

Landscape and Ecology Study of Greenfield Sites in Worthing Borough



ADDENDUM

March 2017

Rev B

ACKNOWLEDGMENTS

This addendum to the Landscape and Ecology Study of Greenfield Sites in Worthing was prepared by Hankinson Duckett Associates (HDA). The work was commissioned and funded by the joint authority of Adur and Worthing Councils. The work has been guided by Ian Moody, Principal Planning Officer of Adur and Worthing Councils.

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Note: Appendices A to D are contained within the original 2015 report

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1. INTRODUCTION

- 1.1 Hankinson Duckett Associates (HDA) was commissioned by Adur and Worthing Borough Councils to undertake a Landscape and Ecology Study of eight Greenfield sites which have been promoted through Worthing's Strategic Housing Land Availability Assessment (SHLAA). This addendum report assessed two further sites.
- 1.2 The Landscape and Ecology Study will form part of the evidence base for the emerging Worthing Local Plan, which will include a range of studies informing which sites should be included as housing allocations within the Local Plan.

Background

- 1.3 With a recently increased housing target, there is considerable pressure to identify sites suitable for development within Worthing Borough. However, the borough is highly constrained, with the 'South Downs' National Park Authority covering areas of the borough to the north, coastline to the south, and tight borough boundaries to the east and west. The ten sites assessed therefore constitute the majority of available open space in the borough. Of the original eight sites considered, three are within the current Built Up Area Boundary (BUAB), and five outside the BUAB. Of the two additional sites assessed within this addendum, the Land East of Titnore Lane (Site 9) is located within the BUAB, and Land at Dale Road (Site 10) is outside the BUAB.
- 1.4 In 2007 (prior to the creation of the South Downs National Park Authority), HDA prepared the Worthing Gap and Landscape Capacity Study which assessed the physical and environmental constraints on accommodating strategic scale development within the borough. Having identified the landscape capacity of the borough on a character area basis, the study was part of a series of studies which provided a starting point to identify suitable areas for housing development. Although identifying large parts of the borough as 'low' capacity, the study recognised that landscape capacity can vary across character areas, and that further detailed studies would be required for site specific proposals, taking into account the scale of development, and the issues identified in the study related to both landscape sensitivity and landscape value.
- 1.5 The 2015 Landscape and Ecology Study of Greenfield Sites has regard for those issues raised in the 2007 Worthing Gap and Landscape Capacity Study. This new study also draws upon the Strategy for the West Sussex Landscape and relevant Land Management Guidelines Sheet (WSCC, 2005), and takes into consideration the findings of the Landscape and Ecological Surveys of Key Sites within Adur District (Shiels Flynn, 2012), particularly where its study area adjoins Worthing Borough.

2. METHOD STATEMENT

Introduction

- 2.1 The approach to this study followed best practice promoted by Natural England, as set out in the Landscape Character Assessment Guidance for England and Scotland (2002) and Topic Paper 6, and reaffirmed by Natural England's 2014 'An Approach to Landscape Character Assessment'.

Stage 1: Desk Study/Review

Landscape and visual

- 2.2 Baseline data has been collated in a Geographical Information System (GIS) and analysed and mapped for each site, in order to identify existing landscape features, views and the main elements which contribute to the character, structure and setting of each site.

Mapping has included:

- Geology and soils;
- Topography;
- Land use and landscape features (based initially on aerial photography and OS mapping);
- Regional and county landscape character types and areas, and associated guidelines;
- Local Plan designations including local landscape, nature conservation, and heritage designation;
- Extent of existing built development (Built Up Area Boundary);
- Listed buildings, conservation areas, registered parks/gardens, ancient monuments;
- Public rights of way (including long distance footpaths etc) and notable view points;
- Areas at risk of flooding;
- Locally valued features e.g. landmarks;
- Any known cultural associations;

- 2.3 This information was overlaid to create a baseline structural analysis for each of the eight original sites and two additional sites, providing a context for field work and the detailed analysis and assessment to follow, helping to identify:

- The nature of the settlement edge and relationship to existing built form;
- Settlement morphology (including form and setting);
- Settlement visual envelope and intervisibility;
- Setting of the landmark features;
- The location/extent of major constraints to future development.

- 2.4 Additionally, maps illustrating the general landscape sensitivity, visual sensitivity and landscape value across the borough were also prepared, taking into account the factors which determine sensitivity and value set out in Natural England's Topic Paper 6.

Ecology/biodiversity

- 2.5 Existing ecological and nature conservation data relevant to each site and its surroundings was collated from various sources including:
- the 'Multi Agency Geographic Information for the Countryside' (MAGIC) online database (<http://magic.defra.gov.uk>);
 - Sussex Biodiversity Record Centre (SBRC); and
 - Local specialist recording groups (where records not already held by SBRC).

2.6 Protected and notable species records will be sought for an area of approximately 2km around each site and the check for designated sites will be extended to an area of up to 10km from site boundaries for internationally designated sites, 5km for nationally designated sites and 2km for non-statutory designated sites.

**Stage 2: Field Assessment
Landscape and visual**

2.7 Field survey work was undertaken during December 2016 to confirm and refine the baseline desk study, recording characteristics that cannot be recorded via the desk study alone, and informing the analysis and assessment set out in Stage 3. Findings were recorded onto survey sheets, OS mapping and annotated copies of the structural analysis overlays.

Ecology/biodiversity

2.8 Each site was subject to an Extended Phase 1 Habitat Survey during February 2017, carried out in accordance with the Joint Nature Conservation Committee's 2010 methodology (JNCC, 2010). This involved the identification and mapping of the main habitat types and any areas or features of ecological interest within and adjacent to each site. Target notes were compiled to record habitat features and a list of vascular plant species noted, together with a qualitative assessment of relative abundance, where appropriate. Any incidental observations of the presence, or potential presence, of protected and invasive species were recorded.

**Stage 3: Analysis and Assessment
Landscape, visual and ecology**

2.9 Drawing together the desk studies and field assessment, and taking into account the guidance set out in Natural England's Topic Paper 6 (see Appendix C), each site was assessed for the following factors, as set out below:

- Existing landscape features, landscape character, settlement pattern and views, presented on plans derived from the baseline structural analysis and supported by photographs as appropriate.
- Visual sensitivity to housing development, is described and demonstrated through annotated panoramic photographs and plans.
- Overall landscape, visual and ecology sensitivity was then assessed, for each site taking into account the following elements in tabulated form:

Inherent landscape quality (intactness and condition)	Ecological sensitivity	Inconsistency with existing settlement form/pattern	Contribution to separation between settlements	Contribution to the setting of surrounding landscape/settlement	Visual sensitivity	Potential for mitigation	Overall sensitivity judgement
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- Overall landscape, visual and ecology value was then assessed, for each site taking into account the following elements in tabulated form:

Landscape designations	Ecological and other designations (eg heritage, flood zone etc)	Local distinctiveness	Any historic/cultural/literary associations	Contribution to setting of 'outstanding assets'	Recreation and public access/locally valued spaces	Perceptual aspects (eg. scenic quality, tranquility, and remoteness)	Overall value judgement
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Ecology appraisals

2.10 Ecological appraisal reports were prepared to inform the ecology assessment and potential green infrastructure strategies and mitigation. These are appended to the main report and give consideration to the following:

- Relevant Local Plan policies
- Statutory and non-statutory designations applicable to each site and adjacent areas
- Scientific evaluation criteria (e.g. Ratcliffe, 1977)
- Guidelines for Ecological Impact Assessment in the United Kingdom (IEEM 2006)
- Ancient or semi-natural habitats and protected species
- Habitats and Species of Principal Importance (and Biodiversity Action Plan Habitats and Species)
- Hedgerow Regulations (where relevant, not a full assessment under the regulations)

2.11 Each ecological appraisal includes the following:

- Summary of the desk study, including confirmation of conservation status of the site. Full findings to be included as appendices.
- Summary of the Extended Phase 1 Habitat Survey including map, habitat descriptions and detailed target notes in appendices.
- Protected Species Assessment discussing the likelihood as to whether the site will or will not support protected species.
- Identification of any invasive species as listed under Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) encountered during the field survey.
- An evaluation of the relative nature conservation value of the site, and the various habitats found within the site, consistent with planning policy and guidance.
- Advice on the adequacy and/or limitations of the survey together with recommendations for further surveys required in support of a planning application.
- Identification of potential ecological constraints to development and outline measures for the mitigation and avoidance of potentially adverse effects on habitats/species of nature conservation interest.
- Identification of potential ecological opportunities for development proposals to deliver enhancement in keeping with Section 40 of the 2006 Natural Environment and Rural Communities (NERC) Act for inclusion with site and strategic level green infrastructure.

Stage 4: Green infrastructure/mitigation

2.12 Taking into account the findings from the analysis and assessment, recommendations for mitigation measures and key green infrastructure strategy opportunities have been set out in the form of an annotated diagram for each appropriate site.

Stage 5: Suitability for development

2.13 Finally, the landscape, visual and ecological suitability for development of each site was determined by combining the sensitivity and value ratings derived from the tabulated assessments set out in Stage 3, using the following matrix:

		Sensitivity				
		Major	Substantial	Moderate	Slight	Negligible
Value	Major	Negligible	Negligible	Negligible / low	Low	Low / medium
	Substantial	Negligible	Negligible / low	Low	Low / Medium	Medium
	Moderate	Negligible / Low	Low	Medium	Medium / high	High / medium
	Slight	Low	Low / medium	Medium /high	High	High / Very high
	Negligible	Low / medium	Medium	High / medium	High / Very high/	Very high

3. POLICY CONTEXT

3.1 Planning and relevant policy within the South Downs National Park which occupies northern parts of Worthing Borough, and borders a number of the sites to the north, is the responsibility of the National Park Authority. The remainder of the borough is covered by the Worthing Local Development Framework (LDF). The Core Strategy, which is a key part of the LDF, was adopted in 2011. There are no specific landscape designations which cover the sites, but the LDF Core Strategy highlights the need to ensure that the borough's natural environment including its green assets and coastal topography are protected, maintained and enhanced.

4. LANDSCAPE AND ECOLOGY CONTEXT

Illustrated by Figures 1 to 14 included within the original 2015 study

4.1 Worthing is underlain by chalk bedrock geology, which as the white chalk subgroup rises to form the South Downs to the north. The majority of Worthing sits on superficial deposits of sand and gravel (see Figure 2 of the original 2015 study report.).

4.2 The quality of the agricultural land across the borough is identified by Natural England's Agricultural Land Classification (see Figure 4 of the original 2015 study report.). The majority of the land surrounding Worthing is grade 3 or 2. However, there are also pockets of grade 1 agricultural land, which is considered to be excellent quality. Grades 1 to 3 are defined by the Agricultural Land Classification as the 'best and most versatile land' which will require statutory consultation with Defra if development is proposed on this land.

Landscape Character

4.3 Worthing Borough lies across the West Sussex coastal plain and the undulating dip slope hills of the South Downs. The contrasting topography of the northern and southern parts of the borough (see Figure 3 of the original 2015 study report.) give rise to marked differences in character.

4.4 The majority of Worthing Borough occupies the coastal plain, with the only breaks in an almost continuous band of urban development along the coast at the far eastern and western ends of Worthing. Inland, the settlement pattern comprises extensive settlement and twentieth century suburbs which extend to the foot of the South Downs. The north-west corner of the Borough contains wooded hills, the north-east corner of the Borough rises to relatively intact, mostly open, downland.

4.5 Worthing Borough is covered by two of Natural England's broad scale regional character areas, the South Coast Plain (126) and the South Downs (125) (see Figure 5 of the original 2015 study report.). The West Sussex landscape character assessment sub-divides these regional areas into a number of county Landscape Character Areas which cover the borough (see Figure 6), including the South Coast Shoreline (SC1), the Worthing and Adur Fringes (SC13) to the east of the Borough, and the Littlehampton & Worthing Fringes (SC11) to the west. Further north, the Angmering Upper Coastal Plain (SC12) gives way to the Angmering Park (SD4) and Central Downs (SD4). The detailed sheets for each character area are included in Appendix B of the original 2015 study report.

4.6 As part of the 2007 Worthing Gap and Landscape Capacity Study, HDA further refined the character areas surrounding Worthing by identifying local landscape character areas. These are shown on Figure 7 and their key characteristics are listed in Appendix C of the original 2015 study report.

Ecology

- 4.7 Worthing Borough contains a number of areas with statutory and non-statutory nature conservation designations (see Figure 8 of the original 2015 study report.). Most notable is Cissbury Ring to the north-east of the Borough, which is designated as a Site of Special Scientific Interest (SSSI) mainly because of its unimproved chalk grassland habitat. The northern half of the Borough is peppered with Sites of Nature Conservation Importance (SNCI), including Titnore and Goring Woods and Highdown Hill to the west. Protected species including Great Crested Newts, Water Voles, Hazel Dormice, bats and reptiles have been recorded across the borough (see Figure 9 of the original 2015 study report).

Landscape, Heritage and Flood Zone

See Figures 28 and 29 contained within this document

- 4.8 Figures 28 and 29 illustrate landscape, heritage and flood zone designations and features within the vicinity of sites 9 and 10. Site 9 is adjacent to the South Downs National Park and therefore its contribution to the setting of the National Park should be considered. The borough has a good network of public rights of way, connecting areas to the south with the downs to the north, although neither site 9 or site 10 have public access.
- 4.9 Areas liable to flooding are a feature of the low lying coastal plain. Figures 28 and 29 include the Environment Agency's Flood Zones 2 and 3. Flood Zone 2 is land assessed as having a 1 in 100 and 1 in 1,000 annual probability of river flooding (1% - 0.1%), or between a 1 in 200 and 1 in 1,000 annual probability of flooding from the sea (0.5% - 0.1%) in any year. Flood Zone 3 is land assessed as having a 1 in 100 or greater annual probability of river flooding (>1%), or a 1 in 200 or greater annual probability of flooding from the sea (>0.5%) in any year. There are significant areas of Flood Zone adjacent to Site 10.

Landscape Structure

(See Figure 14 of the original 2015 study report)

- 4.10 Worthing is located on the south coast between Ferring to the west and Sompting to the east. The southern part of Worthing is located on the coastal plateau, with the suburb of East Worthing forming the eastern extent of the Borough, and Goring-by-Sea the western edge. The northern part of Worthing gently rises on the upper coastal plain, with Broadwater to the east and Durrington to the west. Further north, the suburbs of High Salvington and Findon Valley extend Worthing into the foothills of the South Downs.
- 4.11 The north-eastern part of the Borough contains relatively intact, mostly open, downland of the South Downs National Park. Fingers of ridgelines fan out from Cissbury Ring and fall towards the north-eastern edge of the Built Up Area.
- 4.12 The eastern edge of Worthing descends from the foot of the Downs southwards to the coast. The town is bounded along most of its eastern edge by large-scale, industrial use buildings, beyond which are small scale pasture fields with vegetated streams and ditches forming effective separation between the eastern edge of Worthing and the western edge of Sompting. Along Upper Brighton Road, within the gap between the two settlements, is a small linear hamlet which remains separate from Sompting, and to a lesser extent, Worthing.

- 4.13 South of the railway line which runs between Brighton and Southampton, is an extensive area of floodplain including a lake and open space used for recreation, a restored landfill site and a strip of undeveloped coastline, contained by Lancing to the east and Worthing to the west.

- 4.14 Along the coastline to the west of Worthing, Goring-by-Sea is separated from Ferring by an area of agricultural fields with robust vegetated boundaries to the north and east, which maintains undeveloped coastline between the two settlements. Although coalescence has occurred between Goring-by-Sea and Ferring along Goring Way, separation between the two is re-established to the north of the railway by fields containing Ferring Rife.

- 4.15 As Worthing continues northwards onto the upper coastal plain and the downs transition, complex topography of wooded hills, including Highdown Hill, border the Borough to the north-west.

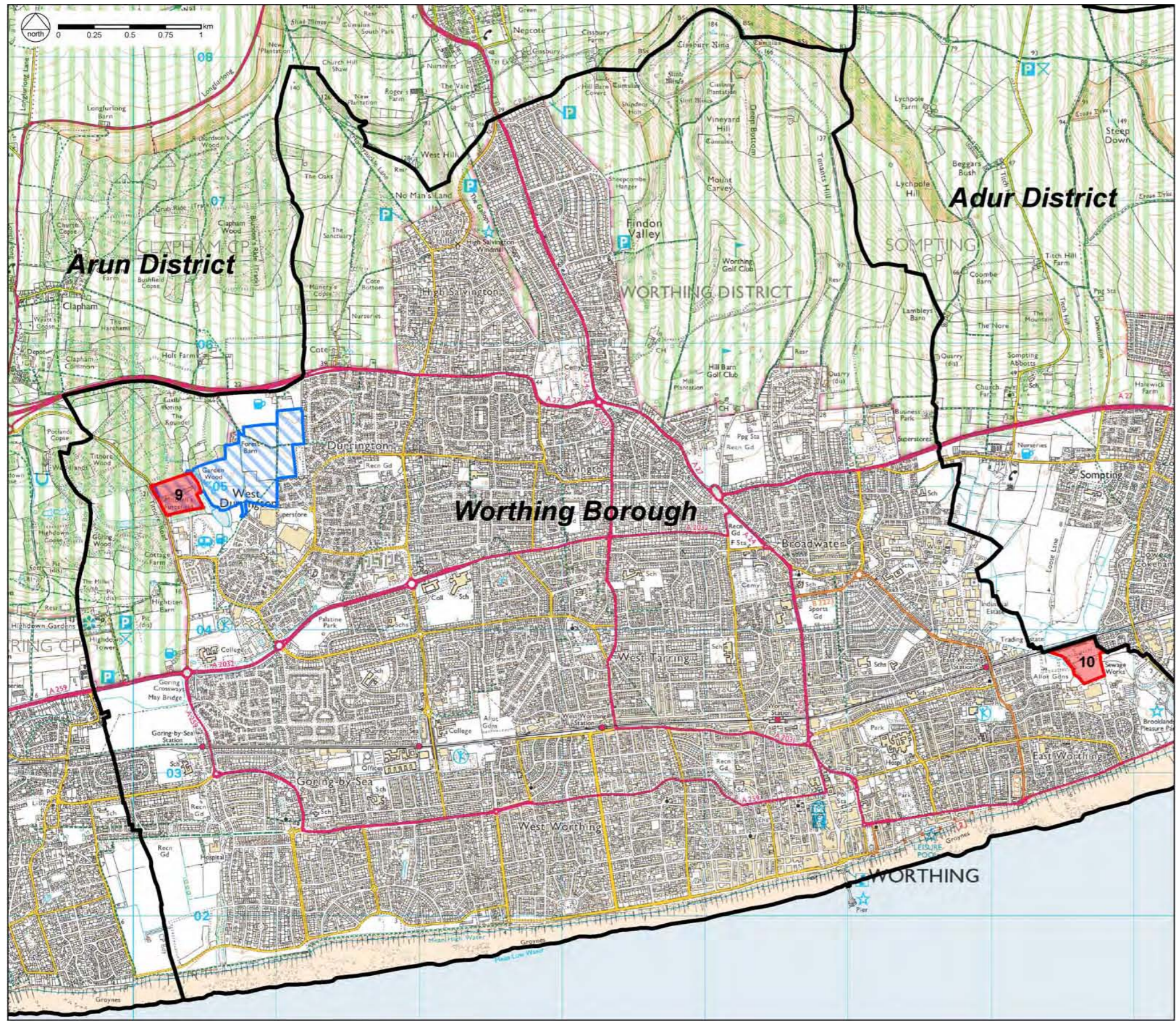


Figure 27
Site Locations

KEY

-  Borough and District boundaries
-  South Downs National Park
-  West Durrington Strategic Allocation
- Sites:**
-  9 Land East of Titnore Road
-  10 Land at Dale Road

Based on mapping data licensed from Ordnance Survey, Crown copyright.

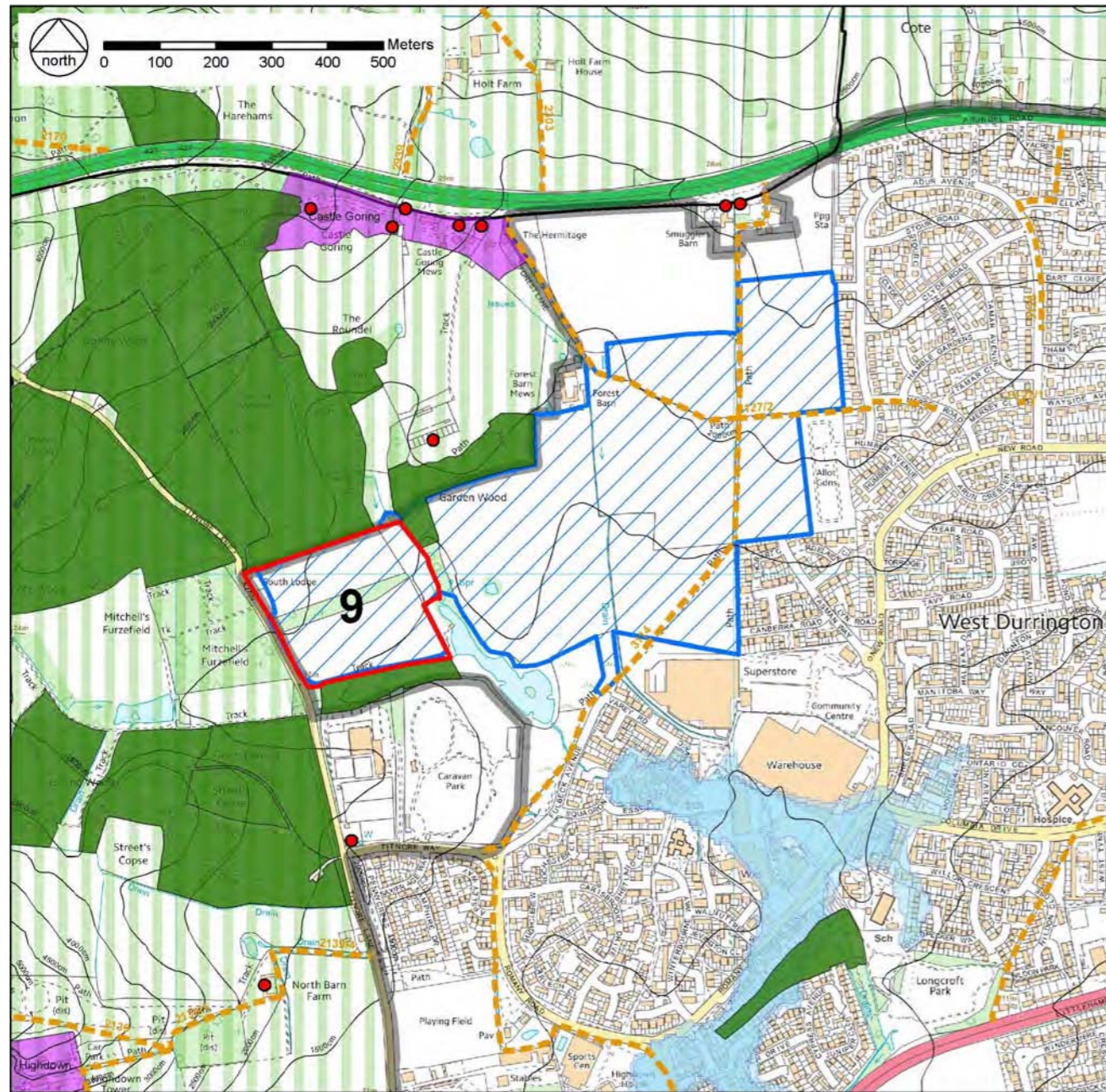


Figure 28
Landscape, Heritage and Flood Zone: Site 9

Based on mapping data licensed from Ordnance Survey, Crown copyright.

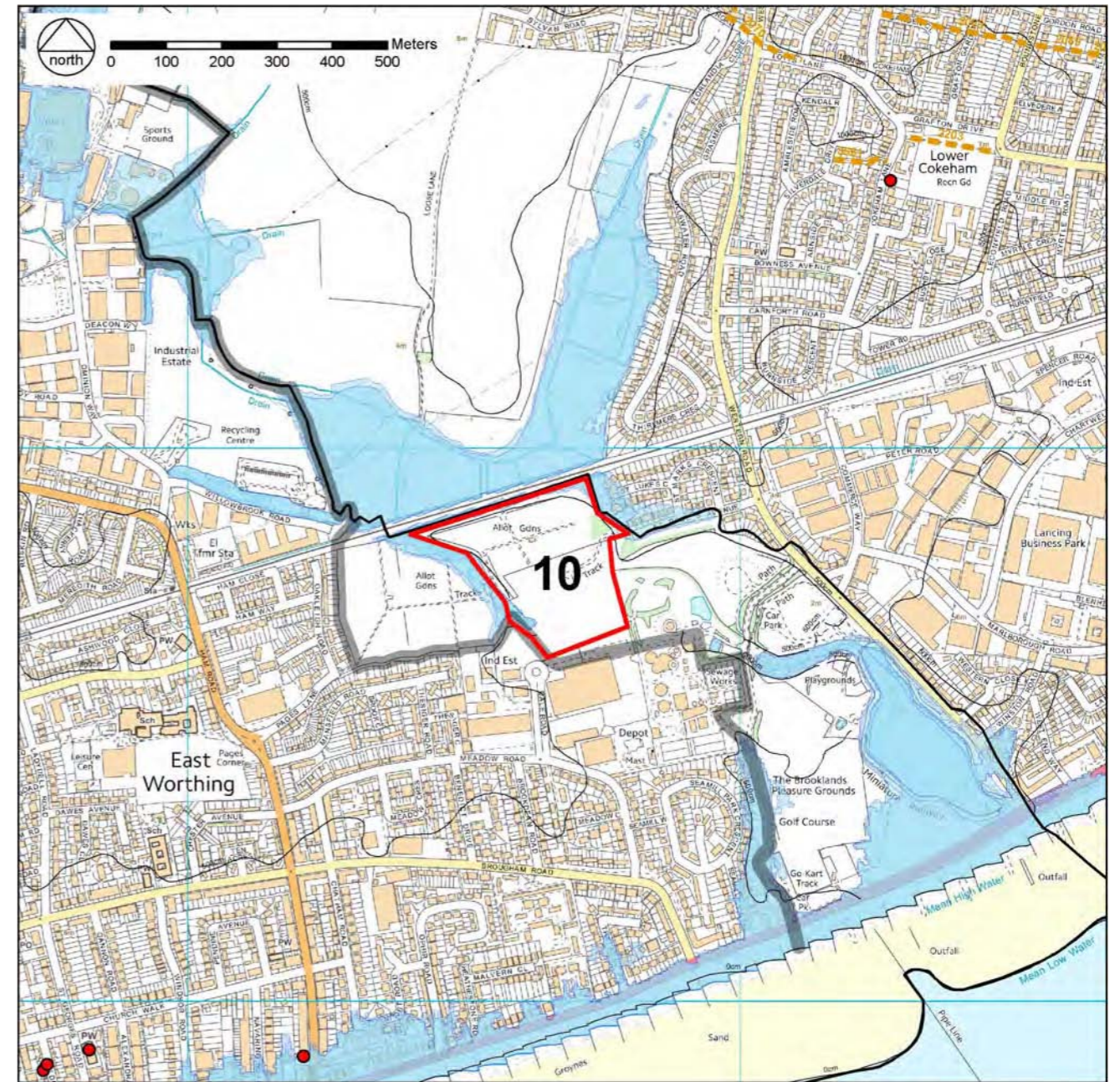


Figure 29
Landscape, Heritage and Flood Zone: Sites 10

Based on mapping data licensed from Ordnance Survey, Crown copyright.

KEY

- | | |
|----------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------|
|  Borough boundary |  Listed buildings |
|  Worthing Built Up Area |  Ancient woodland |
|  South Downs National Park |  Environment Agency Flood Zones 2 and 3 |
|  Public Rights of Way |  5m interval AOD contours |
|  Conservation Areas (as labelled) |  West Durrington Strategic Allocation |

SITE 9: LAND EAST OF TITNORE LANE

Landscape Structure

- 5.1 The site is underlain by clay, silt, sand and gravel, and falls gently towards a fishing lake which is located to the south-east of the site. The site borders Titnore Lane to the west, and is located to the west of the West Durrington housing development which is currently under construction. To the south of the site are the West Worthing Tennis and Squash Club, and the Titnore Way Caravan Club.
- 5.2 The site is surrounded by mature trees up to around 25m high, including ancient woodland to the north and south. Internally there is a wide tree belt of mature deciduous and coniferous trees which divides the two main fields, and a less continuous tree line which separates the main two fields from a small wetter field within the north-eastern part of the site (see photographs 21 and 22). Trees and understorey shrubs along Titnore Lane (A2700) bound the site along its western edge (see photograph 23), and provide a thick continuous screen with the exception of gaps for field gates.
- 5.3 A stream which flows into the fishing lake, runs along the eastern site boundary, and a track to the lake runs along the southern boundary of the site. Internal boundaries are edged with post and wire fencing. South Lodge and its garden (photograph 21) are included within the north-west corner of the site.

Landscape Character

- 5.4 The Site is located in the 'Angmering Upper Coastal Plain' county character area (area SC12), and the 'Durrington Upper Coastal Plain' local landscape character area, which, with semi-open fields and network of hedgerows, forms a transition between the open coastal plain to the south and the more intimate wooded downs to the north. With its pastoral fields enclosed by tree cover, the site is characteristic of this transitional area.

Settlement Pattern

- 5.5 Worthing began to reach its current extent to the south-east of the site during the 1980s. The 'Built Up Area' reaches westwards to Titnore Lane, and has recently developed northwards along Fulbeck Avenue. Worthing is continuing to expand at West Durrington to the east of the site.
- 5.6 The site is within the Worthing 'Built Up Area' by virtue of its inclusion within the wider West Durrington Strategic allocation area. However, the area covered by Site 9 was excluded from the developable area that was the subject of planning permission granted for the West Durrington Strategic development. The site is in close proximity to built development at the Tennis and Squash Club to the south, and once housing to the east of the site has been constructed, there will be built development within close proximity to the east of the site.
- 5.7 Despite its inclusion within the 'Built Up Area' and its close proximity to development to the south and east, the site remains slightly detached from the conurbation due to thick tree cover surrounding the site. Woodland and the National Park are a constraint to further westwards expansion of Worthing within the vicinity of the site.

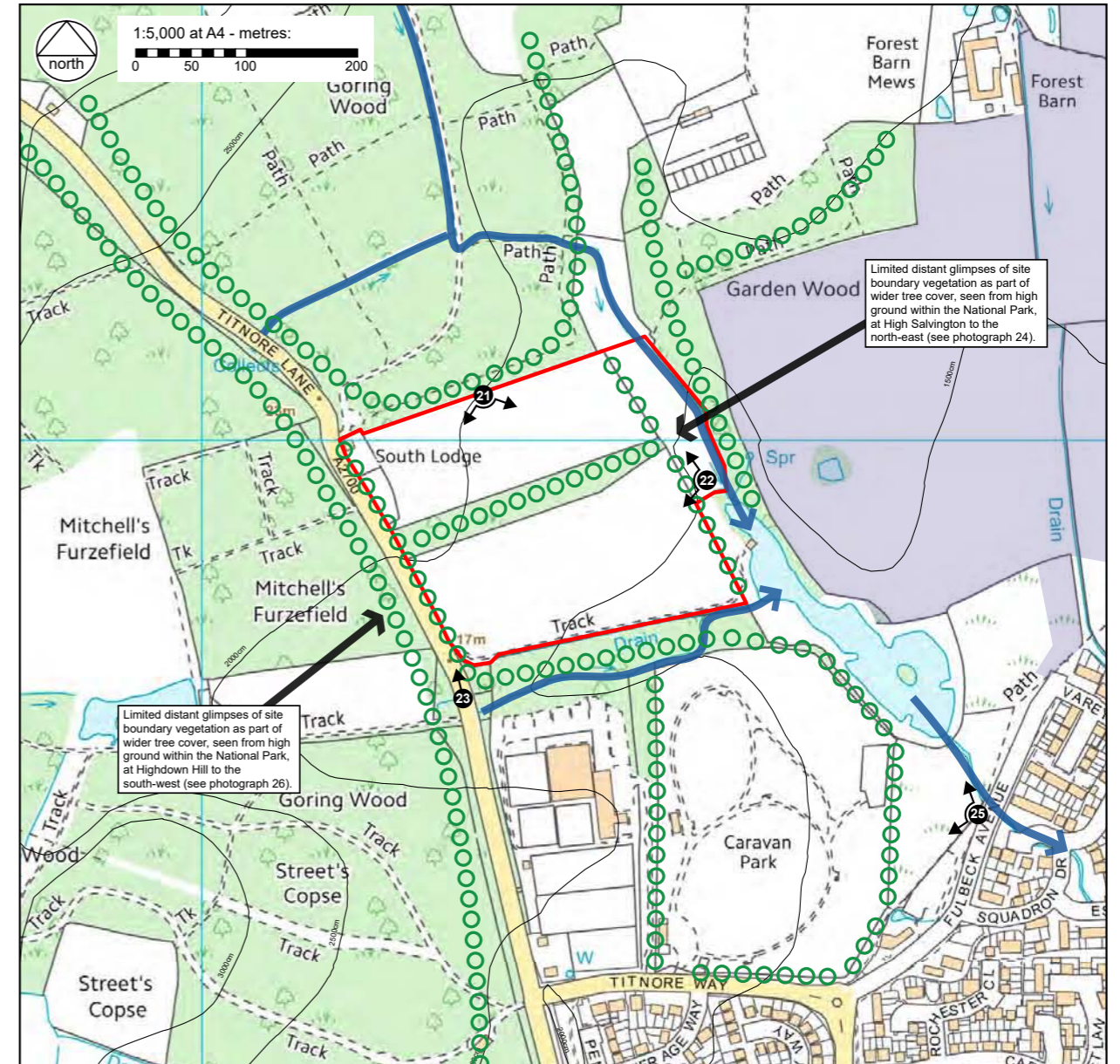


Figure 30: Site 9 Analysis

KEY

	Site boundary
	Contours (5m intervals)
	Containment e.g. boundary vegetation / woodland
	Significant watercourse
	Key views into the site
	Strategic Allocation currently under construction
	Photograph locations

Ecology Summary (see Appendix E for full summary)

- 5.8 The site is dominated by arable land which is of negligible ecological interest in its own right.
- 5.9 The habitats of greatest value associated with the site are those forming part of Titnore & Goring Woods Complex SNCI, including the strip of mixed woodland in the central area of the site, the damp semi-improved grassland, hedgerow, ditches and brook corridor in the north-east of the site, and off-site ancient woodland bordering the northern, north-eastern and southern boundaries. These habitats are considered to be of district value.
- 5.10 The native hedgerows and associated ditches running along the western boundary of the site, although not particularly species-rich, they provide opportunities for a range of species and contribute to the network of linear habitats around the site, and are therefore considered in combination to be of low local value.
- 5.11 Other habitats present including buildings, hardstanding, amenity grassland, access track, ruderal vegetation, scrub, and ornamental shrubs, trees and hedgerow associated with the residential property in the north-west of the site, are considered of less than local/ negligible value in their own right.

Visual Assessment

- 5.12 The site is well enclosed by the mature trees which surround the site, particularly during the summer months when the extent of foliage is at its greatest. However there is close range intervisibility between the site and the edge of the National Park at Titnore Lane, through gaps in the boundary vegetation where field gates are present.
- 5.13 If the site was developed with housing, there are likely to be limited glimpses of new rooftops within the site through gaps in winter vegetation, from the Tennis and Squash Club, and the Caravan Club to the south, from the West Durrington development to the east, and from tracks within the ancient woodland to the north. Further from the site, there is potential for rooftops to be glimpsed through winter vegetation from Fulbeck Avenue to the south-east (see photograph 25).
- 5.14 From high ground within the National Park, including at Highdown Hill and High Salvington, the tree cover surrounding the site can be identified, although views of potential housing development within the site would not be prominent in the wider view of the existing edge of Worthing and adjacent woodland and farmland (see photographs 24 and 26).
- 5.15 The visual sensitivity of the site adjacent to the National Park is judged to be **Moderate**. This rating feeds into the overall sensitivity assessment table on page 14.

Site 9: Land East of Titnore Lane

Ancient woodland along northern boundary

Glimpses of north-eastern portion of the site through winter vegetation

Glimpses of roofs within West Durrington development through winter vegetation

Mixed deciduous and conifer tree belt through the centre of the site



Photograph 21 (Site 9) View from within the northern edge of the site, looking east to south.

Continues right

Glimpses of roofs within leisure centre to the south of the site, through winter vegetation

Track along southern boundary to fishing lake

Western boundary vegetation abutting A2700 road

Mixed deciduous and conifer tree belt through the centre of the site



Photograph 22 (Site 9) View from within the eastern edge of the site, looking west.

Continues right

Mixed deciduous and conifer tree belt through the centre of the site

Western boundary vegetation abutting A2700 road

South Lodge at north-west corner of the site



Continued from left Looking south to west.

Mixed deciduous and conifer tree belt through the centre of the site

North-eastern portion of the site

Ancient woodland along northern boundary

Stream and Garden Wood along eastern boundary



Continued from left Looking west to north.

Site 9: Land East of Titnore Lane

Western boundary vegetation abutting A2700 road



Photograph 23 (Site 9) View from A2700, looking north.

New housing under construction within West Durrington development Site vegetation just about detectable within the wider tree cover Highdown Hill within the South Downs National Park



Photograph 24 (Site 9) View from near Honeysuckle Lane car park, High Salvington, looking south-west.

Fulbeck Avenue



Photograph 25 (Site 9) View from Fulbeck Avenue adjacent to public footpath, looking north-west towards Site 9.

Continues right

High
Salvington

Trees surrounding the site are detectable in the distance
as part of the wider tree cover, but the site itself is
obscured from view by the intervening vegetation

New housing under construction
within West Durrington development



Photograph 26 (Site 9) View from Highdown Hill, looking north-east.

Tree cover surrounding the site is detectable
during the winter, but the site itself is obscured
from view by the intervening vegetation

Recent housing within
West Durrington development



Continued from left

Site 9 Sensitivity

5.16 Each element of the sensitivity assessment for Site 9, and an overall judgement based on a 5 point scale, are set out below.

Inherent landscape quality (intactness and condition)	Ecological sensitivity	Inconsistency with existing settlement form/pattern	Contribution to separation between settlements	Contribution to the setting of surrounding landscape/settlement	Views (visual sensitivity)	Potential for mitigation <small>(inverse score i.e. high potential for mitigation = low sensitivity, therefore low score)</small>	Overall sensitivity judgement <small>01-07 = Negligible 08-14 = Slight 15-21 = Moderate 22-28 = Substantial 29-35 = Major</small>
4	3	3	1	2	2	3	18
The site consists of pastoral fields bisected by a mixed tree belt. A smaller eastern field includes damp grassland associated with the adjacent stream. Ancient woodland forms the north and south boundaries. Fields are ringed by well maintained post and wire fencing. Recorded as Grade 3 Agricultural land.	Ancient woodland borders the site to the north and south, and a watercourse flows along the eastern boundary towards the nearby lake. There is good habitat connectivity generally.	The site is within close proximity to settlement to the south and east, but is separated by belts of woodland with limited opportunities for links between the site and existing nearby development. Extensive woodland to the north and west would however provide a robust settlement edge if the site was to be developed.	The site forms no visual or physical separation between settlements.	The site is part of the wider well-treed setting to the north-west of Worthing.	There are momentary glimpses into the site from the A2700 road through field gates into the site, and limited intervisibility with the West Durrington development, caravan park and sports centre in winter. Boundary and internal trees can be seen from elevated locations within the National Park as part of the wider tree cover.	Ancient woodland would require suitable standoffs to development. Boundary vegetation should be retained along the A2700 to maintain screening. Additional boundary planting along the western edge of the site would further reduce views from the A2700. Site access and sight lines may be difficult given treed western boundary.	MODERATE

Site 9 Value

5.17 Each element of the value assessment for Site 9, and an overall judgement based on a 5 point scale, are set out below.

Landscape designations	Ecological and other designations (eg. heritage, flood zone etc)	Local distinctiveness	Any historic/cultural/literary associations	Contribution to setting of 'outstanding assets'	Recreation and public access/locally valued spaces	Perceptual aspects (eg. scenic quality, tranquillity, and remoteness)	Overall value judgement <small>01-07 = Negligible 08-14 = Slight 15-21 = Moderate 22-28 = Substantial 29-35 = Major</small>
4	3	2	1	4	2	3	19
Adjacent to South Downs National Park to the north and west.	The tree belt within the site is part of the SNCI which surrounds the site. The nearest listed building is approximately 200m to the north-east. Castle Goring conservation area is around 500m to the north-east beyond intervening woodland.	Relatively small fields, enclosed by woodland, consistent with woodland setting.	No specific associations identified.	Although not prominent in the wider landscape, the site forms part of the immediate setting to the National Park.	There is no public access within the site, but an access track to the nearby fishing lake runs along the southern boundary.	Pleasant fields with a degree of remoteness due to surrounding tree cover, although this is tempered by fencing, limited glimpses of existing development to the south and west. Tranquillity is limited due to road noise from the A2700.	MODERATE



Potential Green Infrastructure and Mitigation Landscape

- 5.18 Key considerations should include (see plan left):
1. Identify and maintain suitable stand-off from development to the ancient woodland.
 2. Retain and enhance western boundary vegetation to maintain/enhance visual screening from Titnore Lane along the edge of the National Park.
 3. Retain and protect existing central tree belt, and boundary tree line within the eastern part of the site.
 4. Protect all boundary vegetation elsewhere, including to the east along the stream which flows south to the fishing pond.

Ecology

- 5.19 Any development proposals for the site should seek to avoid direct loss of habitats associated with the Titnore & Goring Woods Complex SNCI within and bordering the site, and maintain the integrity of these habitats through the maintenance of suitable vegetated buffers, habitat linkages, and implementation of measures to minimise potential adverse indirect effects of development including artificial lighting and recreational pressure.

- 5.20 Any development proposals at the site should seek to retain features of local value and where appropriate enhance these features and the wider site through management and complimentary habitat creation. Ways in which this could be achieved include:

- Establishment of new native trees, species-rich scrub, rough and meadow grassland along SNCI/ Ancient Woodland buffers to create 'ecotone' habitats noted for their ability to support a high diversity of species.
- Enhancement of SNCI woodland and grassland habitats through sensitive management, control of non-native/ invasive species and creation of complimentary habitats where appropriate.
- Enhancement of existing hedgerows/ linear scrub habitats along field boundaries through selective clearance of Bramble, infilling using a species-rich mix of native shrubs and trees, and appropriate long-term management.
- Use of native species-rich hedgerow, scrub and tree planting as boundary features to further enhance habitat connectivity across the site and complement existing habitats.
- Creation of a range of habitats with high wildlife interest within areas of public open space currently comprising arable land of negligible interest for wildlife, such as species-rich grassland, native scrub and hedgerows.
- Creation of new wetland habitats such as ponds, swales, ditches and reedbeds in conjunction with SuDS proposals.
- Creation of new opportunities for roosting bats and nesting birds through provision of bird and bat boxes on existing trees and new buildings.
- Use native species typical of the local area in landscape planting where appropriate to do so. Where possible these should be sourced from stock of local provenance.
- Prioritising the use of plants which benefit native wildlife within formal landscaping schemes, including nectar- and pollen-rich and fruit- and nut-producing species.

SITE 10: LAND AT DALE ROAD

Landscape Structure

- 5.21 The site is underlain by clay, silt, sand and gravel solid geology, with sand and gravel drift geology. The site is a former landfill site, it has uneven areas and mounding, but is generally flat, raised up above the surrounding flood zone.
- 5.22 To the south, the site abuts an industrial estate and sewage works within the 'Built Up Area' of Worthing, and to the north-east the site abuts the housing off St Paul's Avenue and St Luke's Close within the built up area of Lancing. The northern edge of the site is bounded by the Southern 'West Coastway' railway line which is raised on a slight embankment above the flood zone. Adjacent to the south-east is the northern end of the recreation area located within the gap between Worthing and Lancing. To the west are the Chesswood allotments. Teville Stream flows south-east along the western site boundary, before going underground within the vicinity of the industrial estate and sewage works.
- 5.23 The site is covered with scrub and young self-set trees, and there is evidence of fly-tipping. There is dense boundary vegetation including conifer trees, particularly to the north and west. However, the southern boundary, marked by a chain link fence adjacent to the industrial area, is more open.

Landscape Character

- 5.24 The site is located within the 'Worthing and Adur Fringes' county landscape character area (area SC13), and the 'Brooklands Lower Coastal Plain' local landscape character area, characterised by relatively flat, low lying landscape used for recreation and waste treatment. The site itself is a former landfill site and despite not being used since the 1960s, the site has been subject to more recent fly-tipping, which combined with overgrown scrub, gives the site a derelict unkempt appearance and character. Boundary and internal vegetation help provide a sense of enclosure in places.

Settlement Pattern

- 5.25 Worthing has developed overtime along the coastal plain, with the settlement spreading eastwards towards Teville Stream. Little Chesswood Farm turned to allotments in the 1920s, and housing began to replace horticulture to the west of the allotments in the 1940s. However, the eastern edge of Worthing has consistently been limited by the Teville Stream. Lancing has spread westwards to Worthing more recently, with railway works replaced by housing after the 1960s and further housing spreading along the southern edge of the railway to the current extent of the conurbation.
- 5.26 A gap of varying width has remained between the 'Built Up Areas' of the two settlements. To the south of the railway the gap is largely occupied by recreational uses, including the Brooklands Pleasure Ground, with its lake, miniature railway, mini golf, playgrounds and associated car parking. To the north of the recreation ground, the site forms the remaining separation between Lancing and the allotments located on the eastern edge of Worthing.
- 5.27 When viewed from the north, including from Loose Lane and public rights of way within the South Downs National Park, the fields to the north of the railway provide the main visual separation between Worthing and Lancing/Sompting. However the site and recreational area to the south provide a gap in development along the lower coastal plain and prevent coalescence along the coastline between the two settlements.

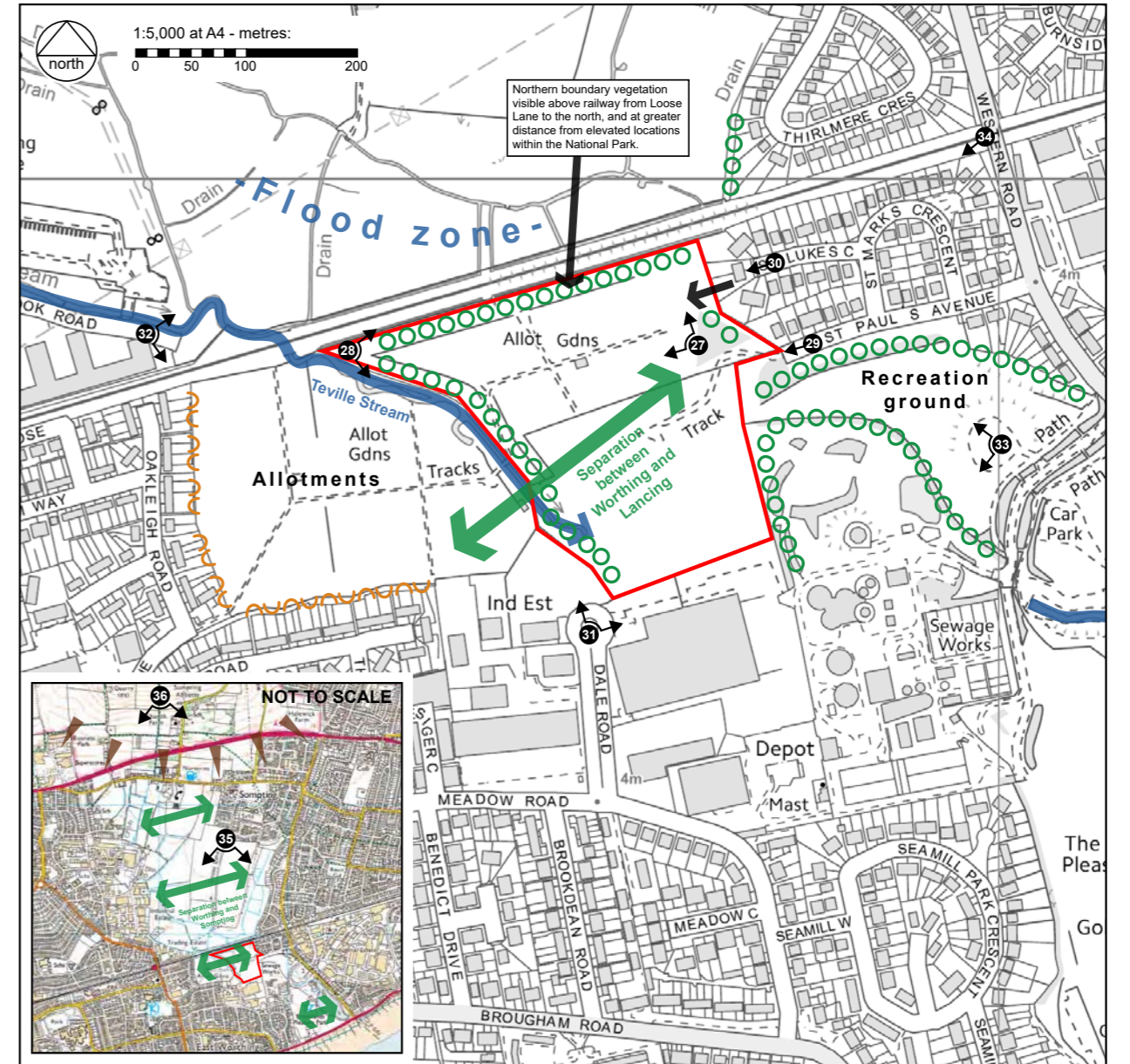


Figure 31: Site 10 Analysis

KEY	
	Site boundary
	Prominent slope
	Containment e.g. boundary vegetation / woodland
	Filtered urban edge
	Separation between settlements
	Significant watercourse
	Key views into the site
	Photograph locations

Ecology Summary (see Appendix E for full summary)

- 5.28 The habitats of greatest value associated with the site are the drainage channels along the northern and western site boundaries and the corridors of semi-natural habitats through which they flow, which in combination are considered to form part of a wider network of habitats of district value. The drainage channels are associated with the Teville Stream, which is a main river and waterbody designated under the Water Framework Directive.
- 5.29 Although the mosaic of scrub and tall ruderal habitats dominating the site is not particularly botanically diverse and is fairly recently established, it forms an extensive area of habitat that is relatively scarce in the wider area and provides opportunities for a range of species, and is therefore considered as a whole to be of up to moderate local value for wildlife.
- 5.30 Early-mature scattered mature coniferous and deciduous trees, native boundary hedgerow and plantation woodland occurring in the northern area of the site and along the south-western site boundary, although not exceptionally diverse and of fairly recent origin, do provide habitat for a range of species, compliment other habitats in the site's surrounds, and in combination provide opportunities for the movement of wildlife through the local area. Although these habitats are likely to be of only site value in their own right they are considered in combination to be of low local value for wildlife.

Visual Assessment

- 5.31 The centre of the site is relatively well contained locally by vegetation along and nearby the site boundaries. However, dwellings located at the western ends of St Paul's Avenue and St Luke's Close (photographs 29 and 30) overlook the north-east corner of the site.
- 5.32 The northern site boundary is visible from the railway and there are views of the site vegetation from the adjacent allotments, the northern end of Dale Road (photograph 31), the eastern end of Willowbrook Road (photograph 32), and from the elevated railway bridge along Western Road (photograph 34). There are more limited glimpses of site vegetation from the recreation ground to the south-east (photograph 33). Although the ground of the site itself is not visible from these locations, if the site was developed with housing, there is potential for the roof tops to be visible.
- 5.33 The northern site boundary, including conifer trees, is visible at varying distance, between Worthing to the west and Lancing to the east, from locations to the north, including from Loose Lane (photograph 35) and from public rights of way within the National Park (photograph 36). The ground of the site itself is not visible from these locations, however if the site was developed with housing, there is potential for dwellings to be visible in a similar manner to the existing development either side of the site.
- 5.34 Overall, the visual sensitivity of the site is judged to be **Substantial**. This rating feeds into the overall assessment table on page 24.

Site 10: Lane at Dale Road

Conifer trees along northern site boundary adjacent to the southern 'West Coastway' railway line

Glimpses from the site of high ground within the National Park to the north, through gaps in site internal and boundary vegetation



Photograph 27 (Site 10) View from within the eastern part of the site, looking west to north.

Continues right

Southern 'West Coastway' railway line

Clearing/track along northern edge of the site between the site and railway

Site boundary vegetation on ground rising up to the site, with internal vegetation beyond



Photograph 28 (Site 10) View from the western edge of the site, looking east to south.

Continues right



Continued from left Looking north.

Northern edge of
adjacent allotments on lower ground
west of the site and brook



Continued from left Looking south.

Site 10: Lane at Dale Road

Conifer trees along the eastern site boundary

Bungalows along St Paul's Avenue



Photograph 29 View from St Paul's Avenue, looking west.

Conifer trees along the eastern site boundary visible above bungalows along St Luke's Close



Photograph 30 View from St Luke's Close, looking west towards the site

Roundabout at the northern end of Dale Road

Conifer trees along the southern edge of the site



Photograph 31 View from the northern end of Dale Road, looking north at the site's southern boundary.

Site boundary vegetation



Photograph 32 View from eastern end of Willowbrook Road, looking east towards the site.

Glimpses during winter of the tops of industrial buildings to the south of the site

Glimpses during winter of the tops of vegetation surrounding the site



Photograph 33 View from recreation ground looking west towards the site.

Site 10: Lane at Dale Road

The tops of site boundary trees visible in the distance above bungalows along St Luke's Close and St Paul's Avenue

Southern 'West Coastway' railway line



Photograph 34 View from elevated railway bridge along Western Road, looking south-west towards the site.

Dwellings off Ullswater Road, to the north-east of the site

Tops of industrial buildings beyond the site to the south, visible above site vegetation

Conifer trees along the northern site boundary adjacent to the railway



Photograph 35 View from Loose Lane at the edge of Sompting, looking south towards the site.



Photograph 36 View from elevated public footpath within the South Downs National Park, looking south towards the site.

Site 10 Sensitivity

5.35 Each element of the sensitivity assessment for Site 10, and an overall judgement based on a 5 point scale, are set out below.

Inherent Landscape quality (intactness and condition)	Ecological sensitivity	Inconsistency with existing settlement form/ pattern	Contribution to separation between settlements	Contribution to the setting of surrounding landscape/settlement	Views (visual sensitivity)	Potential for mitigation <small>(inverse score i.e. high potential for mitigation = low sensitivity, therefore low score)</small>	Overall sensitivity judgement <small>01-07 = Negligible 08-14 = Slight 15-21 = Moderate 22-28 = Substantial 29-35 = Major</small>
2	2	4	5	4	3	4	24
The site is a former landfill site dating from the 1960s, and has been subject to more recent fly-tipping. The site is overgrown with scrub and self-set trees. There are well established trees along the site boundaries, including conifers along the northern boundary.	The site includes scrub habitats internally and Teville Stream along the western edge. Japanese knotweed is present in places.	The site is located beyond the existing edges of Worthing and Lancing, within the gap between the two settlements. The site is raised up slightly above surrounding ground, detached from the existing settlement pattern.	The site forms the only separation between east Worthing and Lancing at one of the narrowest points of the gap between the two settlements.	The site, particularly its well vegetated boundaries, forms a vegetated backdrop in views towards the site, including from along the railway, and helps reduce the prominence of the settlement edge in views from the north.	Local views of the site, including from adjacent properties to the east, and from the railway, consist mainly of views of the boundary vegetation. Boundary vegetation can be identified in more distant views from the north, forming part of the treed separation between east Worthing and Sompting/Lancing.	Majority of the site would need to remain undeveloped to maintain the separation between east Worthing and Sompting/Lancing.	SUBSTANTIAL

Site 10 Value

5.36 Each element of the value assessment for Site 10, and an overall judgement based on a 5 point scale, are set out below.

Landscape designations	Ecological and other designations (eg. heritage, flood zone etc)	Local distinctiveness	Any historic/cultural/ literary associations	Contribution to setting of 'outstanding assets'	Recreation and public access/ locally valued spaces	Perceptual aspects (eg. scenic quality, tranquillity, and remoteness)	Overall value judgement <small>01-07 = Negligible 08-14 = Slight 15-21 = Moderate 22-28 = Substantial 29-35 = Major</small>
1	2	2	1	2	1	2	11
The site is relatively distant from the National Park.	Flood zone wraps around the west, north and north-east of the site.	This is an overgrown site slightly raised above surrounding land, forming a backdrop in occasional views towards the site.	No specific associations identified.	Very limited part of the distant southern setting to the South Downs National Park, forming a break in the built up area visible from the National Park. While the ground of the site itself is not visible from the National Park, housing development on the site would be noticeable.	The site has no formal public access.	Scenic quality, tranquillity and the sense of remoteness substantially limited by internal land use and influence from existing development to the east.	SLIGHT



Potential Green Infrastructure and Mitigation Landscape

- 5.37 Key considerations should include (see plan left):
1. Maintain site as undeveloped, or as open green space with retained/enhanced boundary planting to conserve separation between East Worthing and Lancing.
 2. Maintain and enhance boundary vegetation.
 3. Potential for remediation of landfill to provide open space recreational use as extension to recreation ground to the south, provided boundary and internal tree cover is maintained/enhanced to maintain a sense of separation between East Worthing and Lancing, including when viewed from the National Park.
 4. Potential for new footpath routes across the site, linking the recreation ground to the east with Dale Road to the west.
 5. Potential for new hedge and trees along southern boundary.
 6. Removal of invasive species such as Japanese knotweed and address ground contamination from landfill if appropriate.

Ecology

- 5.38 Any development should seek to maintain the ecological function of water channels within and bordering the site and where possible enhance these features through appropriate habitat retention and enhancement, and sensitive design of SuDS.
- 5.39 Opportunities for wildlife provided by habitats of local or site value lost through development should be replaced through provision of new and enhanced opportunities elsewhere within the site. Ways in which this could be achieved include:
- Enhancement of the Teville Stream and drainage channel corridors through bank reprofiling, creation of side channels and backwaters, management of trees and scrub to reduce overshadowing, provision of complimentary native scrub, tree and hedgerow planting, marginal and aquatic planting, and management of non-native/ invasive species.
 - Retention of trees and scrub on the margins of the site and strengthening of associated wildlife corridors through appropriate management of existing vegetation, complimentary species-rich native tree and scrub planting, and creation of new linear semi-natural habitats such as species-rich hedgerows and treelines around the site boundaries.
 - Selective retention and enhancement of the existing dense scrub habitats through additional species-rich native tree and scrub planting to maintain opportunities for wildlife within the site.
 - Creation of a range of habitats with high wildlife interest within areas of public open space such as species-rich grassland, native scrub, hedgerows, woodland and wetlands.
 - Control of invasive species including Japanese Knotweed which was recorded within the site during the survey.
 - Creation of new opportunities for roosting bats and nesting birds through provision of bird and bat boxes on existing trees and new buildings.
 - Use native species typical of the local area in landscape planting where appropriate to do so. Where possible these should be sourced from stock of local provenance.
 - Prioritising the use of plants which benefit native wildlife within formal landscaping schemes, including nectar- and pollen-rich and fruit- and nut-producing species.

6. SUITABILITY FOR DEVELOPMENT

- 6.1 The overall landscape, visual and ecological suitability for development of each site has been determined by combining the sensitivity and value ratings derived from the tabulated assessments set out in section 5. Sites with a higher sensitivity and/or value have a lower suitability for development than sites with lower sensitivity and/or value.
- 6.2 Using the matrix below, the suitability of each site or zone is set out in the following table and indicated on Figure 32.

		Sensitivity				
		Major	Substantial	Moderate	Slight	Negligible
Value	Major	Negligible	Negligible	Negligible / low	Low	Low / medium
	Substantial	Negligible	Negligible / low	Low	Low / Medium	Medium
	Moderate	Negligible / Low	Low	Medium	Medium / high	High / medium
	Slight	Low	Low / medium	Medium /high	High	High / Very high
	Negligible	Low / medium	Medium	High / medium	High / Very high/	Very high

- 6.3 Site 9 has moderate ratings of sensitivity and value, and is therefore considered to have Medium suitability for housing development. The site is potentially suitable in landscape, visual and ecology terms for limited development proposals, but would need to demonstrate no adverse impacts on the setting to the adjacent National Park, the adjacent ancient woodland, or the wider landscape, and should have regard for the setting and form of existing nearby settlement and the character and sensitivity of the adjacent landscapes.
- 6.4 Site 10, which has substantial sensitivity, has low/medium suitability for development in terms of landscape, visibility and ecology. Built development in this area, such as housing, would have a detrimental effect on the separation between settlements, and the character of the landscape as a whole, as well as affect views south from the South Downs National Park. Formal or informal open space proposals would have a limited effect on views from the National Park, and could be a more appropriate use of the site than built development.

No	Site	Sensitivity	Value	Suitability
9	Land East of Titnore Road	Moderate	Moderate	Medium
10	Land at Dale Road	Substantial	Slight	Low/Medium

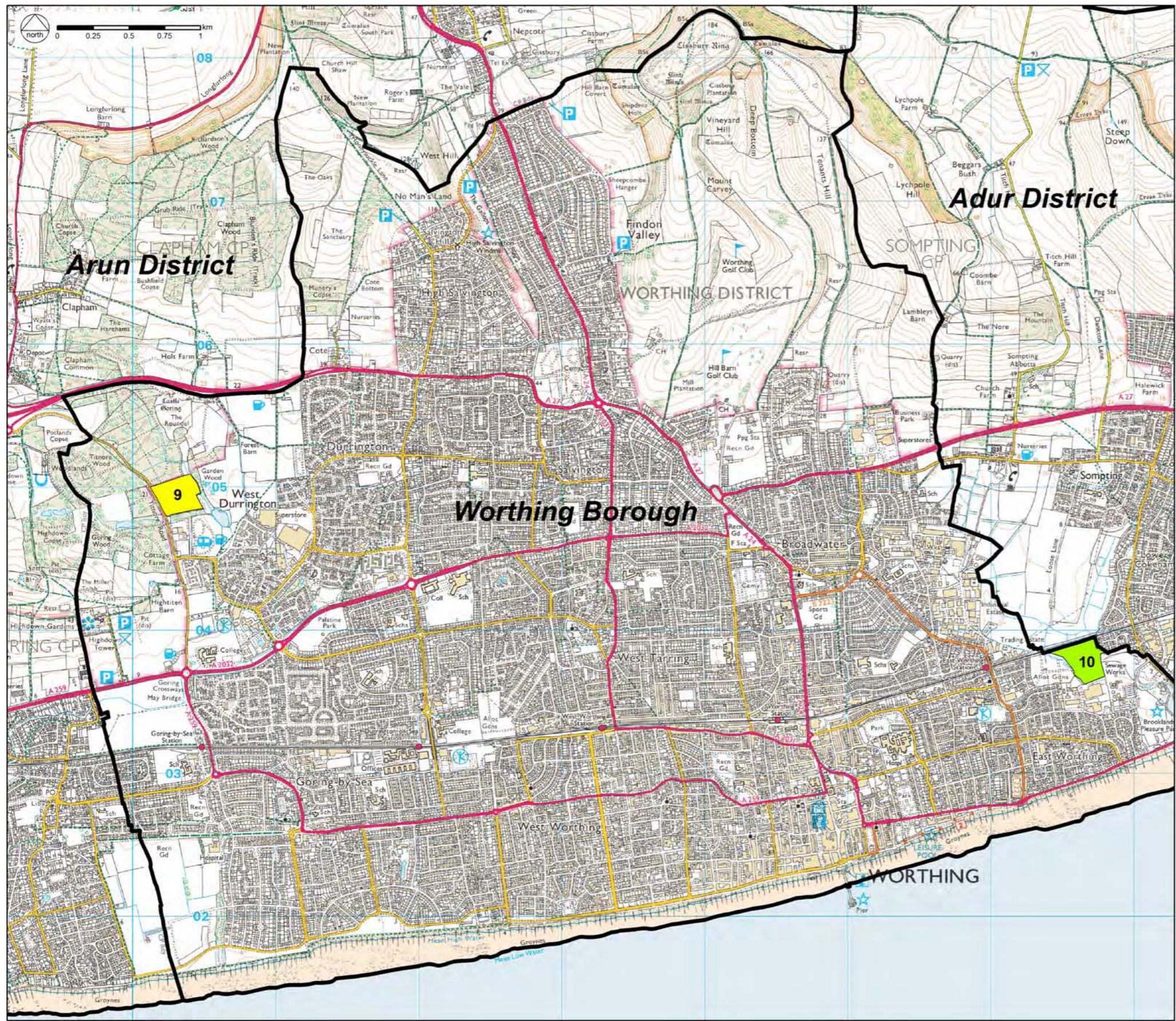


Figure 32
Suitability for Development

KEY

Borough and District boundaries
 Sites:
 9 Land East of Titnore Lane
 10 Land at Dale Road

Landscape, Visual and Ecological Suitability for Housing Development:

Medium
 Low/Medium

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