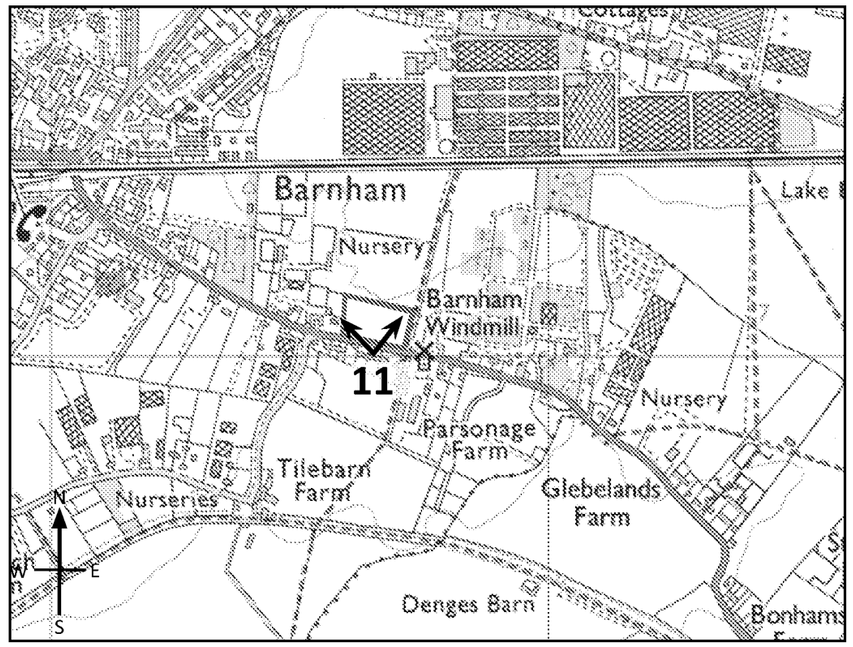
drawing number
Figure 19

revision

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Viewpoint 11	Viewpoint taken from the Yapton Road looking north towards the Application Site (Residential and Movement Corridor)
Visual Sensitivity	High (Residential) Moderate (Users of the Public Highway)
Camera Type	Nikon D3100 with 35mm lens equivalent
Date	03.05.2019
Approx Elevation	10m AOD
Distance to Site	10m



revision	date	description	dwn	chkd

Gloucester House
399 Silbury Boulevard
Milton Keynes
MK9 2AH

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enplan

title
Viewpoint 11

drawn by
SS

checked
RH

project
Land at Yapton Road, Arun District

scale
NTS

date
08.02.2018

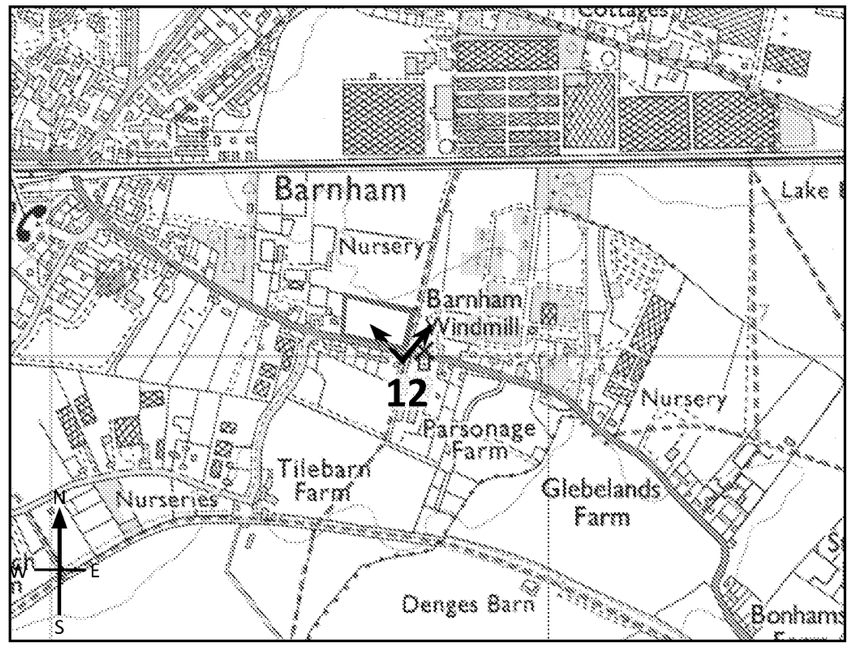
drawing number
Figure 20

revision

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Viewpoint 12	Viewpoint taken from the Public Right of Way ref no. Barnham 325-1 looking north towards the Application Site (Recreational Corridor)
Visual Sensitivity	High (Users of the Public Right of Way)
Camera Type	Nikon D3100 with 35mm lens equivalent
Date	03.05.2019
Approx Elevation	10m AOD
Distance to Site	10m



revision	date	description	dwn	chkd

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title
Viewpoint 12

drawn by
SS

checked
RH

project
Land at Yapton Road,
Arun District

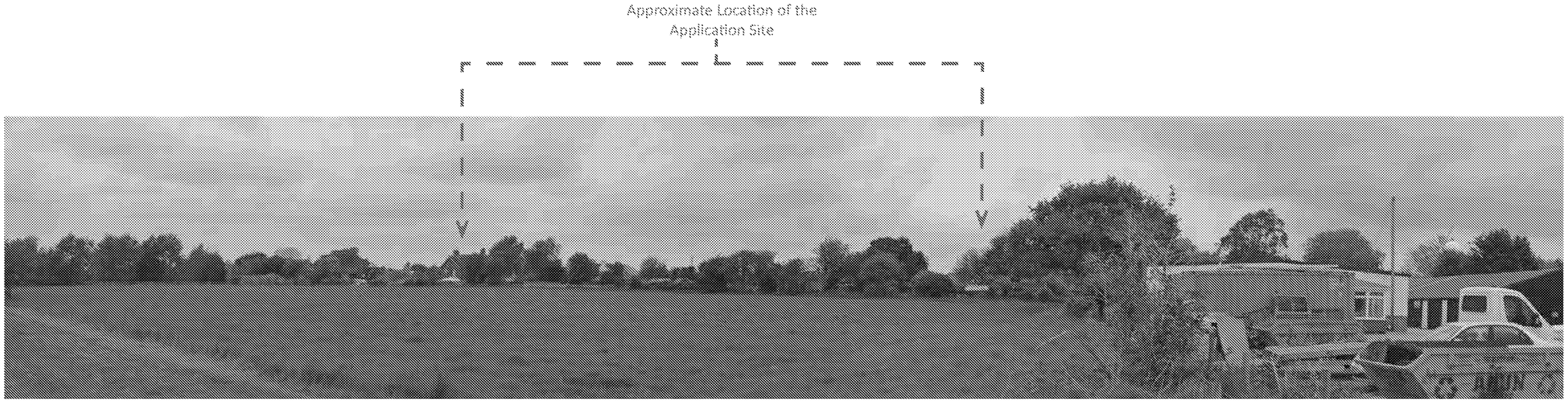
scale
NTS

date
08.02.2018

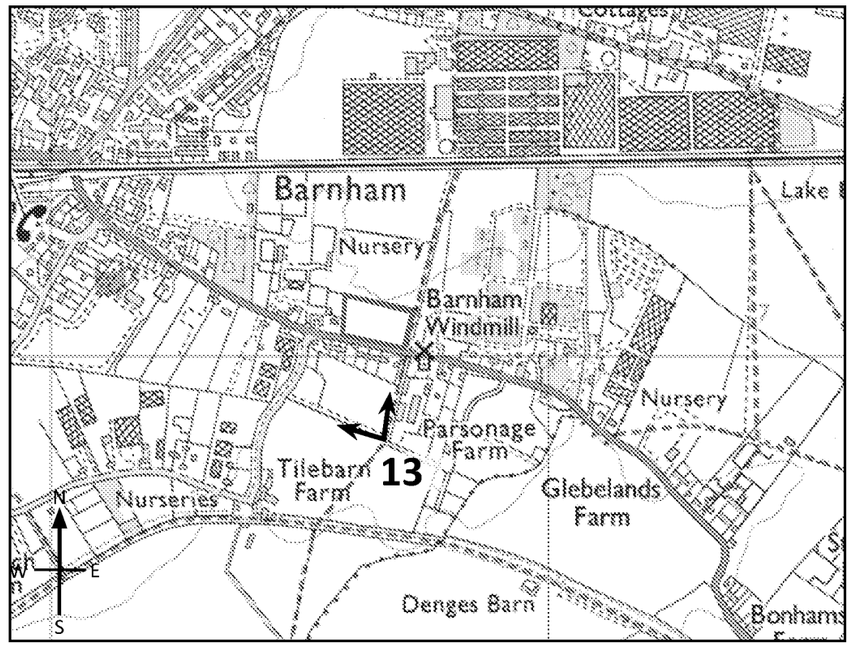
drawing number
Figure 21

revision

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Viewpoint 13	Viewpoint taken from Public Right of Way ref no Barnham 158-3 looking north towards the Application Site (Recreational Corridor)
Visual Sensitivity	High (Users of the Public Right of Way)
Camera Type	Nikon D3100 with 35mm lens equivalent
Date	03.05.2019
Approx Elevation	10m AOD
Distance to Site	190m



revision	date	description	dwn	chkd

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title
Viewpoint 13

drawn by
SS

checked
RH

project
Land at Yapton Road, Arun District

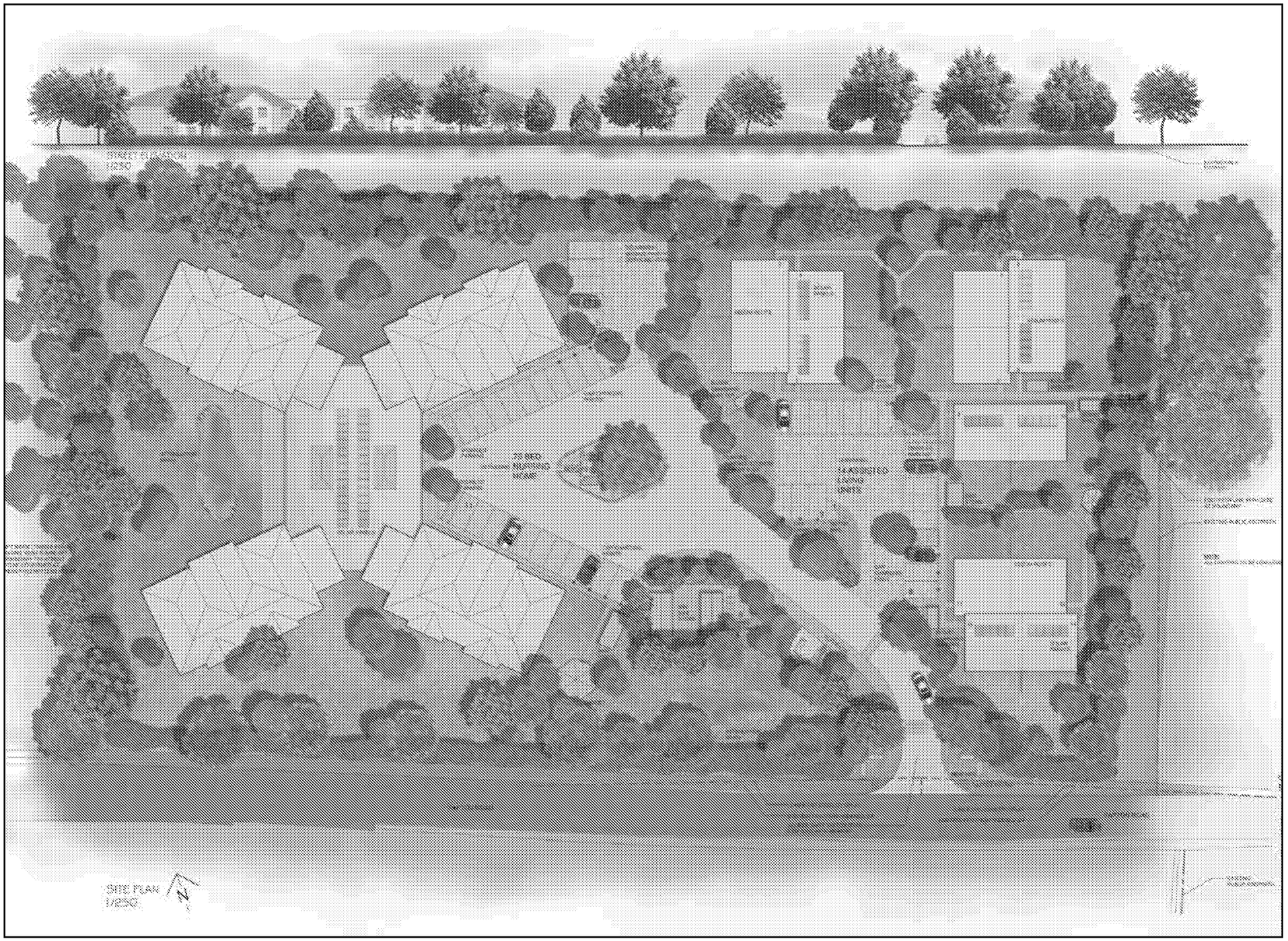
scale
NTS

date
08.02.2018

drawing number
Figure 22

revision

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revision	date	description	dwn	chkd

Gloucester House
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Milton Keynes
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enplan

title
Illustrative Masterplan

drawn by
SS

checked
RH

project
Land at Yapton Road,
Arun District

scale
NTS

date
08.02.2018

drawing number
Figure 23

revision

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