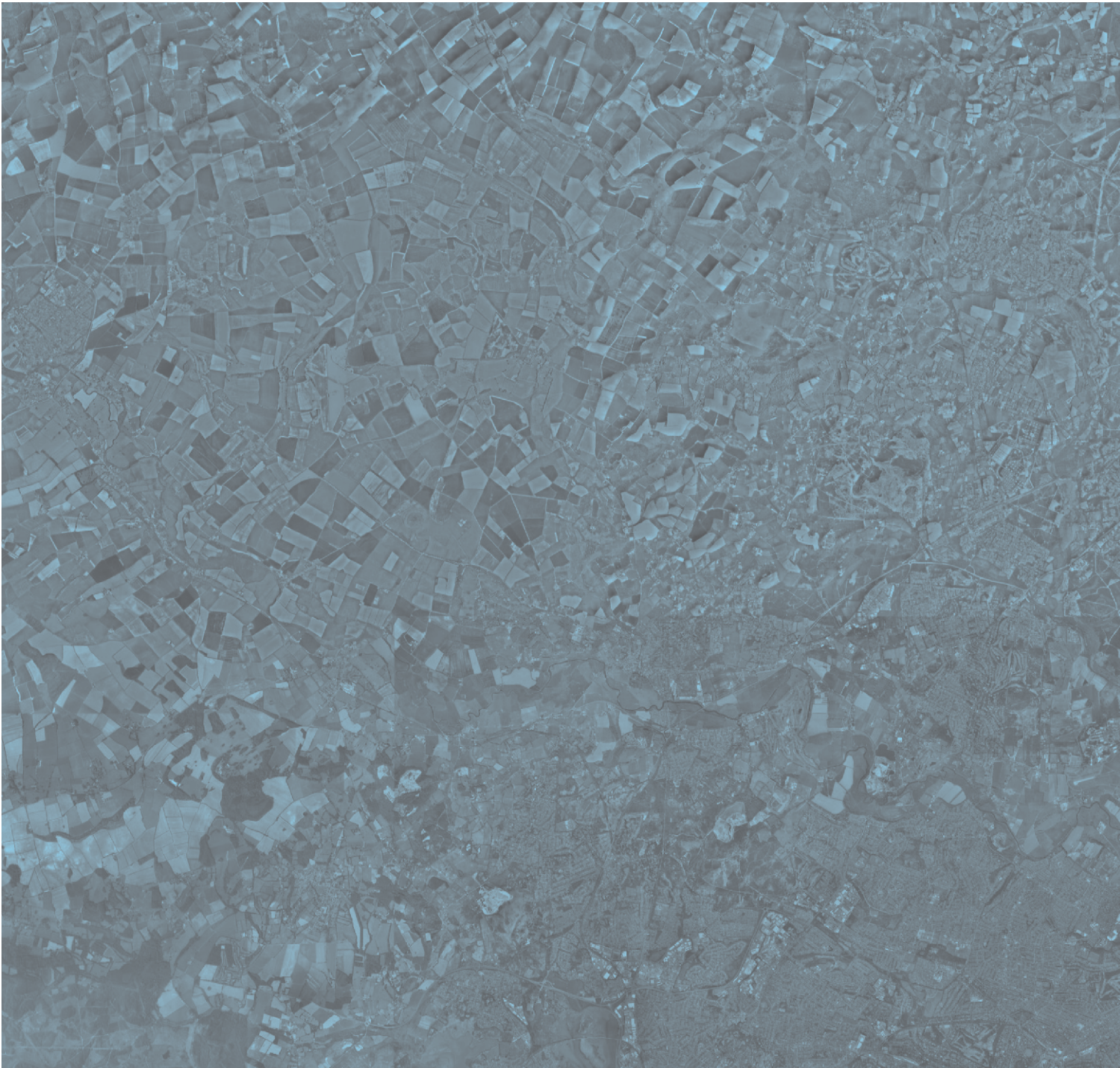
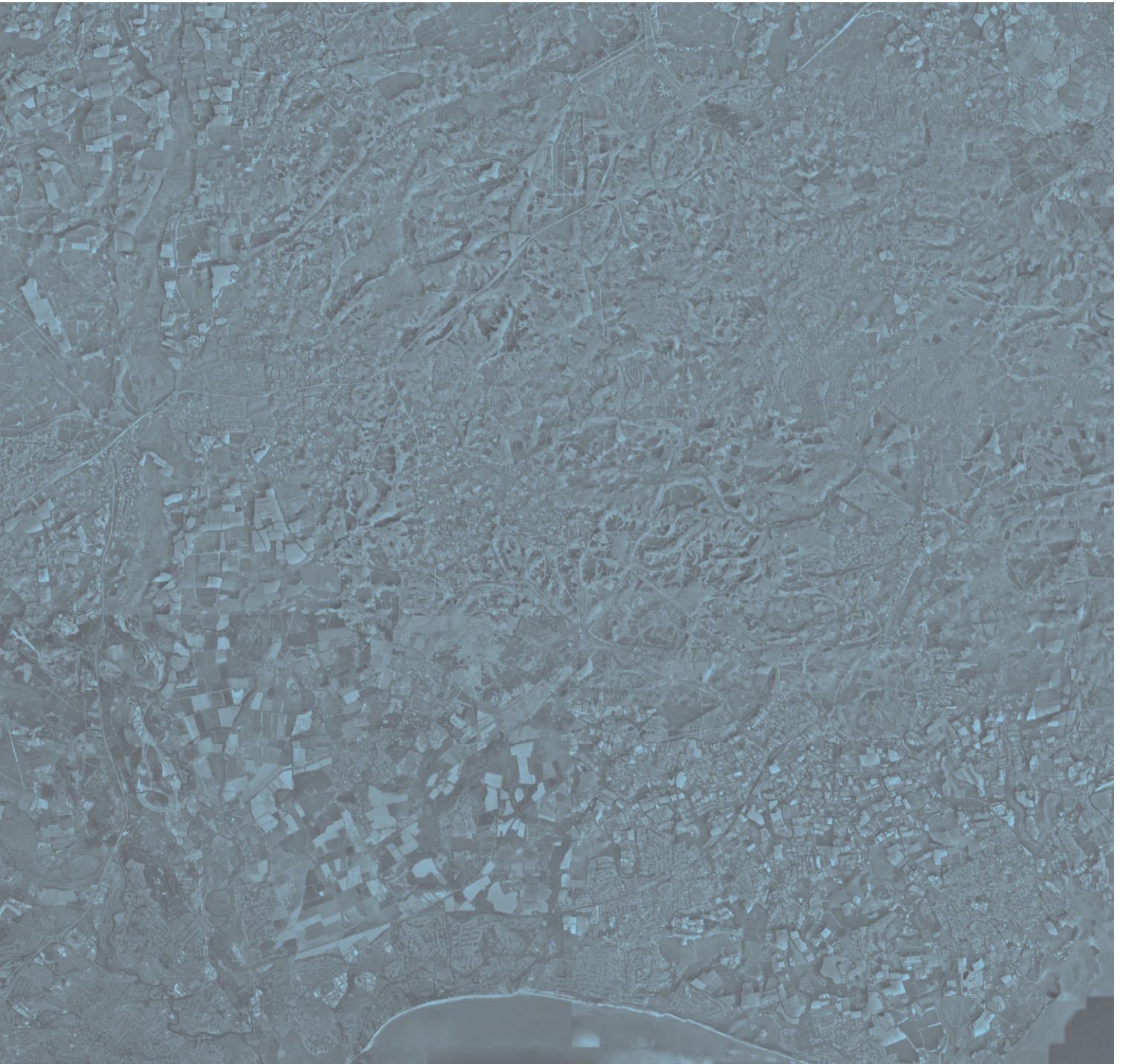


06 CONSTRAINTS AND OPPORTUNITIES ANALYSIS





GREEN BELT REVIEW

Introduction

This section of the report examines a number of key technical constraints and opportunities associated with the areas of search. This will, in turn, help form the basis of the land parcels that we consider should be identified as land for consideration in each of the locations.

The analysis includes:

- Green Belt Review
- Landscape
- Ecology
- Archaeology and Cultural Heritage
- Noise and Vibration
- Flood risk and drainage
- Infrastructure

This section examines the Green Belt issues that relate to each of the areas of search in Verwood. It covers national and regional policy, the Green Belt Review and the key Green Belt issues affecting each of the locations.

Current National and Regional policy

The South East Dorset Green Belt was established by the South East Dorset Structure Plan (1980) which determined its general extent. Detailed boundaries were defined in subsequent local plans.

In approving the policy, the Secretary of State modified the Green Belt policy to set out its purposes as being:

- a. To protect the separate physical identity of individual settlements in the area by maintaining wedges and corridors of open land between them
- b. To maintain an area of open land around the conurbation.

The supporting text suggested that the Green Belt would also provide for the development of suitable forms of countryside recreation easily accessible to a large number of people.

The South West Regional Spatial Strategy, as proposed to be changed (RSS) (now revoked) stated that the Green Belt will continue to maintain the separate identities of settlements, particularly those lying to the north of the Poole-Bournemouth-Christchurch conurbation. However, within this context it stated:

“Necessary provision for new homes and to fulfill the Strategically Significant Cities and Towns (SSCT’s) economic potential cannot be met within the existing urban areas. The most sustainable solution is to provide for urban extensions to the SSCT, including at seven locations

that have been subject to a review of the green belt.....” “To address these exceptional circumstances, the RSS makes changes to the general extent of the green belt, removing the designation from the areas required to accommodate the proposed urban extensions and from land required to meet the development needs of Bournemouth Airport. (para 4.1.53)”

Green Belt Review

The now revoked RSS policy (referred to above) took account of a Green Belt Review conducted as part of the South East Dorset Joint Study Area report SED 04 “Development Options”. This review identified Corfe Mullen, Wimborne Minster and Ferndown as settlements whose separate physical identity is protected by the Green Belt and the key gaps which provide separation from other built up areas.

Verwood

Areas of land to the north, south and west of Verwood are identified as being within the South East Dorset Green Belt and Verwood itself is identified as a settlement whose physical identity is protected by the Green Belt (land to the east of Verwood lies in Hampshire).

The Green Belt Review also identifies “key gaps” which form a strategic element of the South East Dorset Green Belt. A “key gap” is identified to the south of Verwood maintaining the separation between the town and Three Legged Cross to the south. No “key gap” is identified to the north of the town.

Importantly, however, the gap between Verwood and Three Legged Cross is not identified as a “key edge” and, therefore, the gap is more than the “critical” 1 km separation between the two urban areas.

Conclusion

Overall, whilst the town of Verwood is surrounded by Green Belt land and a key gap needs to be maintained between Verwood and Three Legged Cross, the southern area of search is considered to be of a small enough scale so as to not impact on this gap and the separation of the two urban areas. The area of search to the north has no separation issues identified in the Green Belt Review.

We now consider the key factors identified in the Green Belt Review that affect each of the East Dorset new neighbourhoods.

Plans illustrating the areas covered in this section are shown overleaf. These are taken from the South East SED 04 Development Options Report.

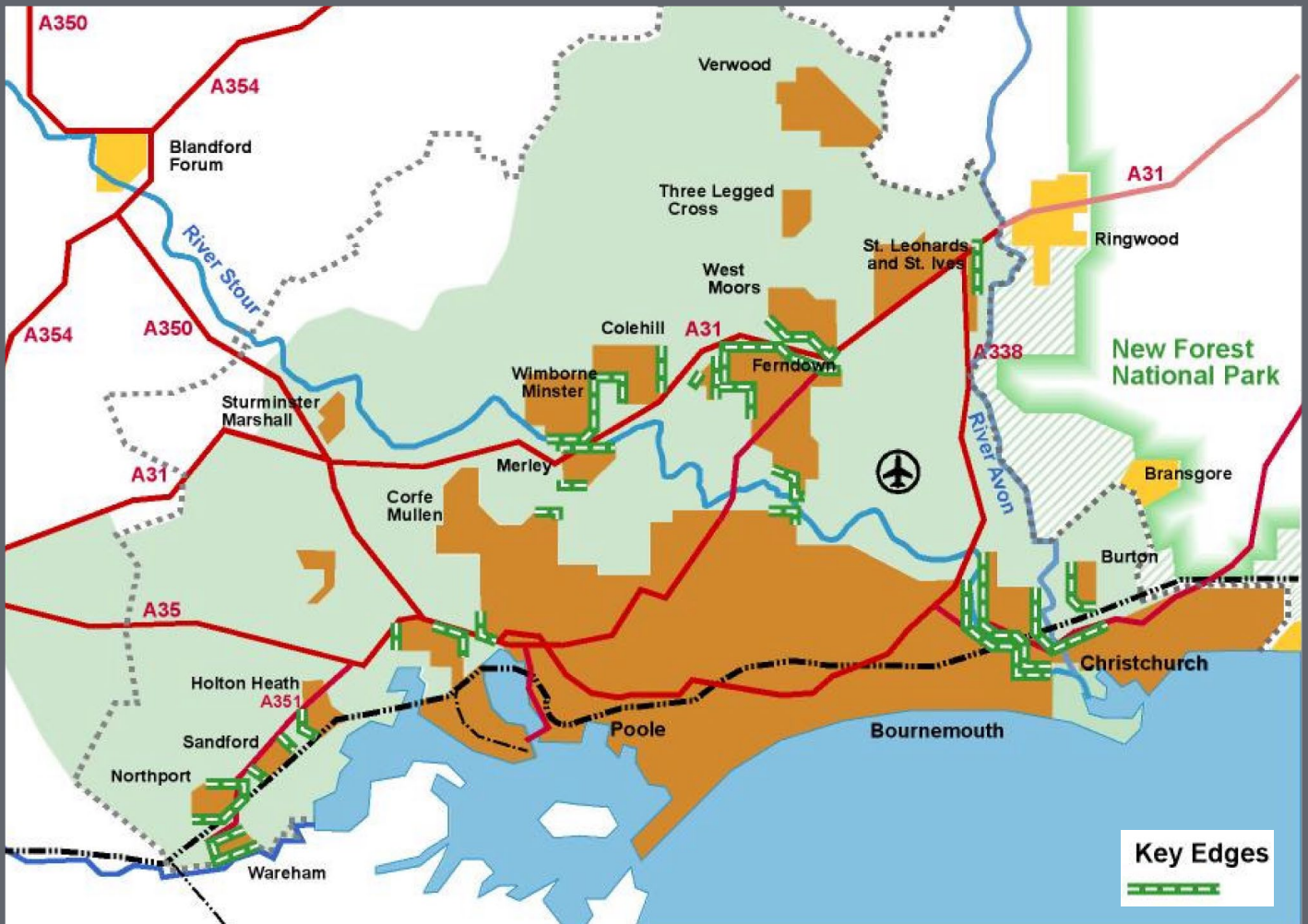




SE Dorset Green Belt



Green Gaps



Key Edges



Historic Setting - (note: Burt's Hill and Brog Street are also conservation areas in free-standing villages)

LANDSCAPE APPRAISAL

Introduction

This section provides a landscape appraisal of each of the areas of search in Verwood and identifies areas with a high capacity to accommodate future development.

Methodology

The process of landscape appraisal and assessing landscape character has broadly followed the 'Guidelines for Landscape and Visual Impact Assessment', published by the Landscape Institute and Institute of Environmental Management & Assessment, Second Edition 2002; and 'Landscape Character Assessment Guidance for England and Scotland' published by the former Countryside Agency 2002.

This has involved both desk and field studies and specifically the appraisal of land in terms of its capacity for development and its sensitivity to change. A ranking system, based on Countryside Agency guidance has been used to provide a comparative assessment of potential sites in landscape terms.

The desk study began with a review of the client briefs for each location followed by a review of the East Dorset Landscape Character Assessment (by East Dorset District Council and approved by Policy and Resources Committee dated 2008).

Unlike other locations in the district e.g. Wimborne Minster, there were no District site based landscape assessments available for Verwood.

The study involved an initial site visit to gain a broad understanding of the existing settlement / landscape character and the potential sites. This was followed by a workshop to review constraints and agree potential developable areas prior to carrying out a detailed landscape assessment of these potential development sites. It should be noted this work was carried out in August/September 2010.

Landscape Designations

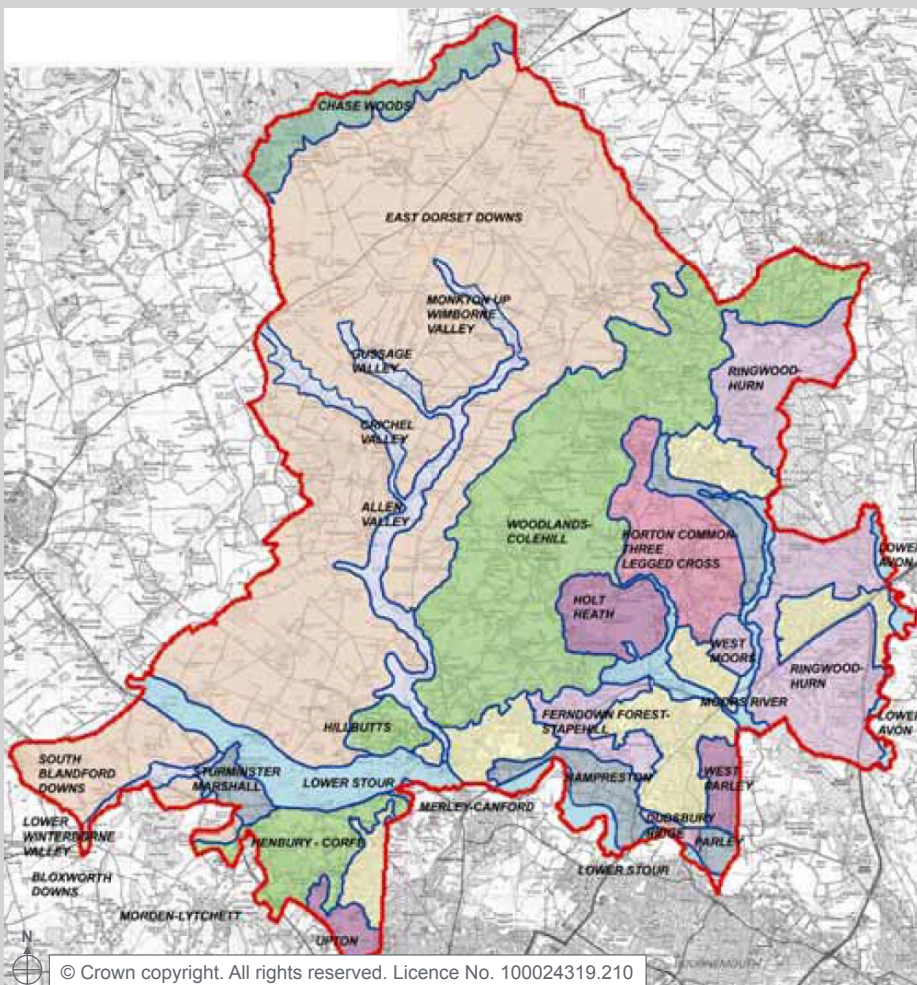
Much of East Dorset is open countryside and predominantly rural in character. Indeed 45% of the western part of the district is designated as part of The

Cranborne Chase and West Wiltshire Downs Area of Outstanding Natural Beauty (AONB) and is nationally protected due to the special qualities of the landscape which include its dramatic landform, attractive views, rich historic built heritage and ecological interest coupled with its remoteness and tranquillity.

In addition to the AONB designation, four areas of distinct landscape quality designated as Areas of Great Landscape Value (AGLV) are also present within East Dorset. Verwood falls outside the AONB but the countryside to the north and west of Verwood is designated as an AGLV. This is an extensive area of about 50km², stretching from Ashford Water and Crendell in the north to Holt Heath in the south and centred upon the neighbourhood of the settlement of Woodlands.

This is a transitional area, having soils mostly derived from the underlying clays, between the chalk of Cranborne Chase and the acidic lowland sands of Ringwood Forest. It has a great variety of landscapes within its small compass, ranging from the enclosure afforded by its hills and extensive woodlands to the exposure of its heathland and the often spectacular long distance views from its hilltops. There is an irregular pattern of roads, with few main routes and narrow winding lanes with dense hedgerows, ancient woodlands with a predominance of oak, including Holt Forest, and many farms and cottages. Holt Heath, and Cranborne Common are among the largest remaining unfragmented areas of Dorset heathland now remaining.

The area also contains the dominating historic folly of Horton Tower, and Horton itself, an important village Conservation Area, as well as many vernacular buildings. Monmouth's Ash and the Remedy Oak are two locally important historic sites. The conifer plantations adjoining Cranborne Common and Holt Heath are excluded, as



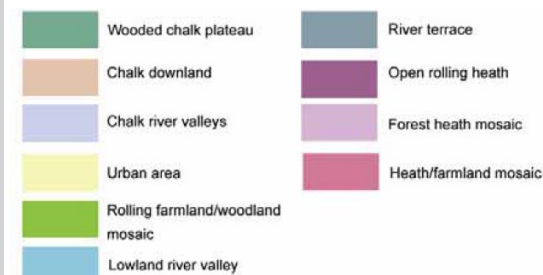
are the despoiled landscapes of Horton Common, and the settlements of Holt, Gaunt's Common and Holt Wood with their intrusive modern housing.

Broad Landscape Character

The Character of England mapping previously prepared by the former Countryside Agency and English Nature categorised the East Dorset District into three broad landscape character areas; the Dorset Downs & Cranborne Chase (134) which largely relates to the AONB area; the Dorset Heaths (135) which covers the countryside in the vicinity of this study; and the New Forest (131) at the eastern edge of the District.

EDDC has also carried out a landscape character assessment which was published in May 2009. This study has identified nine landscape character types and twenty five landscape character areas. **Landscape Character Types** are landscapes with broadly similar patterns of geology, soils, vegetation, landuse, settlement and field patterns. **Landscape Character Areas** are unique areas, geographically discrete examples of a particular landscape type.

The landscape character areas in the vicinity of the study area are shown in the Figure (left).



Source: EDDC Landscape Character Assessment (2008)

EAST DORSET HOUSING OPTIONS MASTERPLAN REPORT

Local Landscape Character

The potential sites considered for new neighbourhoods fall within open land north and south of Verwood. The sites south of Verwood fall close to the settlement boundary with the Dewlands-Rushmoor River Terrace (17) character area. The sites north of Verwood fall close to the settlement boundary with the Ringwood-Hurn Forest/Heath Mosaic (18) character area. These character areas are described below. The numbers in brackets refer to the landscape character area reference.

Dewlands-Rushmoor River Terrace (17)

The Landscape Character Assessment describes the area as follows;

'A transition area of fluvial soil on the Valley Gravels between the Heath/Farmland Mosaic and the River Crane, extending from the western side of Verwood, southwards to Woolsbridge. The area is predominantly pasture and grazing linked with smallholdings. The northern section contains part of the Crane Valley Golf Course. Potterne Recreation Ground occupies a middle section of this character area.

Further south field sizes diminish and periodic urban fringe uses such as sites used for car boot sales can be found. Tree cover is largely confined to field boundaries, although larger woodland blocks can be found to the north adjacent to the urban area. Remnant heathland can be found at Lower Common forming part of the Holt and West Moors Heaths SSSI, SAC and SPA'.

Key Characteristics

- Flat open fields
- Sparse tree cover
- Ecological interest in heathland
- Urban fringe activities

Key Features

- Golf Course (part)
- Woolsbridge Industrial Estate (part)
- Potterne Recreation Ground
- O/h lines (adverse impact)

Ringwood Hurn Forest/Heath Mosaic (18)

The Landscape Character Assessment describes the area as follows;

'The acid soils derived from the underlying Plateau Gravel, Bagshot and Bracklesham Beds extend from Alderholt in the north to Hurn Forest in the south and from Clump Hill and Colehill in the west to the Avon Valley in the east. Topography and human activity have created three distinct landscape character areas on these soils and one of these, the Forest- Heath mosaic, marks the eastern edge of the District. Extensive planting of conifers on much of this land, particularly non-native species, has had a significant impact on the character of these former areas of open heath distinguishing them from the elevated open heaths and the areas of farmed heath to the west.

The heathland areas, although now fragmented, still represent one of the largest groups of heathland in the County. They are less open and exposed than most East Dorset heaths, partly because

of the substantial areas of regenerating birch and pine. The only significant open areas tend to be isolated parcels of acidic grassland, which articulate the heath and conifer woodland. Despite the impact of afforestation and scrub regeneration, much of the remaining heath is of significant international ecological importance and is designated as such.

.... Beyond the A31 and the development of St Leonard's and St Ives lies a further forested tract beginning on Ashley Heath and extending northwards beyond the District boundary as part of Ringwood Forest which reaches back into the District at Boveridge Heath, to the north of Verwood, and Cranborne Common, south of Alderholt.

The large swathes of woodland help to unify the land and although much of the woodland is comparatively recent, as a result of afforestation of open heathland, the area has an empty, wild character.'

Key Characteristics

- Varied landform, with steep slopes especially to the east
- Patchwork of heath, woodland and farmland
- Sandy soils
- Extensive areas of pine forest and birch woodland
- Remnant heathland areas with groups of naturalised pine and birch
- Absence of fields and hedgerows
- Ecological value of heathland
- Urban influences
- Influence of major roads



View northwards from Edmonsham Road

Verwood North

Site Appraisal

The broad landscape character of the landscape to the north and west of Verwood is described under the Ringwood Hurn Forest/Heath Mosaic Character Area. Characteristics of the individual sites are described below:

Area 1: Land north-east of Edmonsham Road, between Trinity First School and Eastworth Farm

Area 2: Land north-west of Eastworth Road

The following is a summary of the main features of the individual sites;

Area 1

Topography

The land is generally flat and low lying, with levels gradually rising from approximately 50m AOD at the site, up to 65m AOD to the north-east towards Burrows Farm and Boveridge Heath.

Existing Vegetation

The woodland of Boveridge Heath, which is part of Ringwood Forest, lies approximately 0.5 km to the north. The northern boundary of the site is also partly enclosed by mature trees. There is a strong hedge which forms the boundary with the school and planting adjacent to the farm on the south western corner of the site.

Historic Landscape

There are no known historical landscape constraints associated with the site.

Local and Strategic Views

There are open and long distance views from Edmonsham Road to the north across the site towards the wooded edge of Boveridge Heath, which provides a treed horizon. Two properties south of Edmonsham Road overlook the site. Views from the footpath alongside Eastworth Farm also have views across the site towards the Trinity First School.

EAST DORSET HOUSING OPTIONS
MASTERPLAN REPORT



View south from Edmonsham Road across site



View along Eastworth Road



View along northern boundary of site

Area 2

Topography

The topography falls gradually across the site in a north-westerly direction from Eastworth Road towards the disused railway line, from approximately 50m AOD to below 45 m AOD.

Existing Vegetation

There a number of mature trees and vegetation which form boundaries and cross the site. There is a wooded SNCI south (and outside) the site. The boundary of the disused railway line is also wooded and treelined. A number of mature trees lie adjacent to the Eastworth Road and hedgerows with mature trees subdivide the site. The site includes a Play Area, which is accessed off Eastworth Road,

and is located within a field bounded by a hedgerow. A significant hedgerow, with mature trees, running in a broadly north to south direction is visible from Edmonsham Road.

Historic Landscape

There are no known historical landscape constraints associated with the site.

Local and Strategic Views

There are local views from Edmonsham Road looking across the site in a south-westerly direction, towards the Site of Nature Conservation Interest (SNCI). There are also some local views from the adjacent residential development on Eastworth Road, although much of the housing is set behind mature boundary vegetation.

Verwood South

Site Appraisal

The broad landscape character of the landscape to the south of Verwood is described under the Dewlands - Rushmoor River Terrace Character Area. Characteristics of the individual sites are described below;

Area 1: Land south of Howe Lane, between Emmanuel School and Summer Fields.

Area 2: Land south-west of Manor Road

The following is a summary of the main features of the individual sites;

Area 1

Topography

The land is essentially level with the adjoining housing on Howe Lane, which lies at approximately 35m AOD. It falls gradually to the south, towards the woodland of Heathy How and the River Crane valley at 25m AOD.

Existing Vegetation

The site is enclosed by mature trees and vegetation. Two significant lines of mature oaks cross the site from east to west between the boundary of Emmanuel School and properties in Howe Lane & Summer Fields. The wooded landscape of Heathy How lies to the south. There are also mature trees on the boundary of the school and Summer Fields.

Historic Landscape

Oak Tree Cottage in Howe Lane is a listed property. There are no known historical landscape constraints associated with the remainder of the site.

Local and Strategic Views

The site is generally well contained by existing housing and vegetation. It is viewed from the break in housing on Howe

Lane and also overlooked from the end properties on Summer Fields.

Area 2

Topography

The land of the site falls gradually from Manor Road at approximately 32m AOD towards the River Crane at 25m AOD.

Existing Vegetation

The site is set within a wooded and treed setting. A number of protected mature hedges run from east to west and subdivide the land into field parcels creating an enclosed landscape towards Manor Road, with the land becoming more open adjacent to the River Crane. The woodland of Heathy How forms a boundary to the site's western edge. Hedge vegetation also forms a boundary with the track at the rear of properties on Manor Road.

Historic Landscape

St Michael's Cottage is a listed property. There are no known historical landscape constraints associated with the remainder of the site.

Local and Strategic Views

The site is viewed from St Michael's Road (which is also a bridleway). Occasional views are also possible southwards from the informal track at the rear of properties on Manor Road.



View from Howe Lane



View of enclosed eastern sector of site from track at the rear of properties on Manor Road



Track at the rear of properties on Manor Road



Open eastern sector of site from St Michael's Road

EAST DORSET HOUSING OPTIONS MASTERPLAN REPORT

Summary and Implications for the Masterplans

The requirement of the study needs to consider the variations in sensitivity of different types and areas of landscape, and their potential capacity to accommodate change for housing development without significant adverse effects on their character or the overall character of the surrounding landscape.

The **landscape capacity** study has, therefore, evaluated the respective sites in terms of both landscape sensitivity and landscape value. This study has developed a ranking system, based on Countryside Agency guidance (now Natural England), in order to provide a comparative assessment of potential sites in landscape terms. The methodology is described below.

Landscape Sensitivity

This may be defined as how robust the existing landscape is in terms of the ability of its components and of the whole to absorb change without loss or change in positive character. A landscape with a character of high sensitivity is one that, once lost, would be difficult to restore, a character that, if valued, must be afforded particular care and consideration in order for it to survive.

In order to make a comparative assessment of the sensitivity of the different sites to development, assumptions have been made regarding the likely development type and form, which is summarised as follows:

'Assumed residential dwellings 2 or 3 storeys in height on average, of varying densities consistent with the surrounding townscape but an overall average of 30-35 net dwellings per hectare. There would be open space provision and a strong landscape framework with tree / woodland planting of appropriate scale, area and design to ensure that the development achieves a good fit in the landscape'.

The landscape sensitivity element of the assessment has taken the following criteria into account. These are derived from Topic Paper 6 of the Countryside Agency's Landscape Character Assessment Guidance:

Natural Factors

- Vegetation Types
- Tree cover type/pattern
- Extent and pattern of semi-natural habitat
- Landform

Cultural Factors

- Land use
- Settlement pattern
- Field boundaries
- Enclosure pattern
- Time depth

Landscape Quality/Condition

- Intactness
- Representation of typical character
- State of repair of individual elements

Aesthetic Factors

- Scale
- Enclosure
- Diversity
- Texture
- Pattern
- Colour
- Form/line
- Balance
- Movement

Visual Sensitivity

- General visibility
- Population with views e.g. numbers and types of residents & numbers and types of visitors
- Mitigation potential i.e. scope for mitigating potential visual impacts

Landscape Value

In addition to sensitivity, landscape value needs to be taken into account. This may be described as the recognised value attached to the landscape or to specific elements in it, either through formal designations, or baseline information combined with professional judgement.

The landscape value element of the assessment has taken the following criteria into account. These are also derived from Topic Paper 6 of the Countryside Agency's Landscape Character Assessment Guidance:

- Landscape designations e.g. national/local.
- Other environmental designations with bearing on landscape value e.g. (nature conservation, heritage, amenity, including flood zone).
- Other criteria indicating value: Scenic beauty, tranquillity, wildness.
- Other criteria indicating value: Special cultural / historic associations.
- Other criteria indicating value: Nature conservation interests.

Landscape Capacity

The landscape capacity assessment uses the outcome of the sensitivity study and combines it with the assessment of more subjective, experiential or perceptual aspects of the landscape and the value attached to it, to indicate whether and to what extent change/development would be acceptable.

Each aspect for the sensitivity and landscape value has been assessed using a 5-point scale as follows:

Sensitivity / Value	
01 - 05	Negligible
06 - 10	Slight
11 - 15	Moderate
16 - 20	Substantial
21 - 25	Major

For the purposes of arriving at an overall rating for sensitivity or value, the scores are aggregated.

The results of the landscape sensitivity and landscape value assessment are then combined to give an overall judgement relating to landscape capacity, which can lead to eight rankings of landscape capacity as follows:

- Negligible
- Negligible / Low
- Low
- Low/Medium
- Medium
- Medium / High
- High
- High / Very High
- Very High

		Landscape Value				
		Major	Substantial	Moderate	Slight	Negligible
Landscape Sensitivity	Major	Negligible Capacity	Negligible Capacity	Negligible / Low Capacity	Low Capacity	Low / Medium Capacity
	Substantial	Negligible Capacity	Negligible / Low Capacity	Low Capacity	Low / Medium Capacity	Medium Capacity
	Moderate	Negligible / Low Capacity	Low Capacity	Medium Capacity	Medium / High Capacity	High / Medium Capacity
	Slight	Low Capacity	Low / Medium Capacity	Medium / High Capacity	High Capacity	High / Very High Capacity
	Negligible	Low / Medium Capacity	Medium Capacity	High / Medium Capacity	High / Very High Capacity	Very High Capacity

Each site will, therefore, be attributed a landscape capacity rating, enabling a comparison to be made and to inform judgements made regarding overall site selection.

Landscape Value																										
Site	Landscape Designation				Other Designation, (nature conservation, heritage, amenity, including flood zone)				Other 'value criteria' (scenic beauty, tranquillity, wildness)				Other 'value criteria' (Special cultural / historic associations)				Other 'value criteria' (Conservation interests)				Average Value					Final Assessment Landscape Value
	Low - High																01 - 05 Negligible 06 - 10 Slight 11 - 15 Moderate 16 - 20 Substantial 21 - 25 Major									
	L			H	L			H	L			H	L			H	L			H	5	10	15	20	25	
1.	L			H	L			H	L			H	L			H	L			H						Moderate
Verwood North - Land north west of Edmonsham Road, between Trinity First School and Eastworth Farm	AGLV				Low value				Scenic value as part of wider landscape				Low value				Value of boundary trees									
2.	L			H	L			H	L			H	L			H	L			H						Moderate
Verwood North - Land north-west of Eastworth Road	AGLV				SNCI To southern boundary				Some scenic value				Low value				Value in site hedgerows									
3	L			H	L			H	L			H	L			H	L			H						Slight
Verwood South - Land south of Howe Lane, between Emmanuel School and Summer Fields	No landscape designation				SSSIs to River floodplain (south of site) Oak Tree Cottage listed building				Limited scenic value				Low value				Some interest in site trees									
4.	L			H	L			H	L			H	L			H	L			H						Slight
Verwood South - Land south west of Manor Road	No landscape designation				St Michaels Cottage listed building				Attractive views				Low value				Some interest in hedgerows/ adjacent habitats									

Summary Landscape Capacity

Verwood North

Site 1: Moderate Landscape sensitivity / Moderate landscape value: Medium landscape capacity

Site 2: Moderate Landscape sensitivity / Moderate landscape value: Medium landscape capacity

Verwood South

Site 3: Slight Landscape sensitivity / Slight landscape value: High landscape capacity

Site 4: Moderate Landscape sensitivity / Slight landscape value: Medium / High capacity

ECOLOGY

Introduction and Method

The approach to ecological constraints and opportunities analysis is primarily high level and is based on site visits; a desk study of ecological designations (both statutory and non-statutory); a review of the Dorset Heathlands Interim Planning Framework; the latest position (August 2010) of the emerging Core Strategy Habitats Regulations Assessment work being undertaken by Land Use Consultants with respect to the Dorset Heaths SPA and New Forest SPA; and a review of other available information concerning the study areas.

On this basis the findings set out in this document should be viewed as preliminary and have aimed to guide development to the most suitable locations with respect to ecology, as well as identify a framework for green infrastructure retention/enhancement and suitable alternative natural green space (SANGs) provision either on-site or off-site (or a combination thereof). This approach will minimise ecological risk in

the future. Further ecological baseline assessments will be required in order to inform more detailed designs. At this stage it seems likely that such work will include Phase I Habitat Surveys, protected species surveys, vegetation, hedgerow and tree surveys. Identification of UK and local Biodiversity Action Plan (BAP) priority habitats etc. will be required. In order to maximise ecological opportunities, consideration will need to be given to the Dorset BAP objectives when devising bespoke ecological mitigation strategies for the new developments in order to demonstrate biodiversity gain. The delivery of SANGs is likely to be a major contributor in demonstrating biodiversity gain.

Verwood North

Statutory Designations

Certain protected sites are afforded multiple designations.

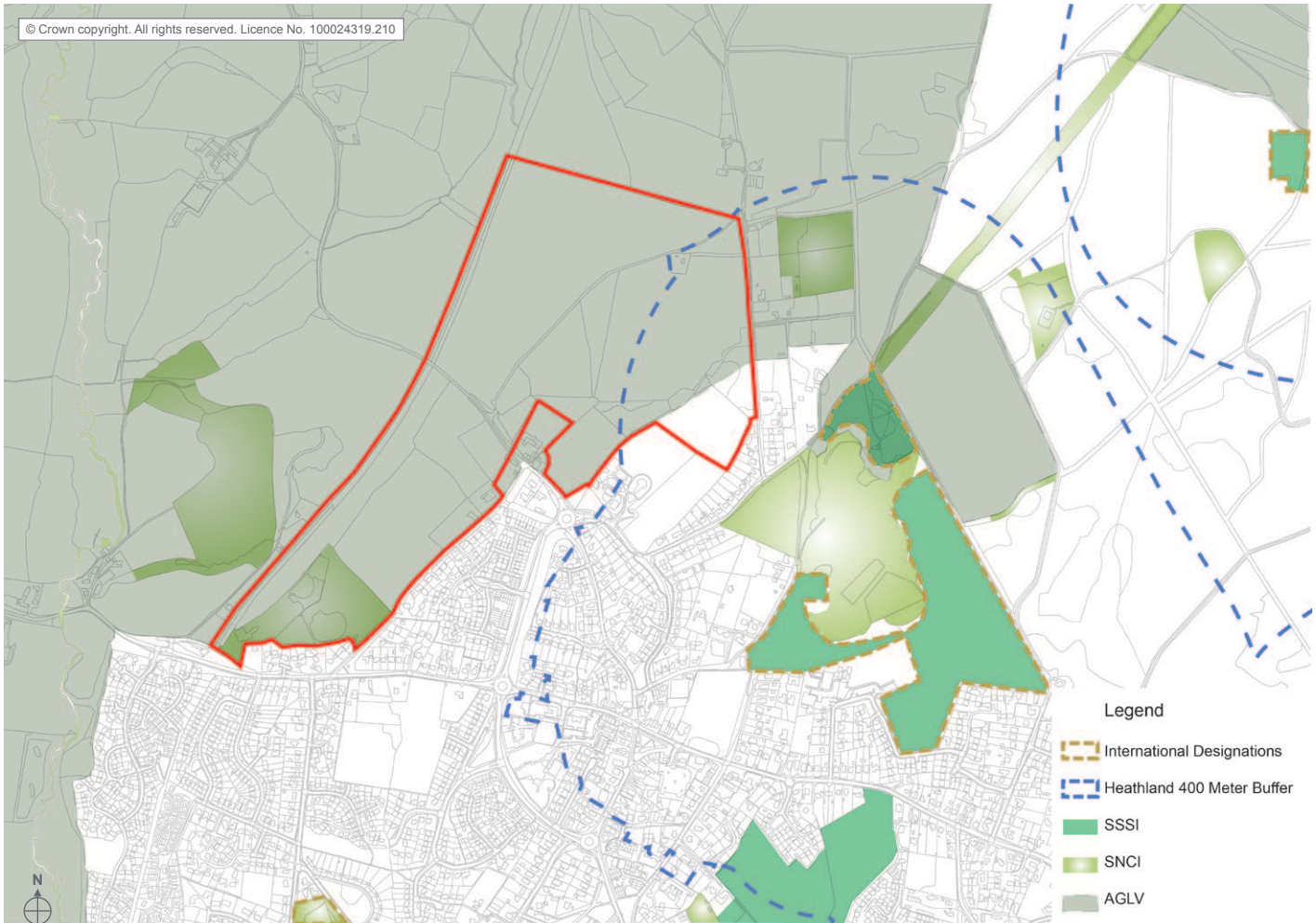
There are no statutory ecological sites within the Verwood North site. Three SSSIs are present within 1km of the site. The closest is Verwood Heaths SSSI which lies approximately 150m to the east. Moors River System SSSI (along the River Crane) is present 260m to the west and Bugdens Copse and Meadows SSSI is located 800m to the south east.

The various parcels of land that comprise the Dorset Heathlands SPA / Ramsar and Dorset Heaths SAC are present in the wider area; the nearest parcel is also designated as Verwood Heaths SSSI and is located approximately 150m to the east of the site. Another parcel, also designated as part of the Verwood Heaths SSSI is located approximately 450m to the south in the area of Dewlands Hill.

Stephen's Castle Local Nature Reserve, has a number of other designations including a SNCI and Verwood Heaths SSSI. It is also part of the Dorset Heathlands SPA/Ramsar and Dorset Heaths SAC. This area lies 150m to the east. Dewlands Common and Bugdens Copse Local Nature Reserves lie within 1km to the south.

Local Non-Statutory Designations

Romford Bridge SNCI is within the southwest of the site, which is designated as mostly deciduous woodland with a



Verwood North - Ecological Areas

pond. Several other SNCIs lie within 1km of the site. Ironmongers Copse SNCI is adjacent to the west and is designated as ancient woodland on an acid clay soil. Resthaven SNCI lies approximately 70m to the east in an area adjacent to the east of the 'Brooklands' property, and Boveridge Heath SNCI lies beyond this to the east, approximately 250m east of the site.

Important Features

There are a number of important ecological features within the site, including areas of woodland (within the west of the study area), hedgerows (some of which may be legally protected under the Hedgerow Regulations), potential veteran trees, ponds and ditches, and areas of grassland and scrub. These features provide green links through the countryside and have

the potential to support rare and protected species. Some of these habitat features are likely to qualify as priority habitats under the UK and local BAPs. Certain individual and groups of trees are afforded TPOs.

Overall, arable fields (where present) and areas of improved grassland (e.g. pasture) are not generally considered to be of significant ecological value, although there is the potential for certain protected species to be present that favour such habitats – this would need to be determined through detailed surveys. Nonetheless, it is these less-important habitats that development should be focussed on.

Protected Species

The study area contains habitats which are suitable for a number of protected and rare species in certain locations. Based on habitat in the study area it is considered likely that species of bats, birds, amphibians and reptiles will be present and potentially badger and dormice (in native woodland). Further surveys will be required to determine the location and distribution, and where appropriate, population estimates, of protected and rare species – this would be bespoke to the habitats found in specific locations proposed for development.

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Verwood South

Statutory Designations

Certain protected sites are afforded multiple designations, as set out opposite.

There are two statutory ecological designations within the Verwood South site. Moors River System SSSI lies within the south of the study area (and adjacent to the south) and follows the route of the River Crane. Moors River System SSSI is a small lowland river which supports an exceptional diversity of aquatic and wetland plants. It also supports diverse bank side habitats. Potterne Hill, designated as a Local Nature Reserve, is located within the east of the site.

The wider area includes several SSSIs, those within 1km of the site include Verwood Heaths SSSI (approximately 520m to the northwest), Bugdens Copse and Meadows SSSI (approximately 600m to the north), Holt and West Moors Heath SSSI (approximately 400m to the southeast) and Horton Common SSSI (approximately 850m to the southwest).

The various parcels of land that comprise the Dorset Heathlands SPA / Ramsar and Dorset Heaths SAC are present in the wider area; the nearest parcel is also designated as part of the Holt and West Moors Heath SSSI (approximately 350m south of the site). Another parcel exists approximately 500m to the northwest at Dewlands Common.

Dewlands Common Local Nature Reserve is located approximately 500m to the northwest.

Local Non-Statutory Designations

Potterne Hill, located within the site to the east, is also designated as a SNCI. There are a number of pockets of land that are designated SNCIs within 1km of the site, most of these are made up of woodland sites. These sites are not included on the Ancient Woodland Inventory.

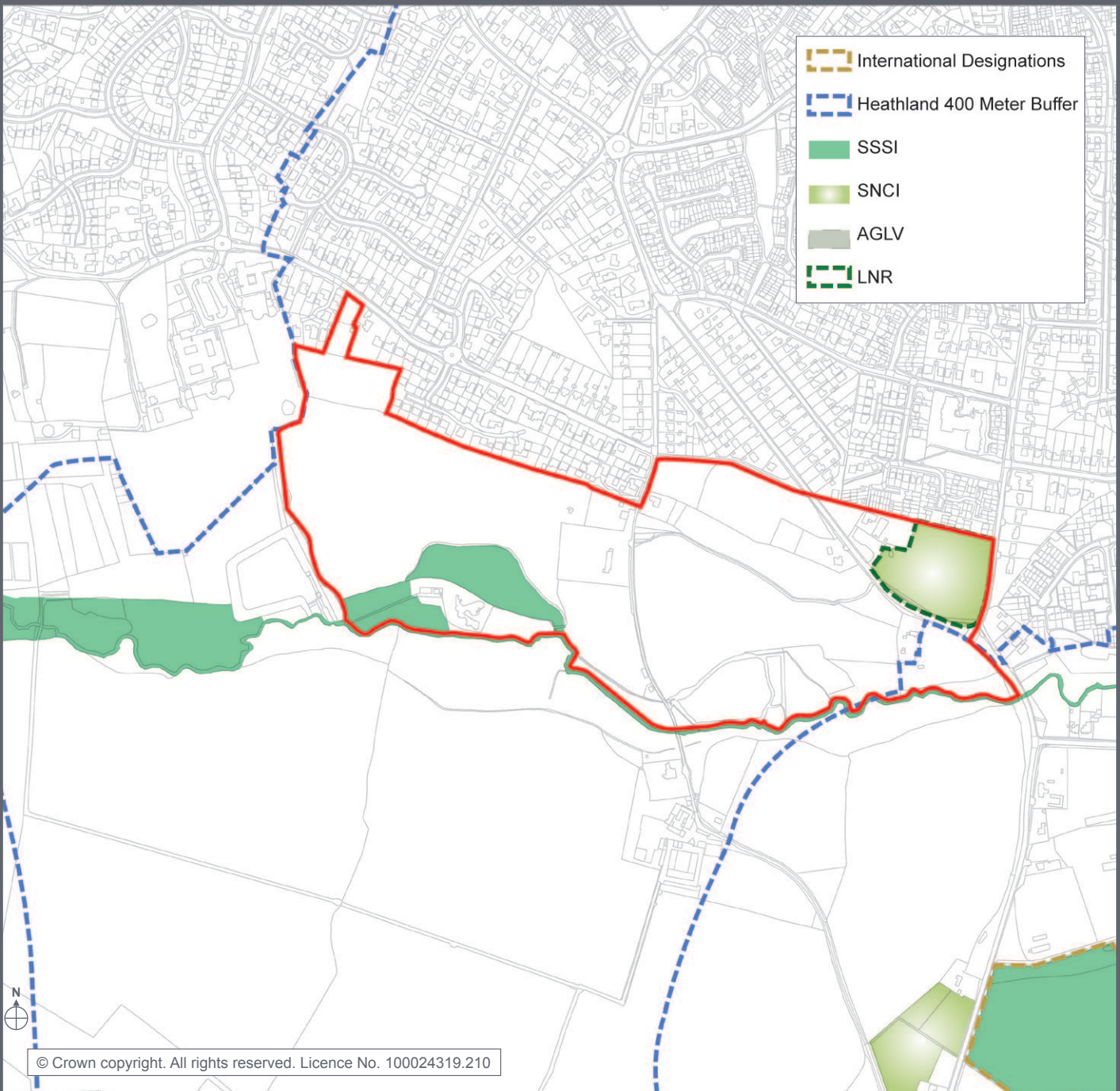
Important Features

There are a number of important ecological features within the study area, including Heathy Howe area of woodland (within the west of the study area), hedgerows (some of which may be legally protected under the Hedgerow Regulations), potential veteran trees, ponds and ditches, and areas of grassland, scrub and heathland. These features provide green links through the countryside and have the potential to support rare and protected species. Some of these habitat features are likely to qualify as priority habitats under the UK and local BAPs. Certain individual and groups of trees are afforded Tree Preservation Orders (TPOs).

Overall, arable fields (where present) and areas of improved grassland (e.g. pasture) are not generally of significant ecological value, although there is the potential for certain protected species to be present that favour such habitats – this would need to be determined through detailed surveys. Nonetheless, it is these less-important habitats that development should be focussed on.

Protected Species

The site contains habitats which are suitable for a number of protected and rare species in certain locations. Based on habitat in the study area it is considered likely that species of bats, birds, amphibians and reptiles will be present, potentially badger and dormice (in native woodland), and potentially otter and water vole along the River Crane. Further survey will be required to determine the location and distribution, and where appropriate, population estimates, of protected and rare species – this would be bespoke to the habitats found in specific locations proposed for development.



EAST DORSET HOUSING OPTIONS MASTERPLAN REPORT

Summary and implication for the masterplans

Dorset Heaths SPA and SAC: legal protection

Special Protection Areas (SPAs) and Special Areas of Conservation (SACs) are statutory designations and are of European importance (called 'European sites'). Their protection stems from the Birds Directive and Habitats Directive, implemented in the UK under the Conservation of Habitats and Species Regulations 2010, which has replaced the 1994 Conservation (Natural habitats &c.) Regulations (as amended). The "Habitat Regulations 2010" make it clear that where development is likely to significantly affect the integrity of a SPA or SAC, development may only be permitted if each of the following three tests can be met:

- there are no suitable alternatives;
- there are reasons of overriding public interest, including those of a social or economic nature; and
- that the conservation status of the sites can be maintained.

This means that there may be a requirement for development to deliver 'avoidance measures' in order to satisfy the requirements of the Habitats Regulations, 2010.

The Dorset Heaths are designated for their ground nesting birds, which are vulnerable to impacts typically associated with urban encroachment on heaths: recreational pressure, dog walking, cat predation and fires. Because of the potential effects of development on nearby heathlands together with the dependence of some heathland species on habitats outside the designated sites and the rigorous statutory tests of the Habitat Regulations, the Dorset Heathlands (amongst other factors) constitute a significant constraint

to the outward spread of the conurbation. A series of public inquiry decisions, in which housing development proposals of various scales have been rejected because of its proximity to heathlands, has re-enforced the significance of this issue.

In the case of the Dorset Heathlands, measures considered suitable to manage potential effects (as set out in the Dorset Heathlands Interim Planning Framework - IPF) include:

- provision for long term financial support to address urban pressures;
- policies and financial support for the provision of alternative green infrastructure, for development up to 5km from the heathland sites; and
- policies to direct housing development (including infill) away from key areas adjacent to heathland sites (i.e. within 400m).

Dorset Heaths SPA and SAC: 400m Development Buffer

Research which has informed the Dorset Heathlands IPF has shown that certain elements of the heathland ecosystem are vulnerable to the effects that result from urban development in the vicinity; the greater the extent of urbanisation around the periphery of the Dorset Heaths, the greater the likely impact. This has been exacerbated in recent years as a result of the open access afforded to the heathlands under the Countryside and Rights of Way Act (CRoW, 2000).

The 400m heathland buffer relates to the importance for protecting the peripheries of the Dorset Heaths from potential threats, such as recreational pressure where the heaths are the nearest area of green space, especially by dog walkers, and few desirable alternatives are available; the lighting of fires; and importantly ground-nesting bird predation associated with the hunting range of domestic cats from residential properties (Use Class C3).

C3 uses should not be promoted within the 400m buffer. If deemed necessary, alternative land uses can be located within the 400m buffer, such as education, commercial, industrial, open space, SANGS etc.

Like-for-like replacement of C3 uses (urban regeneration) within the 400m buffer may be acceptable and will require consultation with Natural England.

Where residential development is proposed as near as permitted to the Dorset Heaths (i.e. up to the 400m buffer), careful consideration must be given to the location and quality of SANGs, such that it offers a genuine attractive alternative to the nearby area of the Dorset Heaths. SANGs requirements are discussed further below.

Dorset Heaths SPA and SAC: SANG

Although none of the study areas are located on any designated parts of the Dorset Heaths, it will need to be demonstrated that adverse impacts to European designated sites can be avoided in accordance with the Habitats Regulations 2010. Habitats Regulations Assessment of the Christchurch & East Dorset Core Strategy is being undertaken by Land Use Consultants, and it is likely that specific policies will be written in the Core Strategy aimed at impact avoidance and mitigation. The Core Strategy HRA in tandem with the emerging South East Dorset Green Infrastructure Strategy is also likely to identify enhancements to and new sources of natural greenspace and will build upon mitigation mechanisms established under the Dorset Heathlands IPF and the emerging Heathlands DPD. The recommendations will be crucial to the SANGs strategy for the East Dorset Masterplans, because these areas of development will make up a considerable proportion of the development in the district. These implications, such as on-site requirements for SANGs, will need

to be understood and factored into the evolving masterplans at a later stage. The Land Use Consultants work will make it clearer whether SANGs are needed (a) within the study areas, or (b) whether SANGs will be created off-site through some of the open space enhancements coming forward and listed in the Dorset Heathlands IPF. Each new neighbourhood will be responsible for demonstrating no effect on the Dorset Heaths SPA. The primary means of achieving this is careful choice of geographical location of development relative to (in particular) the Dorset Heaths and the layout of development e.g. with respect to the 400m buffer for Use Class C3. Beyond this, for development within 5km of the Dorset Heaths SPA, impact avoidance may be achieved through (a) and/or (b) above, although (a) is likely to constitute a major part of the impact avoidance package for each new neighbourhood. As stated in the IPF, *“Natural England will provide advice concerning larger developments or locations where residential intensification is considered significant alone and will be expected to provide appropriate mitigation either on or off site in advance of the development. Where this is the case such schemes will be considered individually and may be exempt from the approach set out in this document.”*

To guarantee the delivery of (b), financial contributions as part of S106 or similar agreements are likely to be entered into, in accordance with the requirements of the IPF.

It is recommended that the SANGs analysis for the East Dorset Masterplans is steered by the emerging Heathlands Development Plan Document and the Core Strategy HRA work. The masterplanning approach to this issue will, therefore, need to be mobile and cannot be fixed at this time. Likewise, developers need to be given the flexibility to develop their own SANGs strategies,

which would be integral to achieving planning permission.

Notwithstanding this ongoing work, the following is relevant with respect to SANGs:

In terms of mitigation, the principle delivery mechanism recommended by Natural England is the provision of SANGs for residential developments and/or improvements to existing sites to increase their visitor capacity and manage/avoid potential negative effects.

With respect to the Accessible Natural Green Space (ANGST) guidance, Natural England advocates that local communities should have access to an appropriate mix of green-spaces providing for a range of recreational needs, of at least 2 hectares of accessible natural green-space per 1,000 population. This can be broken down as follows:

- No person should live more than 300m from their nearest area of natural green-space;
- At least one hectare of Local Nature Reserve should be provided per 1,000 population;
- There should be at least one accessible 20 hectare site within 2 kilometres;
- There should be one accessible 100 hectare site within 5 kilometres; and
- There should be one accessible 500 hectare site within 10 kilometres.

However, where sites are particularly susceptible to recreational impact, such as that which may be caused by development in the vicinity of the Dorset Heaths and the Thames Basin Heaths, Natural England guidance stipulates that SANGs provision should aim to provide at least 8 hectares per 1,000 population. Consultation with Natural England has confirmed that up to

16 hectares may actually be required for the Dorset Heaths given their bespoke requirements. However, this is not an adopted policy at this stage, and it is recognised that 16ha per 1,000 population was originally sought by Natural England on the Thames Basin Heaths, before an eventual formal agreement was reached for 8ha per 1,000 population. **Therefore at this interim stage it can be concluded that between 8-16ha of SANGs will be needed per 1,000 population.**

Natural England has provided guidance towards the characteristics that SANGs should have (it relates to the Thames Basin Heaths and we understand the guidance is currently under review). The Guidance provides some important pointers on the location of SANGs, the facilities that are needed and the type of visitor that should be catered for.

Key considerations include:

- ensure provision of adequate car parking and signpost it;
- Where large populations are close to a European site, the provision of SANGs should be attractive to visitors on foot;
- Sites should be capable of providing routes of 2.5 to 5 kilometres, people may require longer routes;
- Where long routes cannot be accommodated within individual SANGs it may be possible to provide them through a network of sites, provided the connecting areas are rural in nature;
- Paths do not have to be of any particular width, and both vehicular-sized tracks and narrow Public Rights of Way (PRoW) type paths are acceptable to visitors;
- Safety is one of the primary concerns of female visitors. Paths should be routed so that they are perceived as safe by the users, with some routes

being through relatively open (visible) terrain (with no trees or scrub, or well spaced mature trees, or wide rides with vegetation back from the path), especially those routes which are 1-3 km long;

- The routing of tracks along hill tops and ridges where there are views is valued by the majority of visitors;
- A substantial number of visitors like to have surfaced but not tarmac paths, particularly where these blend in well with the landscape. This is not necessary for all paths but there should be some more visitor-friendly routes built into the structure of a SANGs, particularly those routes which are 1-3 km long;
- People value the naturalness of sites and artificial infrastructure should be avoided where possible;
- However, SANGs would be expected to have adequate car parking with good information about the site and the routes available. Some subtle waymarking would also be expected for those visitors not acquainted with the layout of the site;
- Other infrastructure would not be expected and should generally be restricted to the vicinity of car parking areas where good information and signs of welcome should be the norm, though discretely placed benches or information boards along some routes would be acceptable;
- Hills do not put people off visiting a site, particularly where these are associated with good views, but steep hills are not appreciated. An undulating landscape is preferred to a flat one;
- Water features, particularly ponds and lakes, act as a focus for visitors for their visit, but are not essential;

- It is imperative that SANGs allows for pet owners to let dogs run freely over a significant part of the walk. Access on SANGs should be largely unrestricted, with both people and their pets being able to freely roam along the majority of routes. This means that sites where freely roaming dogs will cause a nuisance or where they might be in danger (from traffic or such like) should not be considered for SANGs; and
- Dog bins should be provided for use by dog walkers.

The guidance also provides comments on the enhancement of existing sites, including ensuring that candidate sites do not have any competing uses that would make them unsuitable as SANGs.

The Green Flag Award is the national standard for parks and green spaces in England and Wales. The award scheme began in 1996 as a means of recognising and rewarding the best green spaces in the country. It was also seen as a way of encouraging others to achieve the same high environmental standards, creating a benchmark of excellence in recreational green areas. The Green Flag Award could be another way of ensuring that high quality sites are provided (see <http://www.greenflagaward.org.uk/award/>).

Only with the above measures in place can it be reasonably concluded that there will be no likely net significant effect on the Dorset Heaths sites arising from development within the study areas.

Further advice will be contained in the Core Strategy HRA which will include local requirements identified under the Dorset Heaths IPF and Heathlands DPD. Further advice should also be sought from Natural

England as the masterplan progresses and as the evidence base concerning SANGs and ground nesting birds evolves.

Whilst it is recognised that the New Forest SPA (located approximately 7 km to the east at it's closest point) and Avon Valley SPA (located approximately 4.5 km east at it's closest point) have recreational pressure challenges of their own, it is considered that SANGs provision for the Dorset Heath SPA will be adequate in addressing issues arising from recreational pressure associated with development in Verwood.

Statutory and Non-Statutory Sites

It is recommended that no development should take place on any statutory or non-statutory ecological sites. Where possible, development directly adjacent to such sites and fragmentation of existing ecological links between such sites should also be avoided to reduce the potential for indirect effects.

Important Features

Important ecological features such as woodland belts, hedgerows, veteran trees, water features and areas of heathland and grassland comprise a network of vital green corridors or links. Some of these habitat features will qualify as priority habitats under the UK and local BAPs. An opportunity for the masterplans will be to retain and enhance such important features where possible, and where they are to be lost they should be compensated at a ratio of 1:2 through habitat creation, in order to assist in demonstrating biodiversity gain as part of the development (required under Planning Policy Statement 9) and ensure the successful retention of any notable or protected species which may be found to be present on the site.

There are a number of isolated and fragmented habitats within each study area and the opportunity to enhance green links between these features should be a principle aim of the masterplans, especially in view of some of these features carrying designations of statutory or non-statutory ecological importance. An excellent example of this is an opportunity to provide greater connectivity between Ironmongers Copse (SNCI and ancient woodland) with Romford Bridge SNCI woodland in the Verwood North site.

The masterplans should integrate ecological opportunities such as creating new green corridors and enhancing existing green links formed by such features as woodland, hedgerows and water corridors. The requirement for SANGs provision will also directly contribute to green infrastructure, new and enhanced ecological corridors and in demonstrating biodiversity gain.

River and watercourse corridors associated with potential development at Verwood South near the River Crane should be buffered from development with natural vegetation strips of at least 8m from top of bank. The Environment Agency may request up to 15m if otters are known to be present. The flood plain associated with watercourses is likely to quarantine much of this area from development in any event. Sensitive drainage designs that integrate pollution prevention measures such as sustainable drainage systems (SUDS) and pollution interceptors will also be required. Where appropriate, SUDS solutions that promote habitat creation (e.g. balancing ponds, swales) should be promoted in preference to alternatives such as oversized sewers, underground storage tanks etc.

If loss of important ecological features cannot be avoided, compensatory habitat should be provided at a ratio of 1:2 where possible, in order to assist in demonstrating biodiversity gain as part of the development (required under Planning Policy Statement 9) and to ensure the successful retention of any notable or protected species which may be found to be present on the site. In order to maximise ecological opportunities, consideration will also need to be given to the Dorset BAP objectives when devising bespoke ecological mitigation strategies for the new developments in order to demonstrate biodiversity gain.

Legally Protected Species and Habitats

Species protected under National and European Legislation are subject to special protection in accordance with the relevant legislation (primarily the Habitat Regulations 2010 and the Wildlife and Countryside Act 1981 (as amended)), which generally seeks to safeguard the conservation status of these species and may involve special protection of individual animals or their habitats. All legally protected species are a material consideration in the planning process.

UK BAP and Local BAP species and Habitats

BAPs in the UK have no statutory status, but provide a framework for implementing conservation requirements. Furthermore, species and habitats listed as Priority species in the UK BAP are afforded a degree of protection under the NERC Act (2006), because the presence of, or potential presence of UK BAP and Dorset BAP habitats and species is a material

consideration in the planning process and the Local Authority has a duty to conserve biodiversity and to further the conservation of species and habitats listed under the UK and Local BAP.

Consideration of Species and Habitats within the Planning Process

Legally protected species and Priority habitats and species (e.g. BAP and Dorset BAP priority habitats and species) are material planning considerations that will need further consideration. The implications for the masterplans, should protected species be found present, will depend largely on which species are found and how they are currently using the sites. Further work, including with respect to Phase I Habitat Surveys, protected species surveys, and specific habitat surveys (for example botanical surveys or hedgerow surveys) will be required in order to inform more detailed designs. The findings of such surveys would be submitted in support of any planning applications for land within the study areas. This will ensure that appropriate ecological mitigation informs the scheme designs and is conditioned to any development consent.

ARCHAEOLOGY AND CULTURAL HERITAGE

Introduction and Method

The approach to archaeological and cultural heritage constraints and opportunities analysis is primarily high level and is based on consultation with the County Historic Environment Officer, a desk study of relevant designations and archaeological and cultural heritage information and a review of other available information concerning the sites.

On this basis the findings set out in this document should be viewed as preliminary and have aimed to guide development to the most suitable locations with respect to known archaeology and cultural heritage. This approach will minimise planning risk in the future, although it is important to note that the Verwood area is high in archaeological potential, due to historic activities such as potteries and unknown resources of significance may yet be discovered. Further, more detailed desk based and survey work will be required in order to inform more detailed designs at later stages and in order to satisfy the requirements of Planning Policy Statement 5 at later planning stages.

Both of the Verwood sites are known to contain or be in close proximity to significant quantities of archaeological assets which may influence what development can take place.

Verwood North

Conservation Areas

Verwood is not in a designated Conservation Area. The closest Conservation Area to the site would be Horton, to the west of the urban area.

Scheduled Ancient Monuments

There are no Scheduled Ancient Monuments (SAMs) within close proximity to the site. There is one SAM within the wider area; this is Stephen's Castle, a bowl barrow located approximately 300m east of the site.

Listed Buildings

- The Old Farmhouse in Newton Road, early 18th Century with thatched roof.
- Homelands, Church Hill 18th Century, thatched detached cottage.
- Dewlands Way, 18th Century, small detached cottage with thatched roof.
- Apple Tree Cottage, 18th Century detached cottage.
- Ringwood Road, 18th Century detached cottage with thatched roof.
- Winton View on Black Hill, 18th Century detached cottage with thatched roof.
- Harkaway Cottage, Chapel Lane, 18th Century thatched cottage.
- The Gardens, Brook Lane, 18th Century thatched cottage with roughcast cobwalls.

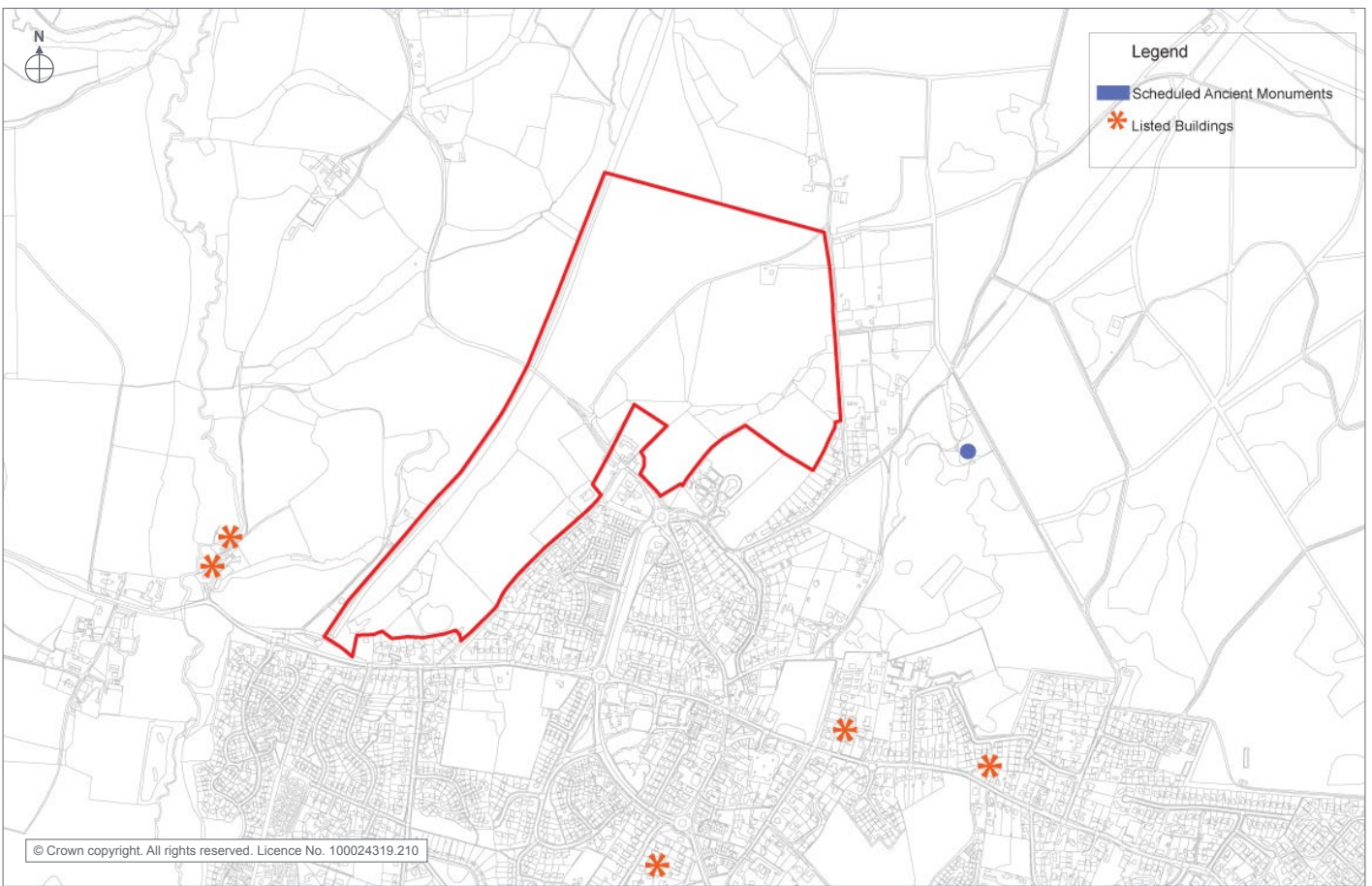
Listed buildings in the vicinity are shown on the plan opposite.

Historic Parks and Gardens

There are no National Trust properties or registered parks and gardens within the site, or within the wider area. The nearest is St Giles' House registered park and garden, located over 3.5 km to the northwest.

Archaeological and Cultural Heritage Assets

A summary of known archaeological and cultural heritage assets within the site is shown below right. This includes the site of a pottery kiln.



A summary of known archaeological assets is shown below:

	Statutory Designations	Buried Features	Spot Finds	Surface Features
Palaeolithic				
Mesolithic				
Neolithic				
Bronze Age				
Iron Age				
Roman				
Post-Roman				
Saxon				
Medieval				
Post-Medieval		✓		
Modern				

Verwood South

Conservation Areas

Verwood is not in a designated Conservation Area. The closest Conservation Area to the site would be Horton, to the west of the urban area.

Scheduled Ancient Monuments

There are no SAM's within the site. Several are present within the wider area. Two of these are associated with potteries and include Sandalholme Pottery works (located east of Dewlands Common, approximately 450m northwest of the site) and Potteries at Prairie Farm (located north of Dewlands Farm, 850m northwest of the site).

There are two scheduled ancient monuments within Horton Common to the southwest and these include a bowl barrow cemetery and a cross dyke (approximately 900m southwest of the site) and a bowl barrow (approximately 1.1km southwest of the site).

The closest SAM, Sandalholme Pottery Works, is illustrated on the plan opposite.

Listed Buildings

- St Michael's Cottage in St Michael's Road (within the Verwood South area of search). The cottage is picturesque and it's in original form with slate roof. The cottage will be a constraint on development within this site. Careful consideration will be required.
- Oak Tree Cottage in Howe Lane (within the Land South of Howe Lane site) is a Listed Building that will be a constraint on the location of the access into this site, and possibly to the number of units achievable.
- Holly Cottage on Manor Road, an 18th Century detached house with thatched porch.
- Potterne House, reputedly site of former Manor house and Chapel.

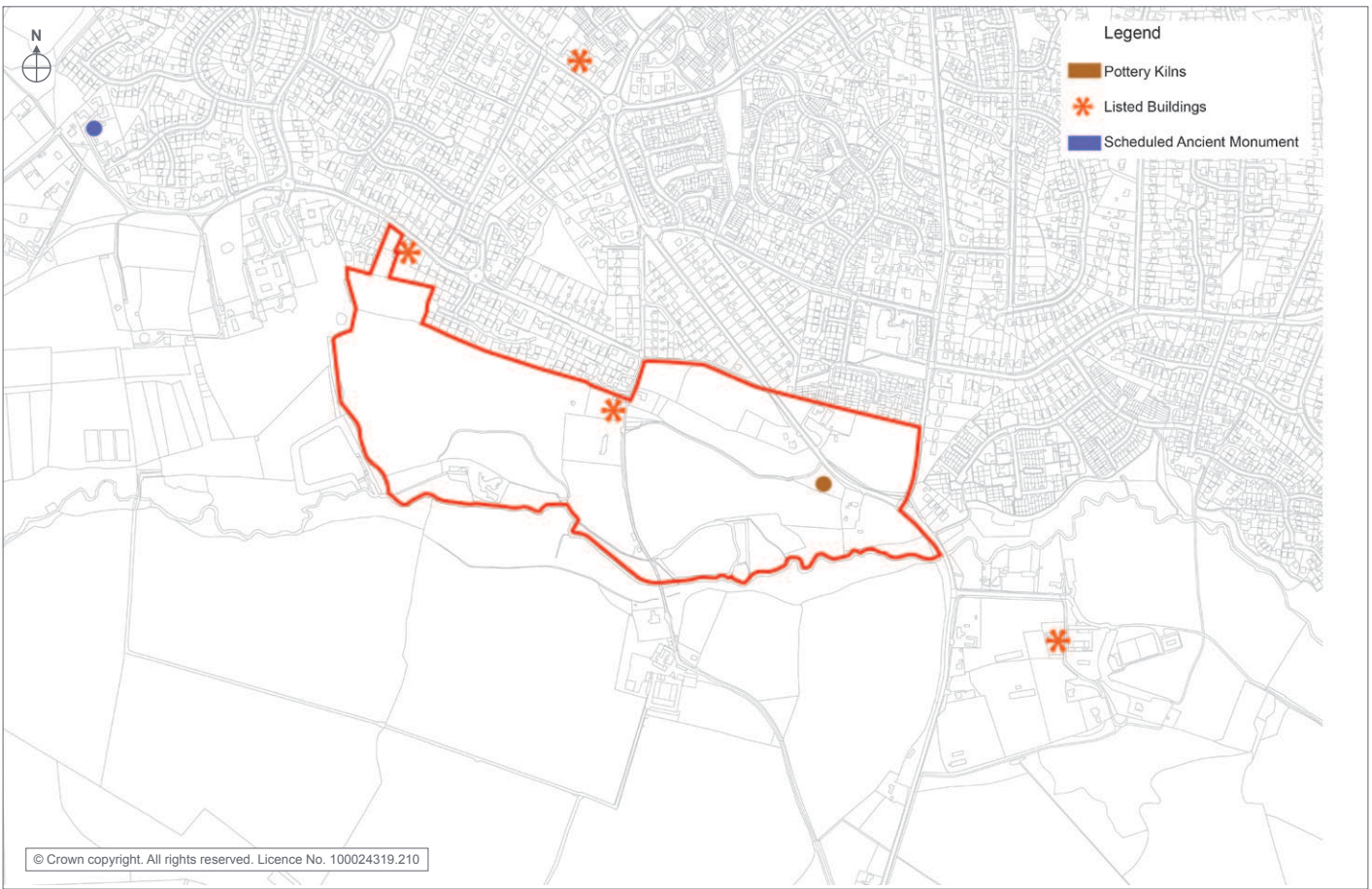
Listed buildings in the vicinity are shown on the plan opposite.

Historic Parks and Gardens

There are no national trust properties or registered parks and gardens within the site, or within the wider area. The closest site is Holt Heath and Forest National Trust Property located over 3 kilometres to the southwest.

Archaeological and Cultural Heritage Assets

A summary of known archaeological and cultural heritage assets within the site is shown below right. This includes the site of a pottery kiln.



A summary of known archaeological assets is shown below:

	Statutory Designations	Buried Features	Spot Finds	Surface Features
Palaeolithic				
Mesolithic				
Neolithic				
Bronze Age				
Iron Age				
Roman				
Post-Roman				
Saxon				
Medieval				
Post-Medieval		✓		✓
Modern				

EAST DORSET HOUSING OPTIONS MASTERPLAN REPORT

Summary and implication for the masterplans

In general, the main area of archaeological interest within the sites is post-medieval activity which is known at a moderate density including pottery kilns, for which Verwood is well known.

There would appear to be a propensity for archaeological remains to follow favourable geology (as providing raw materials for stone working etc) and also the route of watercourses (such as the River Crane) which have been shown to attract both seasonal and permanent human activity potentially for the benefit of ready access to a food source and also transport.

The activity in the historic periods is evidenced by both standing structures across both of the sites (including Listed Buildings) and also ancillary remains potentially indicating agricultural activity across the area.

Listed buildings should not be affected by development, and, consideration should be given to sensitive development to retain or improve the existing setting to built heritage assets (i.e. visual impact).

Development has the potential to destroy any archaeological remains and mitigation of these constraints, where it has been deemed that they cannot be preserved in situ, will be required, for example through recording of finds.

It is important to note that there will be a need for further, more detailed archaeological assessment as the masterplans develop at planning/reserved matters stages in accordance with PPS5.

On this basis the findings set out in this document should be viewed as preliminary and have aimed to guide development to the most suitable locations with respect to archaeology and cultural heritage. This approach will minimise planning risk in the future (particularly with respect to statutorily protected features), although it is important to note that the area is high in archaeological potential and unknown resources of significance may yet be discovered. Further work, including with respect to a full desk based assessment, intrusive investigation, geophysical survey etc. will be required in order to inform more detailed designs where hitherto unknown archaeological resources may be required to be preserved in situ, thereby potentially directly affecting the layout of future development.

NOISE AND VIBRATION

Introduction

This section sets out a summary of the initial advice on the likely noise and vibration constraints associated with the following proposed urban extensions.

Method

This section is based on a review of the available plans and internet searches. No site visit has been undertaken or noise / vibration measurements made although guidance has been sought from the local planning authority regarding the application of Planning Policy Guidance Note 24 Planning and Noise (PPG 24) within East Dorset (see below). On this basis the findings set out below should be viewed as preliminary.

Broadly, constraints can take two forms:

- Existing sources of noise and vibration that may influence the type and location of uses within the proposed urban extensions; and
- The effect that the development itself might have on existing noise sensitive uses surrounding each development.

Planning Policy and Guidance

National Planning Guidance

The Government's policies on noise related planning issues are set out in PPG 24. PPG 24 recommends the use of four Noise Exposure Category (NEC) bands, which are designed to assist local planning authorities in evaluating applications for residential development in noisy areas. The definition of each NEC band depends on the noise source in question. The table below presents the NECs for various noise sources and the associated advice to local authorities.

NEC	Source	Noise Levels		Planning Advice
		Day time 0700-2300 $L_{Aeq,16h}$ dB	Night-time 2300-0700 $L_{Aeq,8h}$ dB	
A	Road traffic / mixed	<55	<45	Noise need not be considered as a determining factor in granting planning permission, although noise at the high end of the category should not be regarded as a desirable level.
	Aircraft	<57	<48	
	Rail	<55	<45	
B	Road traffic / mixed	55 – 63	45 – 57	Noise should be taken into account when determining planning applications and, where appropriate, conditions imposed to ensure an adequate level of protection against noise.
	Aircraft	57 – 66	48 – 57	
	Rail	55 – 66	45 – 59	
C	Road traffic / mixed	63 – 72	57 – 66	Planning permission should not normally be granted. Where it is considered that permission should be given, for example because there are no quieter sites available, conditions should be imposed to ensure a commensurate level of protection against noise.
	Aircraft	66 – 72	57 – 66	
	Rail	66 – 74	59 – 66	
D	Road traffic / mixed	>72	>66	Planning permission should normally be refused.
	Aircraft	>72	>66	
	Rail	>74	>66	

Note: Night-time noise levels (23.00 – 07.00): sites where individual noise events regularly exceed 82 dB L_{Amax} (S time weighting) several times in any hour should be treated as being in NEC C, regardless of the $L_{Aeq,8h}$ (except where the $L_{Aeq,8h}$ already puts the site in NEC D).

EAST DORSET HOUSING OPTIONS MASTERPLAN REPORT

The local planning authority was consulted regarding the local application of guidance contained within PPG 24. Although not ideal, consideration would be given to noise sensitive development located within NEC C provided that there are justifiable reasons why such development is required and subject to a commensurate level of protection against noise being provided. Notwithstanding this guidance (and given there is a general presumption against residential development in NEC C as stated in PPG 24), it seems prudent to develop the concept plan on the basis that residential (and other noise sensitive) development would only be permitted within NEC A and NEC B.

It should be noted that the noise levels in NEC B and even at the high end of NEC A would not be considered ideal and that development in such areas would still require an appropriate level of protection against noise.

Constraints Affecting the Site

The primary noise source affecting each area is road traffic, although both of the areas include or adjoin educational establishments. These potential constraints are considered in turn below.

Road Traffic

In order to determine the constraints posed by existing road traffic a number of sources have been referenced to determine the likely volumes of traffic using key roads running through and past each site. The southern tip of the Verwood North site extends close to the B3081, whilst the B3072 towards Three Legged Cross cuts through the Verwood South site at its eastern end.

Unfortunately, traffic flows could not be obtained for these links, although flows were available for adjacent links as noted above:



Edmondsham Road

- B3081 east of Verwood-taken as representative of the B3081 west of Verwood; and
- B3072 south of Three Legged Cross-taken as representative of the B3072 north of Three Legged Cross.
- the 24-hour Annual Average Daily Traffic (AADT) flows are indicative of the 18-hour Annual Average Weekday Traffic (AAWT) flows (0600-2400);
- a notional speed of 40 mph applies to both roads;
- both roads have a notional hot rolled asphalt (HRA) surface (with 2 mm texture depth); and
- a notional road gradient of 0% has been universally applied.

Further information on traffic flows identified on each of these roads is included in the Transport section of this report.

By undertaking a simple calculation in accordance with the Calculation of Road Traffic Noise (which is the UK method for predicting noise from road traffic) it is possible to determine the approximate distance at which the NEC B/C threshold may be exceeded. The NEC B/C boundary has been selected to identify likely constraints on the basis of the guidance in PPG 24 relating to NEC C where the fundamental advice is that planning permission should not normally be granted.

The calculations necessarily make a number of assumptions which influence the Basic Noise Level as set out above:

- In addition, the calculations assume a full view of the road, without screening but with a predominantly absorbent ground cover (in the acoustic sense) between the road and calculation point. On the basis set out above, it is recommended that the indicative set-back distances for noise sensitive development as noted in the table opposite are applied during the evolution of the concept plan.

Urban extension	Set-back distance	Road links
Northern	20 metres	B3081 east of Verwood
Southern		B3072 south of Three Legged Cross
<p>Verwood</p> <p>Neither road link provides a particularly significant constraint to development, and in any case road traffic noise would only affect a very small proportion of the proposed development (the southern-most tip of the northern area and the very eastern end of the southern area).</p> <p>Comment:</p> <p>It must be borne in mind, though, that the traffic flows utilised in this assessment are only indicative of those which currently use these roads. Consequently, at the appropriate time, more detailed calculations (and or measurements) should be undertaken to confirm the likely constraints and to ensure that road traffic impacts are minimised and appropriate target values are achieved.</p>		

Indicative Set-back Distances from Key Roads (based on NEC B/C boundary with no acoustic barrier)

It should be noted that the constraints described below relate to the NEC B/C boundary, although it should be possible to locate noise sensitive uses closer to the road with appropriate mitigation such as a roadside noise barrier. Nevertheless, noise levels at the NEC B/C boundary should not be considered ideal and indeed some degree of acoustic treatment may still be required at noise sensitive buildings located at the specified set-back distances.

Similarly for external areas considered sensitive to noise (e.g. private gardens), it is unlikely that relevant noise limits will be met unless these areas are screened, either by locating them behind buildings or by the inclusion of appropriately designed acoustic fences.

It should also be borne in mind that constraints might be greater near junctions where noise from more than one road can combine, resulting in higher noise levels.

It will be necessary to give careful consideration to the design, orientation and location of dwellings within the sites to ensure that road traffic impacts are minimised and appropriate internal and external levels are met. There are a number of generic options available to control external noise; including:

- The location of buildings on site. The primary control factor is distance – the greater the distance from the source, the lower the noise level. The type of intervening ground cover (acoustically absorbent or reflecting) and the height of the receptor will also influence the received noise level.
- Screening. Barriers or screens can reduce noise on site. They can take the form of an existing feature (for example a cutting), a purpose-designed feature (for example, a solid boundary fence or an earth mound) or a purpose-designed building (for example, a linear barrier block).

- Building form and orientation. Limiting the view of the source by building orientation can reduce the received noise level. Measures include turning a building through 90° to be perpendicular to the road and staggered terraced housing can be arranged to shield noise-sensitive windows.
- Building envelope. The final line of defence against external noise is the building envelope and in particular the glazing / ventilation package.

Railways

There are no railways passing through or near either of the sites and on this basis, it is concluded that railway noise will not present a constraint to development at these sites.

EAST DORSET HOUSING OPTIONS MASTERPLAN REPORT



Entrance to Trinity First School

Industrial and Commercial Activities

In general, the presence of residential (and other noise sensitive) uses adjacent to industrial and commercial sites (whether new noise sensitive development is introduced within an established industrial area or the reverse scenario) can lead to significant issues in terms of noise (and sometimes vibration as well) and consequently should be avoided if at all possible. Disturbance may be caused partly as a result of the activities that are being conducted (and the resultant noise levels) and partly because of the time at which activities might be undertaken (i.e. at unsocial hours or at weekends). Sometimes it is a combination of the two.

From an initial examination of the sites, no major industrial or commercial areas have been identified in close proximity to potential noise/vibration sensitive development on the sites.

Educational Establishments

The Trinity First School is situated within the Verwood north area on its eastern side, whilst the Emmanuel Middle School (and in particular its playing field) lies just outside the western end of the Verwood south site.

Residential areas adjacent to schools are commonplace and any noise related

impacts tend to be short-lived – occurring during the week and avoiding ‘unsocial’ hours. Nonetheless, noise from children playing and/or being instructed outside should not be under-estimated and the masterplan should be evolved with this in mind.

Constraints posed by the development

Introduction

The preceding section considered the constraints posed by existing sources of noise and vibration on the proposed development. However, during the evolution of the design due consideration should also be given to the likely impact the proposals might have on nearby sensitive locations. Construction phase and operational impacts should both be addressed.

Construction Phase Noise and Vibration

Construction phase activities and the noise and vibration they are likely to generate should be given due consideration. This includes both site based activities and off-site construction traffic.

Whilst the demolition/construction phase impacts are by their very nature temporary, the scale of the new neighbourhoods and their proximity to the neighbouring communities is such that it will be important

that these impacts are properly controlled and managed through the generation and implementation of a construction environmental management plan, drawn-up in consultation with the local authority.

Road Traffic Noise

The development of the new neighbourhoods would obviously influence traffic flows on existing roads which travel through and near the sites. This impact cannot be quantified until much later in the evolution of the schemes.

Nonetheless, consideration can be given at an early stage to how vehicles will access the developments. Access should be designed such that adverse impacts are minimised at existing properties.

Industrial and Commercial Noise

The location of industrial and commercial uses in close proximity to noise sensitive receptors (whether existing or proposed) inevitably introduces the potential for noise (and possibly vibration) disturbance.

Should any industrial or commercial development be proposed, care should be taken when locating noise generating uses, avoiding, wherever possible, placing these in close proximity to adjacent noise sensitive areas whether existing or proposed.



Manor Road

Fixed plant such as that associated with building services would need to adhere to performance criteria (set in line with local authority requirements) to minimise the risk of subsequent complaints from new and existing residents alike.

Power Generation

It is assumed that the new neighbourhoods are likely to include the use of 'green' sources of energy. Some of these, notably wind power and biomass boilers, are known to generate noise which can disturb those living nearby. It is imperative therefore that the potential for noise disturbance is properly assessed at the relevant time and that appropriate mitigation is included in the scheme designs.

Conclusions

This section sets out some initial advice on the likely noise and vibration constraints associated with two Verwood new neighbourhoods. These views are based on a review of available plans and internet searches.

It has been noted that potential constraints exist with respect to road traffic and an attempt has been made to quantify the extent of these constraints. However, as details are limited at this stage in the process, these findings should only be viewed as preliminary.

Some initial and generic 'good practice' guidance has also been provided with respect to the mitigation of these constraints.

FLOOD RISK AND DRAINAGE

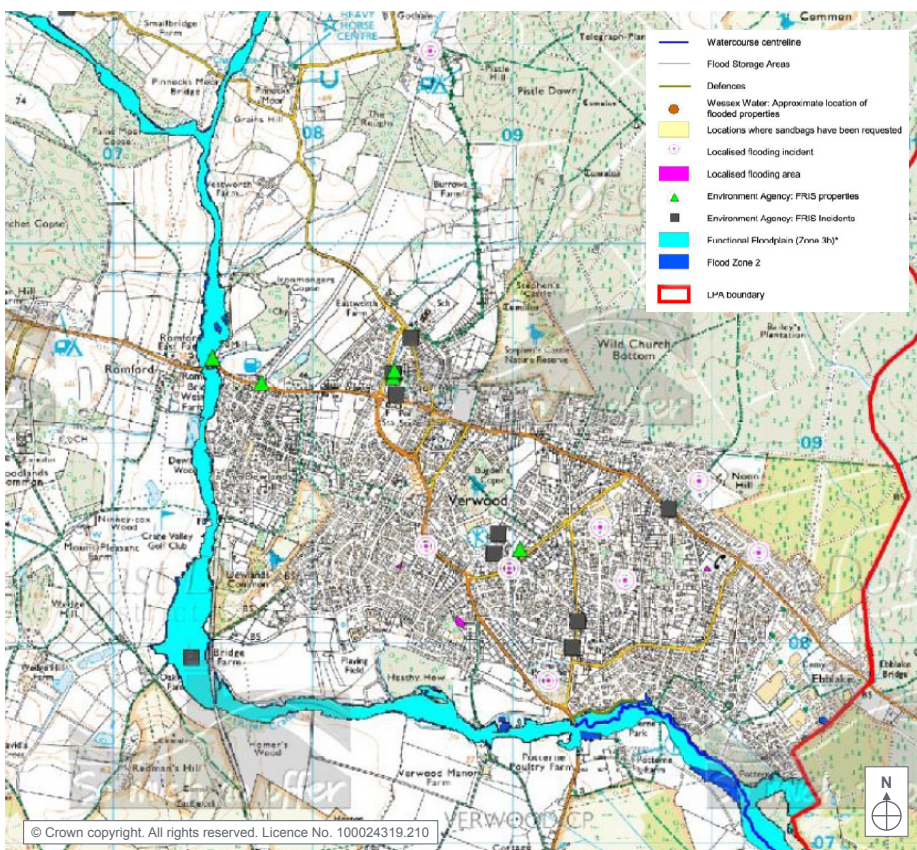


Figure 1 Extract of ED SFRA – <http://www.dorsetforyou.com/media.jsp?mediaid=129699&filetype=pdf>

The Environment Agency Flood Maps and the Bournemouth, Christchurch, East Dorset, North Dorset and Salisbury Level 1 SFRA indicates that the Eastworth Road, North East Verwood, Howe Lane and South East Verwood sites are located in Fluvial Flood Zone 1 – areas of low risk.

The risk of flooding from surface, ground, tidal and artificial sources have been assessed through an initial desk study.

The flood risk from these sources are considered to be low risk, however, site specific flood risk assessments should be undertaken to fully assess the risks and accompany the planning application. The risk of flooding from surface water is considered to be low as these sites are in the upstream areas of their catchments, therefore, there are small areas for surface water runoff generation once the soil and sewer capacity is exceeded, this small risk

can be managed through the incorporation of preferential flow paths through the development. At this stage the risk of flooding from groundwater is considered to be low risk. As the sites are located in Flood Zone 1 all types of development as identified in Planning Policy Statement 25 (PPS 25) are suitable.

A desk based assessment of the soil types indicates that both sites are located on freely draining soils, outside of a groundwater catchment. It is, therefore, considered that soakaways can be a central component of the surface water management strategy, potentially with some discharge to surface water features at Greenfield runoff rates. The use of infiltration will minimise the volume of surface water runoff which will require attenuation, however, the infiltration rates and thus the attenuation storage required can only be calculated following site specific ground investigation. The surface water management strategy will need to incorporate an allowance for climate change in accordance with PPS25, this is currently a 30% increase in rainfall for residential development


To ensure that the masterplan can be developed with suitable allowances for the surface water management systems, estimates of the surface water storage requirements have been provided in the table below. These estimates range from 0 m³ where suitable infiltration rates can be achieved to 3941 m³ which is the estimated attenuation storage that is required achieve Greenfield runoff rates.

Site	Area (ha)	Assumed Impermeable Areas (ha)	Infiltration Suitable	Attenuation Storage (m³)
Eastworth Road	6.13	5.15	Yes	3371
North East Verwood	1.03	0.87	Yes	821
Howe Lane	1.07	0.90	Yes	848
South East Verwood	4.98	4.18	Yes	3941

These estimates have been undertaken within Microdrainage and assume that infiltration cannot be fully achieved across the site and therefore consider full attenuation to Greenfield rates assuming a Cv of 84% and a Greenfield runoff rate of 1.6 l/s/ha

Wessex Water have stated that any surface water flows from development in south Verwood will need to be attenuated on site and flow controlled before discharging to the 300mm diameter public surface water sewer in the track which runs along the western boundary of the site. Whilst for north Verwood there are no public surface water sewers available therefore attenuation and discharge to local watercourse will be required.

SUDS measures should be fully incorporated across the development, consideration should be given to the incorporation of the most sustainable measures within the SUDS matrix opposite.

<p style="text-align: center;">Most Sustainable</p>  <p style="text-align: center;">Least Sustainable</p>	SUDS Technique	Appropriateness to the Site
	Living Roof	These should be considered during the detailed design stage particularly for community areas and central features
	Basins/Ponds	These can be incorporated within the SUDS strategy as either wet or dry features.
	Filter/Swales Strips	These should be incorporated within the
	Infiltration Devices	These are suitable for all the development types based upon an initial desk based study. Site specific ground investigation will be required to confirm that these are suitable and the rates that can be achieved
	Permeable surfaces & filter drains	Where there are significant areas of hard standing that is not adopted highways permeable surfaces should be considered.
Tanked Systems	These should only be considered where there is a need to ensure that seepage to groundwater is not possible or other constraints prevent the adoption of the more sustainable features	

INFRASTRUCTURE

Introduction

Initial data searches have been undertaken to establish the presence of primary utilities infrastructure within the areas of search for each new neighbourhood.

The location and size of primary infrastructure has been identified where it affects the area of search and initial confirmation of availability of infrastructure to service the prospective development demands has been obtained where necessary.

The de-regulation of the utilities market provides greater flexibility than before in planning for development as the potential infrastructure investment costs must be weighed against the potential supply income for a utility.

COMMON MASTERPLAN IMPLICATIONS

Gas

Gas supplies to a development area will typically be provided by a gas shipper or infrastructure provider with a network extension to the nearest point of capacity. Those linkages are typically provided along the public highway network both off site and through a development masterplan area.

There may be small land requirements (say 3m x 3m) for on site gas governor plant where changes in pressure are required on site.

High pressure gas mains are operated on a grid around the country and have large exclusion zones within which development is strictly controlled. There are **no** high pressure gas transmission mains within any of the sites.

Local gas supplies will be forthcoming for all the development areas from the local gas network in the usual commercial way.

Electricity

Electricity supplies to a development area will typically be provided by an energy provider with a network extension to the nearest point of capacity. Those linkages are typically provided underground along the public highway network both off site and through a development masterplan area.

Overhead power lines carry a variety of voltages with varying implications on masterplans. All overhead cables can potentially be relocated but those carrying voltages above 11Kv can incur significant abnormal costs unless covered by a landowners "lift and shift" arrangement.

Lower voltage overhead cables (below 11KV) are typically routed through a development with no implications on the masterplan apart from a requirement for sub-stations through the masterplan. These are typically 3m x 3m blocks and are usually accommodated with no major implications.

Water

Water utilities have an obligation to provide potable water to planned development. Asset management plans implemented by water companies support this obligation, however there can be timescale issues regarding this provision.

In East Dorset the majority of the potable water is taken by abstraction and there is no capacity constraint on abstraction.

Water supplies are available to all the urban extension areas though some reinforcement may be necessary to local water networks.

Telephone

Telecoms infrastructure takes the form of small wire networks either overhead or underground and primary fibre optic networks in public highway.

Diversions of low grade overhead cables in development areas are usually accommodated into the development masterplan as part of the new infrastructure provision.

Where required diversions of fibre optic cables can be very costly with long lead in times.

Mobile

Mobile telecommunications base stations are now part of the infrastructure network and network providers have rights following granting of a license and planning permission for a base station. The health issues previously thought to be associated with mobile phone mast have now been technically resolved although there remains some negative public perception regarding this.

Foul Drainage

Drainage undertakers have an obligation to provide a sewerage system to planned development. Asset management plans implemented by sewerage undertakers support this obligation.

Development areas have a right to connect whilst the costs associated with required network reinforcement can be re-charged



to development although the revenue benefits to the undertaker are also taken into account.

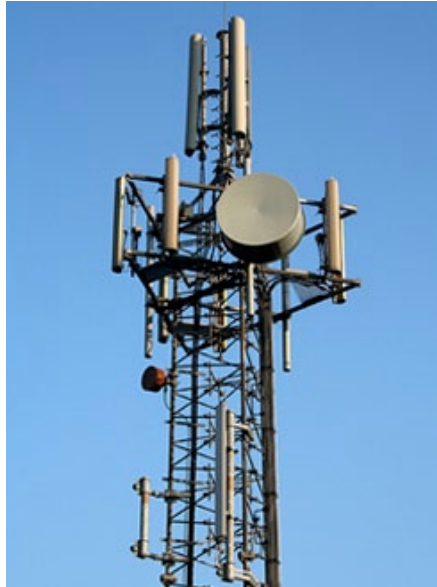
Existing sewerage infrastructure on a masterplan area is typically designed into the masterplan and utilised to serve the proposed development area.

Verwood

Gas

Consultation is still on going regarding the location of the gas infrastructure within Verwood, however, we are not aware of any on site high pressure gas mains which would require development exclusion zones. Any intermediate pressure or low pressure networks across the new neighbourhood area could be accommodated within emerging masterplans as part of a new supply network.

We understand that there is a comprehensive local gas supply network around Verwood which will be able to provide supply to the anticipated new neighbourhood area. It is possible that some localised diversion of low pressure mains may be required to facilitate access to the site, but the scope of such works would be unlikely to generate an abnormal development cost.



Electricity

A power line is present across the northern boundary of the north eastern site, however we are waiting for Southern Power to confirm the size of the line. It is, however, considered unlikely that this will restrict development on the site.

Consultation is on going regarding the location and capacity of the electricity infrastructure although any associated apparatus within the area of search would be diverted into the supply network for the new development. It is possible that some localised diversion of low voltage cables may be required to facilitate access to the site, but the scope of such works would be unlikely to generate an abnormal development cost.

A network of sub-stations may be required for development to boost supplies as required although the land take implications (around 3m x 3m each) is not normally significant.

Water

There are water supply networks around the areas of search and it is anticipated that potable water supply will be available. Some reinforcement of off-site mains may be necessary and would be undertaken phased with delivery of development.

Telephone

Strategic networks may include fibre optic supplies and these are normally located in public highway and so would only be affected by development masterplans where significant highway works are proposed. Any existing overhead supplies associated with the local telecoms networks present in the area of search can be diverted within the supply infrastructure required for the masterplan.

Mobile

Ofcom records indicate that there no mobile communications base station within the area of search.

Foul Drainage

South Verwood

A large diameter foul sewer (375mm) runs around the northern boundary of the site and drains to the A31 terminal Sewage Pumping Station (SPS) at Tricketts Cross which pumps forward flows to Palmersford Sewage Treatment Works (STW). This public foul sewer should have the capacity to accommodate the additional flows from the proposed development.

North Verwood

The existing public foul sewers will not have the capacity to accommodate the additional foul flows from this site. As the site is at the extreme end of the existing public foul sewerage network, it is likely that offsite improvements will be required to service the site subject to further investigation by Wessex Water.