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Lower Winterborne Neighbourhood Plan

Habitats Regulations Assessment

Lower Winterborne Neighbourhood Plan Group

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Quality information

Prepared by	Checked by	Verified by	Approved by
Amelia Kent Principal Ecologist (ACIEEM)	Damiano Weitowitz Principal Ecologist (ACIEEM)	Dr James Riley Technical Director (HRA)	Dr James Riley Technical Director (HRA)

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0	25/02/26	Draft	JR	James Riley	Technical Director (HRA)

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Prepared for:

Lower Winterborne Neighbourhood Plan Group

Prepared by:

Amelia Kent
Principal Ecologist (ACIEEM)

AECOM Limited
3 Rivergate
Temple Quay
Bristol BS1 6ER

T: [redacted]
aecom.com

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1. Introduction

1.1 Background to the Project

1.1.1 AECOM was appointed by Locality to undertake the appropriate assessment component of a Habitats Regulations Assessment (HRA) for the Lower Winterbourne Neighbourhood Plan (NP). This is to inform the planning group and Dorset County Council of the potential effects of the NP development on European sites and how these are being, or should be, addressed in the draft NP. Dorset County Council will then be able to utilise this report to inform their formal Habitats Regulations Assessment decision-making regarding the Neighbourhood Plan.

1.2 Legislative Framework

1.2.1 The UK left the EU on 31 January 2020 under the terms set out in the European Union (Withdrawal Agreement) Act 2020 ("the Withdrawal Act"). This established a transition period, which ended on 31 December 2020. The Withdrawal Act retains the body of existing EU-derived law within our domestic law. The most recent amendments to the Habitats Regulations – the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 – make it clear that the need for HRA has continued after the end of the Transition Period.

1.2.2 Under the Conservation of Habitats and Species Regulations 2017 (as amended) (the "Habitats Regulations"), an appropriate assessment is required, where a plan or project is likely to have a significant effect upon an international site, either individually or in combination with other projects.

The legislative basis for Appropriate Assessment

Conservation of Habitats and Species Regulations 2017 (as amended)

With specific reference to Neighbourhood Plans, Regulation 106(1) states that:
'A qualifying body which submits a proposal for a neighbourhood development plan must provide such information as the competent authority [the Local Planning Authority] *may reasonably require for the purposes of the assessment under regulation 105* [which sets out the formal process for determination of 'likely significant effects' and the 'appropriate assessment']…'.

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

a. To assist the Qualifying Body (Lambourn Parish Council) in preparing their plan by recommending (where necessary) any adjustments required to protect international sites, thus making it more likely their plan will be deemed compliant with the Conservation of Habitats and Species Regulations 2017 (as amended); and

b. On behalf of the Qualifying Body, to assist the Local Planning Authority (West Berkshire District Council) to discharge their duty under Regulation 105 (in their role as 'plan-making authority' within the meaning of that regulation) and Regulation 106 (in their role as 'competent authority').

1.2.4 As 'competent authority', the legal responsibility for ensuring that a decision of 'likely significant effects' is made, for ensuring an 'appropriate assessment' (where required) is undertaken, and for ensuring Natural England is consulted, falls on the local planning authority and the Neighbourhood Plan examiner. However, they are entitled to request from the Qualifying Body the necessary information on which to base their judgment, and that is a key purpose of this report.

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

1.2.6 Note that at there are no allocations to assess within the neighbourhood plan at this time. So this assessment is based off of policies only.

2. Methodology

2.1 Introduction

2.1.1 The HRA has been carried out with reference to the general EC guidance on HRA (European Commission, 2001), general guidance on HRA published by the UK government in 2021 (Department for Environment, Food & Rural Affairs, 2021)

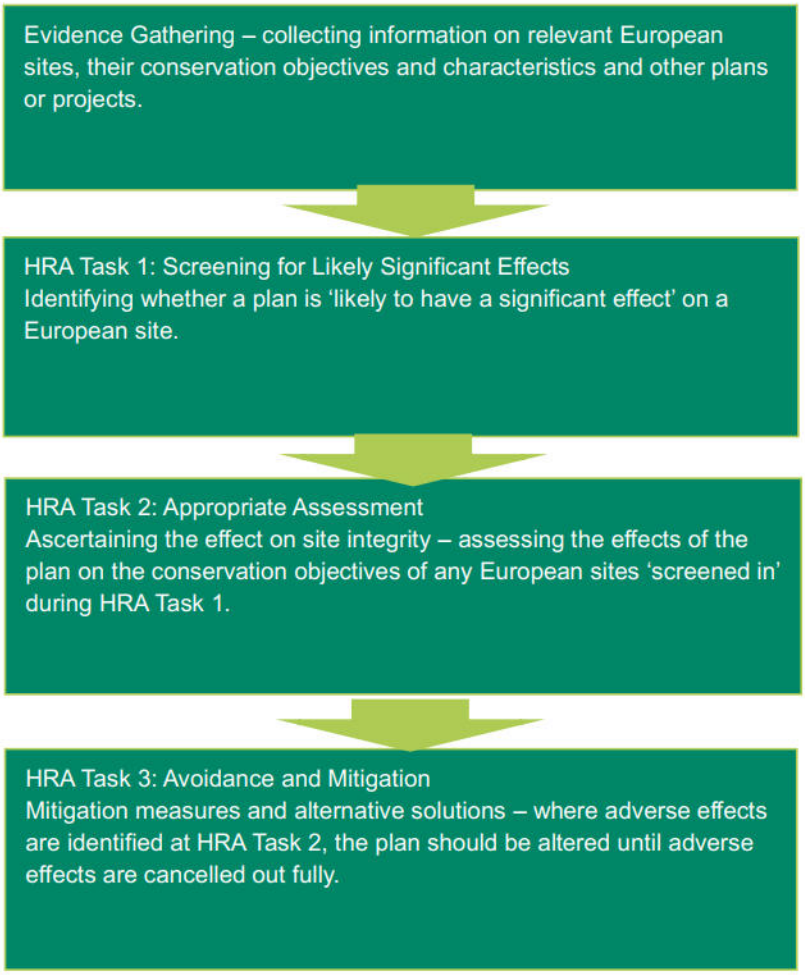


Plate 1. Four Stage Approach to Habitats Regulations Assessment (Department for Environment, Food & Rural Affairs, 2021)

2.1.2 Plate 1 above outlines the stages of HRA according to the current Department for Levelling Up, Housing & Communities guidance. The stages are essentially iterative, being revisited as necessary in response to more detailed information, recommendations, and any relevant changes to the Plan until no significant adverse effects remain.

2.2 HRA Task 1 – Likely Significant Effects (LSE)

2.2.1 Following evidence gathering, the first stage of any Habitats Regulations Assessment is a Likely Significant Effect (LSE) test - essentially a risk assessment to decide whether the full subsequent stage, known as Appropriate Assessment, is required. The essential question is:

"*Is the project, either alone or in combination with other relevant projects and plans, likely to result in a significant effect upon European sites?*"

2.2.2 The objective is to 'screen out' those plans and projects that can, without any detailed appraisal, be said to be unlikely to result in significant adverse effects upon European sites, usually because there is

no mechanism for an adverse interaction with European sites. This stage is undertaken in Chapter 4 of this report.

2.3 HRA Task 2 - Appropriate Assessment (AA)

2.3.1 Where it is determined that a conclusion of 'no likely significant effect' cannot be drawn, the analysis has proceeded to the next stage of HRA known as Appropriate Assessment. Case law has clarified that 'Appropriate Assessment' is not a technical term. In other words, there are no particular technical analyses, or level of technical analysis, that are classified by law as belonging to Appropriate Assessment rather than the determination of likely significant effects. It literally means '*whatever level of further assessment is appropriate to form a conclusion regarding effects on the integrity of relevant European sites'.*

2.3.2 During July 2019 the Department for Levelling Up, Housing and Communities (DLHC) published guidance for Appropriate Assessment (Department for Levelling Up, Housing and Communities, 2019). Paragraph: 001 Reference ID: 65-001-20190722 explains: '*Where the potential for likely significant effects cannot be excluded, a competent authority must make an appropriate assessment of the implications of the plan or project for that site, in view of the site's conservation objectives. The competent authority may agree to the plan or project only after having ruled out adverse effects on the integrity of the habitats site. Where an adverse effect on the site's integrity cannot be ruled out, and where there are no alternative solutions, the plan or project can only proceed if there are imperative reasons of over-riding public interest and if the necessary compensatory measures can be secured*'.

2.3.3 One of the key considerations during Appropriate Assessment is whether there is available mitigation that would address the potential effect.

2.4 HRA Task 3 – Avoidance and Mitigation

2.4.1 Where necessary, measures are recommended for incorporation into the Plan in order to avoid or mitigate adverse effects on European sites. There is considerable precedent for the level of detail a Neighbourhood Plan document should include regarding mitigation for recreational impacts on European sites. This precedent implies that all measures don't need to be fully developed before the adoption of the Plan, but the Plan must provide an adequate policy framework within which these measures can be delivered.

2.4.2 In evaluating significance, AECOM has relied on professional judgement and the LP HRA regarding development impacts on the European sites considered within this assessment.

2.4.3 When discussing 'mitigation' for a Neighbourhood Plan document, one is concerned primarily with the policy framework to enable the delivery of such mitigation rather than the details of the mitigation measures themselves, since the Local Development Plan document is a high-level policy document. A Neighbourhood Plan is a lower-level constituent of a Local Development Plan.

3. Scope of Report

3.1 Introduction

3.1.1 No guidance dictates the general physical scope of an HRA of a Plan document. Therefore, in considering the physical scope of the assessment, we were guided primarily by the identified impact pathways (called the source-pathway-receptor model).

3.1.2 Briefly defined, impact pathways are routes by which the implementation of a project can lead to an effect upon a European designated site. Examples of this include visual and noise disturbances arising from construction/decommissioning work or the operational phase of a project. If there are sensitive ecological receptors within a nearby European site (e.g. non-breeding overwintering birds), this could alter their foraging and roosting behaviour and potentially affect the site's integrity. For some impact pathways (notably air pollution), there is guidance that sets out distance-based zones required for assessment. For others, a professional judgment must be made based on the best available evidence.

3.2 European Sites Relevant to the Neighbourhood Plan

3.2.1 In the case of the Lower Winterborne NP, the Habitats sites requiring consideration are described in Table 1–1. The background of the Habitats sites are discussed in **Appendix A**. These sites lie outside of the neighbourhood plan area.

Table 1–1 European site description and distance from the Lower Winterborne NP area

Site Name/Designation	Site Description	Distance from NP Area	Reason for Inclusion
Dorset Heathlands SPA	The Dorset heathlands is an extensive lowland heathland area in southern England. Formerly a single tract divided only by river valleys, it is now fragmented. The heathlands comprise a wide range of habitat types, reflecting variation in soils, hydrology, water chemistry, and land-use history.	2.6 km	Public access/disturbance
Dorset Heaths SAC		2.6 km	Wildfire/arson
Dorset Heathlands Ramsar		2.8 km	Water pollution Air pollution: impact of atmospheric nitrogen
Dorset Heaths (Purbeck & Wareham & Studland Dunes SAC		6.4 km	Water pollution Air pollution: impact of atmospheric nitrogen
Poole Harbour SPA	Poole Harbour is a large natural harbour comprising of extensive tidal mudflats and saltmarshes, together with associated reedbeds, freshwater marshes and wetland grassland. It has a narrow entrance and a small tidal range, and as a result, although classified as an estuary (several rivers flow into it), it has many of the qualities of a large lagoon	8.2 km	Water Pollution
Poole Harbour Ramsar		8.2 km	

3.3 Pathways of Impact

3.3.1 In carrying out an HRA, it is important to avoid confining oneself to effectively arbitrary boundaries (such as Local Authority boundaries) but to use an understanding of the various ways in which Land Use Plans can impact on Habitats Sites to follow the pathways along which development can be connected with Habitats Sites, in some cases, many kilometres distant. Briefly defined, pathways are routes by which a

change in activity associated with a development can lead to an effect on a Habitats Site. It is also essential to bear in mind CLG guidance, which states that the AA should be '*proportionate to the geographical scope of the [plan policy]*' and that '*an AA need not be done in any more detail, or using more resources, than is useful for its purpose*' (CLG, 2006, p.6[1]).

3.3.2 Based upon Natural England Site Improvement Plans and professional judgement, there are several impact pathways that require consideration regarding increased development within the SMNP area and said Habitats Sites.

3.3.3 The following pathways of impact were considered relevant to the HRA of the SMNP.

- Public access/recreational pressure;
- Noise and visual disturbance;
- Changes in water quality; and,
- Changes in air quality.

[1] Department for Communities and Local Government. 2006. *Planning for the Protection of European Sites: Appropriate Assessment*. http://www.communities.gov.uk/index.asp?id=1502244

4. Test of Likely Significant Effect

4.1 Public Access/Recreational Pressure

4.1.1 There is growing concern over the cumulative impacts of recreation on key nature conservation sites in the UK, as most sites must fulfil conservation objectives while also providing recreational opportunities. Various research reports have provided compelling links between changes in housing and access levels and impacts on Habitats Sites [2] [3].

4.1.2 Recreational use of a site has the potential to:

- Cause disturbance to sensitive species such as wintering wildfowl;
- Prevent appropriate management or exacerbate existing management difficulties;
- Cause damage through erosion, trampling and fragmentation; and
- Cause eutrophication as a result of dog fouling.

4.1.3 Different types of Habitats Sites (e.g., coastal, heathland, chalk grassland) are subject to different types of recreational pressures and have different vulnerabilities. Studies across a range of species have shown that the effects of recreation can be complex.

Birds

4.1.4 Disturbance effects for birds can have an adverse effect in various ways, with increased nest predation by natural predators as a result of adults being flushed from the nest and deterred from returning to it by the presence of people and dogs likely to be a particular problem. A literature review on the effects of human disturbance on bird breeding found that 36 out of 40 studies reported reduced breeding success as a consequence of disturbance[4]. The main reasons given for the reduction in breeding success were nest abandonment and increased predation of eggs or young. Over the years, studies of other species have shown that birds nest at lower densities in disturbed areas, particularly when there is weekday as well as weekend pressure[5].

4.1.5 Studies have shown that birds are affected more by dogs and people with dogs than by people alone, with birds flushing more readily, more frequently, at greater distances and for longer (Underhill-Day, 2005). In addition, dogs, rather than people, tend to be the cause of many management difficulties, notably by worrying grazing animals, and can cause eutrophication near paths. Nutrient-poor habitats are susceptible to the fertilising effect of inputs of phosphates, nitrogen and potassium from dog faeces[6].

4.1.6 Underhill-Day (2005) summarises the results of visitor studies that have collected data on the use of semi-natural habitat by dogs. In surveys reporting 100 or more observations, the mean percentage of visitors accompanied by dogs was 54.0%.

4.1.7 However, these studies need to be treated with care. For instance, the effect of disturbance is not necessarily correlated with its impact; i.e., the most easily disturbed species are not necessarily those that will suffer the most significant impacts. It has been shown that, in some cases, the most easily disturbed birds move to other feeding sites, whilst others may remain (possibly due to an absence of alternative sites) and thus suffer greater impacts on their population[7]. A recent literature review

[2] Liley D, Clarke R.T., Mallord J.W., Bullock J.M. 2006a. The effect of urban development and human disturbance on the distribution and abundance of nightjars on the Thames Basin and Dorset Heaths. Natural England / Footprint Ecology.
[3] Liley D., Clarke R.T., Underhill-Day J., Tyldesley D.T. 2006b. Evidence to support the appropriate Assessment of development plans and projects in south-east Dorset. Footprint Ecology / Dorset County Council.
[4] Hockin, D., M. Oundsted, M. Gorman, D. Hill, V. Keller and M.A. Barker (1992) – Examination of the effects of disturbance on birds with reference to its importance in ecological assessments. *Journal of Environmental Management*, **36**, 253-286.
[5] Van der Zande, A.N., J.C. Berkhuizen, H.C. van Letesteijn, W.J. ter Keurs and A.J. Poppelaars (1984) – Impact of outdoor recreation on the density of a number of breeding bird species in woods adjacent to urban residential areas. *Biological Conservation,* **30**, 1-39.
[6] Shaw, P.J.A., K. Lankey and S.A. Hollingham (1995) – Impacts of trampling and dog fouling on vegetation and soil conditions on Headley Heath. *The London Naturalist*, **74**, 77-82.
[7] Gill et al. (2001) - Why behavioural responses may not reflect the population consequences of human disturbance. *Biological Conservation,* **97**, 265-268

undertaken for the RSPB[8] also urges caution when extrapolating results from a single disturbance study because responses differ among species, and responses within a species may vary with local environmental conditions. These factors must be taken into account when predicting the impacts of future recreational pressure on international sites.

4.1.8 It should be emphasised that recreational use is not inevitably a problem. Many Habitats Sites are also National Nature Reserves or nature reserves managed by Wildlife Trusts, The National Trust and the RSPB. At these sites, access is encouraged, and resources are available to ensure that recreational use is managed appropriately.

4.1.9 Where increased recreational use is predicted to cause adverse impacts on a site, avoidance and mitigation should be considered. Avoidance of recreational impacts at Habitats Sites involves locating new development away from such sites; Local Plans and other strategic plans, including Neighbourhood Plans, provide the mechanism for this. Where avoidance is not possible, mitigation will usually involve a mix of access management, habitat management and provision of alternative recreational space.

Bird Disturbance Study

4.1.10 A study was undertaken in 2010/2011 by Footprint Ecology[9], who looked at bird disturbance in North Kent. The study focused on recreational disturbance to wintering waterfowl on intertidal habitats and concentrated on part of the North Kent shoreline, stretching between Gravesend and Whitstable; encompassing three SPAs: the Thames Estuary and Marshes SPA, the Medway Estuary and Marshes SPA and the Swale SPA. The key findings of the study are as follows:

4.1.11 From 1,400 events (records of visitors in the bird survey areas) occurring within 200m of the birds, 3,248 species-specific observations were noted of which:

- 74% resulted in no response.
- 13% resulted in a major flight.
- 5% resulted in a short flight.
- 5% resulted in a short walk.
- 3% resulted in an alert.

4.1.12 Dog walking accounted for 55% of all major flight observations, with a further 15% attributed to walkers without dogs. After controlling for distance, major flights were more likely to occur when activities took place on the intertidal zone (compared to events on the water or events on the shore), when dogs were present, and the probability of a major flight increased with the number of dogs present within a group.

4.1.13 There were significant differences between species, with curlew *Numenius arquata*, the species with the highest probability of major flight, and teal *Anas crecca* and black-tailed godwit *Limosa limosa*, the lowest.

4.1.14 Tide state was also significant with major flights more likely at high tide, after controlling for distance. There was also a significant interaction between distance and tide, indicating that the way in which birds responded varied according to tide.

Habitats

4.1.15 Coastal habitats are particularly vulnerable to recreational impacts because these environments are highly dynamic and continually change in response to biotic and abiotic factors. Sand dune communities worldwide are characterised by high biodiversity but are often affected by human-induced impacts, such as trampling.

4.1.16 To understand the effects of human frequentation, trampling, and other human-induced impacts, fencing experiments have been traditionally carried out on coastal dunes. Since in touristic areas dune systems

[8] Woodfield & Langston (2004) - Literature review on the impact on bird population of disturbance due to human access on foot. *RSPB research report* No. 9.
[9] D. Liley & H. Fearnley (Footprint Ecology), 2011. Bird Disturbance Study North Kent.

are subjected to varying levels of human use rather than opening or fencing, studies have explored the effects of accessibility on vascular plant cover.

4.1.17 In general, plant communities subject to trampling tend to be poorer in species and less structured, since only dominant and tolerant plant species persist. Furthermore, limiting trampling appears to produce positive changes in the dune vegetation assemblage after a period of only two years[10]

4.1.18 A study was made of paths on a dune system at Winterton, Norfolk, by ground and aerial surveys and a map was produced of the 35 km of primary paths in 104 ha of dune[11]. Experiments were conducted on the resistance of a tall Festuca ovina-Carex arenaria sward to trampling. Estimates were made of the comparative vulnerability of other plant communities. The range extended from *Ammophila arenaria,* which was 10x as vulnerable, to a short rabbit-grazed sward, only 13-14x as vulnerable. Unfortunately, the more vulnerable habitats attracted more people. 42% of the paths at Winterton run through steep slopes dominated by *Ammophila*. Comparisons were made with a similar site at Meijendel, where greater recreational pressure necessitated the installation of laid-out paths and fencing to control visitors. It was suggested that if visitor pressure increased at Winterton, similar management may also be required there.

4.1.19 The degree of impact and sensitivity of SAC, SPA and Ramsar habitats and species are summarised below in Table 1–2 and Table 1–3[12]. It shows that most habitats and bird species have a degree of direct negative impact resulting from recreational site users.

Table 1–2 Relative Sensitivity of Moorland Features to Recreation and Urban Impacts

Habitats	Direct Impact		Indirect Impact	
	Trampling	**Disturbance**	**Fire**	**Management**
Dry dwarf-shrub heath	XX		XXX	
Wet dwarf-shrub heath	XXX		XX	
Blanket mire	XXX		XXX	
Mountain	XXX		X	
Acid grassland	XX		XX	
Calcareous grassland	XX			XX
Flushes/ springs	XXX			
Rock ledges	XX			
Screes	XX			
Breeding birds		XXX	XXX	XX
Wintering birds (raptor roosts)		X		
Invertebrates	XX		XX	X

Key (degree of negative effects): Least **X** **XX** **XXX** Most

Source: Adapted from Anderson (1990)

[10] Santoro, R et.al. (2012) Effects of Trampling Limitation on Coastal Dune Plant Communities. Environmental Management DOI 10.1007/s00267-012-9809-6

[11] L.A. Boorman, R.M. Fuller. Studies on the impact of paths on the dune vegetation at Winterton, Norfolk, England, Biological Conservation, Volume 12, Issue 3, 1977, Pages 203-216.

[12] Anderson P (1990). Moorland Recreation and Wildlife in the Peak District. Peak Park Joint Planning Board, Bakewell. Taken from Calderdale Local Plan HRA and referenced in the Bradford Core Strategy HRA.

Table 1–3 Relative Sensitivity of Moorland Plants

	Species	Notes	SAC/ SPA Presence
Least Sensitive	**Common bent/ crested dog's tail**	As in some in-bye land[13]	Not a major component of SAC Annex 1 habitats
	Wavy hairgrass/ sheep's fescue	On mineral soils	Often a minor component of SAC dry heath habitat
	Heather	Young	A major component of Annex 1 dry heath and blanket bog habitats
	Mat-grass	Usually on drier, thin peats or peaty mineral soils	Often a component of heavily grazed dry heath
	Purple moor-grass	Usually on wetter, flushed peaty soils	A major component of wetter heath and blanket bog habitats
	Bracken	Young plants	Can be invasive on drier heath and acid grassland habitats
	Heather	Old – old plants are brittle and easily broken	A major component of Annex 1 dry heath and blanket bog habitats. Important for nesting SPA birds
	Crowberry/ bilberry	On peat	A major component of Annex 1 dry heath and blanket bog habitats
	Cotton-grass spp.	Cotton-grass mire on peat	A major component of Annex 1 blanket bog habitats
Most Sensitive	***Sphagna***	Flushes, mire on peat	A major component of blanket bogs and transition mire habitats

Source: Adapted from Anderson (1990)

4.1.20 The Dorset Household Survey[14] considered how different factors influence visitor rates to heathlands in south-east Dorset. The survey focused on the extent to which the presence or extent of different habitats and existing green spaces in the vicinity of where people live determines the number of visits people make to the health.

4.1.21 The annual number of visits made per household to heaths correlated with the amount of heathland surrounding the home postcode, i.e., those people living in locations surrounded by lots of heathland visit heaths more often than those surrounded by less heathland. For those travelling to heaths on foot, the highest correlations were found with the area of the heath within a distance of 1.5km. For car-borne visitors, the highest correlation occurred using the area of the heath within 5km and especially within 1.5km-5km.

4.1.22 There was an indication that people living close to the coast visit heaths less. When there is no heath within 500m of a household, the presence of coastal greenspace within any distance limit from 500m outwards up to 15km has a statistically significant reduction in both the likelihood of visiting any heath and the number of heath visits made in a year.

4.1.23 Lower Winterborne parish is located within approximately 2.6km of the Dorset Heathland SPA, and Dorset Heaths SAC, and approximately 2.8km of the Dorset Heathland Ramsar, and around 6.4km from the Dorset Heaths (Purbeck & Wareham) & Studland Dunes SAC.

4.1.24 The following Habitats Sites are considered susceptible to recreational pressures within the context of the LWNP:

- Dorset Heathland SPA;

[13] In-bye land: part of a farm not comprising the hill and rough grazings.
[14] https://www.footprint-ecology.co.uk/reports/Clarke%20et%20al.%20-%202008%20-%20Access%20patterns%20in%20south-east%20Dorset.%20The%20Dorset%20h.pdf

- Dorset Heath SAC; and
- Dorset Heaths (Purbeck & Wareham) & Studland Dunes SAC

Nutrient enrichment (eutrophication)

4.1.25 A major concern for nutrient-poor terrestrial habitats such as dune and heathland systems is nutrient enrichment associated with dog fouling, which has been addressed in various reviews (e.g.,[15]). It is estimated that dogs will defecate within 10 minutes of starting a walk, and therefore most nutrient enrichment arising from dog faeces will occur within 400m of a site entrance. In contrast, dogs will urinate at frequent intervals during a walk, resulting in a spread-out distribution of urine. For example, in Burnham Beeches National Nature Reserve, it is estimated that 30,000 litres of urine and 60 tonnes of dog faeces are deposited annually[16]. While there is little information on the chemical constituents of dog faeces, nitrogen is one of the main components[17]. Nutrient levels are the primary determinant of plant community composition, and the effect of dog defecation in sensitive habitats is comparable to a high-level fertiliser application, potentially shifting plant communities toward those more typical of improved grasslands.

4.1.26 Nitrate is believed to be the limiting nutrient in marine or estuarine waters (as phosphorus is in freshwaters). Eutrophication can lead to extensive weed and algal growth, which can harm the natural habitat. Nitrate is a highly soluble, mobile compound which is readily used by plants but also leaches into groundwater or runs off the land into watercourses if over applied or following rainfall events.

4.1.27 The Dorset Household Survey[18] also showed that dog owners visit green spaces, and particularly heaths, more than non-dog owners. Dog owners make an average of 289.5 visits per year to any type of green space compared to an average of 119.5 annual visits by households without a dog (i.e., dog walkers make 2.4 times as many visits to green space as non-dog walkers). The ratio of dog owners to non-dog-owners is greatest for heaths, to which dog-owning households make over four times as many visits both on foot and by car. There is a preference for visiting coastal green spaces when no heathland is within 500m of a household.

4.1.28 The following Habitats Sites are considered susceptible to nutrient enrichment within the context of the LWNP:

- Dorset Heathland SPA;
- Dorset Heath SAC; and
- Dorset Heaths (Purbeck & Wareham) & Studland Dunes SAC

Wildfire and Arson

4.1.29 Wildfires are a periodic threat across the Habitats Sites and can adversely affect habitats through direct damage caused to the vegetation and soils, which results in loss of valuable habitat quality and associated wildlife, alongside carbon release to the atmosphere and to watercourses. Wildfires/arson have been identified as a potential threat to the Dorset Heaths (Purbeck & Wareham) & Studland Dunes SAC, Dorset Heaths SAC and Dorset Heathlands SPA/Ramsar.

4.1.30 The cause of ignition is generally accepted to be of human origin, with deliberate intent a pattern on some parts of the site and elsewhere, careless behaviour near to footpaths and car parks appears to be the chief cause of ignition. Available research[19, 20] identifies the principal causes of 'wild' fires to be:

[15] Taylor K., Anderson P., Taylor R.P., Longden K. & Fisher P. 2005. Dogs, access and nature conservation. English Nature Research Report, Peterborough.
[16] Barnard A. 2003. Getting the facts – Dog walking and visitor number surveys at Burnham Beeches and their implications for the management process. *Countryside Recreation* **11**:16-19.
[17] Taylor K., Anderson P., Liley D. & Underhill-Day J.C. 2006. Promoting positive access management to sites of nature conservation value: A guide to good practice. English Nature / Countryside Agency, Peterborough and Cheltenham.
[18] https://www.footprint-ecology.co.uk/reports/Clarke%20et%20al.%20-%202008%20-%20Access%20patterns%20in%20south-east%20Dorset.%20The%20Dorset%20h.pdf
[19] J. C. Underhill-Day, (2005) 'A literature review of urban effects on lowland heaths and their wildlife', English Nature Research Reports, Number 623
[20] J.S. Kirby & D.A.S Tantram (1999) 'Monitoring heathland fires in Dorset: Phase 1' Report to Department of the Environment, Transport and the Regions: Wildlife and Countryside Directorate

- Deliberate fire-setting;
- Campfires or disposable barbeques that have got out of control;
- Planned fires that have got out of control (e.g. part of moorland management for grouse); and,
- Bonfires that have got out of control.

4.1.31 Kirby & Tantram concluded that fires occurred at higher densities on the fringes of larger conurbations and in sites within developed urban areas, where fire events present a serious risk to ecological integrity. Within the Kirby & Tantram research, a zone of 500m was used, based on the maximum likely access distance for average users of greenspace[21, 22,] and it was found that the degree of development within this zone correlated with the incidence of fires (on Dorset Heathlands). There is also evidence to suggest that a significant proportion of deliberate fire setting is by children of school age.

4.1.32 None of the Habitats sites are within 500m of the NP boundary and therefore none are considered susceptible to wildfire and arson within the context of the LWNP. **Wildlife and arson can be screened out from further discussion**.

4.1.33 **Recreational pressure overall cannot be screened out and will be discussed further within the appropriate assessment in terms of bird disturbance and nutrient enrichment**.

4.2 Noise and Visual Disturbance

4.2.1 As detailed in the Recreational Pressure section above, human activity can affect birds either directly (e.g., through causing them to flee) or indirectly (e.g., through damaging their habitat). Human activity can also lead to behavioural changes (e.g., alterations in feeding behaviour, avoidance of certain areas etc.) and physiological changes (e.g., an increase in heart rate) that, although less noticeable, may ultimately result in major population-level effects by altering the balance between immigration/birth and emigration/death[23].

4.2.2 Recreational pressure is not the only potential source of disturbance. Construction work taking place immediately adjacent to the designated site or functionally linked land could cause disturbance and displacement of the designated birds. While any impact relating to demolition and construction activities will be temporary (in that birds would return once construction work ceased and the disturbance stimulus was removed), the resulting effect on population survival could be significant if it occurs during the winter/passage period and prevents birds from using feeding areas on which they rely. It should be noted that operational activities are unlikely to be temporary, and thus, the impact of these activities could result in a more severe adverse reaction from designated bird features.

4.2.3 The degree of impact that varying levels of noise will have on different species of bird is poorly understood except that a number of studies have found that an increase in traffic levels on roads does lead to a reduction in the bird abundance within adjacent hedgerows - Reijnen et al (1995) examined the distribution of 43 passerine species (i.e., 'songbirds'), of which 60% had a lower density closer to the roadside than further away. By controlling vehicle usage, they also found that the density generally was lower along busier roads than quieter roads[24].

4.2.4 A recent study on recreational disturbance on the Humber[25] assesses different types of noise disturbance on waterfowl, referring to studies relating to aircraft (see Drewitt 1999[26]), traffic (Reijnen, Foppen, & Veenbaas 1997)[27], dogs (Lord, Waas, & Innes 1997[28]; Banks & Bryant 2007[29]) and machinery

[21] Harrison, C, Burgess, J, Millward, A, Dawe, G. 1995. Accessible greenspace in towns and cities: A review of appropriate size and distance criteria. English Nature Research Report No. 153. English Nature, Peterborough.
[22] Box, J. & Harrison, C. 1993. Natural spaces in urban places. Town 19 Country Planning, 62(9): 231-235
[23] Riley, J. 2003. Review of Recreational Disturbance Research on Selected Wildlife in Scotland. Scottish Natural Heritage.
[24] Reijnen, R. et al. 1995. The effects of car traffic on breeding bird populations in woodland. III. Reduction of density in relation to the proximity of main roads. Journal of Applied Ecology 32: 187-202
[25] Helen Fearnley Durwyn Liley and Katie Cruickshanks (2012) Results of Recreational Visitor Survey across the Humber Estuary produced by Footprint Ecology
[26] Drewitt, A. (1999) Disturbance effects of aircraft on birds. English Nature, Peterborough.
[27] Reijnen, R., Foppen, R. & Veenbaas, G. (1997) Disturbance by traffic of breeding birds: evaluation of the effect and considerations in planning and managing road corridors. Biodiversity and Conservation, 6, 567-581.
[28] Lord, A., Waas, J.R. & Innes, J. (1997) Effects of human activity on the behaviour of northern New Zealand dotterel Charadrius obscurus aquilonius chicks. Biological Conservation, 82,15-20.
[29] Banks, P.B. & Bryant, J.V. (2007) Four-legged friend of foe? Dog-walking displaces native birds from natural areas. Biology Letters, 3, 611-613.

(Delaney et al. 1999; Tempel & Gutierrez 2003). These studies identified that there is still relatively little work on the effects of different types of water-based craft and the impacts from jet skis, kite surfers, windsurfers, etc. (see Kirby et al. 2004[30] for a review). Some types of disturbance are clearly likely to invoke different responses. In very general terms, both distance from the source of disturbance and the scale of the disturbance (noise level, group size) will influence the response (Delaney et al. 1999[31]; Beale & Monaghan 2005[32]). On UK estuaries and coastal sites, a review of WeBS data showed that, among the volunteer WeBS surveyors, driving of motor vehicles and shooting were the two activities most perceived to cause disturbance (Robinson & Pollitt 2002)[33].

4.2.5 Additionally, animals can be disturbed by the movement of ships. For instance, a DTI study of birds of the northwest coast noted that: "*Divers and scoters were absent from the mouths of some busier estuaries, notably the Mersey... Both species are known to be susceptible to disturbance from boats, and their relative scarcity in these areas... may in part reflect the volume of boat traffic in these areas*"[34].

4.2.6 Three of the most important factors determining the magnitude of disturbance appear to be species sensitivity, proximity of the disturbance source and timing/ duration of the disturbance. Generally, the most disturbing activities are likely to be those that involve irregular, infrequent, unpredictable loud noise events, movement or vibration of long duration. Birds are least likely to be disturbed by activities that involve regular, frequent, predictable, quiet patterns of sound or movement or minimal vibration. The farther any activity is from the birds, the less likely it is to disturb them.

4.2.7 An increasing amount of research on visual and noise disturbance of waterfowl from construction (and other activities) is now available. Both visual and noise stimuli may elicit disturbance responses, potentially affecting the fitness and survival of waterfowl and waders. Noise is a complex disturbance parameter that requires consideration of multiple factors, including its nonlinear nature, nonadditive effects, and source-receptor distance. A high level of noise disturbance constitutes a sudden noise event exceeding 60 dB or a prolonged noise event exceeding 72 dB. Bird responses to high noise levels include major flight or cessation of feeding, both of which might affect survival if other stressors are present (e.g., cold weather, food scarcity).

4.2.8 Generally, research has shown that above noise levels of 84 dB, waterfowl show a flight response, while at levels below 55 dB, there is no effect on their behaviour. These two thresholds are therefore considered useful as defining two extremes. The same authors have shown that regular noise levels should be below 70 dB at the bird, as birds will habituate to noise levels below this level. Generally, noise is attenuated by 6 dB with every doubling of distance from the source. For example, impact piling, which is a particularly noisy construction process of approximately 110 dB at 0.67m from the source, will therefore reduce to 67 – 68 dB at 100m away from the source. The loudest construction noise will therefore have fallen to below disturbing levels by 100m from the source, and certainly by 200m, even without mitigation.

4.2.9 Visual disturbance is generally considered to have a higher impact than noise disturbance as, in most instances, visual stimuli will elicit a disturbance response at much greater distances than noise. For example, a flight response is triggered in most species when they are approached to within 150m across a mudflat. Visual disturbances can be exacerbated by workers operating equipment outside the machinery, undertaking sudden movements, and using large machinery. Some species are particularly sensitive to visual disturbance, including curlew (taking flight at 275m), redshank (at 250m), shelduck (at 199m) and bar-tailed godwit (*Limosa lapponica*) (at 163m).

4.2.10 For the purpose of this assessment, a buffer of 300m has been used for visual and noise disturbance effects. **As all of the Habitats Sites are over 2km from the NP boundary, none are considered susceptible to visual and noise disturbance within the context of the LWNP; therefore, noise and visual disturbance can be screened out and do not need further discussion**.

[30] Kirby, J.S., Clee, C. & Seager, V. (1993) Impact and extent of recreational disturbance to wader roosts on the Dee estuary: some preliminary results. Wader Study Group Bulletin, 68, 53-58.
[31] Delaney, D.K., Grubb, T.G., Beier, P., Pater, L.L.M. & Reiser, H. (1999) Effects of Helicopter Noise on Mexican Spotted Owls. The Journal of Wildlife Management, 63, 60-76.
[32] Beale, C.M. & Monaghan, P. (2005) Modeling the Effects of Limiting the Number of Visitors on Failure Rates of Seabird Nests. Conservation Biology, 19, 2015-2019.
[33] Robinson, J.A. & Pollitt, M.S. (2002) Sources and extent of human disturbance to waterbirds in the UK: an analysis of Wetland Bird Survey data, 1995/96 to 1998/99: Less than 32% of counters record disturbance at their site, with differences in causes between coastal and inland sites. Bird Study, 49, 205.
[34] DTI (2006). Aerial Surveys of Waterbirds in Strategic Wind Farm Areas: 2004/05 Final Report

4.3 Changes in Air Quality

4.3.1 Current levels of understanding of air quality effects on semi-natural habitats are not adequate to allow a rigorous assessment of the likelihood of significant effects on the integrity of key Habitats Sites.

4.3.2 The main pollutants of concern for Habitats Sites are oxides of nitrogen (NOx), ammonia (NH_3) and sulphur dioxide (SO_2) and are summarised in Table 4. NOx can have a direct toxic effect on vegetation. In addition, higher NOx or ammonia concentrations in the atmosphere will lead to higher rates of nitrogen deposition to soils. An increase in atmospheric nitrogen deposition to soils is generally regarded as leading to increased soil fertility, which can have a serious deleterious effect on the quality of semi-natural, nitrogen-limited terrestrial habitats[35] [36].

Table 1–4 Main Sources and Effects of Air Pollutants on Habitats and Species

Pollutant	Source	Effects on habitats and species
Sulphur dioxide (SO_2)	The main sources of SO_2 are electricity generation and the combustion of industrial and domestic fuels. However, total SO_2 emissions in the UK have decreased substantially since the 1980s. Another origin of sulphur dioxide is the shipping industry, and high atmospheric concentrations of SO_2 have been documented in busy ports. In future years, shipping is likely to become one of the most important contributors to SO_2 emissions in the UK.	Wet and dry deposition of SO_2 acidifies soils and freshwater and may alter the composition of plant and animal communities. The magnitude of effects depends on levels of deposition, the buffering capacity of soils and the sensitivity of impacted species. However, SO_2 background levels have fallen considerably since the 1970s and are no longer considered a threat to plant communities. For example, decreases in Sulphur dioxide concentrations have been linked to the return of lichen species and improved tree health in London.
Acid deposition	Leads to acidification of soils and freshwater via atmospheric deposition of SO_2, NOx, ammonia and hydrochloric acid. Acid deposition from rain has declined by 85% in the last 20 years, with most of this attributed to lower sulphate levels. Although future trends in S emissions and subsequent deposition to terrestrial and aquatic ecosystems will continue to decline, increased N emissions may offset any gains from reduced S levels.	Gaseous precursors (e.g., SO_2) can cause direct damage to sensitive vegetation, such as lichen, upon deposition. It can affect habitats and species through both wet (acid rain) and dry deposition. The effects of acidification include lowering of soil pH, leaf chlorosis, reduced decomposition rates, and compromised reproduction in birds/plants. Not all sites are equally susceptible to acidification. This varies depending on soil type, bedrock geology, weathering rate and buffering capacity. For example, sites with an underlying geology of granite, gneiss and quartz-rich rocks tend to be more susceptible.
Ammonia (NH_3)	Ammonia is a reactive, soluble, alkaline gas released following the decomposition and volatilisation of animal wastes, as well as from some chemical processes and vehicle exhausts. It is a naturally occurring trace gas, but ammonia concentrations are directly related to livestock distribution. Ammonia reacts with acid pollutants, such as products of SO2 and NOX emissions, to produce fine ammonium (NH4+) -containing aerosol. Due to its significantly longer lifetime, NH_4+ may be transferred much longer distances (and can therefore be a significant transboundary issue). While ammonia deposition may be estimated from its atmospheric concentration, the	The negative effect of NH_4+ may occur via direct toxicity when uptake exceeds detoxification capacity and via N accumulation. Its main adverse effect is eutrophication, leading to assemblages dominated by fast-growing, tall species. For example, a shift in dominance from heath species (lichens, mosses) to grasses is often seen. As emissions mostly occur at ground level in rural environments and NH_3 is rapidly deposited, some of the most acute problems of NH_3 deposition occur in small relict nature reserves located in intensive agricultural landscapes.

[35] Wolseley, P. A.; James, P. W.; Theobald, M. R.; Sutton, M. A. **2006.** Detecting changes in epiphytic lichen communities at sites affected by atmospheric ammonia from agricultural sources. Lichenologist 38: 161-176
[36] Dijk, N. **2011.** Dry deposition of ammonia gas drives species change faster than wet deposition of ammonium ions: evidence from a long-term field manipulation Global Change Biology 17: 3589-3607

Pollutant	Source	Effects on habitats and species
	deposition rates are strongly influenced by meteorology and ecosystem type	
Nitrogen oxides (NO_x)	Nitrogen oxides are mostly produced in combustion processes. Half of NO_X emissions in the UK derive from motor vehicles, one quarter from power stations and the rest from other industrial and domestic combustion processes.	The direct toxic effects of gaseous nitrates are likely to be important in areas close to the source (e.g., roadside verges). A critical level of NOx for all vegetation types has been set to 30 ug/m^3. Deposition of nitrogen compounds (nitrates (NO_3), nitrogen dioxide (NO_2) and nitric acid (HNO_3)) contributes to the total nitrogen deposition and may lead to both soil and freshwater acidification. In addition, NOx contributes to soil and water eutrophication, altering plant community species composition at the expense of sensitive species.
Nitrogen deposition	The pollutants that contribute to total nitrogen deposition derive mainly from oxidised (e.g., NOX) or reduced (e.g., NH_3) nitrogen emissions (described separately above). While oxidised nitrogen mainly originates from major conurbations or highways, reduced nitrogen mostly derives from farming practices. The N pollutants together are a large contributor to acidification (see above).	All plants require nitrogen compounds to grow, but excessive overall N is widely regarded as the major driver of biodiversity change globally. Species-rich plant communities with high proportions of slow-growing perennial species and bryophytes are most at risk from N eutrophication. This is because many semi-natural plants cannot assimilate the surplus N as well as many graminoid (grass) species. N deposition can also increase the risk of damage from abiotic factors, e.g. drought and frost.
Ozone (O_3)	A secondary pollutant generated by photochemical reactions involving NOx, volatile organic compounds (VOCs) and sunlight. These precursors are mainly released by the combustion of fossil fuels (as discussed above). Increasing anthropogenic emissions of ozone precursors in the UK have led to more days when ozone levels exceed 40 ppb ('episodes' or 'smog'). Reducing ozone pollution is believed to require action at the international level to reduce levels of the precursors that form ozone.	Concentrations of O_3 above 40 ppb can be toxic to both humans and wildlife and can affect buildings. High O_3 concentrations are widely documented to cause damage to vegetation, including visible leaf damage, reductions in floral biomass, reductions in crop yield (e.g., cereal grains, tomato, potato), reductions in the number of flowers, decreases in forest production, and altered species composition in semi-natural plant communities.

Source: Information summarised from the Air Pollution Information System (http://www.apis.ac.uk/)

4.3.3 Sulphur dioxide emissions are overwhelmingly influenced by the output of power stations and industrial processes that require the combustion of coal and oil. Ammonia emissions are dominated by agriculture, with some chemical processes also making notable contributions. As such, it is unlikely that material increases in SO_2 emissions will be associated with the SMNP.

4.3.4 Ammonia can have a directly toxic effect upon vegetation, particularly at close distances to the source, such as near road verges[37]. NO_x can also be toxic at high concentrations (far above the annual average critical level), but generally only in the presence of elevated sulphur dioxide, which is very rare in the UK. High levels of NO_x and NH_3 are likely to increase the total N deposition to soils, potentially leading to deleterious knock-on effects in resident ecosystems. Increases in atmospheric nitrogen deposition can, if sufficiently large, enhance soil fertility and lead to eutrophication. This often has adverse effects on community composition and the quality of semi-natural, nitrogen-limited terrestrial and aquatic habitats[38, 39].

[37] http://www.apis.ac.uk/overview/pollutants/overview_NOx.htm.
[38] Wolseley, P. A.; James, P. W.; Theobald, M. R.; Sutton, M. A. **2006.** Detecting changes in epiphytic lichen communities at sites affected by atmospheric ammonia from agricultural sources. Lichenologist 38: 161-176
[39] Dijk, N. **2011.** Dry deposition of ammonia gas drives species change faster than wet deposition of ammonium ions: evidence from a long-term field manipulation Global Change Biology 17: 3589-3607

4.3.5 NO_x emissions, however, are dominated by the output of vehicle exhausts (more than half of all emissions). Within a 'typical' housing development, by far the most considerable contribution to NO_x (92%) will be made by the associated road traffic. Other sources, although relevant, are of minor importance (8%) in comparison[40]. Emissions of NO_x could therefore be reasonably expected to increase as a result of greater vehicle use as an indirect effect of the SMNP.

4.3.6 According to the World Health Organisation, the critical NO_x concentration (critical threshold) for the protection of vegetation is 30 μgm^{-3}; In addition, ecological studies have determined 'critical loads'[41] of atmospheric nitrogen deposition (that is, NO_x combined with ammonia NH_3) for key habitats within Habitats Sites.

4.3.7 According to the Department of Transport's Transport Analysis Guidance, *"Beyond 200m, the contribution of vehicle emissions from the roadside to local pollution levels is not significant"*[42] (Figure 2).

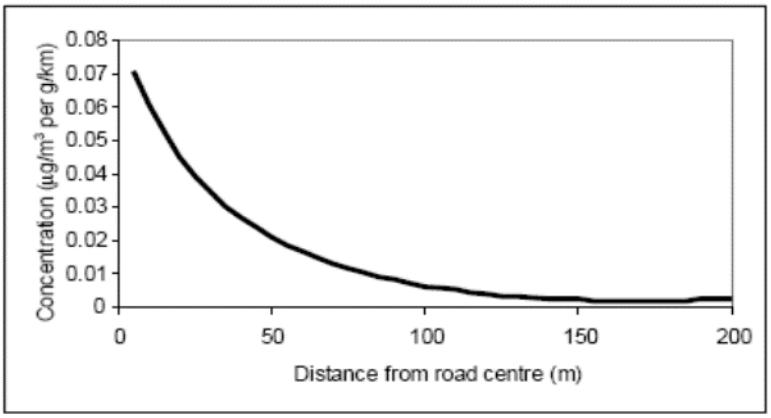


Figure 2: Traffic contribution to concentrations of pollutants at different distances from a road (Source: www.dft.gov.uk/ha/standards/dmrb/vol11/section3/ha20707.pdf)

4.3.8 This is therefore the distance that has been used throughout this HRA in order to determine whether Habitats Sites are likely to be significantly affected by development under the LWNP.

4.3.9 Lower Winterborne Parish lies on the A31, which leads to the A35 and A350 Poole Road, which, south of the parish, passes adjacent to Dorset Heaths SAC and Dorset Heathlands SPA/Ramsar. Therefore, likely significant effects cannot be screened out, and this will be discussed within the appropriate assessment.

4.4 Changes in Water Quality

4.4.1 Increased amounts of housing or business development can lead to reduced water quality of rivers and estuarine environments. Sewage and industrial effluent discharges can contribute to increased nutrients on Habitats Sites, leading to unfavourable conditions.

4.4.2 The quality of the water that feeds Habitats Sites is an important determinant of the nature of their habitats and the species they support. Poor water quality can have a range of environmental impacts:

- At high levels, toxic chemicals and metals can result in the immediate death of aquatic life. They can have detrimental effects even at lower levels, including increased vulnerability to disease and changes in wildlife behaviour. Eutrophication, the enrichment of water with plant nutrients, increases plant growth and, consequently, depletes oxygen. Algal blooms, which commonly result from eutrophication, increase turbidity and decrease light penetration. The decomposition of organic waste that often accompanies eutrophication further deoxygenates water, amplifying the

[40] Proportions calculated based upon data presented in Dore CJ et al. 2005. UK Emissions of Air Pollutants 1970 – 2003. UK National Atmospheric Emissions Inventory. http://www.airquality.co.uk/archive/index.php
[41] The critical load is the rate of deposition beyond which research indicates that adverse effects can reasonably be expected to occur
[42] www.webtag.org.uk/archive/feb04/pdf/feb04-333.pdf

oxygen-depleting effects of eutrophication. In the marine environment, nitrogen is the limiting plant nutrient, and so eutrophication is associated with discharges containing available nitrogen.

- Some pesticides, industrial chemicals, and components of sewage effluent are suspected to interfere with the functioning of the endocrine system, possibly having negative effects on the reproduction and development of aquatic life.
- For sewage treatment works close to capacity, further development may increase the risk of effluent escape into aquatic environments. In many urban areas, sewage treatment and surface water drainage systems are combined, and therefore, a predicted increase in flood and storm events could increase pollution risk.

4.4.3 Poole Harbour SPA/Ramsar is tidal and is also fed by the rivers Frome and Piddle. Nitrogen (nitrates) in the harbour, through a process known as eutrophication, is encouraging the growth of widespread algal mats. These mats restrict the development, distribution and variety of important food (invertebrates) available for wading birds and affect other important features and processes. The presence of algal mats has increased since the 1960s, spreading from Holes Bay to become widespread across the harbour.

4.4.4 Nitrates enter Poole Harbour from inflowing rivers (73%), from the sea (19%) and from direct discharges to the harbour (8%). Nitrogen entering Poole Harbour from the land comes from either a combination of widespread places known as 'diffuse sources', which are mainly losses from agriculture such as nitrogen fertilisers and livestock manure (85%), or from concentrated point sources such as sewage treatment works (STWs) (15%). The time it takes nitrates to reach the harbour from the source varies from very quickly, where wastewater is piped from STWs, to very slowly, where nitrates from agriculture percolate through soil into rivers, which can take an average of about 30 years to reach the harbour. In 2009, nitrogen stripping was introduced at Poole STW, significantly reducing the nitrate concentration in wastewater entering the harbour.

4.4.5 The Water Framework Directive defines Poole Harbour as a 'Protected Area' and is classed as having poor chemical status due to elevated nitrogen concentrations. The objective for Protected Areas is to achieve Good Ecological Status, where technically feasible and not disproportionate in cost. For Poole Harbour, the Environment Agency and Natural England have recognised that achieving Good status will take a significant time delay, as historic leaching of nitrates across the catchment will take many years to be flushed through the groundwater and into the Harbour (on average 30 years across the catchment).

4.4.6 The Environment Agency and Natural England published a nutrient management plan (NMP), entitled the '*Strategy for Managing Nitrogen in the Poole Harbour Catchment To 2035*' (June 2013)[43]. The NMP provides the most comprehensive and up-to-date scientific knowledge and understanding of the complex underlying processes causing eutrophication. The NMP also sets out options for reducing nutrient inputs to Poole Harbour in a sustainable and considered manner. The NMP is flexible in its approach, considering measures across the whole harbour catchment. It recommends that representatives of the agricultural sector prepare a plan to reduce the impact of agricultural nitrates. It also recommends that local planning authorities within the catchment prepare a plan to ensure that future residential development is nitrogen-neutral. In response to the NMP, the Nitrogen Reduction in Poole Harbour Supplementary Planning Document was prepared. This was adopted by Purbeck District Council, the Borough of Poole, West Dorset District Council and North Dorset District Council in 2017.

4.4.7 Wessex Water currently handles wastewater treatment within Sandbanks through their Drainage and Wastewater Management Plan 2022[44] (May 2023). The Plan sets out how Wessex Water aims to deliver resilient drainage and wastewater infrastructure for the next 25 years.

4.4.8 In addition to this, under the Environmental Damage (Prevention and Remediation) (England) Regulations 2015 and the Environmental Permitting (England and Wales) Regulations 2016, it is illegal to pollute watercourses. Individual planning proposals will undergo Preliminary Ecological Appraisal (PEA) or Environmental Impact Assessment (EIA), if identified as Schedule 1 or Schedule 2 proposals by the Town and Country Planning (Environmental Impact Assessment) Regulations 2017. As such, water quality protection measures must, by law, be introduced on any scheme that could affect the water

[43] http://webarchive.nationalarchives.gov.uk/20140328084622/http:/www.environment-agency.gov.uk/research/library/publications/148450.aspx
[44] https://corporate.wessexwater.co.uk/media/cldo1kua/wessex-dwmp-the-full-report.pdf

quality of the river or coastal environment, irrespective of whether part of that environment is designated as an SAC or SPA.

4.4.9 **The majority of the Lower Winterborne Parish, including the three main settlements lie beyond the Poole Harbour surface water catchment area, and treated wastewater from the parish likely ultimately discharges to the Stour catchment, which will discharge to the sea at Bournemouth or Hengistbury Head, so Poole Harbour SPA/Ramsar will not be susceptible to nitrogen inputs from the Lower Winterborne Parish NP. Therefore, water quality can be screened out from further discussion.**

4.5 Summary of Test of Likely Significant Effects

4.5.1 A test of likely significant effects assessment has been undertaken on the policies of the Lower Winterborne Neighbourhood Plan. This is shown in Appendix B. There were 16 policies in total, with the following policies screened as potentially having an impact on Habitats sites:

- **Policy 10** – Meeting local needs – housing. This policy sets out that local housing needs require at least 30 net new dwellings.
- **Policy 11** – Meeting local needs – employment. Although this policy doesn't specifically allocate a quantum of employment, the policy does support increasing employment land within the neighbourhood plan area.
- **Policy 14** – Land adjoining and north of the Recreation Ground, off North Street. This is a potential allocation which could allocate up to 22 net new dwellings. This allocation is yet to be confirmed.
- **Policy 15** – Unconfirmed allocation. This policy has yet to be written at the time of writing this report. However, this could potentially allocate the remaining 8 dwellings for the local need.
- **Policy 16** – Abbots Court Dairy. This is a potential employment allocation policy. However, the policy itself does not allocate a quantum of employment land; it does, however, support increasing employment land at this site.

4.5.2 An assessment of impact pathways has also been undertaken above, and the following have been screened in for the appropriate assessment as having a likely significant effect on Habitats Sites:

- **Recreational pressure** – on Dorset Heaths SAC, Dorset Heathlands SPA and Dorset Heaths (Purbeck & Wareham) & Studland Dunes SAC, with regard to bird disturbance and nutrient enrichment.
- **Air Quality** – on Dorset Heaths SAC, Dorset Heathlands SPA and Ramsar.

4.5.3 The following impact pathways have been screened out:

- **Wildfire and arson** – all Habitats Sites are sufficiently distant from the neighbourhood plan area.
- **Noise and visual disturbance** – All Habitats Sites are sufficiently distant from the neighbourhood plan area.
- **Water quality** – The settlements are outside of the groundwater catchment for Poole Harbour SPA/Ramsar, and the WwTWs are within the River Stour catchment.

5. Appropriate Assessment in Combination

5.1 Introduction

5.1.1 The law does not prescribe how an AA should be undertaken or presented, but it must consider all impact pathways that have been screened in, whether they arise alone or in combination with other projects and plans. That analysis is the purpose of this section. The law does not require the different effects to be examined separately, provided all effects are discussed.

5.1.2 The HRA screening exercise undertaken in Table 1-5, Appendix B, indicates that five NP policies were considered to pose LSEs to Habitats sites, either alone or in combination with other projects and plans, due to contributing to one or more of the following impact pathways: recreational pressure and atmospheric pollution.

5.2 Recreational Pressure

5.2.1 Recreational pressure includes bird disturbance by walkers and dogs, trampling of habitats by walkers, and nutrient enrichment of habitats through dog faeces, all of which have been discussed in detail in the test of likely significant effects. The Neighbourhood Plan, in combination with other plans and projects, was shown to have a likely significant effect on the following Habitats sites:

- Dorset Heathland SPA;
- Dorset Heath SAC; and
- Dorset Heaths (Purbeck & Wareham) & Studland Dunes SAC

5.2.2 The impacts of recreation on these Habitats Sites are a well-known issue across the County of Dorset, which has created The Dorset Heathlands Supplementary Planning Document since 2006. The current adopted document 2020-2025, which will be updated to cover the next five years, sets out the recreation mitigation for the above Habitats Sites.

5.2.3 The strategy for avoidance and mitigation within 400m to 5 km of the Habitats sites consists of two dependent approaches. Strategic Access Management and Monitoring (SAMM) and Heathland Infrastructure Projects (HIPs). The SPD sets out that "*SAMMs contributions secure the day-to-day costs of helping local people to alter harmful behaviour through raising awareness of the issues and value of the protected sites, which includes (i) employing wardens to manage visitor pressures on the heathland; and (ii)delivering education programmes in local schools. SAMMs also pay for the ongoing monitoring of a sample of heathlands and the effects of new development, and crucially, whether this strategy is effective.*" The SPD goes on to state that "*HIPS are physical infrastructure works, such as the provision of Suitable Alternative Natural Greenspace (SANGs) or enhancement of existing greenspaces to increase the attractiveness for visitors that would otherwise visit the Dorset Heathlands.*"

5.2.4 As the Parish is within 5 km of the Habitats Sites covered within this SPD, any development brought forward, including those provisionally allocated within the current version of the Neighbourhood Plan and any brought forward in the future, will be required to adhere to the requirements of this SPD and any updated version.

5.2.5 The Neighbourhood Plan contains a protective policy framework to ensure compliance with the Dorset Heathlands SPD in Policy 4. Protecting and incorporating green spaces and wildlife. This policy states that "*To avoid adverse effects on the Dorset Heathlands SPA/Ramsar/SAC, any net gain in dwellings or visitor accommodation will need to satisfy the requirements of The Dorset Heathlands SPD and the Dorset Heathland Air Quality Strategy. This will include provision of adequate Heathland Infrastructure Projects and financial contributions towards the mitigation measures identified in the SPD.*"

5.2.6 The SPD is worded so that any development within 5km of the Sites will have to adhere to the mitigation plan, therefore any development brought forward across Dorset in the zone of influence will

contribute to SAMM and HIPs. This means there will be no in-combination impacts, as all development, regardless of parish or district, will have to provide mitigation for the Heathland Habitats Sites.

5.2.7 **With the SPD and the protective policy within the LWNP, it can be concluded that the Lower Winterborne Neighbourhood Plan will not adversely affect any Habitats Sites with regard to recreational pressure either alone or in combination with other plans and projects**.

5.3 Changes in Air Quality

5.3.1 As summarised in the ToLSE, the main pollutants of concern for Habitats Sites are oxides of nitrogen (NOx), ammonia (NH_3) and sulphur dioxide (SO_2) and contributions of air quality impacts are seen within 200m of the road; further than this, the contributions are negligible. Additional vehicle trips generated by increased development within the Neighbourhood Plan Area in-combination with increased development across Dorset within this distance could have adverse effects on the integrity of the Habitats Sites.

5.3.2 This is therefore the distance that has been used throughout this HRA in order to determine whether Habitats Sites are likely to be significantly affected by development under the LWNP. Lower Winterborne Parish lies on the A31, which leads to the A35 and A350 Poole Road, which, south of the parish, passes adjacent to Dorset Heaths SAC and Dorset Heathlands SPA/Ramsar.

5.3.3 Working in partnership, Dorset Council and Bournemouth, Christchurch and Poole (BCP) Council have produced the Dorset Heathlands Interim Air Quality Strategy (2020 – 2025)[45]. The aim of the strategy is *"to address the adverse effect of airborne nitrogen upon the Dorset Heathlands designated sites by contributing to the achievement of the conservation objectives for air quality and in doing so, facilitate the delivery of planned development."* The Councils can partially address air quality issues by using developer contributions to fund targeted management of heathland, but measures to actively reduce emissions are also required. The Councils have already implemented, or are implementing, projects to improve air quality on heathlands.

5.3.4 This element forms part of the overall strategy to deliver the reductions in pollution necessary to help achieve the conservation objectives of the Dorset Heathlands. The councils (Dorset and BCP) have already implemented, or are implementing, projects to improve air quality on heathlands.

5.3.5 The strategy envisages a phased approach to the delivery of further projects and measures to contribute to the recovery of the Dorset Heathlands towards a favourable conservation status with regard to air quality:

- Phase 1: Measures already in place 2015-2020 – Projects implemented for other reasons which have air quality benefits to the protected heathland nearby.
- Phase 2: Interim approach from 2020-2025 - Projects to deliver benefits ahead of the preparation of formal local plan policy.
- Phase 3: Local plan approach from 2025 onwards - Projects aligned to new policies set out in the BCP Council Local Plan and the Dorset Council Local Plan

5.3.6 The strategy states that "*by 2030, or when government policy on vehicle emissions will trigger an increasing shift to zero emission vehicles, the measures set out in this strategy should become embedded.*

The measures will be needed until air pollution levels return to an acceptable level and the conservation objectives of the Dorset Heathlands are achieved in respect of air quality.

Types of measures include direct measures targeting vehicle emissions adjacent to heathland.

These include projects to encourage modal shift to other forms of transport, reduce vehicle speeds adjacent to heathlands, encourage the use of zero emission vehicles and through heathland management alongside roads.

[45]https://democracy.bcpcouncil.gov.uk/documents/s22089/Enc.%201%20for%20Dorset%20Heathlands%20Air%20Quality%20Strategy.pdf

The strategy also addresses wider measures to reduce nitrogen deposition from agricultural land near to heathlands, or the resiting/cleaning up of certain operations that generate emissions.

By taking a holistic approach with other mitigation measures and initiatives, this strategy will drive an improving trend in air quality, which is targeted to the sources which make the greater contribution to current exceedances."

5.3.7 The Dorset Heathland Interim Air Quality Strategy document constitutes Phase 2. Phase 3 of the strategy will be prepared through the BCP Council and Dorset Council local plans process post 2025. While these are in progress, the Interim Air Quality Strategy will be the one the parish councils must follow.

5.3.8 The Neighbourhood Plan contains a protective policy framework to ensure compliance with the Dorset Heathlands Interim Air Quality Strategy in Policy 4. Protecting and incorporating green spaces and wildlife. This policy states that "*To avoid adverse effects on the Dorset Heathlands SPA/Ramsar/SAC, any net gain in dwellings or visitor accommodation will need to satisfy the requirements of The Dorset Heathlands SPD and the Dorset Heathland Air Quality Strategy. This will include provision of adequate Heathland Infrastructure Projects and financial contributions towards the mitigation measures identified in the SPD.*"

5.3.9 **With the Interim Air Quality Strategy and the protective policy within the LWNP, it can be concluded that the Lower Winterborne Neighbourhood Plan will not adversely affect any Habitats Sites with regard to changes in air quality either alone or in combination with other plans and projects**.

6. Conclusions

6.1.1 AECOM was appointed by Locality to undertake the appropriate assessment component of a Habitats Regulations Assessment (HRA) for the Lower Winterbourne Neighbourhood Plan (NP). This is to inform the planning group and Dorset County Council of the potential effects of the NP development on European sites and how these are being, or should be, addressed in the draft NP. Dorset County Council will then be able to utilise this report to inform their formal Habitats Regulations Assessment decision-making regarding the Neighbourhood Plan.

6.1.2 A test of likely significant effects assessment was undertaken on the policies of the Lower Winterborne Neighbourhood Plan. There were 16 policies in total, with the following policies screened as potentially having an impact on Habitats sites:

- **Policy 10** – Meeting local needs – housing. This policy sets out that local housing needs require at least 30 net new dwellings.
- **Policy 11** – Meeting local needs – employment. Although this policy doesn't specifically allocate a quantum of employment, the policy does support increasing employment land within the neighbourhood plan area.
- **Policy 14** – Land adjoining and north of the Recreation Ground, off North Street. This is a potential allocation which could allocate up to 22 net new dwellings. This allocation is yet to be confirmed.
- **Policy 15** – Unconfirmed allocation. This policy has yet to be written at the time of writing this report. However, this could potentially allocate the remaining 8 dwellings for the local need.
- **Policy 16** – Abbots Court Dairy. This is a potential employment allocation policy. However, the policy itself does not allocate a quantum of employment land; it does, however, support increasing employment land at this site.

6.1.3 An assessment of impact pathways was also completed, and the following were screened in for the appropriate assessment as having a likely significant effect on Habitats Sites:

- **Recreational pressure** – on Dorset Heaths SAC, Dorset Heathlands SPA and Dorset Heaths (Purbeck & Wareham) & Studland Dunes SAC, with regard to bird disturbance and nutrient enrichment.
- **Changes to Air Quality** – on Dorset Heaths SAC, Dorset Heathlands SPA and Ramsar.

6.1.4 The following impact pathways were screened out:

- **Wildfire and arson** – all Habitats Sites are sufficiently distant from the neighbourhood plan area.
- **Noise and visual disturbance** – All Habitats Sites are sufficiently distant from the neighbourhood plan area.
- **Water quality** – The settlements are outside of the groundwater catchment for Poole Harbour SPA/Ramsar, and the WwTWs are within the River Stour catchment.

6.1.5 An Appropriate Assessment was undertaken for Recreational Pressure and Changes to Air Quality. Dorset Council has already undertaken work to provide mitigation strategies for both impact pathways. These are the Dorset Heathlands Planning Framework SPD and the Interim Air Quality Strategy. These set out mitigation measures to avoid adverse effects both alone and in combination with all growth within the Habitats Sites zone of impact.

6.1.6 The Neighbourhood Plan refers to these mitigation documents in Policy 4, providing a protective policy framework for any allocation sites brought forward within the Parish.

6.1.7 As these mitigation strategies are in place and the Neighbourhood Plan policies refer to adhering to these mitigation strategies, **it was concluded that the Lower Winterborne Neighbourhood Plan will not cause adverse effects on the integrity of the Habitats Sites either alone or in combination with any other plan or project.**

Appendix A Background to Habitats Sites

A.1 Dorset Heathlands SPA / Ramsar

Introduction

The Dorset Heathlands comprises a suite of heathland sites at the western edge of the Hampshire Basin. Extensive and fragmented, these heathland areas are centred around Poole Harbour and are adjacent to the urban conurbation of Bournemouth and Poole. The heathland contains numerous examples of wet heath and acid valley mire, habitats that are restricted to the Atlantic fringe of Europe. These heath wetlands are among the best of their type in lowland Britain. There are also transitions to coastal wetland and fen habitat types. The wetland flora and fauna include a large assemblage of nationally rare and scarce species, especially invertebrates.

Conservation Objectives[46]

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

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

- The extent and distribution of the habitats of the qualifying features
- The structure and function of the habitats of the qualifying features
- The supporting processes on which the habitats of the qualifying features rely
- The population of each of the qualifying features, and,
- The distribution of the qualifying features within the site.'

Qualifying Features

The reason for the designation of the **SPA** is for the following features.

Qualifying Annex I species:

- Hen harrier (*Circus cyaneus*) (Non-breeding)
- Merlin (*Falco columbarius*) (Non-breeding)
- European nightjar (*Caprimulgus europaeus*) (Breeding)
- Woodlark (*Lullula arborea*) (Breeding)
- Dartford warbler (*Sylvia undata*) (Breeding)

The reason for the designation of the **Ramsar** is for the following features[47].

Criterion 1 – Contains particularly good examples of (i) northern Atlantic wet heaths with cross-leaved heath *Erica tetralix* and (ii) acid mire with *Rhynchosporion*. Contains largest example in Britain of southern Atlantic wet heaths with Dorset heath *Erica ciliaris* and cross-leaved heath *Erica tetralix*.

Criterion 2 – Supports 1 nationally rare and 13 nationally scarce wetland plant species, and at least 28 nationally rare wetland invertebrate species.

[46] https://publications.naturalengland.org.uk/publication/5808199001178112 [Accessed 19 May 2023]
[47] https://jncc.gov.uk/our-work/ramsar-sites/ [Accessed 19 May 2023]

Criterion 3 – Has a high species richness and high ecological diversity of wetland habitat types and transitions, and lies in one of the biologically-rich wetland areas of lowland Britain, being continuous with three other Ramsar sites: Poole Harbour, Avon Valley and The New Forest.

Environmental Vulnerabilities[48]

Natural England's Site Improvement Plan identifies the following threats and pressure for the integrity of the SPA/Ramsar

- Inappropriate scrub control
- Public Access/Disturbance
- Undergrazing
- Forestry and woodland management
- Drainage
- Water Pollution
- Invasive species
- Habitat fragmentation
- Conflicting conservation objectives
- Wildfire/arson
- Air Pollution: impact of atmospheric nitrogen deposition
- Deer

A.2 Dorset Heaths SAC

Introduction

This site, with the Dorset Heaths (Purbeck and Wareham) and Studland Dunes SAC, covers an extensive complex of heaths that form one of the best developed and most significant tracts of heathland in the lowlands of the UK. There are fine transitions between dry heath, wet heath and acid mire vegetation types, as well as a high diversity of associated habitats such as acid grassland, sand dune, acid oak woods, bog woodland, base-rich mires, fen-meadow, reedswamp and small water bodies.

Conservation Objectives[49]

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

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

- *The extent and distribution of qualifying species*
- *The structure and function (including typical species) of qualifying natural habitats*
- *The structure and function of the habitats of qualifying species*
- *The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely*

[48] https://publications.naturalengland.org.uk/publication/5181909839642624 [Accessed 19 May 2023]
[49] European Site Conservation Objectives for Dorset Heaths SAC - UK0019857 (naturalengland.org.uk) [Accessed 19 May 2023]

- *The populations of qualifying species, and*
- *The distribution of qualifying species within the site*.'

Qualifying Features

The reason for the designation of the SAC is for the following features.

Qualifying Annex I priority habitats:

- Calcareous fens with *Cladium mariscus* and species of the *Caricion davallianae* (Calcium-rich fen dominated by great fen sedge (saw sedge))
- Qualifying Annex I habitats:
- Alkaline fens. (Calcium-rich springwater-fed fens)
- Depressions on peat substrates of the *Rhynchosporion*
- European dry heaths
- Molinia meadows on calcareous, peaty or clayey-silt-laden soils (*Molinion caeruleae*). (Purple moor-grass meadows)
- Northern Atlantic wet heaths with *Erica tetralix*. (Wet heathland with cross-leaved heath)
- Old acidophilous oak woods with Quercus robur on sandy plains. (Dry oak-dominated woodland)

Qualifying Annex II species:

- Great crested newt *Triturus cristatus*
- Southern damselfly *Coenagrion mercuriale*

Environmental Vulnerabilities[50]

Natural England's Site Improvement Plan identifies the following threats and pressure for the integrity of the SAC

- Inappropriate scrub control
- Public Access/Disturbance
- Undergrazing
- Forestry and woodland management
- Drainage
- Water Pollution
- Invasive species
- Habitat fragmentation
- Conflicting conservation objectives
- Wildfire/arson
- Air Pollution: impact of atmospheric nitrogen deposition
- Deer

[50] https://publications.naturalengland.org.uk/publication/5181909839642624 [Accessed 19 May 2023]

A.3 Dorset Heaths (Purbeck & Wareham) & Studland Dunes SAC

Introduction

This site, with the Dorset Heaths SAC, covers an extensive complex of heaths that form one of the best developed and most significant tracts of heathland in the lowlands of the UK. There are fine transitions between dry heath, wet heath and acid mire vegetation types, as well as a high diversity of associated habitats such as acid grassland, sand dune, acid oak woods, bog woodland, base-rich mires, fen-meadow, reedswamp and small water bodies.

Conservation Objectives

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

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

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

Qualifying Features

The reason for the designation of the SAC is for the following features.

Qualifying Annex I priority habitats:

- Bog woodland
- Atlantic decalcified fixed dunes (Calluno-Ulicetea). (Coastal dune heathland)
- Calcareous fens with *Cladium mariscus* and species of the *Caricion davallianae* (Calcium-rich fen dominated by great fen sedge (saw sedge))
- Temperate Atlantic wet heaths with *Erica ciliaris* and *Erica tetralix*. (Wet heathland with Dorset heath and cross-leaved heath)
- Qualifying Annex I habitats:
- Alkaline fens. (Calcium-rich springwater-fed fens)
- Depressions on peat substrates of the *Rhynchosporion*
- Embryonic shifting dunes
- European dry heaths
- Humid dune slacks
- Molinia meadows on calcareous, peaty or clayey-silt-laden soils (*Molinion caeruleae*). (Purple moor-grass meadows)
- Northern Atlantic wet heaths with *Erica tetralix*. (Wet heathland with cross-leaved heath)

- Old acidophilous oak woods with Quercus robur on sandy plains. (Dry oak-dominated woodland)
- Oligotrophic waters containing very few minerals of sandy plains: *Littorelletalia uniflorae*. (Nutrient-poor shallow waters with aquatic vegetation on sandy plains)
- Shifting dunes along the shoreline with *Ammophila arenaria* (white dunes). (Shifting dunes with marram)

Qualifying Annex II species:

- Southern damselfly Coenagrion mercuriale
- Great crested newt Triturus cristatus

Environmental Vulnerabilities[51]

Natural England's Site Improvement Plan identifies the following threats and pressure for the integrity of the SAC

- Inappropriate scrub control
- Public Access/Disturbance
- Undergrazing
- Forestry and woodland management
- Drainage
- Water Pollution
- Invasive species
- Habitat fragmentation
- Conflicting conservation objectives
- Wildfire/arson
- Air Pollution: impact of atmospheric nitrogen deposition
- Deer

Poole Harbour SPA/Ramsar

Introduction

Poole Harbour is a bar-built estuary covering an area of nearly 4000 hectares. The Harbour occupies a shallow depression in the acidic, tertiary deposits towards the south-western extremity of the Hampshire Basin and has been formed over the last 5000 years by a rise in sea level. The unusual micro-tidal regime means that a significant body of water is retained throughout the tidal cycle. The site therefore exhibits many of the characteristics of a lagoon. There are extensive intertidal mudflats supporting internationally important numbers of waterfowl in winter. These are fringed on the landward side by saltmarshes or reedbeds. The river valleys of the lower Frome and Piddle support grazing marsh which is also important for wintering waterfowl. Much of the catchment along the western and southern shores comprises the internationally important Dorset heathlands and there are unusual transitions from saltmarsh to valley mire. The Harbour is separated from Poole Bay by the internationally important Studland dunes and the site includes Littlesea, a large dune slack lake also important for wintering wildfowl.

[51] https://publications.naturalengland.org.uk/publication/5181909839642624 [Accessed 19 May 2023]

Conservation Objectives[52]

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

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

- *The extent and distribution of the habitats of the qualifying features*
- *The structure and function of the habitats of the qualifying features*
- *The supporting processes on which the habitats of the qualifying features rely*
- *The population of each of the qualifying features, and,*
- *The distribution of the qualifying features within the site.'*

Qualifying Features

The reason for the designation of the **SPA** is for the following features.

Qualifying Annex I species:

- Little egret (*Egretta garzetta*) (Non-breeding)
- Eurasian spoonbill (*Platalea leucorodia*) (Non-breeding)
- Pied Avocet (*Recurvirostra avosetta*) (Non-breeding)
- Mediterranean gull (*Larus melanocephalus*) (Breeding)
- Sandwich tern (*Sterna sandvicensis*) (Breeding)
- Common tern (*Sterna hirundo*) (Breeding)

Qualifying regularly occurring migrant species not listed in Annex I:

- Common shelduck (*Tadorna tadorna*) (Non-breeding)
- Black-tailed godwit (*Limosa limosa islandica*) (Non-breeding)

The reason for the designation of the **Ramsar** is for the following features[53].

Criterion 1 – The site is the best and largest example of a bar-built estuary with lagoonal characteristics (a natural harbour) in Britain.

Criterion 2 – The site supports two species of nationally rare plant and one nationally rare alga. There are at least three British red data book invertebrate species.

Criterion 3 – The site includes examples of natural habitat types of community interest – Mediterranean and thermos Atlantic halophilous scrubs, in this case dominated by *Suaeda vera*, as well as calcareous fens with *Cladium mariscus.* Transitions from saltmarsh through to peatland mires are of exceptional conservation importance as few such examples remain in Britain.

The Site supports nationally important populations of breeding waterfowl including Common tern, *Sterna hirundo* and Mediterranean gull *Larus melanocephalus*. Over winter the site also supports a nationally important population of Avocet *Recurvirostra avosetta*.

Criterion 5 – Assemblages of international importance

Criterion 6 – Species populations occurring at levels of international importance.

[52] https://publications.naturalengland.org.uk/publication/6625771074355200 [Accessed 19 May 2023]
[53] https://jncc.gov.uk/our-work/ramsar-sites/ [Accessed 19 May 2023]

Qualifying Species/populations (as identified at designation):

Species with peak counts in winter:

- Common shelduck (*Tadorna tadorna*)
- Black-tailed godwit, (*Limosa limosa islandica*)

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

Species with peak counts in winter:

- Pied avocet, (*Recurvirostra avosetta*)

Environmental Vulnerabilities

Natural England's Site Improvement Plan identifies the following threats and pressure for the integrity of the SPA/Ramsar[54]

- Water Pollution
- Air Pollution: impact of atmospheric nitrogen deposition
- Fisheries: Commercial marine and estuarine
- Coastal squeeze
- Public Access/Disturbance
- Deer

[54] https://publications.naturalengland.org.uk/publication/6713862766198784 [Accessed 19 May 2023]

Appendix B Policies Table – Test of Likely Significant Effects

Table 1–5 Test of Likely Significant Effects – Policies

Policy No./Name	Policy Description	Test of Likely Significant Effects
Policy 1. Preserving our Historic Legacy	The policy states that development should preserve heritage assets while avoiding harm to the wider environment. "*a) Development should preserve the significance of the many designated and non-designated heritage assets (including the key findings set out in Appendix 3), taking into account the approach to making decisions regarding heritage assets and their settings in national policy. Proposals which enhance or would lead to a better appreciation of these assets, including their wider settings, should receive favourable consideration, subject to avoiding substantial harm to the wider environment or character of the area.* *b) Where there is reasonable prospect that development would disturb or prevent future access to archaeological remains relating to the medieval or earlier settlement of this area, a desk-based assessment and field-based evaluation shall be required prior to the determination of a planning application. The findings of this assessment should be used to inform how the remains will be preserved in situ, or the recording of the find prior to development.*"	No HRA implications. This is a development management policy that aims to protect heritage assets, such as archaeological remains, and states that environmental harm should also be avoided during their preservation. This policy does not allocate a quantum of development; it is merely a development management policy. There are no linking impact pathways.
Policy 2. Landscape Character and Locally Important Views	The policy states that the parish council will resist development that degrades important views and that development should consider local topography, provide gradual green landscaping transitions between development and wider landscape, and respect the open nature and panoramic views of the area. "*a) Locally important views, as described in Table 1 and indicated on the map in Appendix 4, are to be respected. Development that would significantly degrade these views and significance of local landmarks, by virtue of scale, massing, design or poor location, will be resisted.* *b) The open nature of and panoramic views across the chalk downlands should be respected.* *c) New development must take into account how topography and level of tree cover will affect views towards the development, and seek to mitigate development which would otherwise be overly prominent in comparison to its surrounds. This may be achieved through the choice of location in relation to the landform, use of tree and woodland cover, lower building heights, sympathetic roof styles and use of materials with more muted colours.* *d) The transition between the settlement edges and the wider landscape should be gradual, using green buffers (dense vegetation) and topography to soften the visual impact of development in wider views. Developments on the settlement edge may need to be of a lower density in order to achieve this.*	No HRA implications. This is a development management policy that aims to protect important local views, and states that gradual green landscaping buffers should be utilised between settlements and the wider landscape. This policy does not allocate a quantum of development; it is merely a development management policy. There are no linking impact pathways.

	e) Development that would have a significant adverse impact on a Locally Important View (as shown on Map XXX and described in Table XXX) should be avoided, unless there would be a clear and over-riding public benefit and all reasonable measures, including the assessment of reasonable alternatives, have been taken to mitigate the impact."	
Policy 3. Retaining our dark skies and rural tranquillity	The policy states that streetlighting should be avoided or reduced where possible to protect dark skies in the area, as well as avoiding disturbing the tranquillity of the area with increased vehicle movements outside of the settlement boundaries. "*a) Street lighting is not characteristic of the area and should be avoided to preserve dark skies unless necessary for safety. Where any form of external lighting is required, or light spill is likely to occur due to the design incorporating roof lights or large glazed areas, measures must be incorporated to minimise light pollution.* *b) Options to reduce light pollution can include: lighting which is automatically turned off when not needed such as through the installation of carefully directed motion sensors and timers; designs that ensure any light is directed downward; and the use of low intensity, low level lighting such as solar cat's-eye lighting, reflective paint and ground-based lighting on foot / cycle paths.* *c) In rural locations, outside of the main settlements and farmyard complexes, the impact of the development on the area's tranquillity, including through increase vehicle movements, must be considered. Proposals that could have an adverse impact on the area's tranquillity through excessive noise or busyness must demonstrate how this will be managed or mitigated so as to not significantly detract from this important characteristic."*	No HRA implications. This is a development management policy that aims to protect dark skies and the area's tranquillity. This policy does not allocate a quantum of development; it is merely a development management policy. There are no linking impact pathways.
Policy 4. Protecting and incorporating green spaces and wildlife	This policy aims to preserve green spaces and wildlife in the NP area. It states that local green spaces should be protected, opportunities to incorporate wildlife features into built structures should be taken, and developments should incorporate green spaces, trees and hedgerows to support biodiversity, as well as larger developments providing multifunctional green spaces, SUDs and BNG. The policy also states that development should avoid adverse effects on Dorset Heaths Habitats Sites by satisfying the requirements of the Dorset Heathlands SPD and the Dorset Heathland Air Quality Strategy. "*a) The following local green spaces should be protected. Inappropriate development that would harm their character and reason for designation, as set out in Table 2, will not be permitted, other than in very special circumstances:* • *the Village recreation ground* • *the Green at Broad Close* • *the footpath between Sackville Street and North Street* • *the river walk between Stoney Lawn and Greyhound Inn* • *St Nicholas Church Yard* • *the former Allotment Field.*	No HRA implications. This is a development management policy that aims to protect greenspaces and local wildlife and Habitats Sites. This policy does not allocate a quantum of development; it is merely a development management policy. There are no linking impact pathways. This policy is the framework to provide protection from development on Dorset Heaths Habitats Sites. It is a positive policy.

	b) Opportunities should also be taken to incorporate features that support wildlife within built structures. *c) Developments should incorporate green spaces, trees and hedgerows to support biodiversity, enhance the verdant character of the area and reinforce people's connection to their natural surroundings. This can best be achieved through the provision of public green spaces, front gardens and boundary treatments. Where new buildings adjoin open spaces, they must be oriented and organised to overlook these spaces to provide natural surveillance. Native tree and hedgerow species should be used to ensure planting is appropriate for the local character and to ensure climate resilience. Larger green spaces should where possible open up views to the countryside and link into and enhance the ecological network of the Neighbourhood Plan area.* *d) For large scale new developments, a multi-functional greenspace strategy should be implemented incorporating landscaping, recreational opportunities, movement corridors for active travel, sustainable drainage systems (SuDS) and wildlife habitats and corridors to achieve biodiversity net gain (BNG).* *e) The following opportunities to improve biodiversity in the Neighbourhood Plan area are particularly encouraged:* • *strengthening the hedgerow corridors between isolated deciduous woodland clumps, to better connect these habitats, and the planting of new deciduous woodland clumps;* • *replacement / compensatory planting of Ash trees lost to disease (Ash die-back) with more resilient stock;* • *appropriate management of the floodplain for wildlife benefits, through appropriate grazing and natural drainage.* *f) To avoid adverse effects on the Dorset Heathlands SPA/ Ramsar/ SAC, any net gain in dwellings or visitor accommodation will need to satisfy the requirements of The Dorset Heathlands SPD and the Dorset Heathland Air Quality Strategy. This will include provision of adequate Heathland Infrastructure Projects and financial contributions towards the mitigation measures identified in the SPD."*	
Policy 5. Built character design and codes	This policy sets out the character of the settlements and how developments should tie in with the existing built environment. "*a) Any new development must reflect the existing modest building scale within the Neighbourhood Plan area and should keep to a maximum of two storeys in height.* *b) Roofs are typically steeply pitched, although hipped roofs are also present, particularly in thatched properties. Roofs must therefore be either pitched or hipped, and gabled roof ends can be used. Flat roofs must not be used, other than in the case of single storey rear extensions that are set below any first-floor windows. Roofs should not overwhelm the proportions of the building. Ridge heights should be in keeping with the existing context, so both pitch and height must be considered together. The roof pitch of an extension should harmonise with that of the*	No HRA implications. This is a development management policy that keep new development in keeping with existing build development designs. This policy does not allocate a quantum of development; it is merely a development management policy. There are no linking impact pathways.

main building, and the roof should be subservient to that of the main building.

c) Variation in roof form and height, such as stepped elements or varied ridge lines, can be used where the surrounding settlement has an informal character. In more regular or planned parts of the settlement, a consistent, linear roofline could be more appropriate.

d) In order to provide accommodation within the roof space, skylights can be incorporated and should be proportionate in scale to the building, although measures may need to be taken to reduce light pollution. Alternatively gabled dormers can be used, and should be proportionate to the roof and should reflect the existing window rhythm of the building.

e) Extensions should be subservient in scale to the main building, regardless of the number of extensions. Usually, extensions should be one or two-storeys high.

f) The low density character of the village and outlying hamlets should be respected, through ensuring new development incorporates gaps between buildings, open green spaces and gardens. This includes any conversions or extensions.

g) New development should respect existing building lines, but greater emphasis should be placed on maintaining the informal pattern of development with subtle setback differences across the streetscape. Front extensions are unlikely to be acceptable. If proposed, front extensions should take the form of the existing building, mirroring the roof pitch, replicate or have lower cornice height and their ridge should be below the existing ridge height. The extension should be small in scale, appear subordinate to the main building and should not cover more than 50% of the front elevation. Side extensions should be set back from the main building.

h) In general buildings within or adjoining Winterborne Kingston should contribute positively to the street scene, by facing onto or otherwise having a positive relationship with, and being clearly visible from, the street. Low walls or hedges should be used as boundary treatments adjoining roads within the area's settlements.

i) New development must be in keeping with the traditional material and colour palette. Infill and extensions should use materials, architectural features, and proportions that complement the existing surrounding context, and must create a harmonious composition overall and a strong degree of unity with the main building. The combination of red brick with flint is a characteristic style of local buildings, white and off-white render, slate tiles, and thatch can also be used where appropriate. Wherever possible, materials should be locally sourced, low in embodied carbon, and support broader sustainability objectives. New development must avoid bland and repetitive use of materials. Sole use of red brick across multiple buildings is not characteristic, and buildings of wholly red brick should feature sparingly across the street scene. Large areas of uninterrupted glazing on the building facade is not in keeping with the local character and should generally be avoided.

	j) Developments of more than one building should vary materials and style to ensure the organic development pattern and dynamic street scene in the Neighbourhood Plan area is retained and added to. *k) Whilst new buildings designed to reflect traditional village designs from around this area is supported, complementary and modern interpretation of such styles can be used, introducing innovative and contemporary approach to design."*	
Policy 6. Promoting eco-friendly development	This policy sets out that new builds, alterations or extensions should minimise carbon footprint while not having a significant detrimental impact on the local character of the area. "*a) New buildings, and alterations and extensions to existing buildings, should seek to minimise the carbon footprint of the development, and address inefficiencies where opportunities exist, providing that the resulting design would not have a significantly detrimental impact on the character of the area. This should include consideration of:* • *Thermal mass, insulation, airtightness and ventilation;* • *Solar panels, including less visually intrusive options such as solar shingles and photovoltaic slates in sensitive locations;* • *Ground source and air source heat pumps – the former will depend on the ground conditions (high groundwater flows and soft clays should be avoided), the latter will require careful siting and ideally should be placed to the rear of the dwelling at ground level, protected from heavy snowfall and flood risk;* • *Building orientation and window size - designed to benefit from solar heat gain; and roof overhangs and window reveals used to reduce potential for overheating on southerly-facing rooms;* • *The inclusion of renewable energy storage systems, sited to minimise adverse impacts on the streetscape."*	No HRA implications. This is a development management policy that keeps new development in line with existing building development designs while promoting a lower carbon footprint. This policy does not allocate a quantum of development; it is merely a development management policy. There are no linking impact pathways.
Policy 7. Promoting active travel routes	This policy promotes active travel routes within the NP area and the adjacent countryside, as well as improving public highways and the PROW network within the NP area. "*a) The network of pavements and footways within the village and the wider Public Right of Way (PRoW) network should be protected, and extended and connected where opportunities arise, to enable active travel around and between the settlements within and adjoining the Neighbourhood Plan area. New development will be expected to link into this network and allow for future onward connections where there is reasonable prospect of adjoining sites coming forward for development in the future.* *b) Routes should be designed to accommodate cyclists as well as pedestrians where this is feasible.* *c) The design of the route should consider the nature of users (cyclists, pedestrians, equestrians, and those with limited mobility) and the ground conditions, to ensure that the route is safe and attractive throughout the year. Permeable surface*	No HRA implications. This is a development management policy that promotes active travel routes and may levy developer contributions to improve highways and PROWs within the NP area. This policy does not allocate a quantum of development; it is merely a development management policy. There are no linking impact pathways.

	materials can be used to support rainwater management, but loose gravel surfaces should be avoided where these may be washed away or used by wheelchairs and buggies. *d) Wayfinding devices such as signage should be used to ensure the walking and cycling network is easy to navigate. Signage should be designed to reflect the rural character of the area, such as through the use of wooden fingerposts.* *e) Developer contributions may be sought where reasonable and necessary for such improvements to the highway and public rights of way network, to help address issues relating to speeding, inappropriate on-street parking, lack / poor connectivity of pedestrian and cycle routes.*"	
Policy 8. Car parking arrangements	This policy sets out how developers should provide parking provision for the new residential dwellings. "*a) In general on-plot parking should be used for developments. The quantum of parking should be guided by Dorset Council's parking standards and consideration of the likelihood and impact of any visitor / over-flow parking on nearby roads. Additional unallocated / visitor parking may be required where additional on-street parking would give rise to pedestrian safety concerns.* *b) Parking should be well integrated into design so as not to dominate the public realm. Side parking or placing cars towards the backs of plots can help to reduce the visual impact of cars on the front of development. High-quality and well-designed soft landscaping, hedges, hedgerows, and trees should be used to increase the visual attractiveness of the parking and enhance the rural character of the parish. Hard-standing and driveways must be constructed from porous materials, to minimise surface water run-off and therefore help mitigate potential flooding.* *c) Electric vehicle charging points, mounted charging points, and associated services should be integrated into the design of new developments. Care must be taken to avoid cluttering elevations, or resulting in trailing wires likely to create trip hazards.*"	No HRA implications. This is a development management policy that sets out how developers should provide parking for new residential dwellings. This policy does not allocate a quantum of development; it is merely a development management policy. There are no linking impact pathways.
Policy 9. Mitigating flood risk	This policy sets out the developer's responsibilities regarding drainage, surface runoff, and flood prevention. "*a) Drainage schemes should be considered early in the development process to enable them to be designed and integrated into development and associated landscaping, augmenting the landscape and providing biodiversity and amenity benefits.* *b) Surface water run-off should where feasible be managed through natural, low-maintenance systems that filter pollutants, sited as close to where it originates as possible.* *c) Measures to store and allow surface water run-off to infiltrate into the ground are encouraged in areas where groundwater levels are sufficiently low (at least 1.0m below the proposed measures). Where infiltration is proposed in areas that may be susceptible to groundwater flooding, borehole monitoring may*	No HRA implications. This is a development management policy that sets out the developer's responsibilities regarding drainage, surface runoff, and flood prevention. This policy does not allocate a quantum of development; it is merely a development management policy. There are no linking impact pathways.

	be required to inform the design and suitability of the proposed scheme."	
Policy 10. Meeting local needs – housing	This is a policy that aims to increase the quantum of development within the neighbourhood plan area by 30 net new dwellings. *"a) Provision is made to achieve at least 30 additional homes in the Lower Winterborne area between 2025 and 2040, which will meet the projected local needs of the community.* *b) The following site allocations, together with sensitive infill within the built-up area of Winterborne Kingston (as defined by the revised settlement boundary on Map 3) and rural conversion opportunities that may arise, should meet this projected need. The development of other sites for new-build, open market housing outside of the revised settlement boundary should therefore be resisted.* □ *[to be confirmed]* *c) The overall mix and provision of affordable housing will be guided by the requirements set in the Local Plan and the demonstrable need for affordable housing from those with a local connection to the area, as recorded in the Dorset Council affordable housing register at the time the application is considered. Affordable housing should be tenure-blind and a planning obligation secured to ensure that their allocation prioritises eligible households who have a local connection to the Neighbourhood Plan area (based on the local connection criteria of the Dorset Council Housing Allocation Policy), cascading out to those with a local connection to the adjoining parishes if there is no local need. Mechanisms should be used to ensure that any affordable housing remains so in perpetuity.* *d) The impact of proposed development on European sites (SAC, SPA and Ramsar sites), alone or in combination with other existing and proposed development, must be screened for likely significant effects under the Conservation of Habitats and Species Regulations 2017, as amended. Where there is a probability or risk of a significant effect, the proposed development will be subject to an appropriate assessment and avoid or otherwise mitigate any adverse impact on the integrity of the network of European sites."*	Potential HRA Implications This policy sets out that the local housing needs require at least 30 net new dwellings. However, the exact location of the dwellings has not been listed within this version of the neighbourhood plan. The potential impacts of the 30 dwellings will be discussed in the body of the report. However, the policy does also state that the developments must be screened for likely significant effects and, where necessary, an appropriate assessment, e.g. a project-level HRA, which is a protective policy framework.
Policy 11. Meeting local needs – employment	This is a policy setting out the developer's responsibilities for developing land within the neighbourhood plan area for employment. *"a) The expansion of existing employment areas and repurposing / replacement of redundant buildings and/or other previously developed land for employment will be supported, providing the proposed development:* • *falls within Use Class E or similar and compatible business use that would support the vitality and viability of the local community and provide local job opportunities;* • *is compatible with the character and amenity of the area, taking into account proximity to homes and areas used for quiet recreation;* • *is accessed directly off the C6, or demonstrate that the size and volume of traffic generated by the development*	Potential HRA Implications Although this is a development management policy and doesn't allocate a quantum of development, the increase in employment land within the neighbourhood plan area could adversely impact Habitats Sites so this will be discussed within the body of the report.

	would be unlikely to have a significant adverse impact on the rural character and safety of the local highway network; • *will be of a modest (small) scale and, if located in the countryside, would not be unduly prominent from wider public views;* • *will avoid significant adverse environmental impacts and unacceptable harm to heritage assets, including through indirect impacts such as noise or light pollution, with any harm being clearly outweighed by the benefits of the proposal."*	
Policy 12. Community facilities and local services	This is a policy about safeguarding the local community facilities *"a) Every effort should be made to avoid the loss or significant reduction of local community facilities and services, and to support the ongoing provision and improvement of:* • *community venue/s for social clubs / activities and events, including a range of indoor sports, and availability throughout the day / evening and weekends;* • *outdoor spaces for a range of sports and recreation activities, including 'doorstep spaces' of at least 0.5ha within 200m walking distance of people's homes; and 'local spaces' of at least 2ha within 300m walking distance of people's homes* • *education, health and social care provision;* • *local convenience store provision including post office services.* *b) Where proposed development would involve the closure or significant reduction of a local facility or service without alternative provision, the applicant will be expected to show that they have pro-actively worked with the local community and relevant authorities to investigate potential solutions to retaining the local service / facility or providing other alternative community uses that would be of value to the vitality and sustainability of the village.* *c) A site has been reserved for a local accessible greenspace / heathland infrastructure project on land to the south of the village, as indicated on Map XXX."*	No HRA Implications This is a development management policy that sets out the developer's responsibilities regarding safeguarding community facilities. This policy does not allocate a quantum of development; it is merely a development management policy. There are no linking impact pathways.
Policy 13. Community-led renewable energy scheme	This policy sets out developer responsibilities regarding renewable energy development *"a) Proposals for a community-led small-scale wind turbine development in the area of North Down, as indicated on Map 4, will be supported provided:* • *an archaeological assessment has been undertaken and the siting avoids areas of known / suspected archaeological interest;* • *the siting, colour and scale of the wind turbine / group takes account of the landform, screening and likely visibility in the wider landscape, in order to reduce adverse impacts on landscape character and views to an acceptable level;* • *the amenities of local residents are not significantly harmed as a result of noise or flicker; and* • *unacceptable impacts on protected species (including flight lines of birds and bats) are avoided.* • *measures are put into place to ensure the removal of the wind turbine/s and associated infrastructure from the landscape once they come to the end of their useful life."*	No HRA Implications This is a development management policy that sets out the developer's responsibilities regarding renewable energy development This policy does not allocate a quantum of development; it is merely a development management policy. There are no linking impact pathways.

Policy 14. Land adjoining and north of the Recreation Ground, off North Street	**This is a potential allocation policy, although the site has yet to be confirmed** *"a) Land north of the Recreation Ground, as indicated on Map XX, is allocated for residential development of up to 22 homes. The development of this site is expected to:* • *provide affordable housing as part of the mix;* • *have a positive, interactive relationship with the adjoining Recreation Ground, with easy public access into and housing fronting onto and overlooking the Recreation Ground;* • *provide a pedestrian / cycle route running north-south through the green link to the west of the Recreation Ground, and contribute towards the provision of a footway extending down to The Greyhound Inn along North Street;* • *enable the widening of the existing access into the Recreation Ground off North Street;* • *enable onward vehicular and pedestrian connection through the site to allow access to the land east of the recreation ground;* • *provide landscaping on the northern and eastern site boundaries and within the site to soften the 'new' edge of the village and potential prominence of the site in wider views;* • *contribute to the improvement / enhancement of the community venues within the village;* • *mitigate any adverse impact on the integrity of the network of European sites and to achieve the Natural England local standard for Accessible Greenspace through the provision of a heathland infrastructure project on land indicated on Map XX and contribution to ongoing monitoring as required under the Dorset Heathlands SPD;* • *be in accordance with all relevant policies in this Neighbourhood Plan."*	Potential HRA Implications This is an allocation policy which potentially allocates up to 22 net new dwellings within the neighbourhood plan area. Although this site has still to be confirmed, we will look at this site within the total dwelling allocation of at least 30 net new dwellings within the neighbourhood plan area. The potential impacts of the 22 dwellings will be discussed in the body of the report.
Policy 15. Unconfirmed Allocation	**This is a potential allocation policy that is yet to be written or confirmed for this version of the neighbourhood plan.**	No assessment possible for this policy.
Policy 16. Abbots Court Dairy	**This is a potential allocation policy, although the policy itself sets out developer responsibilities should they bring forward development at this site.** a) The sensitive conversion of the historic farm buildings at Abbots Court Dairy, and re-purposing of the modern farm buildings and related structures indicated on Map XX, for employment / community use is supported. The development of this site is expected to: • respect the historic interest of this site and contribution these buildings make in wider views, including the potential impact of parking areas and external storage. • contribute towards the provision of pedestrian enhancements to the single track section of East Street heading back into the village; [include text ref alternate route] • remove redundant buildings and related structures and undertake any necessary decontamination to ensure the site is suitably safe for future occupants; • be in accordance with all relevant policies in this Neighbourhood Plan.	Potential HRA Implications This is a potential allocation policy for employment development within the neighbourhood plan area. Although the policy does not specifically allocate the site, the site has the potential to be developed for this purpose, we will look at this site within the body of the report.

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