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EASTLEIGH BOROUGH COUNCIL

Habitats Regulations Assessment Screening Report

Revised Pre-submission Eastleigh Borough Local Plan 2011-2029 with updates for submission

JULY 2014

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1 Introduction

1.1 Legislation

1.1.1 The need for Appropriate Assessment is set out within Article 6 of the EC Habitats Directive 1992, and implemented into British law by the Conservation (Natural Habitats, &c) Regulations 1994 (as amended). The 1994 Regulations have been replaced by the Conservation of Habitats and Species Regulations 2010 (as amended). Under these Regulations, land use plans must be subject to Appropriate Assessment if they are likely to have a significant effect on a Natura 2000 site (Special Areas of Conservation, SAC and Special Protection Areas, SPA). It is Government policy for sites designated under the Convention on Wetlands of International Importance (Ramsar sites) to be treated as having equivalent status to Natura 2000 sites. As such, Appropriate Assessments should also cover these sites.

1.1.2 The Habitats Directive applies a precautionary approach to protected areas; plans and projects can only be permitted having ascertained that there will be no adverse effect on the integrity of the site(s) in question. In the case of the Habitats Directive, plans and projects may still be permitted if there are no alternatives to them and there are Imperative Reasons of Overriding Public Interest (IROPI) as to why they should go ahead. In such cases, compensation would be necessary to ensure the overall integrity of the site network.

1.1.3 In recent years the term Habitat Regulations Assessment (HRA) has been coined to describe the entire assessment process required to comply with the Regulations, including the specific Appropriate Assessment stage. In order to ascertain whether or not site integrity will be affected, an HRA should therefore be undertaken of the plan or project in question.

Habitats Directive 1992

Article 6 (3) states that:

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

Conservation of Habitats and Species Regulations 2010 (as amended)

The Regulations state that:

"*A competent authority, before deciding to … give any consent for a plan or project which is likely to have a significant effect on a European site … shall make an appropriate assessment of the implications for the site in view of that sites conservation objectives*".

1.2 This Report

1.2.1 The purpose of this report is to document the Habitat Regulations Assessment Screening (Likely Significant Effects) exercise for the pre-submission Eastleigh Borough Local Plan 2011-2029. Where easily identifiable, potential measures that could enable effects to be screened out have also been identified. Chapter 2 of the report sets out the methodology for this assessment. Chapter 3 summarises the scientific background to the impact pathways under consideration. Chapters 4 – 8 document the screening exercise for each European site being considered.

1.2.2 Each of Chapters 4 - 8 begins with a summary of the international interest features of the European site along with its conservation objectives and key environmental conditions, the preservation of which is essential to maintain site integrity. Against this context each policy

and site allocation in the Local Plan is subject to screening in a series of tables. Each chapter concludes with consideration of the 'in combination' effects of the Local Plan on each European site and finishes with a concluding statement as to whether Likely Significant [adverse] Effects will occur.

1.3 Pre-submission Eastleigh Borough Local Plan 2011-2029

1.3.1 The Revised Pre-submission Local Plan replaces the current Eastleigh Borough Local Plan Review 2001-2011. It contains policies for development in the borough and identifies new allocations to make provision for future needs in the borough, and also for wider needs of the South Hampshire area where the borough sits. The plan aims to achieve the following strategic priorities:

- A clean and green borough
- A prosperous place
- A healthy community

1.3.2 In March 2013, the government revoked the South East Plan, the third regional spatial strategy to be revoked under the Localism Act 2011, following the required environmental assessments. This now means that local authorities are now responsible for their own strategic planning and will set their own housing targets. Alongside the Localism Act the National Planning Policy Framework (NPPF) sets out the Government's economic, environmental and social planning policies for England; 'It provides a framework within which local people and their accountable Councils can produce their own distinctive local and neighbourhood plans, which reflect the needs and priorities of their communities' (paragraph 1 NPPF) and 'at the heart of the NPPF is a presumption in favour of sustainable development, which should be seen as a golden thread running through both plan making and decision taking' (paragraph 14 NPPF). However the NPPF recognises that 'the presumption in favour of sustainable development does not apply where development requiring appropriate assessment under the Birds or Habitats Directive is being considered, planned or determined'. (paragraph 119, NPPF)

1.3.3 This Habitats Regulations Assessment report assesses the pre-submission Eastleigh Borough Local Plan 2011-2029 including the policies and site allocations. Assessment of the plan is a legal requirement under the Conservation of Habitats and Species Regulations 2010. The first stage of a HRA is a screening assessment which highlights any likely significant effects from the proposed plan on the Natura 2000 sites and sets out whether a more detailed appropriate assessment is required and mitigation and alternatives set out. This assessment has been undertaken on the basis of professional judgement informed by the best available data.

1.4 Submission Update

1.4.1 This Screening Report was published for consultation alongside the 'Revised Pre-submission' version of the Eastleigh Borough Local Plan in March 2014. **This report** is an 'update' to the HRA Report to address latest understanding of the evidence base and issues raised during the March 2014 consultation. Where text has been updated in response to these issues since March 2014, this is highlighted clearly.

2 Methodology

2.1 Introduction

2.1.1 This section sets out our approach and methodology for undertaking the HRA.

2.2 A Proportionate Assessment

2.2.1 Project-related HRA often requires bespoke survey work and novel data generation in order to accurately determine the significance of adverse effects; in other words, to look beyond the risk of an effect to a justified prediction of the actual likely effect and to the development of avoidance or mitigation measures.

2.2.2 However, the draft CLG guidance[1] makes it clear that when implementing HRA of land-use plans, the AA should be undertaken at a level of detail that is appropriate and proportional to the level of detail provided within the plan itself:

2.2.3 "*The comprehensiveness of the [Appropriate] assessment work undertaken should be proportionate to the geographical scope of the option and the nature and extent of any effects identified. An AA need not be done in any more detail, or using more resources, than is useful for its purpose. It would be inappropriate and impracticable to assess the effects [of a strategic land use plan] in the degree of detail that would normally be required for the Environmental Impact Assessment (EIA) of a project*."

2.2.4 In other words, there is a tacit acceptance that appropriate assessment can be tiered and that all impacts are not necessarily appropriate for consideration to the same degree of detail at all tiers (**Figure 1**). This HRA was therefore undertaken using existing data and without undertaking bespoke surveys or detailed modelling.

2.2.5 The most robust and defensible approach to Plan-level HRA is to make use of a precautionary approach in assessing the policies of the Local Plan. In other words, the plan is never given the benefit of the doubt; it must be assumed that an objective/policy is likely to have an impact leading to a significant adverse effect upon a European site unless it can be clearly established otherwise.

[1] CLG (2006) Planning for the Protection of European Sites, Consultation Paper

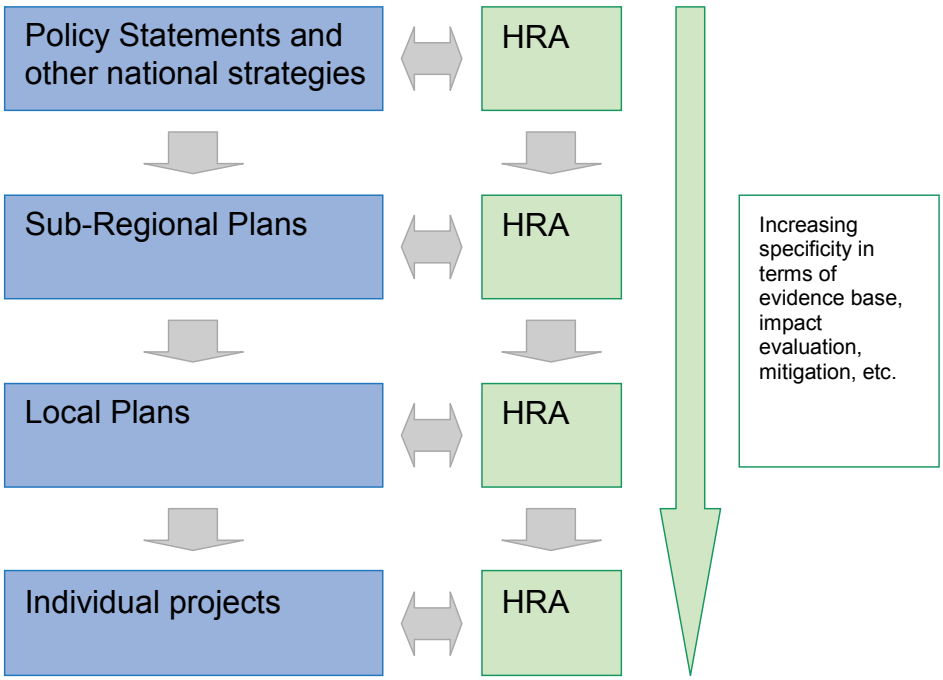


Figure 1: Tiers in HRA of Land Use Plans

2.3 The Process of HRA

2.3.1 The HRA has been carried out in the continuing absence of formal Government guidance. CLG released a consultation paper on AA of Plans in 2006. As yet, no further formal guidance has emerged.

2.3.2 **Figure 2** below outlines the stages of HRA according to current draft CLG 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.

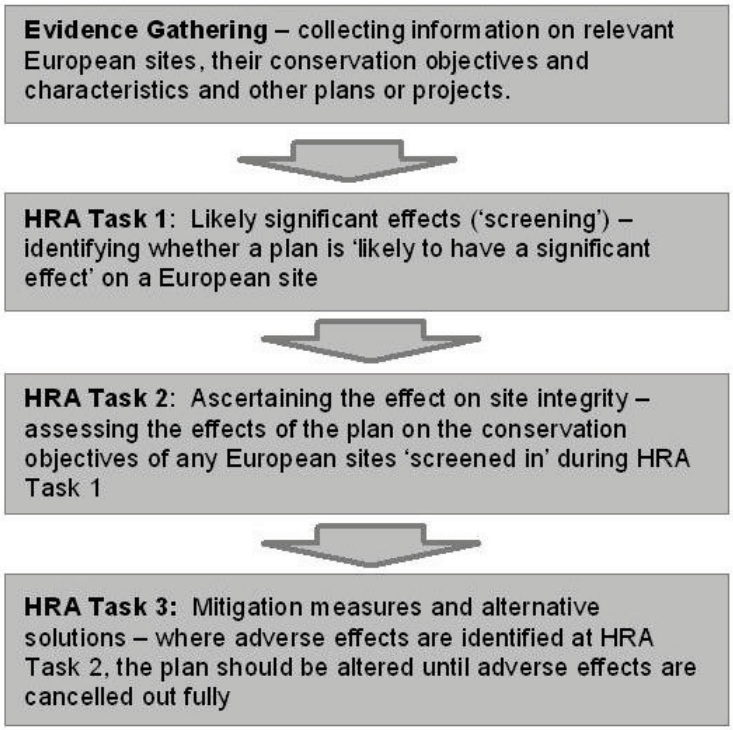


Figure 2: Four-Stage Approach to Habitat Regulations Assessment

2.3.3 In practice, this broad outline requires some amendment in order to feed into a developing land use plan such as a Local Plan.

2.4 Evidence gathering

2.4.1 Key sources of evidence that we have accessed for this Habitat Regulations Assessment are:

- The Joint Nature Conservation Committee website (www.jncc.gov.uk) and Natura 2000 data sheets;
- The websites www.natureonthemap.co.uk and www.magic.gov.uk both of which enable internationally important wildlife sites to be viewed in a spatial context;
- Habitat Regulations Assessments for adopted Core Strategies in surrounding authorities;
- Stillman, R. A., West, A. D., Clarke, R. T. & Liley, D. 2012. Solent Disturbance and Mitigation Project Phase II: Predicting the impact of human disturbance on overwintering birds in the Solent. Report to the Solent Forum;
- Postlethwaite B. February 2010. Noise Quality Assessment Eastleigh River Side Project. Unpublished report by Bureau Veritas on behalf of Eastleigh Borough Council;
- Chanin P., Ecology of the European Otter, Conserving Natura 2000 Rivers, Ecology series No 10, Published by Life in the Rivers;
- AEA Technology. April 2010. Eastleigh River Side Air quality Study. River Itchen Deposition research. Unpublished report by AEA technology on behalf of Eastleigh Borough Council;
- AEA Technology. 2010. Road transport emissions impacts on Nature Conservation Sites. Report to the Partnership for Urban South Hampshire;
- The UK Air Pollution Information System www.apis.ac.uk;

- Environment Agency Stage 3 and 4 Review of Consents Reports for the River Itchen and Solent Maritime SAC/Solent & Southampton Water SPA (2007);
- Hampshire & Isle of Wight Wildlife Trust. 2010. Solent Waders and Brent Goose Strategy;
- Whyte, P. 2011. Itchen Navigation Otter Survey 2010/2011. Report by Hampshire & Isle of Wight Wildlife Trust for the Itchen Navigation Heritage Trail Project Partnership;
- Mott Gifford and Hampshire County Council. October 2008. Contaminated Land and Hydrology Research Study for Eastleigh Borough Council Area Action Plan. Report No:227552HA/002, for Eastleigh County Council;
- Environment Agency. April 2010. Integrated Pollution Prevention and Control - Environmental Assessment and Appraisal of BAT. Horizontal Guidance Note IPPC H1, Annex F;
- Highways Agency. 2011. Design Manual for Roads & Bridges. Volume 11, Section 3, Part 1: Air Quality;
- EPR. 2011. Nutburn Road, North Baddesley: Visitor Questionnaire Survey of Emer Bog and Baddesley Common;
- R.H. Allen (The Environmental Project Consulting Group). 2003. Hydro-Ecological Appraisal of Emer Bog cSAC, North Baddesley, Hampshire, R.H. Allen (The Environmental Project Consulting Group), 2002 and Emer Bog cSAC: Review of Consents: Surface Water Quality and Hydro-Ecological Regime of Emer Bog cSAC;
- Davidson-Watts, I. & McKenzie, A. 2006. Habitat use and Ranging of Barbastelle Bats of the Mottisfont Estate, Hampshire. ID Wildlife Ltd; and
- Sharp, J., Lowen, J. & Liley, D. 2008. Changing patterns of visitor numbers within the New Forest National Park, with particular reference to the New Forest SPA. Unpublished report by Footprint Ecology for the New Forest National Park Authority.

Physical scope of the HRA

2.4.2 There are no standard criteria for determining the ultimate physical scope of an HRA. Rather, the source-pathway-receptor model should be used to determine whether there is any potential pathway connecting development to any European sites. In the case of Eastleigh it is clear that there are pathways connecting development to the River Itchen SAC and Solent Maritime SAC/Solent & Southampton Water SPA/Ramsar site since both European sites lie either within or immediately adjacent to the boundary of the Borough.

2.4.3 Examining sites outside the Borough it was determined that there were only conceivable pathways connecting to three other sites – The New Forest SAC/SPA/Ramsar site, Emer Bog SAC and Mottisfont Bats SAC. This therefore defined the scope of the HRA. It should be noted that the presence of a conceivable pathway linking the Borough to a European site does not mean that likely significant effects will occur.

2.5 Task 1: Likely Significant Effects (Screening)

2.5.1 The first stage of any Habitat 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:

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

2.5.3 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. **The Likely Significant Effects stage is the purpose of the current document.**

Other plans and projects

2.5.4 It is neither practical nor necessary to assess the 'in combination' effects of the pre-submission Eastleigh Borough Local Plan 2011-2029 within the context of all other plans and projects within South Hampshire and east Dorset. In practice therefore, in combination assessment is of most relevance when the plan would otherwise be screened out because its individual contribution is inconsequential. For the purposes of this assessment, we have determined that, due to the nature of the identified impacts, the key other plans and projects relate to the additional housing, transportation and commercial/industrial allocations proposed for neighbouring authorities over the lifetime of the Plan. The following plans and projects have been identified for consideration 'in combination' at the screening stage for the Local Plan:

- Strategic Guidance for the Solent (Solent Forum)
- South East Plan (2009; to be withdrawn)
- The draft Hampshire Minerals and Waste Plan
- Test Valley Borough draft Core Strategy
- New Forest District Core Strategy
- New Forest National Park Authority Core Strategy
- Fareham Borough Council Core Strategy
- Winchester City Council draft LDF/Local Plan
- Southampton Water and Western Solent Shoreline Management Plan and related Coastal Strategies
- Solent dynamic coast project report
- Southampton Core Strategy
- Southampton draft City Centre Area Action Plan
- Southampton Airport Master Plan
- Hampshire Local Transport Plan 2011-2031
- Test and Itchen, Catchment Flood Management Plan
- South East Hampshire Catchment Flood Management Plan
- PUSH Integrated Water Management Strategy (IWMS)
- Southern Water – Water Resource Management Plan
- Test and Itchen Catchment Abstraction Management Strategy
- PUSH Green Infrastructure Strategy
- ABP Project Capital dredge of berths 204 and 205
- ABP Project Southampton Approach Channel Dredge
- Netley Coastal Defence Scheme

2.5.5 These projects and plans are discussed in the following report where relevant. If not discussed then they have not been identified as being relevant for consideration 'in combination' with the Eastleigh Local Plan.

2.6 Task 2: Appropriate Assessment

2.6.1 The level of detail concerning developments that will be permitted under Local plans (and to an extent, knowledge concerning the sensitivities and vulnerabilities of European sites) is generally insufficient to make a detailed assessment of significance of effects, beyond levels of risk. As such, individual policies and allocations will be evaluated against the environmental conditions necessary to maintain the integrity of the European site with consideration being given to the timing, duration, reversibility and scale of any adverse effect. In evaluating significance, the authors have relied on their professional judgement as well as stakeholder consultation. Importantly, the authors make use of the precautionary approach where uncertainty over significance exists such that the effect will be considered significant unless there is considerable certainty that it can be ruled out.

2.7 Task 3: Avoidance & Mitigation

2.7.1 Where necessary, measures will be recommended for incorporation into the Local Plan in order to avoid or mitigate significant adverse effects on European sites. Local precedent concerning the level of detail that a Local Plans needs to contain regarding mitigation for recreational impacts on European sites has been established by the New Forest District Core Strategy Examination in Public and associated Inspector's Report. The implication of the Inspector's conclusions is that it is not necessary for all measures that will be deployed to be fully developed prior to adoption of the Local Plan, but the Local Plan must provide an adequate policy framework within which these measures can be delivered.

3 Pathways of impact and screening

3.1 Introduction

3.1.1 In carrying out a HRA it is important to determine the various ways in which land use plans can impact on European sites by following the pathways along which development can be connected with European 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 upon a European site.

3.1.2 The pathways of impact considered further due to the potential for them to impact upon relevant internationally designated sites are detailed below. Whether they are actually likely to arise from the Local Plan is considered later in the report.

3.2 Disturbance

Mechanical erosion

3.2.1 Most types of aquatic or terrestrial European site can be affected by excessive levels of recreational activity. For example, there have been several papers published that empirically demonstrate that damage to vegetation in woodlands and other habitats can be caused by high volumes of recreational users. While these are not directly applicable to the New Forest they do clearly demonstrate that trampling can be an issue for sensitive habitats:

Wilson & Seney (1994)[2] examined the degree of track erosion caused by hikers, motorcycles, horses and cyclists from 108 plots along tracks in the Gallatin National Forest, Montana. Although the results proved difficult to interpret, it was concluded that horses and hikers disturbed more sediment on wet tracks, and therefore caused more erosion, than motorcycles and bicycles.

Cole et al (1995a, b)[3] conducted experimental off-track trampling in 18 closed forest, dwarf scrub and meadow & grassland communities (each tramped between 0 – 500 times) over five mountain regions in the US. Vegetation cover was assessed two weeks and one year after trampling, and an inverse relationship with trampling intensity was discovered, although this relationship was weaker after one year than two weeks indicating some recovery of the vegetation. Differences in plant morphological characteristics were found to explain more variation in response between different vegetation types than soil and topographic factors. Low-growing, mat-forming grasses regained their cover best after two weeks and were considered most resistant to trampling, while tall forbs (non-woody vascular plants other than grasses, sedges, rushes and ferns) were considered least resistant. Cover of hemicryptophytes and geophytes (plants with buds below the soil surface) was heavily reduced after two weeks, but had recovered well after one year and as such these were considered most resilient to trampling. Chamaephytes (plants with buds above the soil surface) were least resilient to trampling. It was concluded that these would be the least tolerant of a regular cycle of disturbance.

Cole (1995c)[4] conducted a follow-up study (in 4 vegetation types) in which shoe type (trainers or walking boots) and trampler weight were varied. Although immediate damage was greater

[2] Wilson, J.P. & J.P. Seney. 1994. Erosional impact of hikers, horses, motorcycles and off road bicycles on mountain trails in Montana. Mountain Research and Development 14:77-88

[3] Cole, D.N. 1995a. Experimental trampling of vegetation. I. Relationship between trampling intensity and vegetation response. Journal of Applied Ecology 32: 203-214

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

[4] Cole, D.N. 1995c. Recreational trampling experiments: effects of trampler weight and shoe type. Research Note INT-RN-425. U.S. Forest Service, Intermountain Research Station, Utah.

with walking boots, there was no significant difference after one year. Heavier tramplers caused a greater reduction in vegetation height than lighter tramplers, but there was no difference in effect on cover.

Cole & Spildie (1998)[5] experimentally compared the effects of off-track trampling by hiker and horse (at two intensities – 25 and 150 passes) in two woodland vegetation types (one with an erect forb understorey and one with a low shrub understorey). Horse traffic was found to cause the largest reduction in vegetation cover. The forb-dominated vegetation suffered greatest disturbance, but recovered rapidly. Higher trampling intensities caused more disturbance.

Disturbance of Birds by Human Activity

3.2.2 Concern regarding the effects of disturbance on birds in particular, stems from the fact that they are expending energy unnecessarily and the time they spend responding to disturbance is time that is not spent feeding[6]. Disturbance therefore risks increasing energetic output while reducing energetic input, which can adversely affect the 'condition' and ultimately survival of the birds In addition, displacement of birds from one feeding site to others can increase the pressure on the resources available within the remaining sites, as they have to sustain a greater number of birds.[7] Moreover, the more time a breeding bird spends disturbed from its nest, the more its eggs are likely to cool and the more vulnerable they are to predators. Finally, regular disturbance can also render some areas of otherwise suitable habitat unavailable for nesting such that breeding territories fail to be established or are limited to sub-optimal habitat.

3.2.3 The potential for disturbance may be less in winter than in summer, in that there are often a smaller number of recreational users and birds are not breeding. However, winter activity can still cause important disturbance, especially as birds are particularly vulnerable at this time of year due to food shortages. Several empirical studies have, through correlative analysis, demonstrated that out-of-season recreational activity can result in quantifiable disturbance:

Tuite et al[8] found that during periods of high recreational activity, bird numbers at Llangorse Lake decreased by 30% over a time period correlating with an increase in recreational activity. During periods of low recreational activity, however, no such correlation was observed. In addition, all species were found to spend less time in their 'preferred zones' (the areas of the lake used most in the absence of recreational activity) as recreational intensity increased.

Underhill et al[9] counted waterfowl and all disturbance events on 54 water bodies within the South West London Water bodies Special Protection Area and clearly correlated disturbance with a decrease in bird numbers at weekends in smaller sites and with the movement of birds within larger sites from disturbed to less disturbed areas.

Evans & Warrington[10] found that on Sundays total water bird numbers (including shoveler and gadwall) were 19% higher on Stocker's Lake LNR in Hertfordshire, and attributed this to displacement of birds resulting from greater recreational activity on surrounding water bodies

[5] Cole, D.N., Spildie, D.R. 1998. Hiker, horse and llama trampling effects on native vegetation in Montana, USA. Journal of Environmental Management 53: 61-71

[6] Riddington, R. *et al*. 1996. The impact of disturbance on the behaviour and energy budgets of Brent geese. *Bird Study* 43:269-279

[7] Gill, J.A., Sutherland, W.J. & Norris, K. 1998. The consequences of human disturbance for estuarine birds. *RSPB Conservation Review* 12: 67-72

[8] Tuite, C. H., Owen, M. & Paynter, D. 1983. Interaction between wildfowl and recreation at Llangorse Lake and Talybont Reservoir, South Wales. *Wildfowl* 34: 48-63

[9] Underhill, M.C. *et al.* 1993. *Use of Waterbodies in South West London by Waterfowl. An Investigation of the Factors Affecting Distribution, Abundance and Community Structure.* Report to Thames Water Utilities Ltd. and English Nature. Wetlands Advisory Service, Slimbridge

[10] Evans, D.M. & Warrington, S. 1997. The effects of recreational disturbance on wintering waterbirds on a mature gravel pitlake near London. International Journal of Environmental Studies 53: 167-182

at weekends relative to week days. However, recreational activity was not quantified in detail, nor were individual recreational activities evaluated separately.

Tuite et al[11] used a large (379 site), long-term (10-year) dataset (September – March species counts) to correlate seasonal changes in wildfowl abundance with the presence of various recreational activities. They found that shoveler was one of the most sensitive species to disturbance. The greatest impact on winter wildfowl numbers was associated with sailing/windsurfing and rowing.

3.2.4 Human activity can affect birds either directly (e.g. through causing them to flee) or indirectly (e.g. through damaging their habitat). The most obvious direct effect is that of immediate mortality such as death by shooting, but 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.[12]

3.2.5 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[13].

3.2.6 Activity will often result in a flight response (flying, diving, swimming or running) from the animal that is being disturbed. This carries an energetic cost that requires a greater food intake. Research that has been conducted concerning the energetic cost to wildlife of disturbance indicates a significant negative effect.

3.2.7 Disturbing activities are on a continuum. 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 further any activity is from the birds, the less likely it is to result in disturbance.

3.2.8 The factors that influence a species response to a disturbance are numerous, but the three key factors are species sensitivity, proximity of disturbance sources and timing/duration of the potentially disturbing activity.

Sensitivity of waterfowl

3.2.9 The distance at which a species takes flight when approached by a disturbing stimulus is known as the 'tolerance distance' (also called the 'escape flight distance') and differs between species to the same stimulus and within a species to different stimuli. These are given in Table 2, which compiles 'tolerance distances' from a literature review. It is reasonable to assume from this that disturbance is unlikely to be experienced more than a few hundred metres from the birds in question. In addition, the regular mechanized noise that is associated with industrial sites is likely to be less disturbing that the presence of visible human activity in areas in which the birds are not used to observing such activity.

[11] Tuite, C.H., Hanson, P.R. & Owen, M. 1984. Some ecological factors affecting winter wildfowl distribution on inland waters in England and Wales and the influence of water-based recreation. *Journal of Applied Ecology* 21: 41-62

[12] Riley, J. 2003. Review of Recreational Disturbance Research on Selected Wildlife in Scotland. Scottish Natural Heritage.

[13] 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

Table 2 - Tolerance distances of 21 water bird species to various forms of recreational disturbance, as described in the literature. All distances are in metres. Single figures are mean distances; when means are not published, ranges are given. [1] Tydeman (1978), [2] Keller (1989), [3] Van der Meer (1985), [4] Wolff et al (1982), [5] Blankestijn et al (1986).[14]

	Type of disturbance		
Species	Rowing boats/kayak	Sailing boats	Walking
Little grebe		60 – 100 [1]	
Great crested grebe	50 – 100 [2]	20 – 400 [1]	
Mute swan		3 – 30 [1]	
Teal		0 – 400 [1]	
Mallard		10 – 100 [1]	
Shoveler		200 – 400 [1]	
Pochard		60 – 400 [1]	
Tufted duck		60 – 400 [1]	
Goldeneye		100 – 400 [1]	
Smew		0 – 400 [1]	
Moorhen		100 – 400 [1]	
Coot		5 – 50 [1]	
Curlew			211 [3]; 339 [4]; 213 [5]
Shelduck			148 [3]; 250 [4]
Grey plover			124 [3]
Ringed plover			121 [3]
Bar-tailed godwit			107 [3]; 219 [4]
Brent goose			105 [3]
Oystercatcher			85 [3]; 136 [4]; 82 [5]
Dunlin			71 [3]; 163 [2]

3.2.10 The Solent Forum is undertaking a project to examine bird disturbance and possible mitigation in the Solent area. A Phase 1 report has outlined the existing visitor data for the Solent, canvassed expert opinion on recreational impacts on birds, and assessed current available data on relevant species. Phase II of the Solent Disturbance and Mitigation Project[15] identified that survival rates for dunlin, ringed plover, oystercatcher and curlew were predicted to decrease under any increase in visitor rates. Redshank survival rate was predicted to decrease if visitor rates were to increase to over 1.25 times the current rate, approximately double the increase expected through future housing. Grey plover survival rate would be decreased slightly if visitor rates increased to over 1.5 times the current rate, and black-tailed godwit survival was not reduced even when visitor rates were doubled. The highest increases

[14] Tydeman, C.F. 1978. *Gravel Pits as conservation areas for breeding bird communities*. PhD thesis. Bedford College

Keller, V. 1989. Variations in the response of Great Crested Grebes *Podiceps cristatus* to human disturbance - a sign of adaptation? *Biological Conservation* 49:31-45

Van der Meer, J. 1985. *De verstoring van vogels op de slikken van de Oosterschelde*. Report 85.09 Deltadienst Milieu en Inrichting, Middelburg. 37 pp.

Wolf, W.J., Reijenders, P.J.H. & Smit, C.J. 1982. The effects of recreation on the Wadden Sea ecosystem: many questions but few answers. In: G. Luck & H. Michaelis (Eds.), *Schriftenreihe M.E.L.F., Reihe A: Agnew. Wissensch* 275: 85-107

Blankestijn, S. *et al.* 1986. *Seizoensverbreding in de recreatie en verstoring van Wulp en Scholkester op hoogwatervluchplaatsen op Terschelling*. Report Projectgroep Wadden, L.H. Wageningen. 261pp.

[15] Stillman, R. A., West, A. D., Clarke, R. T. & Liley, D. (2012) Solent Disturbance and Mitigation Project Phase II: Predicting the impact of human disturbance on overwintering birds in the Solent. Report to the Solent Forum

in visitor rates (generally in the range 10 to 20%) were predicted to occur along sections of open shore, particularly to the east of Southampton Water in association with high densities of housing.

3.2.11 It was reported that the potential impact of visitors on wader survival throughout the Solent can be inferred by comparing visitor densities throughout the Solent (expressed relative to intertidal habitat area) to visitor densities predicted to decrease survival within Southampton Water. This showed that coastal sections with predicted future daily visitor rates during autumn and winter of over 30 per ha (low tide) were predicted to decrease survival of some SPA/Ramsar species due to disturbance.

3.2.12 Phase III [16] has assessed mitigation measures associated with the forecast future number of people visiting the Solent and the associated impact on the survival rates of shorebirds. Appendix 5 of the report sets out a series of potential schemes that could be delivered by local authorities working with housing developers, although no definitive choice of schemes has yet been made. The references to the Solent Disturbance and Mitigation Project will be updated in the submission Local Plan.

Noise and Vibration on other Wildlife

3.2.13 The River Itchen is designated for several species of fish and the European otter, all of which will be more or less sensitive to noise and vibration through the water column (and in the case of the otter, in close proximity to holts and other terrestrial habitat). Much of the information in this section is derived from literature reviews undertaken by Bureau Veritas on behalf of Eastleigh Council for the Eastleigh River Side project[17].

Sensitivity of Atlantic salmon

3.2.14 In addition to direct trauma, a significant risk associated with underwater noise generated by piling is the creation of an acoustic barrier to fish migration. Acoustic barriers/deterrents have the potential to impede fish as they migrate up and down the estuary. Any factor that limits the ability of fish to reach spawning grounds will potentially have a catastrophic effect on recruitment for a given species in that year and thus maintenance of the population.

3.2.15 A joint study in Southampton Docks was carried out in 2003 between Subacoustech Ltd and Fawley Aquatic Research Laboratories. The study investigated the effects of underwater noise generated by piling (vibro/impact) on caged brown trout. Five cages of the test species were situated at increasing distances from the piling events and subsequent behavioural and physical observations summarised. The test species showed no reaction (behavioural and physical) to impact piling at the regulatory stand-off range (400 m) and to vibro piling even at very close range (< 50 m)[18].

3.2.16 The metric most commonly used for the assessment of the behavioural and audiological effects of noise on animals is that of 'decibels above the hearing threshold' or dB_{ht}. This is species-specific, requiring knowledge of the hearing threshold of the species in question, and has been most widely investigated for marine species. The Atlantic salmon has relatively poor hearing with peak sensitivity at 160 Hz. For marine species, it is becoming accepted practice in the UK to consider that between 0 – 50 dB_{ht} (*Species*) there is a low likelihood of disturbance. The Environment Agency criteria for acceptability of in-water levels for Atlantic salmon requires that not more than 50% of the cross sectional area of a watercourse should

[16] Liley D & Tyldesley, D. 2013. Solent Disturbance and Mitigation Project: Phase III, Mitigation. Unpublished report. Footprint Ecology/David Tyldesley & Associates

[17] Postlethwaite B. February 2010. Noise Quality Assessment Eastleigh River Side Project. Unpublished report by Bureau Veritas on behalf of Eastleigh Borough Council

[18] Nedwell J R, Lambert D, Turnpenny A W H (2003) 'Objective design of acoustic fish deterrent systems'. Proceedings of the Symposium on Cooling Water Intake Technologies to Protect Aquatic Organisms, Environmental Protection Agency, May 6- 7, 2003. Hilton Crystal City at National Airport, Arlington, VA.

be exposed to noise levels greater than 50 dB_{ht} (*Salmo salar*) (in other words, 50 decibels above the hearing threshold of the Atlantic salmon) to ensure that continued use of the watercourse by migrating salmon is possible.

3.2.17 The data collated for the Bureau Veritas report suggests that noise levels may exceed the 50 dB_{ht} (*Salmo salar*) threshold for some construction activities (i.e. piling operations) taking place up to 20 m (in the case of vibropiling) or up to 70m (in the case of impact piling which is highly percussive) from the edge of the watercourse. Given the relatively narrow width of the river in this location, it is quite possible that vibration within the river will travel the full width.

Sensitivity of the otter

3.2.18 There is no available research into the hearing thresholds of the European otter. However, research undertaken into the North American otter enabled a probable hearing threshold for the European otter to be determined by Bureau Veritas. Otters have very acute high frequency hearing sensitivity (16 kHz) but much poorer hearing sensitivity than humans at frequencies below 4 kHz; this may explain why they appear to tolerate what, to humans, are perceived as 'noisy' environments. The 'Ecology of the European Otter'[19] states that otters will rest under roads, in industrial buildings, close to quarries and at other sites close to high levels of human activity. These observations indicate that otters are very flexible in their use of resting sites and do not necessarily avoid disturbance in terms of noise or proximity to human activity.

3.2.19 Bureau Veritas postulated that a sound pressure level below 50 dB_{ht} (*Lutra lutra*) would probably result in a low likelihood of disturbance for otters as it does for humans and many marine species[20]. The Bureau Veritas report further identifies that most construction activities involving ground penetration or noise would not result in disturbance (i.e. noise levels above 50 dB_{ht} (*Lutra lutra*)) if undertaken over 30m from the watercourse but that some activities (e.g. piling) may disturb up to 80m away. The zone of influence of construction noise on potential otter disturbance may even extend to 100 m from individual construction tasks if these are of a highly percussive nature (e.g. driven/impact piling).

3.2.20 This must of course be related to the duration and frequency of occurrence of the noise and the current baseline noise environment. Exceedence of the dB_{ht} (*Species*) threshold alone does not necessarily mean an adverse biological effect will result. Provided that the otter population in a particular catchment is stable, it can reasonably be concluded that a level of noise that does not exceed (or exceeds to a trivial degree) the existing pre-construction background noise levels is unlikely to deter the otters, even if it does exceed 50 dBht (*Lutra lutra*).

3.2.21 To be precautionary for the purposes of this HRA any development site which could involve piling within 100m of the River Itchen SAC or tributaries known/likely to be used by otters is screened in for the devising of site-specific measures at the planning application stage.

3.3 Air Quality

3.3.1 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 European sites.

[19] Chanin P., Ecology of the European Otter, Conserving Natura 2000 Rivers, Ecology series No 10, Published by Life in the Rivers.
[20] Postlethwaite B. February 2010. Noise Quality Assessment Eastleigh River Side Project. Unpublished report by Bureau Veritas on behalf of Eastleigh Borough Council

Table 3. Main sources and effects of air pollutants on habitats and species

Pollutant	Source	Effects on habitats and species
Acid deposition	SO_2, NOx and ammonia all contribute to acid deposition. Although future trends in S emissions and subsequent deposition to terrestrial and aquatic ecosystems will continue to decline, it is likely that increased N emissions may cancel out any gains produced by reduced S levels.	Can affect habitats and species through both wet (acid rain) and dry deposition. Some sites will be more at risk than others depending on soil type, bed rock geology, weathering rate and buffering capacity.
Ammonia (NH_3)	Ammonia is released following decomposition and volatilisation of animal wastes. It is a naturally occurring trace gas, but levels have increased considerably with expansion in numbers of agricultural livestock. Ammonia reacts with acid pollutants such as the products of SO_2 and NO_X emissions to produce fine ammonium (NH_4+)- containing aerosol which may be transferred much longer distances (can therefore be a significant trans-boundary issue.)	Adverse effects are as a result of nitrogen deposition leading to eutrophication. As emissions mostly occur at ground level in the rural environment and NH_3 is rapidly deposited, some of the most acute problems of NH_3 deposition are for small relict nature reserves located in intensive agricultural landscapes.
Nitrogen oxides NO_x	Nitrogen oxides are mostly produced in combustion processes. About one quarter of the UK's emissions are from power stations, one-half from motor vehicles, and the rest from other industrial and domestic combustion processes.	Deposition of nitrogen compounds (nitrates (NO_3), nitrogen dioxide (NO_2) and nitric acid (HNO_3)) can lead to both soil and freshwater acidification. In addition, NO_x can cause eutrophication of soils and water. This alters the species composition of plant communities and can eliminate sensitive species.
Nitrogen (N) deposition	The pollutants that contribute to nitrogen deposition derive mainly from NO_X and NH_3 emissions. These pollutants cause acidification (see also acid deposition) as well as eutrophication.	Species-rich plant communities with relatively high proportions of slow-growing perennial species and bryophytes are most at risk from N eutrophication, due to its promotion of competitive and invasive species which can respond readily to elevated levels of N. 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 from NO_x and volatile organic compounds (VOCs). These are mainly released by the combustion of fossil fuels. The increase in combustion of fossil fuels in the UK has led to a large increase in background ozone concentration, leading to an increased number of days when levels across the region are above 40ppb. Reducing ozone pollution is believed to require action at international level to reduce levels of the precursors that form ozone.	Concentrations of O_3 above 40 ppb can be toxic to humans and wildlife, and can affect buildings. Increased ozone concentrations may lead to a reduction in growth of agricultural crops, decreased forest production and altered species composition in semi-natural plant communities.
Sulphur Dioxide SO_2	Main sources of SO_2 emissions are electricity generation, industry and domestic fuel combustion. May also arise from shipping and increased atmospheric concentrations in busy ports. Total SO_2 emissions have decreased substantially in the UK since the 1980s.	Wet and dry deposition of SO_2 acidifies soils and freshwater, and alters the species composition of plant and associated animal communities. The significance of impacts depends on levels of deposition and the buffering capacity of soils.

3.3.2 The main pollutants of concern for European sites are oxides of nitrogen (NOx), ammonia (NH_3) and sulphur dioxide (SO_2). NOx can have a directly toxic effect upon vegetation. In

addition, greater NOx or ammonia concentrations within the atmosphere will lead to greater rates of nitrogen deposition to soils. An increase in the deposition of nitrogen from the atmosphere to soils is generally regarded to lead to an increase in soil fertility, which can have a serious deleterious effect on the quality of semi-natural, nitrogen-limited terrestrial habitats.

3.3.3 Sulphur dioxide emissions are overwhelmingly influenced by the output of power stations and industrial processes that require the combustion of coal and oil as well (particularly on a local scale) shipping. 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 or NH_3 emissions will be associated with Local Development Frameworks. NOx emissions, however, are dominated by the output of vehicle exhausts (more than half of all emissions). Within a 'typical' housing development, by far the largest contribution to NOx (92%) will be made by the associated road traffic. Other sources, although relevant, are of minor importance (8%) in comparison[21]. Emissions of NOx could therefore be reasonably expected to increase as a result of greater vehicle use as an indirect effect of the LDF.

3.3.4 According to the World Health Organisation, the critical NOx concentration (critical threshold) for the protection of vegetation is 30 μgm^{-3}; the threshold for sulphur dioxide is 20 μgm^{-3}. In addition, ecological studies have determined 'critical loads'[22] of atmospheric nitrogen deposition (that is, NOx combined with ammonia NH_3).

3.3.5 The National Expert Group on Transboundary Air Pollution (2001)[23] concluded that:

- In 1997, critical loads for acidification were exceeded in 71% of UK ecosystems. This was expected to decline to 47% by 2010.
- Reductions in SO_2 concentrations over the last three decades have virtually eliminated the direct impact of sulphur on vegetation.
- By 2010, deposited nitrogen was expected to be the major contributor to acidification, replacing the reductions in SO_2.
- Current nitrogen deposition is probably already changing species composition in many nutrient-poor habitats, and these changes may not readily be reversed.
- The effects of nitrogen deposition are likely to remain significant beyond 2010.
- Current ozone concentrations threaten crops and forest production nationally. The effects of ozone deposition are likely to remain significant beyond 2010.
- Reduced inputs of acidity and nitrogen from the atmosphere may provide the conditions in which chemical and biological recovery from previous air pollution impacts can begin, but the timescales of these processes are very long relative to the timescales of reductions in emissions.

3.3.6 Grice et al[24] [25] do however suggest that air quality in the UK will improve significantly over the next 15 years due primarily to reduced emissions from road transport and power stations.

[21] 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

[22] The critical load is the rate of deposition beyond which research indicates that adverse effects can reasonably be expected to occur

[23] National Expert Group on Transboundary Air Pollution (2001) Transboundary Air Pollution: Acidification, Eutrophication and Ground-Level Ozone in the UK.

[24] Grice, S., T. Bush, J. Stedman, K. Vincent, A. Kent, J. Targa and M. Hobson (2006) Baseline Projections of Air Quality in the UK for the 2006 Review of the Air Quality Strategy, report to the Department for Environment, Food and Rural Affairs, Welsh Assembly Government, the Scottish Executive and the Department of the Environment for Northern Ireland.

[25] Grice, S., J. Stedman, T. Murrells and M. Hobson (2007) Updated Projections of Air Quality in the UK for Base Case and Additional Measures for the Air Quality Strategy for England, Scotland, Wales and Northern Ireland 2007,

Local air pollution

3.3.7 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[26]. This is therefore the distance that has been used throughout this HRA in order to determine whether European sites are likely to be significantly affected by development under the Local Plan.

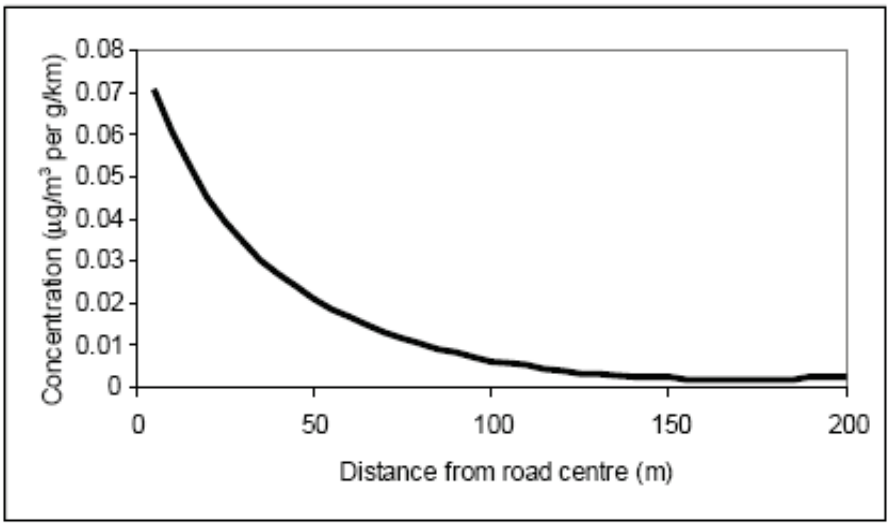


Figure 4. Traffic contribution to concentrations of pollutants at different distances from a road (Source: DfT[27])

3.3.8 In 2007 PUSH commissioned a study to examine the atmospheric pollution effects of growth planned within the South Hampshire Sub Regional Strategy on nationally and internationally important nature conservation sites[28]. A dispersion model was used to predict the contribution from roads to concentrations of oxides of nitrogen and ammonia and the rates of nutrient nitrogen and acid deposition in such sites. The model also predicted the additional contribution in 2026 resulting from traffic associated with growth generated by development in the PUSH area, including that planned for within the Local Plan. The conclusions of the study as relevant to this HRA are discussed in Chapters 4 and 5.

Diffuse air pollution

3.3.9 In addition to the contribution to local air quality issues, development can also contribute cumulatively to an overall change in background air quality across an entire region (although individual developments and plans are – with the exception of large point sources such as power stations – likely to make very small individual contributions), although the contribution from any given single source is likely to be trivial. In July 2006, when this issue was raised by Runnymede District Council in the South East, Natural England advised that their Local Development Framework *'can only be concerned with locally emitted and short range locally acting pollutants'* [29] as this is the only scale which falls within a local authority remit. It is understood that this guidance was not intended to set a precedent, but it inevitably does so

report to the Department for Environment, Food and Rural Affairs, Welsh Assembly Government, the Scottish Executive and the Department of the Environment for Northern Ireland.

[26] http://www.dft.gov.uk/webtag/documents/expert/unit3.3.3.php#013; accessed 13/04/12

[27] http://www.dft.gov.uk/ha/standards/dmrb/vol11/section3/ha20707.pdf; accessed 04/05/12

[28] AEA Technology. 2010. Road transport emissions impacts on Nature Conservation Sites. Report to the Partnership for Urban South Hampshire

[29] English Nature (16 May 2006) letter to Runnymede Borough Council, 'Conservation (Natural Habitats &c.) Regulations 1994, Runnymede Borough Council Local Development Framework'

since (as far as we are aware) it is the only formal guidance that has been issued to a Local Authority from any Natural England office on this issue.

3.3.10 In the light of this and our own knowledge and experience, it is considered reasonable to conclude that it must be the responsibility of Central Government and higher-tier bodies to set a policy framework for addressing the cumulative diffuse pan-authority air quality impacts, partly because such impacts stem from the overall quantum of development within a region or even the UK as a whole and since this issue can only practically be addressed at the highest pan-authority level. In line with common practice therefore, diffuse air quality issues will not therefore be considered further within this HRA.

3.4 Water quality

3.4.1 Water quality includes such components as dissolved oxygen, acidity/alkalinity, levels of other chemicals such as nitrogen and phosphorous, amount of suspended solids and heavy metals. Dissolved oxygen is affected by the Biochemical Oxygen Demand (BOD); the higher the BOD the lower the dissolved oxygen available in the water for fish and other wildlife. Excess nutrients can lead to various impacts including algal blooms and smothering growth of large algae, while high ammonia concentrations and heavy metals are directly toxic to aquatic life. Each species has its own tolerance range with respect to water quality. As noted earlier, fish, such as the salmon, which are totally dependent on water are more sensitive to changes in water quality. And water quality can have other indirect effects, for example high volumes of nitrogen and phosphorous can lead to algal blooms and excessive growth of other water plants.

3.4.2 The Environment Agency has undertaken a series of Reviews of Consents for the River Itchen and all of the Solent European sites. These identified that phosphorus concentrations in the River Itchen SAC[30] and nitrogen discharges into the coastal waters that constitute the Solent complex were leading in combination to an adverse effect on the integrity of those sites. The major discharge to the River Itchen SAC is from the Chickenhall Lane Wastewater Treatment Works (WwTW) in Eastleigh although Harestock WwTW also makes a significant contribution. Historically, many water quality parameters for the River Itchen were at their poorest in the Eastleigh area. None of the BOD, ammonia concentrations or levels of suspended solids met the quality targets for the SAC in this area, while soluble phosphorous concentrations were 4 times higher than acceptable levels.

3.4.3 The Agency has therefore introduced a series of amendments to discharge consents into these receiving watercourses intended to reduce the inputs of these nutrients to acceptable levels. Provided therefore that new development can be accommodated within the headroom (i.e. remaining volumetric capacity) of the post-review discharge consents for the relevant wastewater treatment works it will not contribute to an adverse effect on any European sites.

3.4.4 The Partnership for Urban South Hampshire (PUSH) commissioned an Integrated Water Management Strategy in 2009 specifically to determine whether the existing water treatment capacity in the sub-region would be able to accommodate the level of development proposed given the associated environmental constraints. It was ultimately concluded that *'At this stage, therefore, it is considered very unlikely that major new wastewater treatment infrastructure will be required during the next 20 years other than that already required to achieve the consents set by the EA under the Urban Wastewater Treatment Directive and those proposed to fulfil the requirements of the Habitats and Birds Directives'.*

[30] The Environment Agency Stage 3 Review of Consents Report explains on page 48 why the emphasis is placed on phosphorus rather than nitrogen: '*Nitrogen levels are also monitored but are of less concern as it is not thought to be the limiting nutrient in the freshwater Itchen system*'

3.4.5 Southern Water has confirmed to Eastleigh Borough Council that it will be possible for development to be delivered within Eastleigh Borough as set out in the Local Plan to be accommodated either within the headroom of the existing consents, or by increasing volumetric consents but tightening water quality standards to the degree necessary to ensure no deterioration downstream[31]. The Local Plan can therefore be screened out on the basis that it will not lead to Likely Significant Effects on any European sites through deteriorating water quality from treated effluent discharge.

3.4.6 Water quality impacts related to site-specific development construction activities in proximity to watercourses are covered in the relevant site assessment tables in Chapters 4 and 5.

3.5 Water resources

3.5.1 Water quantity has a significant effect on the biodiversity of the river catchment in many different ways. The amount of water falling on the catchment and getting into the river, has an effect on water levels (depth) in the river, water table levels in the floodplain, and the flow rate of the river. In turn, these properties influence other important river properties – for example levels of silt and dissolved oxygen in the water.

3.5.2 Different species have their own optimal ranges for these properties (and these can vary from season to season), and their own tolerance levels. So, for example with breeding wading birds of the floodplain such as the redshank, a high water-level during the spring breeding season, resulting in shallow pools to feed from and feed the young chicks is ideal. However, too much water (flooding) can wash away nests and eggs. Too little water (drought) and the invertebrate food in the grassland is more difficult to obtain, and chicks may not get enough food.

3.5.3 For salmon, flow rates are critical to the success of the species. Low flow rates affect food availability and migration. Low flows mean reduced invertebrate food, and increased concentrations of pollutants significantly reducing the numbers of salmon returning up river to spawn. In low flow years, salmon returning to spawn can be reduced by as much as 50%. Low flow also means more silt and less oxygen in the water, significantly reducing the survival rate for the eggs of the salmon that do spawn.

3.5.4 Historically, the Environment Agency Review of Consents for the River Itchen SAC identified that abstraction could (during a dry year) result in flows in Candover Stream and the main River Itchen south of Winchester to fall to approximately 35% below naturalised flow in September. The Agency has therefore introduced a series of amendments to abstraction licences for the River Itchen SAC to reduce abstraction to acceptable levels. Provided therefore that new development can be accommodated within the headroom (i.e. remaining volumetric capacity) of the post-review abstraction licences for the relevant raw water treatment works it will not contribute to an adverse effect on any European sites.

3.5.5 Southern Water has confirmed to Eastleigh Borough Council that it will be possible for development set out in the Local Plan to be accommodated within the headroom of the existing abstraction licences. The Local Plan can therefore be screened out on the basis that it will not lead to Likely Significant Effects on any European sites through inadequate flows.

3.6 Coastal squeeze

3.6.1 Rising sea levels can be expected to cause intertidal habitats (principally saltmarsh, sand dunes and intertidal mudflats) to migrate landwards. However, in built-up areas, such landward retreat is often rendered impossible due to the presence of the sea wall and other flood defences. In addition, development frequently takes place immediately behind the sea

[31] Southern Water Position Statement (April 2012) as supplied to Eastleigh Borough Council

wall, so that the flood defences cannot be moved landwards to accommodate managed retreat of threatened habitats. The net result is that the quantity of saltmarsh, sand dunes and mudflat adjacent to built-up areas will progressively decrease as sea levels rise. This process is known as 'coastal squeeze'. In areas where sediment availability is reduced, the 'squeeze' also includes an increasingly steep beach profile and foreshortening of the seaward zones.

3.6.2 Defra's current national assessment is that the creation of an annual average of at least 100 ha of intertidal habitat associated with European sites in England that are subject to coastal squeeze, together with any more specifically identified measures to replace losses of terrestrial and supra-tidal habitats, is likely to be required to protect the overall coherence of the Natura 2000 network. This assessment takes account of intertidal habitat loss from European sites in England that is caused by a combination of all flood risk management structures and sea level rise. The assessment will be kept under review taking account of the certainty of any adverse effects and monitoring of the actual impacts of plans and projects.[16]

3.6.3 Intertidal habitat loss is mainly occurring in the south and east of the country, particularly around the Humber and Severn. Northwest England, south Wales, the Solent in Hampshire, the southeast around the Thames estuary and large parts of East Anglia are also affected but to a lesser degree. The Coastal Strategies for the Solent area are the main process whereby the losses due to flood defences and coastal squeeze and the gains due to managed retreat along the frontage will be identified at a strategic level, with strategic habitat creation solutions identified through the Environment Agency Regional Habitat Creation Programme. However, local authorities can also contribute to minimising squeeze by appropriately situating new development in line with Shoreline Management Plan policy.

3.6.4 No development being proposed in the Local Plan is situated in such a position that it would cause coastal squeeze or cause the SMP defence policy to be changed. Therefore this issue does not need to be considered further in the HRA.

3.7 Land outside European site boundaries

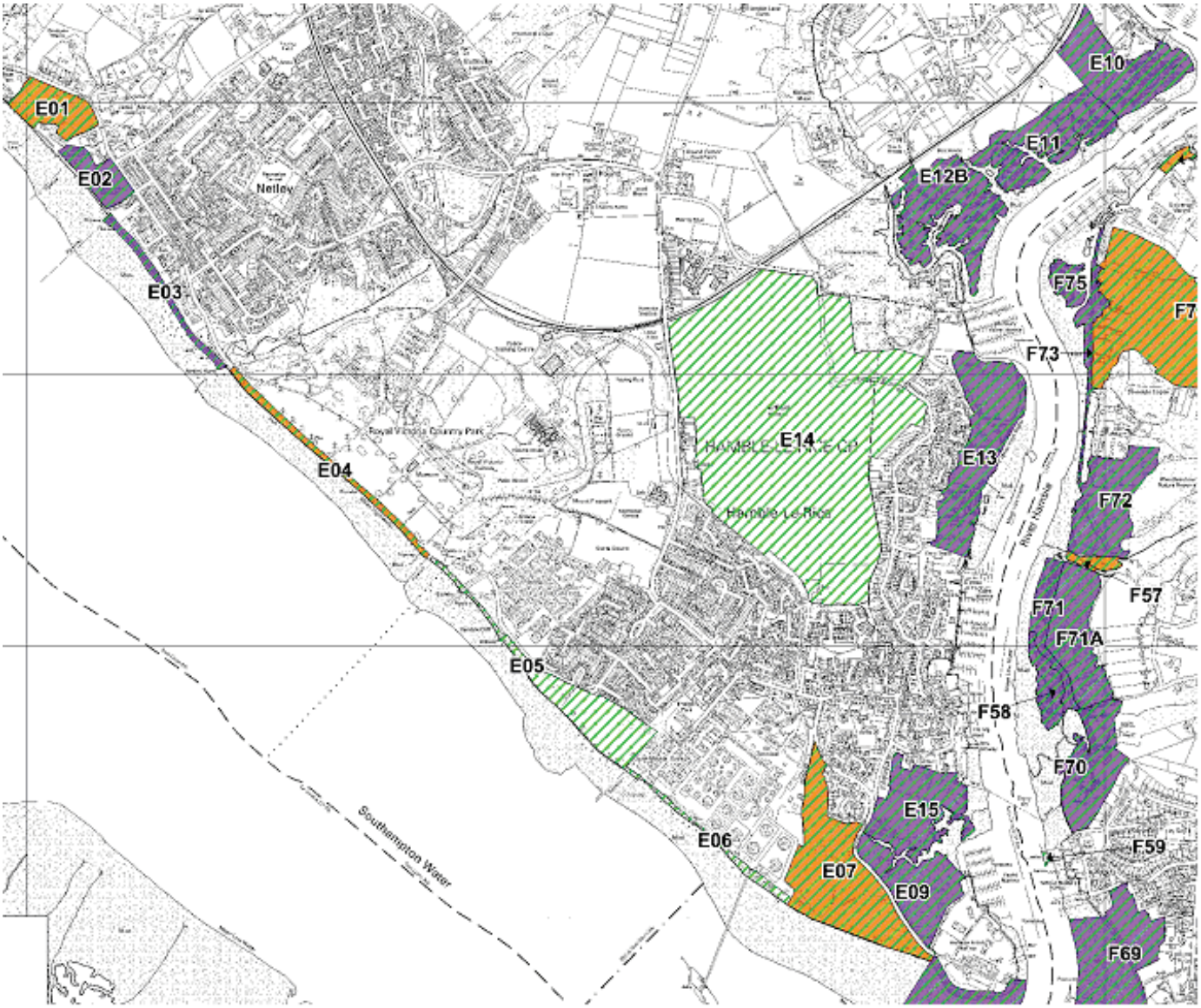
3.7.1 The boundaries of European sites are defined to encompass as much as possible of the key land areas essential to the maintenance of populations of species of European importance. However, for migratory or otherwise highly mobile species it is not possible to encompass all the areas of land necessary for the maintenance of the population within the site boundary. In these instances, areas outside the European site boundary require preservation.

3.7.2 The River Itchen is designated for several mobile species of which the most highly mobile are the migratory Atlantic salmon and the European otter. Therefore preservation of salmon populations in the River Itchen SAC requires not only the protection of the river (including upstream of the SAC) but also the Solent area as the salmon migrate into the marine environment. Protection of otter populations can involve not only the protection of habitat along the Itchen itself but also of tributaries of the Itchen which may either provide habitat themselves or provide corridors linking the Itchen with the Hamble.

3.7.3 The Solent & Southampton Water SPA/Ramsar site is noted for a suite of highly mobile waterfowl and other birds. Of particular note, it is known that the populations of Brent goose for which the SPA/Ramsar site are designated are highly dependent upon areas of open short-mown grassland around the SPA as high tide roosts and feeding areas. However, the key areas are well known and have been subject to mapping exercises. Those in Eastleigh Borough are shown on the plan below. Sites of potential importance to Brent geese are coloured purple (definite) or orange (uncertain). Sites of potential importance for waders are hatched red (definite) or green (uncertain). None of the sites allocated in the Local Plan are

[16] Defra. 2005. Coastal Squeeze – Implications for Flood Management. http://www.defra.gov.uk/environ/fcd/policy/csqueeze.pdf

situated on any of these land parcels. Loss of supporting habitat for SPA birds does not therefore require further consideration.



Source: Hampshire & Isle of Wight Wildlife Trust. 2010. Solent Waders and Brent Goose Strategy

3.8 Non-native species

3.8.1 Audits conducted by Scottish Natural Heritage and the former English Nature identified 988 and 2,271 non-native species present in Scotland and England respectively. Most, such as Horse Chestnut or Little Owl for example, are benign or have contributed to Britain's natural heritage. However, a minority of non-native species can become dominant in the environment where they may impact on native species, transform ecosystems and cause environmental harm. These are the invasive non-native species which form the central concern of this Strategy.

3.8.2 Invasive non-native species of flora and fauna are considered the second biggest threat after habitat loss and destruction to biodiversity worldwide and the greatest threat to fragile ecosystems such as islands. Because of the increase in the global movement of people and goods, they pose a growing problem in the conservation of biodiversity, and are a threat to economic interests such as agriculture, forestry and fisheries. The true extent of the threat posed by invasive non-native species has become much better understood in recent times,

including an appreciation of the fact that past introductions have usually occurred with little awareness of the potential consequences[32].

3.8.3 The introduction of invasive non-native species and the diseases they carry is considered to be among the greatest threats to the survival of our native flora and fauna. Well documented examples that threaten our freshwater habitats include:

- New Zealand pygmyweed *Crassula helmsii*
- Killer shrimp *Dikerogammarus villosus*
- Signal crayfish *Pacifastacus leniusculus*
- Japanese knotweed *Fallopia japonica*
- Giant hogweed *Heracleum mantegazzianum*
- Himalayan balsam *Impatiens glandulifera*
- Floating pennywort *Hydrocotyle ranunculoides*
- Creeping water primrose *Ludwigia peploides*

3.8.4 Non-native weeds as outlined above can increase the risk of flooding by choking drainage channels with their rapid growth in addition to outcompeting native species.

3.8.5 If large amounts of development (e.g. 100 dwellings and upwards) are placed in close proximity to river and stream corridors the potential for non-native species to be introduced to the river corridor can increase significantly. This particularly relates to the introduction of non-native plant species through garden waste or simply through dissemination of garden plants through soil/rhizomes and seeds. Although non-native fish and aquatic invertebrates are also of great relevance they are less likely to be introduced through residential development.

[32] Defra. 2008. The Invasive Non-Native Species Framework Strategy for Great Britain

4 Solent European Sites

4.1 Introduction

4.1.1 There are several overlapping designations that cover the Solent. Although they have different interest features, the environmental conditions necessary to ensure their continuing favourable conservation status are similar as are the potential impacts of development and associated in the New Forest National Park. In order to reduce repetition, they are therefore considered collectively in this chapter.

4.1.2 These sites covered by this chapter are:

- Solent Maritime SAC; and
- Solent and Southampton Water SPA and Ramsar

Solent Maritime SAC

4.1.3 The Solent Maritime Special Area of Conservation (SAC) is a complex site encompassing a major estuarine system on the south coast of England. The SAC includes sixteen Sites of Special Scientific Interest (SSSI) spread out along the Solent, including Langstone Harbour SSSI, Chichester Harbour SSSI and extensive areas of the inshore Solent along the north coast of the Isle of Wight, the Lymington area, the western shores of Southampton Water and the Hamble Estuary.

Solent and Southampton Water SPA and Ramsar

4.1.4 The site comprises a series of estuaries and harbours with extensive mud-flats and saltmarshes together with adjacent coastal habitats including saline lagoons, shingle beaches, reedbeds, damp woodland and grazing marsh. The mud-flats support beds of *Enteromorpha* spp. and *Zostera* spp. and have a rich invertebrate fauna that forms the food resource for the estuarine birds. In summer, the site is of importance for breeding seabirds, including gulls and four species of terns. In winter, the SPA holds a large and diverse assemblage of waterbirds, including geese, ducks and waders. Dark-bellied Brent Goose *Branta b. bernicla* also feed in surrounding areas of agricultural land outside the SPA.

4.2 Reasons for Designation

Solent Maritime SAC

4.2.1 Solent Maritime qualifies as a SAC for both habitats and species. Firstly, the site contains the following Habitats Directive Annex I habitats:

- Estuaries
- Cord-grass swards (Spartina swards *Spartinion maritimae*)
- Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*)
- Subtidal sandbanks (sandbanks which are slightly covered by seawater all the time)
- Intertidal mudflats and sandflats (mudflats and sandflats not covered by seawater at low tide)
- Lagoons (coastal lagoons)
- Annual vegetation of drift lines

- Coastal shingle vegetation outside the reach of waves (perennial vegetation of stony banks)
- Glasswort and other annuals colonising mud and sand (*Salicornia* and other annuals colonising mud and sand)
- Shifting dunes with marram (shifting dunes along the shoreline with *Ammophila arenaria* 'white dunes')

4.2.2 Secondly, the site contains the following Habitats Directive Annex II species:

- Desmoulin's Whorl Snail *Vertigo moulinsiana*

Conservation Objectives

Solent Maritime SAC

1. Subject to natural change, maintain* the Estuaries in favourable condition, in particular:

- Shingle communities.
- Reedbed communities.
- Saltmarsh communities.
- Intertidal mudflat & sandflat communities.
- Intertidal mixed sediment communities.
- Subtidal sediment communities.

2. The conservation objective for annual vegetation of drift lines
Subject to natural change, maintain* the Annual vegetation of drift lines in favourable condition.

3. The conservation objective for Atlantic salt meadows (*Glauco-Puccinellietalia*)
Subject to natural change, maintain* the Atlantic salt meadows (*Glauco-Puccinellietalia*) in favourable condition, in particular:

- Low marsh communities.
- Mid-marsh communities.
- Upper marsh communities.
- Transitional high marsh communities.

4. The conservation objective for *Salicornia* and other annuals colonising mud and sand
Subject to natural change, maintain* the *Salicornia* and other annuals colonising mud and sand in favourable condition, in particular:

- Annual *Salicornia* saltmarsh communities (SM8).
- *Suaeda maritima* saltmarsh communities (SM9).

5. The conservation objective for cordgrass swards (*Spartinion*)
Subject to natural change, maintain* the cordgrass swards (*Spartinion*) in favourable condition, in particular:

- Small cordgrass (*Spartina maritima*) communities.
- Smooth cordgrass (*Spartina alterniflora*) communities.
- Townsend's cordgrass (*Spartina x townsendii*) communities.

6. The conservation objective for mudflats and sandflats not covered by seawater at low tide
Subject to natural change, maintain* the mudflats and sandflats not covered by seawater at low tide in favourable condition, in particular:

- Intertidal mud communities.
- Intertidal muddy sand communities.
- Intertidal sand communities.
- Intertidal mixed sediment communities.

7. The conservation objective for sandbanks slightly covered by seawater all the time
Subject to natural change, maintain* the sandbanks slightly covered by seawater all the time in favourable condition, in particular:

- Subtidal gravel and sands.
- Subtidal muddy sand.
- Subtidal eelgrass Zostera marina beds.

8. The conservation objective for lagoons
Subject to natural change, maintain* the lagoons in favourable condition.

9. The conservation objective for perennial vegetation of stony banks
Subject to natural change, maintain* the Perennial vegetation of stony banks in favourable condition.

10. The conservation objective for shifting dunes along the shoreline with *Ammophilia arenaria* (white dunes)
Subject to natural change, maintain* the Shifting dunes along the shoreline with *Ammophilia arenaria* (white dunes) in favourable condition.

11. The conservation objective for *Vertigo moulinsiana* (Desmoulin's Whorl Snail)
Subject to natural change, maintain* in favourable condition the habitats for *Vertigo moulinsiana* (Desmoulin's Whorl Snail)

*maintenance implies restoration if the feature is not currently in favourable condition.

Solent and Southampton Water SPA and Ramsar

4.2.3 Solent and Southampton Water qualifies as a SPA for its breeding and wintering bird species. As breeding species the site contains:

- Common Tern *Sterna hirundo*, 267 pairs representing at least 2.2% of the breeding population in Great Britain (5 year peak mean, 1993-1997)
- Little Tern *Sterna albifrons*, 49 pairs representing at least 2.0% of the breeding population in Great Britain (5 year peak mean, 1993-1997)
- Mediterranean Gull *Larus melanocephalus*, 2 pairs representing at least 20.0% of the breeding population in Great Britain (5 year peak mean, 1994-1998)
- Roseate Tern *Sterna dougallii*, 2 pairs representing at least 3.3% of the breeding population in Great Britain (5 year peak mean, 1993-1997)
- Sandwich Tern *Sterna sandvicensis*, 231 pairs representing at least 1.7% of the breeding population in Great Britain (5 year peak mean, 1993-1997)

Over winter:

- Black-tailed Godwit *Limosa limosa islandica*, 1,125 individuals representing at least 1.6% of the wintering Iceland - breeding population (5 year peak mean, 1992/3-1996/7)
- Dark-bellied Brent Goose *Branta bernicla bernicla*, 7,506 individuals representing at least 2.5% of the wintering Western Siberia/Western Europe population (5 year peak mean, 1992/3-1996/7)
- Ringed Plover *Charadrius hiaticula*, 552 individuals representing at least 1.1% of the wintering Europe/Northern Africa - wintering population (5 year peak mean, 1992/3-1996/7)
- Teal *Anas crecca*, 4,400 individuals representing at least 1.1% of the wintering Northwestern Europe population (5 year peak mean, 1992/3-1996/7)

The area also qualifies as an SPA by supporting 53,948 individual waterfowl (5 year peak mean 1991/2 - 1995/6).

4.2.4 Solent and Southampton Water qualifies as a Ramsar as illustrated in Table 5.

Table 5: Solent and Southampton Water Ramsar site criteria

Ramsar criterion	Description of Criterion	Solent and Southampton Water
1	A wetland should be considered internationally important if it contains a representative, rare, or unique example of a natural or near-natural wetland type found within the appropriate biogeographic region.	The site is one of the few major sheltered channels between a substantial island and mainland in European waters, exhibiting an unusual strong double tidal flow and has long periods of slack water at high and low tide. It includes many wetland habitats characteristic of the biogeographic region: saline lagoons, saltmarshes, estuaries, intertidal flats, shallow coastal waters, grazing marshes, reedbeds, coastal woodland and rocky boulder reefs.
2	A wetland should be considered internationally important if it supports vulnerable, endangered, or critically endangered species or threatened ecological communities.	The site supports an important assemblage of rare plants and invertebrates. At least 33 British Red Data Book invertebrates and at least eight British Red Data Book plants are represented on site.
5	A wetland should be considered internationally important if it regularly supports 20,000 or more waterbirds	**Species with peak counts in winter:** 51343 waterfowl (5 year peak mean 1998/99-2002/2003)
6	A wetland should be considered internationally important if it regularly supports 1% of the individuals in a population of one species or subspecies of waterbird.	**Qualifying Species/populations (as identified at designation):** **Species with peak counts in spring/autumn:** Ringed plover , *Charadrius hiaticula*, Europe/Northwest Africa 397 individuals, representing an average of 1.2% of the GB population (5 year peak mean 1998/9-2002/3) **Species with peak counts in winter:** Dark-bellied brent goose, *Branta bernicla bernicla*, 6456 individuals, representing an average of 3% of the population (5 year peak mean 1998/9-2002/3) Eurasian teal , *Anas crecca*, NW Europe 5514 individuals, representing an average of 1.3% of the population (5 year peak mean 1998/9-2002/3) Black-tailed godwit , *Limosa limosa islandica*, Iceland/W Europe 1240 individuals, representing an average of 3.5% of the population (5 year peak mean 1998/9-2002/3)

Conservation Objectives

Solent and Southampton Water SPA
1. The conservation objective for the internationally important populations of the regularly occurring Annex 1 Species Subject to natural change, maintain* in favourable condition the habitats for the internationally important populations of the regularly occurring Annex 1 species, in particular: - Standing water - Sand and shingle - Saltmarsh - Intertidal mudflats and sandflats - Shallow coastal waters - Lagoons 2. The conservation objective for the internationally important populations of the regularly

occurring migratory species
Subject to natural change, maintain* in favourable condition the habitats for the internationally important populations of the regularly occurring migratory species, in particular:

- Grazing marsh
- Reedbeds
- Standing water
- Coastal and inundation grassland
- Saltmarsh
- Intertidal mudflats and sandflats
- Boulder and cobble shores
- Mixed sediment shores
- Lagoons

3. The conservation objective for the internationally important assemblage of waterfowl
Subject to natural change, maintain* in favourable condition the habitats for the internationally important assemblage of waterfowl, in particular:

- Grazing marsh
- Reedbeds
- Standing water
- Coastal and inundation grassland
- Saltmarsh
- Intertidal mudflats and sandflats
- Boulder and cobble shores
- Mixed sediment shores
- Lagoons

*maintenance implies restoration if the feature is not currently in favourable condition.

Solent and Southampton Water Ramsar

The conservation objective for the internationally important populations of the regularly occurring Annex 1 species
Subject to natural change, maintain* in favourable condition the habitats for the internationally important populations of the regularly occurring Annex 1 species, in particular:

- Standing water
- Sand and shingle
- Saltmarsh
- Intertidal mudflats and sandflats
- Shallow coastal waters
- Lagoons

2. The conservation objective for the internationally important populations of the regularly occurring migratory species
Subject to natural change, maintain* in favourable condition the habitats for the internationally important populations of the regularly occurring migratory species, in particular:

- Grazing marsh
- Reedbeds
- Standing water
- Coastal and inundation grassland
- Saltmarsh
- Intertidal mudflats and sandflats
- Boulder and cobble shores
- Mixed sediment shores
- Lagoons

3. The conservation objective for the internationally important assemblage of waterfowl
Subject to natural change, maintain* in favourable condition the habitats for the internationally

important assemblage of waterfowl, in particular:

- Grazing marsh
- Reedbeds
- Standing water
- Coastal and inundation grassland
- Saltmarsh
- Intertidal mudflats and sandflats
- Boulder and cobble shores
- Mixed sediment shores
- Lagoons

*maintenance implies restoration if the feature is not currently in favourable condition.

4.3 Historical Trends and Current Pressures

Solent Maritime SAC

4.3.1 The Solent Maritime SAC has a number of physical constraints including existing flood defence and coast protection works that, coupled with predictions of rising sea levels may lead to coastal squeeze of intertidal habitats. Development pressures including ports, marinas, jetties etc, often involve capital/ maintenance dredging to provide/ improve deep water access, and land-claim of coastal habitats. Such development along with ongoing port activities leads to an increased risk of accidental pollution from shipping, oil/chemical spills, heavy industrial activities, former waste disposal sites and waste-water discharge, while there is risk of introduction of non-native species e.g. from shipping activity.

4.3.2 Solent Maritime SAC suffers from nutrient enrichment[33], which causes excessive growth of green weed across the site. This green weed can form dense mats within the intertidal areas throughout sheltered areas of the site, inhibiting the natural functioning of these habitats. In their Review of Consents process, the Environment Agency observed evidence of toxic contamination within certain areas of the site, including tri-butyl tin (TBT) at the head of Southampton Water and in the middle of the Solent, arising from historic use as an anti-fouling paint on boats. The Review of Consents process has identified an area of thermal pollution occurring over the shallow intertidal zone on the western shore of Southampton Water. Thermal plumes may affect the distribution of fish. There are areas of organic enrichment on the western shore of Southampton Water. This can make sediments anaerobic which can effect the distribution or composition of designated habitats.

4.3.3 Reductions in freshwater flows into the SAC may pose a risk to site's integrity. Estuaries are a very important feature of the site and implicitly require some freshwater input. It is also widely agreed that small freshwater flows may also be important to intertidal SAC habitats.

4.3.4 These issues have been and are being addressed through a number of mechanisms including the review of consents procedure under the Habitats Regulations, Biodiversity Action Plans, and other coastal strategies, management plans and management agreements. In 2000, a collaborative Solent European Marine Sites project was set up with the aim of developing a strategy for managing the marine and coastal resources of the Solent in a more integrated and sustainable way[34].

4.3.5 The key environmental conditions of the SAC are mainly:

[33] http://www.environment-agency.gov.uk/static/documents/Business/solent_maritime_sac_1885867.pdf
[34] www.solentems.org.uk/

- Sufficient space between the site and development to allow for managed retreat of intertidal habitats and avoid coastal squeeze.
- No dredging or land-claim of coastal habitats.
- Unpolluted water.
- Absence of nutrient enrichment.
- Absence of non-native species.
- Maintenance of freshwater inputs.
- Balance of saline and non-saline conditions.
- Maintenance of grazing

Solent and Southampton Water SPA and Ramsar

4.3.6 The Solent and Southampton Water SPA/Ramsar has a number of physical constraints including existing flood defence and coast protection works that, coupled with predictions of rising sea levels, may lead to coastal squeeze of intertidal habitats. Development pressures including ports, marinas, jetties etc, often involve capital/ maintenance dredging to provide/ improve deep water access, and land-claim of coastal habitats. Such development along with ongoing port activities leads to an increased risk of accidental pollution from shipping, oil/chemical spills, heavy industrial activities, former waste disposal sites and waste-water discharge, while there is risk of introduction of non-native species e.g. from shipping activity.

4.3.7 The SPA/Ramsar suffers from nutrient enrichment, which causes excessive growth of green weed. This green weed can form dense mats within the intertidal areas throughout sheltered areas of the site, inhibiting the natural functioning of these habitats. The Review of Consents process has noted evidence of toxic contamination within certain areas of the site, including tri-butyl tin (TBT) at the head of Southampton Water and in the middle of the Solent, arising from historic use as an anti-fouling paint on boats. The Review of Consents process has identified an area of thermal pollution occurring over the shallow intertidal zone on the western shore of Southampton Water. Thermal plumes may affect the distribution of fish. There are areas of organic enrichment on the western shore of Southampton Water. This can make sediments anaerobic which can effect the distribution or composition of designated habitats.

4.3.8 Reductions in freshwater flows into the SAC may pose a risk to site's integrity. Recent research indicates that freshwater creeks flowing over intertidal areas are an important resource to many bird species. Birds use such freshwater zones at times of low tide for feeding, drinking, bathing and shelter. Licensed abstractions can have an adverse effect by reducing the amount of freshwater available.

4.3.9 These issues have been and are being addressed through a number of mechanisms including the review of consents procedure under the Habitats Regulations, Biodiversity Action Plans, and other coastal strategies, management plans and management agreements. In 2000, a collaborative Solent European Marine Sites project was set up with the aim of developing a strategy for managing the marine and coastal resources of the Solent in a more integrated and sustainable way.

4.3.10 The key environmental conditions required to maintain site integrity include:

- Sufficient space between the site and development to allow for managed retreat of intertidal habitats and avoid coastal squeeze.
- No dredging or land-claim of coastal habitats.
- Unpolluted water.

- Absence of nutrient enrichment.
- Absence of non-native species.
- Low levels of recreational pressure both on shore and offshore can avoid disturbance effects during sensitive (over-wintering) periods.
- Freshwater inputs are of value for providing a localised increase in prey biomass for certain bird species, specific microclimatic conditions and are used for preening and drinking.
- Low amounts of silt loss.
- Short grasslands surrounding the site are essential to maintaining interest features as they are now the key foraging resource.

4.4 Likely Significant Effects

Disturbance/recreation

4.4.1 Data on visitor activity in the Solent complex was obtained through the Solent Disturbance and Mitigation Project. Overall, Southampton Water had a relatively high predicted density of future visitors. Five of the twelve sections of frontage in Southampton Water predicted to receive an increase in visitor density to over 30/ha (in some cases more than three times over) are located in Eastleigh (from Weston to Hound). Visitor numbers per day were typically highest on weekends compared to weekdays. Holiday makers accounted for 6% of the total number of visitors recorded. Visitors undertook a wide range of activities, with walking (without a dog) and dog walking the two most frequently recorded activities (44% and 42% of interviews). Across all sites and activities, visits were typically short, with 89% lasting less than two hours. Across all sites (and taking the data for non-holiday makers only) visitors were roughly evenly divided between those who arrived by car and those who arrived on foot. Ninety percent of all visitors arriving on foot lived within 2km, compared to only 20% of visitors arriving by car. Almost eighty percent of all visitors arriving by car (excluding holiday makers) lived within 10km, with 50% living within 4km. The overall median distance from site (across the study area) for non-tourist visitors was 1.7km.

4.4.2 The vast majority of South-Hampshire based visitors (irrespective of mode of transport) to the Eastleigh sections of frontage lived south of the A3024, i.e. within approximately 4km. However, visitors did arise from across South Hampshire. The projected increase in visitors cannot therefore be entirely attributed to Eastleigh any more than it can be stated that Eastleigh will not be contributing visitor pressure along other sections of frontage. However, it is reasonable to assume that a very high proportion of the additional visitors to the Eastleigh frontage will be Eastleigh residents, mainly from the coastal stretches of the Borough. It is therefore the case that, when taken as a whole and 'in combination' with development across South Hampshire, the scale of development set out in the Eastleigh Local Plan cannot currently be screened out as leading to no Likely Significant Effects until measures addressing this issue are incorporated into the Plan.

4.4.3 In addition to the Borough-wide contribution to recreational pressure it is conceivable that individual allocated sites could make a disproportionate contribution to recreational pressure given their scale or location. This issue is explored in the site-by-site appraisal tables below.

Air quality

4.4.4 The M27 crosses the Solent Maritime SAC at Landranger grid reference SU496101. Approximately 4ha of river and intertidal mudflat lies within 200m of the road at this location amounting to approximately 0.02% of the total area of the SAC. There is no critical load for mudflat, but there is a critical load for 'saltmarsh' which is likely to have a similar susceptibility

to nitrogen deposition. The minimum critical load for saltmarsh is 20 kgN/ha/yr (since saltmarsh is not very susceptible to nitrogen inputs). Current deposition at grid reference SU496101 is 17.5 kgN/ha/yr (14% below the critical load). The A27 also crosses the Solent Maritime SAC and has a similar rate of deposition. Further down the river the nitrogen deposition rate drops further (for example to 14kgN/ha/yr at SU489087 and along the Netley coastal frontage of the Solent & Southampton Water SPA/Ramsar site at SU474062).

4.4.5 It is unlikely that even a large increase in traffic on the M27 or A27 within Eastleigh Borough would result in a 19% increase in total nitrogen deposition, particularly since the delivery of new development during the Local Plan period will be against a background of continual improvements in air quality (hence the APIS website predicts deposition in 2020 to be lower than deposition at the same location in 2010). NOx is also below the critical level (25.83 $\mu g/m^3$ at the grid references identified above compared to a critical level of 30 $\mu g/m^3$).

4.4.6 Department for Transport Guidance as expressed in the Design Manual for Roads and Bridges (DMRB)[35] states that the first process in determining air quality impacts from road schemes is to determine whether the road in question is an 'affected road' which is defined as, among other criteria, if it will experience an increase in flows of more than 1,000 Average Annual Daily Traffic (AADT). The traffic modelling being undertaken for the Local Plan was used to identify whether predicted flows on the two main routes that lie within 200m of the Solent Maritime SAC and Solent & Southampton Water SPA/Ramsar site (the M27 and A27 as they cross the River Hamble) would be likely to exceed 1,000 AADT. In the case of the A27, flows were not expected to exceed the threshold. Following DMRB guidance therefore this would not be an 'affected road' and no further air quality assessment is required. In the case of the M27 the Local Plan is expected to result in a total change in flows exceeding 1000 AADT. Note that these scenarios are the most precautionary in that they do not allow for the Botley Bypass. Transport modelling indicates that with the Botley Bypass in, place flows would be lower than in the absence of the bypass and the change in flows due to Local Plan development would not exceed 1000 AADT on either the A27 or M27.

	Direction	**Predicted increase in vehicle flows by 2031 in terms of AADT as a result of Local Plan development**
M27 crossing the River Hamble	Eastbound	960
	Westbound	1,213
A27 crossing the River Hamble	Eastbound	-27
	Westbound	215

4.4.7 Since the change in flows on the M27 under the most precautionary scenario would exceed 1,000 AADT, air quality calculations were undertaken. Department for Transport and Environment Agency guidance states that if the contribution of a plan or project to change in NOx concentrations or rates of nitrogen deposition is equivalent to 1% of the critical level (for NOx) or critical load (for nitrogen deposition) then the plan or project can be considered trivial and it will not lead to a likely significant effect either alone or in combination with other projects and plans.

4.4.8 The tables below present changes in NOx concentration and nitrogen deposition due to Local Plan development compared to that which would occur in any case over the plan period. In these tables 'Base' refers to the current base case used for assessment, 'Do Min' refers to the future situation without the Local Plan in place (i.e. background traffic growth) and 'Do Some' refers to the future situation with the Local Plan in place. The key column therefore is that

[35] Design Manual for Roads and Bridges, Volume 11 Environmental Assessment, Section 3 Environmental Assessment Techniques, Part 1: Air Quality

which shows the difference between the 'Do Min' and the 'Do Some' scenarios. For NOx, if the numbers in this column fall below 0.3 µg/m^3 (i.e. 1% of the critical level of 30 µg/m^3) then it can be screened out. For nitrogen deposition, if the numbers in this column fall below 0.2 kg/N/ha/yr (1% of the critical load for saltmarsh of 20 kgN/ha/yr) then it can also be screened out.

Table 1: NO_x Concentrations

Distance from named link* (m)	**Annual Mean NO_x (µg/m^3)**			**Change (µg/m^3)**	
	2011 Base	2030** Do-Min	2030** Do-Some	Do-Some – Do-Min	Do-Some – Base
10	116.92	76.63	76.67	**+ 0.04**	-40.25
50	68.98	44.52	44.53	**+ 0.01**	-24.45
100	49.64	31.57	31.57	**+< 0.01**	-18.07

* This is distance from named road. Other roads included within calculation if within 200m
** Calculation carried out for 2025 as that is the limit of the emission factor tools

Table 2: Nitrogen Deposition Rates

Distance from named link* (m)	**Year**	**Nitrogen deposition rate (kg N/ha/yr)**		
		Road Contribution	**Average Rate in 5km square**	**Total**
10	2011 Base	2.89	17.64	20.53
	2030** DM	2.15	11.78	13.92
	2030** DS	2.15	11.78	13.92
	DS-DM	-	-	**+< 0.01**
	DS-Base	-	-	- 6.61
50	2011 Base	1.21	17.64	18.85
	2030** DM	0.86	11.78	12.64
	2030** DS	0.86	11.78	12.64
	DS-DM	**-**	**-**	**+< 0.01**
	DS-Base	-	-	-6.21
100	2011 Base	0.38	17.64	18.02
	2030** DM	0.27	11.78	12.04
	2030** DS	0.27	11.78	12.04
	DS-DM	**-**	**-**	**+< 0.01**
	DS-Base	-	-	-5.98
Critical Load				20 kg/N/ha/yr

* This is distance from named road . Other roads included within calculation if within 200m
** Calculation carried out for 2025 as that is the limit of the emission factor tools

4.4.9 It can be seen that at no point is the '1% of the critical level/load' threshold exceeded. It is can therefore be concluded that increased development in Eastleigh Borough would not result in a likely significant effect on the Solent Maritime SAC. Consideration of all development within the Partnership for Urban South Hampshire (PUSH) sub-region 'in combination' is covered in section 4.5 below.

Allocated sites assessment table[36]

Site	Location (centroid)	Details	Impact pathways	Likely Significant Effect?	Avoidance
Policy AL1, Land at Portchester Rise/ Boyatt Lane, Allbrook	445127,121195	Approximately 1 hectare site allocated for approximately 25 dwellings	Site is located approximately 8km from the nearest Solent site (Solent & Southampton Water SPA). No specific pathways identified.	There will be no site-specific Likely Significant Effect due to the distance between the development site and the Solent complex, beyond the strategic 'in combination' recreational impact that will apply across South Hampshire.	N/A
Policy AL2, Land east of Pitmore Road and north of Allbrook Farmhouse	446030, 121403	Residential allocation of 50 dwellings and 4.6ha of public open space to the north.	Site located approximately 8km from the nearest Solent site (Solent & Southampton Water SPA). No specific path identified.	There will be no site-specific Likely Significant Effect due to the distance between the development site and the Solent complex, beyond the strategic 'in combination' recreational impact that will apply across South Hampshire.	N/A
Policy AL3, Land north of Allbrook Hill and west of Pitmore Lane	445853, 121179	Approximately 1.25ha of land for 20 off-street car parking spaces, 20 dwellings and public open space.	Site located approximately 8km from the nearest Solent site (Solent & Southampton Water SPA). No specific path identified.	There will be no site-specific Likely Significant Effect due to the distance between the development site and the Solent complex, beyond the strategic 'in combination' recreational impact that will apply across South	N/A

[36] In this table potential water quality pathways are identified linking development sites and internationally important wildlife sites. A distance of 7km has been used as a cut-off threshold for screening out specific development sites associated with this impact pathway. This distance is considered sufficiently precautionary to include all sites where there is a realistic possibility of a likely significant effect while excluding sites that are so far from the internationally important wildlife site that (given the limited risk and scale of pollution associated with housing and general commercial development) an effect, while not impossible, is clearly unlikely. This does not mean that pollution control would not be required as a general principle when working near watercourses.

Site	Location (centroid)	Details	Impact pathways	Likely Significant Effect?	Avoidance
				Hampshire.	
Policy Bi1, Land west of Church Road, including The Mount Hospital, Bishopstoke	446541,120148	An area of 9.7 hectares allocated for approximately 260 dwellings	Site is located approximately 7.5km from the nearest Solent site (Solent & Southampton Water SPA). No specific pathways identified.	There will be no site-specific Likely Significant Effect due to the distance between the development site and the Solent complex beyond the strategic 'in combination' recreational impact that will apply across South Hampshire.	N/A
Policy Bi2, Land south-west and north-east of Bishopstoke Cemetery, Stoke Common Road, Bishopstoke	447258,119994	An area of approximately 7 hectares allocated for approximately 55 dwellings and A cemetery, allotments and open space	Site is located approximately 7.5km from the nearest Solent site (Solent & Southampton Water SPA). No specific pathways identified.	There will be no site-specific Likely Significant Effect due to the distance between the development site and the Solent complex, beyond the strategic 'in combination' recreational impact that will apply across South Hampshire.	N/A
Policy Bi3, Riverside Road junction, Bishopstoke	446656, 119140	The Borough Council will support the County Council in developing and delivering a scheme to improve junction capacity (Church Road/Bishopstoke Road) involving provision of traffic signals	No pathways of impact.	No	N/A
Policy BO1, Land north and east of Boorley Green, Botley	451054,114872	An area of 83.5 hectares allocated as a strategic location for development to include	Site is immediately adjacent to a tributary of the River Hamble which itself drains into	Depending upon the layout of the site there is the potential for water quality impacts on the SPA/Ramsar site/SAC	Risk of introducing invasive non-native species could be controlled by circulation of information leaflets to new residents, careful design of the development to

Site	Location (centroid)	Details	Impact pathways	Likely Significant Effect?	Avoidance
		approximately 1,400 new homes, a local centre to include shops and employment opportunities, and community facilities and services possibly including a primary school	the Solent & Southampton Water SPA/Ramsar site and Solent Maritime SAC (specifically the saltmarsh, reed swamp and narrow mudflats within the Upper Hamble Estuary & Woods SSSI) approximately 2km downstream. There is therefore a pathway linking the development site to the SPA/Ramsar site/SAC through fluvial flows in the River Hamble.	through surface water runoff or deterioration of water quality in the River Hamble during construction which could particularly affect the use of the lower Hamble by Desmoulin's whorl snail, if it occurred. Building large amounts of new housing immediately adjacent to a tributary of the River Hamble may also increase the risk of invasive non-native species being introduced to the river corridor. **Therefore this site cannot be screened out at this stage.** The River Hamble is not publically accessible at this point. Therefore development immediately adjacent to the river corridor will not increase the likelihood that residents will walk along the corridor and down into the SPA/Ramsar site/SAC for recreation.	ensure that it doesn't make access to the river corridor for fly-tipping easier and ensures that the river corridor is overlooked by dwellings and potentially by introducing a monitoring commitment by the developer as part of estate-maintenance. Potential for adverse water quality effects during construction could be addressed by careful design and adherence to a Construction Environmental Management Plan coupled with utilisation of standard pollution control guidance (e.g. storage of chemicals and fuel away from the watercourse).
Policy BO2, Land north-east of Winchester Street	451206,113724	Approximately 26 hectares allocated for about 300 dwellings, a cemetery, allotments	Site is located immediately adjacent to a tributary of the River Hamble	Depending upon the layout of the site there is the potential for water quality impacts on the SPA/Ramsar site/SAC	Risk of introducing invasive non-native species could be controlled by circulation of information leaflets to new residents, careful design of the development to

Site	Location (centroid)	Details	Impact pathways	Likely Significant Effect?	Avoidance
		and open space.	(approximately 20-70m from the watercourse itself, separated by a strip of woodland) which itself drains into the Solent & Southampton Water SPA/Ramsar site and Solent Maritime SAC (specifically the saltmarsh, reed swamp and narrow mudflats within the Upper Hamble Estuary & Woods SSSI) approximately 750m downstream. There is therefore a pathway linking the development site to the SPA/Ramsar site/SAC through fluvial flows in the River Hamble.	through surface water runoff or deterioration of water quality in the River Hamble during construction which could particularly affect the use of the lower Hamble by Desmoulin's whorl snail, if it occurred. Building large amounts of new housing immediately adjacent to the River Hamble may also increase the risk of invasive non-native species being introduced to the river corridor. **Therefore this site cannot be screened out at this stage.** The River Hamble is not publically accessible at this point. Therefore development immediately adjacent to the river corridor will not increase the likelihood that residents will walk along the corridor and down into the SPA/Ramsar site/SAC for recreation.	ensure that it doesn't make access to the river corridor for fly-tipping easier and ensures that the river corridor is overlooked by dwellings and potentially by introducing a monitoring commitment by the developer as part of estate-maintenance. Potential for adverse water quality effects during construction could be addressed by careful design and adherence to a Construction Environmental Management Plan coupled with utilisation of standard pollution control guidance (e.g. storage of chemicals and fuel away from the watercourse).
Policy BO3, Botley Bypass	N/A	An indicative route is reserved for a new road bypassing Botley to the north. This shall	This would involve a new bridge across the River Hamble approximately 1km	Yes	The policy refers to the need for EIA and the supporting text references the need for a construction Environment Management Plan and the need for the EIA to include

Site	Location (centroid)	Details	Impact pathways	Likely Significant Effect?	Avoidance
		comprise improvements to Woodhouse Lane from the Maypole roundabout in Hedge End, and a road built to distributor road standard eastward across the River Hamble to the junction of the A334 with the Curdridge road in Winchester district. The design of the bridge over the upper reaches of the Hamble River should minimise damage to the adjoining Site of Importance for Nature Conservation. The new road should include safe and convenient provision for pedestrians and cyclists. An Environmental Impact Assessment will need to be prepared to accompany the planning application. The Borough Council will promote traffic calming measures within Botley village in association with the bypass.	upstream of the Solent Maritime SAC. There is therefore potential for water quality impacts during the construction process which could affect the downstream SAC. The policy makes it clear that '*The design of the bridge over the upper reaches of the Hamble River should minimise damage to the adjoining Site of Importance for Nature Conservation*' and adds that '*An Environmental Impact Assessment will need to be prepared to accompany the planning application'.* However, no mention is made of the Solent Maritime SAC and '*minimising damage*' is not the same as '*avoiding an adverse effect on integrity'*. Although this policy must be read within the context of policy		specific consideration of water quality impacts on the SAC and how adverse effects on the SAC will be avoided.

Site	Location (centroid)	Details	Impact pathways	Likely Significant Effect?	Avoidance
			DM9 which states that '*Development which is likely to adversely affect the integrity of an International or European nature conservation site will not be permitted* 'Some amendment to wording of this policy is required.		
Policy BO4, Transport improvements	i) 449772, 116161 ii) 450818, 114075 iii) 451421, 113017	The Borough Council will support the County Council as highway authority in delivering capacity improvements as required at: i. Botley Road/ Bubb Lane roundabout (Denham's Corner); and (if necessary, pending the construction of the Botley bypass) at: ii. Winchester Road/ Woodhouse Lane; and iii. Winchester Street/ Mill Street.	No pathways of impact.	No	N/A
Policy BO5, Botley Mill	451431,113031	Policy addresses the sympathetic redevelopment for the retention and enhancement of the Mill.	No pathways of impact. The policy specifically states that redevelopment of the mill '*must not harm the nature conservation value of*	No	N/A

Site	Location (centroid)	Details	Impact pathways	Likely Significant Effect?	Avoidance
			the River Hamble'.		
Policy BU1, Land at Providence Hill and Oakhill, Bursledon	448627,110426	Area of 5.3 hectares allocated for approximately 75 dwellings	Site is located approximately 850m north-west of the Solent Maritime SAC. There is a stream adjacent to the site which drains into the River Hamble/Solent Maritime SAC approximately 2km downstream. There is therefore a pathway linking the development site to the SPA/Ramsar site/SAC through fluvial flows in the River Hamble.	Depending upon the layout of the site there is the potential for water quality impacts on the SPA/Ramsar site/SAC through surface water runoff or deterioration of water quality in the River Hamble during construction which could particularly affect the use of the lower Hamble by Desmoulin's whorl snail, if it occurred. In addition, construction and occupation of housing in proximity to the adjacent stream may increase the risk of invasive non-native species travelling along this tributary and being introduced to the river Hamble **Therefore this site cannot be screened out at this stage.**	Potential for contamination of invasive non-native species and adverse water quality effects during construction could be addressed by careful design and adherence to a Construction Environmental Management Plan coupled with utilisation of standard pollution control guidance (e.g. storage of chemicals and fuel away from the watercourse). Risk of introducing invasive non-native species could also be controlled by circulation of information leaflets to new residents, careful design of the development to ensure that it doesn't make access to the river corridor for fly-tipping easier and ensures that the river corridor is overlooked by dwellings and potentially by introducing a monitoring commitment by the developer as part of estate-maintenance.
Policy BU2, Land north of Bridge Road (A27) and west of Blundell Lane, Bursledon	449074,110008	Area of 9.2 hectares allocated for approximately 100 dwellings.	Site is located approximately 100m north-west of the Solent Maritime SAC separated from it by Blundell Lane, the mainline railway and a boatyard. Mapping indicates the	Depending upon the layout of the site there is the potential for water quality impacts on the SPA/Ramsar site/SAC through surface water runoff via the ditch that lies within the site and drains into the Hamble.	Risk of introducing invasive non-native species could be controlled by circulation of information leaflets to new residents, careful design of the development to ensure that it doesn't make access to the river corridor for fly-tipping easier and ensures that the river corridor is overlooked by dwellings and potentially by introducing a monitoring commitment by the developer

Site	Location (centroid)	Details	Impact pathways	Likely Significant Effect?	Avoidance
			presence of a ditch within the development site that drains into the SAC. The site is located over 500m from the Solent & Southampton Water SPA/Ramsar site with no direct access possible.	Building large amounts of new housing very close to the River Hamble may increase the risk of invasive non-native species being introduced to the river corridor, particularly given that a ditch draining straight into the Hamble lies within the development site. **Therefore this site cannot be screened out at this stage.**	as part of estate-maintenance. Potential for adverse water quality effects during construction could be addressed by careful design and adherence to a Construction Environmental Management Plan coupled with utilisation of standard pollution control guidance (e.g. storage of chemicals and fuel away from the watercourse).
Policy BU3, Land East of Dodwell Lane & North of Pylands Lane	448809,111500	An area of 20.9 hectares of land allocated for approximately 250 dwellings.	Site is located approximately 1.2km north-west of Solent Maritime SAC and Solent & Southampton Water SPA/Ramsar site. There is a stream on site which drains into the SAC.	Depending upon the layout of the site there is the potential for water quality impacts on the SPA/Ramsar site/SAC through surface water runoff via the ditch that lies within the site and drains into the Hamble. Building large amounts of new housing very close to the River Hamble may increase the risk of invasive non-native species being introduced to the river corridor, particularly given that a ditch draining straight into the Hamble lies within the development site. **Therefore this site cannot be screened out at this stage.**	Risk of introducing invasive non-native species could be controlled by circulation of information leaflets to new residents, careful design of the development to ensure that it doesn't make access to the river corridor for fly-tipping easier and ensures that the river corridor is overlooked by dwellings and potentially by introducing a monitoring commitment by the developer as part of estate-maintenance. Potential for adverse water quality effects during construction could be addressed by careful design and adherence to a Construction Environmental Management Plan coupled with utilisation of standard pollution control guidance (e.g. storage of chemicals and fuel away from the watercourse).

Site	Location (centroid)	Details	Impact pathways	Likely Significant Effect?	Avoidance
Policy BU4, Sunday's Hill Bypass	443945,119621	New distributor road between Heath House Lane and Dodwell Lane.	Site is located approximately 1.2km north-west of Solent Maritime SAC and Solent & Southampton Water SPA/Ramsar site. There is a stream on site which drains into the SAC.	Depending upon the road scheme there is the potential for introduction of invasive non-native species and water quality impacts on the SPA/Ramsar site/SAC through surface water runoff via the ditch that lies within the site and drains into the Hamble. There is potential negative impact on air quality at this location as a result of the new road. **Therefore this site cannot be screened out at this stage.**	Potential for introduction of invasive non-native species and adverse water quality effects during construction could be addressed by careful design and adherence to a Construction Environmental Management Plan coupled with utilisation of standard pollution control guidance (e.g. storage of chemicals and fuel away from the watercourse). In addition, risk of introducing invasive non-native species could be controlled by careful design of the development to ensure that it doesn't make access to the river corridor for fly-tipping easier and potentially by introducing a monitoring commitment by the developer as part of estate-maintenance.
Policy BU5, Riverside Boatyard, Blundell Lane, Bursledon	449347,110060	An area of 0.6ha of land off Blundell Lane adjoining the Riverside Boatyard allocated for expansion of the boatyard for boatbuilding and repair etc.	Site is immediately adjacent to the Solent Maritime SAC on its riverwards side.	Landwards expansion of the site for boatbuilding etc there may however be increased activity on the River and therefore potential disturbance impacts.	A planning-application level HRA will be required to confirm that no adverse effects on the SPA/Ramsar site will result. This should focus particularly on the potential for disturbance from construction.
Policy BU6, Land at Long Lane, Bursledon	448406,109863	Policy identities land at Long Lane, Old Bursledon to meet any additional open space needs in the Parish.	No pathways of impact. This policy is intended to control development rather than promoting it.	No	N/A
Policy BU7, Residential extensions and	N/A	Policy sets a special policy area for Old Bursledon and controls	No pathway of impact. This policy is intended to control	No	N/A

Site	Location (centroid)	Details	Impact pathways	Likely Significant Effect?	Avoidance
replacement dwellings, Old Bursledon Special Policy Area		the size of extensions within that area.	development rather than promoting it.		
Policy CF1, Central Precinct, Chandler's Ford	443479,120487	An area of 1.2 hectares allocated for approximately 85 dwellings and A1 retail uses	Site is 3km from the River Itchen SAC (the nearest European site) which is a tributary of the Solent complex. It lies adjacent to the Monks Brook which does provide a water quality pathway downstream to the River Itchen.	Potential impacts on the River Itchen SAC itself are considered separately. Depending upon the layout of the site there is the potential for water quality impacts on the SPA/Ramsar site/SAC through surface water runoff via the Monks Brook that lies adjacent to the site and drains into the River Itchen which itself drains into the Solent & Southampton Water SPA/Ramsar site. **Therefore this site cannot be screened out at this stage.**	Potential for invasive non-native species and adverse water quality effects during construction could be addressed by careful design and adherence to a Construction Environmental Management Plan coupled with utilisation of standard pollution control guidance (e.g. storage of chemicals and fuel away from the watercourse). In addition, risk of introducing invasive non-native species could be controlled by careful design of the development to ensure that it doesn't make access to the river corridor for fly-tipping easier and potentially by introducing a monitoring commitment by the developer as part of estate-maintenance
Policy CF2, Land at Common Road Industrial Estate, Chandler's Ford	442939,121713	An area of 0.8 hectares allocated for approximately 30 dwellings	Site is 3.4km from the River Itchen SAC (the nearest European site) which is a tributary of the Solent complex. It lies adjacent to the Monks Brook which does provide a water quality pathway downstream to the River Itchen.	Potential impacts on the River Itchen SAC itself are considered separately. Depending upon the layout of the site there is the potential for water quality impacts on the SPA/Ramsar site/SAC through surface water runoff via the Monks Brook that lies adjacent to the site and drains into the River Itchen which itself drains into the Solent &	Potential for invasive non-native species adverse water quality effects during construction could be addressed by careful design and adherence to a Construction Environmental Management Plan coupled with utilisation of standard pollution control guidance (e.g. storage of chemicals and fuel away from the watercourse). In addition, risk of introducing invasive non-native species could be controlled by careful design of the development to

Site	Location (centroid)	Details	Impact pathways	Likely Significant Effect?	Avoidance
				Southampton Water SPA/Ramsar site. **Therefore this site cannot be screened out at this stage.**	ensure that it doesn't make access to the river corridor for fly-tipping easier and potentially by introducing a monitoring commitment by the developer as part of estate-maintenance
Policy CF3, Land at Fire and former Ambulance Stations, Steele Close, Chandler's Ford	443945,119621	An area of 1.3 hectares of land allocated for B1 (b), B1 (c), B2 and B8, car showroom or other similar *sui generis* uses.	Site is located approximately 7km north of the Solent & Southampton Water SPA/Ramsar site. However, it lies adjacent to the Monks Brook which does provide a water quality pathway 3km downstream to the River Itchen.	Potential impacts on the River Itchen SAC itself are considered separately. Depending upon the layout of the site there is the potential for water quality impacts on the SPA/Ramsar site/SAC through surface water runoff via the Monks Brook that lies adjacent to the site and drains into the River Itchen which itself drains into the Solent & Southampton Water SPA/Ramsar site. **Therefore this site cannot be screened out at this stage.**	Potential for invasive non-native species and adverse water quality effects during construction could be addressed by careful design and adherence to a Construction Environmental Management Plan coupled with utilisation of standard pollution control guidance (e.g. storage of chemicals and fuel away from the watercourse). In addition, risk of introducing invasive non-native species could be controlled by careful design of the development to ensure that it doesn't make access to the river corridor for fly-tipping easier and potentially by introducing a monitoring commitment by the developer as part of estate-maintenance
Policy CF4, Land south of the supermarket and east of Bournemouth Road, Chandler's Ford	443282,118283	An area of 1.9ha of land south of Asda and east of Bournemouth Road, Chandler's Ford allocated for use as an employment site.	Site is over 3km from the River Itchen (a tributary of the Solent European sites). However, there is no pathway connecting the site to the River Itchen.	There will be no site specific Likely Significant Effect due to the distance between the development site and the European sites, beyond the strategic 'in combination' recreational impact that will apply across South Hampshire	N/A
Policy CF5, Land east of Stoneycroft Rise	443175,118485	An area of 1.62 hectares allocated for a household waste	Site is 2.8km from the River Itchen SAC (the nearest European	There will be no site-specific Likely Significant Effect due to the distance between the	N/A

Site	Location (centroid)	Details	Impact pathways	Likely Significant Effect?	Avoidance
and south-west of Chestnut Avenue		recycling centre	site) which is a tributary of the Solent complex. However, there is no pathway connecting the site to the River Itchen.	development site and European sites, beyond the strategic 'in combination' recreational impact that will apply across South Hampshire.	
Policy E1, Land south of Chestnut Avenue, Eastleigh	443728,117841	An area of 61 hectares allocated as a strategic location for approximately 1100 houses and a local centre to include a primary school and other community facilities	Site is 2.5km from the River Itchen SAC (the nearest European site) which is a tributary of the Solent complex. Several tributaries to the Monks Brook run throughout the site. These tributaries drain into the River Itchen at the tidal limit.	Potential impacts on the River Itchen SAC itself are considered separately. Depending upon the layout of the site there is the potential for water quality impacts on the SPA/Ramsar site/SAC through surface water runoff via the Monks Brook that lies adjacent to the site and drains into the River Itchen which itself drains into the Solent & Southampton Water SPA/Ramsar site. **Therefore this site cannot be screened out at this stage.**	Potential for invasive non-native species and adverse water quality effects during construction could be addressed by careful design and adherence to a Construction Environmental Management Plan coupled with utilisation of standard pollution control guidance (e.g. storage of chemicals and fuel away from the watercourse). In addition, risk of introducing invasive non-native species could be controlled by careful design of the development to ensure that it doesn't make access to the river corridor for fly-tipping easier and potentially by introducing a monitoring commitment by the developer as part of estate-maintenance
Policy E2, Land at Civic Offices. Leigh Road, Eastleigh	444232,119356	An area of 1.9 hectares allocated for development which may include residential, office (B1a) and/or training and meeting facilities.	Site is 2.2km west of the River Itchen SAC (the nearest European site). The site lies immediately adjacent to the Monks Brook which in turn drains into the River Itchen and thus into the Solent & Southampton Water	Potential impacts on the River Itchen SAC itself are considered separately. Depending upon the layout of the site there is the potential for water quality impacts on the SPA/Ramsar site/SAC through surface water runoff via the Monks Brook that lies adjacent to the site and drains into the River Itchen which	Potential for invasive non-native species and adverse water quality effects during construction could be addressed by careful design and adherence to a Construction Environmental Management Plan coupled with utilisation of standard pollution control guidance (e.g. storage of chemicals and fuel away from the watercourse). In addition, risk of introducing invasive non-native species could be controlled by

Site	Location (centroid)	Details	Impact pathways	Likely Significant Effect?	Avoidance
			SPA/Ramsar site.	itself drains into the Solent & Southampton Water SPA/Ramsar site. **Therefore this site cannot be screened out at this stage.**	careful design of the development to ensure that it doesn't make access to the river corridor for fly-tipping easier and potentially by introducing a monitoring commitment by the developer as part of estate-maintenance
Policy E3, Land at Woodside Avenue, Eastleigh	444714,119483	An area of 3.3 hectares allocated for approximately 80-100 dwellings.	Site is 2km west of the River Itchen SAC (the nearest European site) and has no pathway connecting it. Therefore, although the River Itchen is a theoretical connection to the Solent Complex downstream there is no pathway connecting this development site.	There will be no site-specific Likely Significant Effect due to the distance between the development site and European sites, beyond the strategic 'in combination' recreational impact that will apply across South Hampshire.	N/A
Policy E4, Land at Toynbee Road, Eastleigh	445142,119475	An area of 5.6 hectares of land at Toynbee Road, Eastleigh as defined on the proposals map is allocated for residential-led development for approximately 190 dwellings.	Site is 760m from the River Itchen SAC (the nearest European site) and has no pathway connecting it. Therefore, although the River Itchen is a theoretical connection to the Solent Complex downstream there is no pathway connecting this development site.	There will be no site-specific Likely Significant Effect due to the distance between the development site and European sites, beyond the strategic 'in combination' recreational impact that will apply across South Hampshire.	N/A
Policy E5, Land	445758,11	An area of 2.1 hectares	Site is approximately	There will be no site-specific	N/A

Site	Location (centroid)	Details	Impact pathways	Likely Significant Effect?	Avoidance
at Travis Perkins, Twyford Road, Eastleigh	9491	of land at Travis Perkins, east of Twyford Road, Eastleigh as defined on the proposals map is allocated for approximately 115 dwellings	180m from the River Itchen SAC (the nearest European site) but is separated from it by extensive urban and industrial development and a railway line. There is no pathway connecting the site to the Itchen. Therefore, although the River Itchen is a theoretical connection to the Solent Complex downstream there is no pathway connecting this development site.	Likely Significant Effect due to the distance between the development site and European sites, beyond the strategic 'in combination' recreational impact that will apply across South Hampshire.	
Policy E6, Eastleigh Town Centre	N/A	Policy addresses regeneration of Eastleigh Town Centre	No pathways of impact. This policy is intended to control development rather than promoting it.	No	N/A
Policy E7, Urban Renaissance Quarter	N/A	Policy sets out the criteria and uses that would be acceptable within the Urban Renaissance Quarter.	No pathways of impact. This policy is intended to control development rather than promoting it.	No	N/A
Policy E8, Public realm improvements in and adjoining Eastleigh town centre.	N/A	Policy sets out the public realm improvements in and adjoining Eastleigh town centre.	No pathways of impact. This policy is intended to control development rather than promoting it.	No	N/A

Site	Location (centroid)	Details	Impact pathways	Likely Significant Effect?	Avoidance
Policy E9, Eastleigh River Side	445947,119335	The regeneration of Eastleigh River Side through redevelopment of existing older industrial premises and development of green field sites north-east of the airport and off Chickenhall Lane to deliver an unspecified quantum of employment and other development including retention of aggregates depots on site.	Site is immediately adjacent to the River Itchen SAC which is a tributary of the Solent Maritime SAC and Solent & Southampton Water SPA/Ramsar site, situated approximately 4.5km downstream. There is therefore a pathway linking the development site to the SPA/Ramsar site/SAC through fluvial flows in the River Itchen.	Potential impacts on the River Itchen SAC itself are considered separately. With regard to the Solent complex, depending upon the layout of the site there is the potential for water quality impacts on the SPA/Ramsar site/SAC through surface water runoff or deterioration of water quality in the River Itchen during construction. **Therefore this site cannot be screened out at this stage.**	Potential for invasive non-native species and adverse water quality effects during construction could be addressed by careful design and adherence to a Construction Environmental Management Plan coupled with utilisation of standard pollution control guidance (e.g. storage of chemicals and fuel away from the watercourse). In addition, risk of introducing invasive non-native species could be controlled by careful design of the development to ensure that it doesn't make access to the river corridor for fly-tipping easier and potentially by introducing a monitoring commitment by the developer as part of estate-maintenance
Policy E10, Development opportunities adjoining Eastleigh River Side	446360, 117789	The development of land to the east of the railway works will be permitted for employment uses	Site is immediately adjacent to the River Itchen SAC which is a tributary of the Solent Maritime SAC and Solent & Southampton Water SPA/Ramsar site, situated approximately 4.5km downstream. There is therefore a pathway linking the development site to the SPA/Ramsar site/SAC through fluvial flows in the	Potential impacts on the River Itchen SAC itself are considered separately. With regard to the Solent complex, depending upon the layout of the site there is the potential for water quality impacts on the SPA/Ramsar site/SAC through surface water runoff or deterioration of water quality in the River Itchen during construction. **Therefore this site cannot be screened out at this stage.**	Potential for invasive non-native species and adverse water quality effects during construction could be addressed by careful design and adherence to a Construction Environmental Management Plan coupled with utilisation of standard pollution control guidance (e.g. storage of chemicals and fuel away from the watercourse). In addition, risk of introducing invasive non-native species could be controlled by careful design of the development to ensure that it doesn't make access to the river corridor for fly-tipping easier and potentially by introducing a monitoring commitment by the developer as part of estate-maintenance

Site	Location (centroid)	Details	Impact pathways	Likely Significant Effect?	Avoidance
			River Itchen.		
Policy E11, Junction improvements, Eastleigh	(i) 445694, 119276 (ii) 446122, 119176 (iii) 444304, 118182 (iv) 445422, 118071	Improvements are proposed to (i) the Twyford Road roundabout to ease traffic flows, including increasing its size and widening approached to it. (ii) Chickenhall Lane/Bishopstoke Road junction – widening Bishopstoke Road approaches and traffic signals (iii) Chestnut Avenue/Passfield Avenue – enlargement of existing roundabout (iv) Chestnut Avenue/Southampton Road – widening of highway, pedestrian crossing and signals.	No pathways of impact.	No	N/A
Policy E12, Southampton Airport	N/A	The Borough Council will continue to work with the operators of Southampton Airport to promote its viability, and will support the expansion of the airport's operations and related development provided that:	Site is immediately adjacent to the River Itchen SAC which is a tributary of the Solent Maritime SAC and Solent & Southampton Water SPA/Ramsar site, situated approximately 4.5km downstream. There is	As the policy is intended to control development rather than to promote, there is not expected to be Likely significant effects.	N/A

Site	Location (centroid)	Details	Impact pathways	Likely Significant Effect?	Avoidance
		i. They are necessary for the improvement of operational efficiency and passenger safety and convenience; ii. They would not physically or visually diminish the countryside gap between Eastleigh and Southampton iii. Any new parking proposals are consistent with the airport operators' agreed Airport Surface Access Strategy iv. All proposals are supported by transport assessments v. There is no increase in noise impacts on the borough's residents. The Borough Council will ensure that the airport's operational constraints are respected, including height limits on development in the vicinity of the airport. Development within the Southampton Airport	therefore a pathway linking the development site to the SPA/Ramsar site/SAC through fluvial flows in the River Itchen.		

Site	Location (centroid)	Details	Impact pathways	Likely Significant Effect?	Avoidance
		Public Safety Zone (as shown on the proposals map) will be restricted in accordance with DfT Circular 01/2010.			
Policy E13, Land south of M27 Junction 5	443927,116742	Land south-west of M27 Junction 5 is allocated for use as playing fields.	The site is located approximately 1km from the nearest part of the River Itchen SAC (a tributary of the Solent European Sites). The site lies immediately adjacent to the Monks Brook which in turn drains into the River Itchen and thus into the Solent & Southampton Water SPA/Ramsar site.	Potential impacts on the River Itchen SAC itself are considered separately. Depending upon the layout of the site there is the potential for water quality impacts on the SPA/Ramsar site/SAC through surface water runoff via the Monks Brook that lies adjacent to the site and drains into the River Itchen which itself drains into the Solent & Southampton Water SPA/Ramsar site. **Therefore this site cannot be screened out at this stage.**	Potential for invasive non-native species and adverse water quality effects during construction could be addressed by careful design and adherence to a Construction Environmental Management Plan coupled with utilisation of standard pollution control guidance (e.g. storage of chemicals and fuel away from the watercourse). In addition, risk of introducing invasive non-native species could be controlled by careful design of the development to ensure that it doesn't make access to the river corridor for fly-tipping easier and potentially by introducing a monitoring commitment by the developer as part of estate-maintenance
Policy E14, Western extension to Lakeside Country park	449157,114647	Area of 3.6 hectares allocated for open space, new footway and cycleway.	Site is located approximately 1.4km from the nearest part of the Solent Maritime SAC. there is no specific pathway connecting the site to the Solent European sites	There will be no site-specific Likely Significant Effect	N/A
Policy E15, Aviary Estate	N/A	Policy seeks to protect the special character of the Aviary Estate.	No pathways of impact. This policy is intended to control	No	N/A

Site	Location (centroid)	Details	Impact pathways	Likely Significant Effect?	Avoidance
			development rather than promoting it.		
Policy FO1, Land off Harding Lane and Winchester Road, Fair Oak	448741.70, 119546.06	An area of 18ha of land is allocated for residential development of approximately 330 homes and public open space	Whilst there is an adjacent tributary of the River Itchen SAC (itself a tributary of the Solent complex), the site is more than 8.5km away from the Solent Complex sites. This is a long pathway and water quality impacts on the River Hamble (and therefore the Solent & Southampton Water SPA/Ramsar site and Solent Maritime SAC downstream) should be easily avoidable through standard design techniques. It is therefore not considered that this is a realistic pathway.	There will be no site-specific Likely Significant Effect due to the distance between the development site and European sites, beyond the strategic 'in combination' recreational impact that will apply across South Hampshire.	N/A
Policy FO2, Land north of Mortimers Lane, Fair Oak	449702,118746	An area of 1 hectare of land allocated for approximately 30 dwellings	Site is 3km east of the River Itchen SAC (the nearest European site) and has no pathway connecting it. Therefore, although the River Itchen is a theoretical connection to the Solent Complex downstream there is	There will be no site-specific Likely Significant Effect due to the distance between the development site and European sites, beyond the strategic 'in combination' recreational impact that will apply across South Hampshire.	N/A

Site	Location (centroid)	Details	Impact pathways	Likely Significant Effect?	Avoidance
			no pathway connecting this development site.		
Policy FO3, Land at Scotland Close, Fair Oak	450196,118534	Unspecified educational, institutional or recreational development	Site is 2.8km east of the River Itchen SAC (the nearest European site) and has no pathway connecting it. Therefore, although the River Itchen is a theoretical connection to the Solent Complex downstream there is no pathway connecting this development site.	There will be no site-specific Likely Significant Effect due to the distance between the development site and European sites, beyond the strategic 'in combination' recreational impact that will apply across South Hampshire.	N/A
Policy FO4, Land at Whitetree Farm	449658,117821	An area of 0.7 hectares allocated for a parish office and compound and approximately 15-20 dwellings	Site is 2.3km east of the River Itchen SAC (the nearest European site) and has no pathway connecting it. Therefore, although the River Itchen is a theoretical connection to the Solent Complex downstream there is no pathway connecting this development site.	There will be no site-specific Likely Significant Effect due to the distance between the development site and European sites, beyond the strategic 'in combination' recreational impact that will apply across South Hampshire.	N/A
Policy FO5, Hammerley Farm, Anson Road, Fair Oak	449105,117394	1.1ha of land at Hammerley farm, Anson Road allocated for employment use.	Site is approximately 2km from the River Itchen SAC (a tributary of the Solent	There is the potential for water quality impacts on the SPA/Ramsar site/SAC through surface water runoff via the	Potential for invasive non-native species and adverse water quality effects during construction could be addressed by careful design and adherence to a Construction

Site	Location (centroid)	Details	Impact pathways	Likely Significant Effect?	Avoidance
			European Sites). To the north of the site runs a tributary of the River Itchen which ultimately runs into the Solent and Southampton Water SPA/Ramsar site.	tributary that lies adjacent to the site and drains into the River Itchen which itself drains into the Solent & Southampton Water SPA/Ramsar site. **Therefore this site cannot be screened out at this stage.**	Environmental Management Plan coupled with utilisation of standard pollution control guidance (e.g. storage of chemicals and fuel away from the watercourse). In addition, risk of introducing invasive non-native species could be controlled by careful design of the development to ensure that it doesn't make access to the river corridor for fly-tipping easier and potentially by introducing a monitoring commitment by the developer as part of estate-maintenance
Policy FO6, Junction improvements, Fair Oak	(i) 448916, 118438 (ii) 449480, 118476 (iii) 449639, 117419 Fir Tree Lane: 449046, 117290 Blind Lane: 449378, 116257	Borough Council will support the County Council as highway authority in developing and delivering capacity improvements at i. the Allington Lane/ Fair Oak Road junction to include traffic signals and additional turning lanes; ii. the Botley Road/ Eastleigh Road junction to include additional turning lanes on Botley Road north and Eastleigh Road; iii. the Botley	No pathways of impact.	No	N/A

Site	Location (centroid)	Details	Impact pathways	Likely Significant Effect?	Avoidance
		Road/ Burnett's lane junction by means of changes to signalling arrangements; And introduction of measures to manage and restrict traffic movements along Fir Tree Lane and Blind Lane			
Policy HA1, Railway station parking, Hamble	447250,108245	Allocation of land for car park to serve railway station	Site is located approximately 1km from the nearest part of the Solent Maritime SAC; there is no specific pathway connecting the site to the Solent European sites	There will be no site-specific Likely Significant Effect	N/A
Policy HA2, Mercury Marina and Riverside camping and caravan park	448402,108091	An area of 4.7 hectares of land at Mercury Marina and Riverside camping and caravan park allocated for a marina, hotel and a range of holiday accommodation.	Site is adjacent to the Solent Maritime SAC; and Solent & Southampton Water SPA/Ramsar site.	There is some potential for water quality impacts on the SAC from surface water runoff during construction **Therefore this site cannot be screened out at this stage.**	Potential for invasive non-native species and adverse water quality effects during construction could be addressed by careful design and adherence to a Construction Environmental Management Plan coupled with utilisation of standard pollution control guidance (e.g. storage of chemicals and fuel away from the watercourse). In addition, risk of introducing invasive non-native species could be controlled by careful design of the development to

Site	Location (centroid)	Details	Impact pathways	Likely Significant Effect?	Avoidance
					ensure that it doesn't make access to the river corridor for fly-tipping easier and potentially by introducing a monitoring commitment by the developer as part of estate-maintenance
Policy HA3, Hamble Airfield	447773, 107764	Following completion of gravel and sand extraction and restoration (in accordance with the Hampshire Minerals and Waste Plan), site shall be retained as accessible countryside and open space.	Site is adjacent to the Solent Maritime SAC and Solent & Southampton Water SPA/Ramsar site.	There will be no site-specific Likely Significant Effect due to the distance between the development site and the River Itchen SAC.	N/A
Policy HE1, Land west of Woodhouse Lane	450258,114054	An area of 51.1 hectares allocated as a strategic location for about 800 new homes.	Site is 1.7km from the Solent Maritime SAC and Solent & Southampton Water SPA/Ramsar site. There are tributaries of the River Hamble flowing through the development site before achieving confluence with the Hamble south of Botley just upstream of the European site. However, this is a long pathway and water quality impacts on the River Hamble (and therefore the	There will be no site-specific Likely Significant Effect due to the distance between the development site and European sites, beyond the strategic 'in combination' recreational impact that will apply across South Hampshire.	N/A

Site	Location (centroid)	Details	Impact pathways	Likely Significant Effect?	Avoidance
			Solent & Southampton Water SPA/Ramsar site and Solent Maritime SAC downstream) should be easily avoidable through standard design techniques. It is therefore not considered that this is a realistic pathway.		
Policy HE2, Land south of Foord Road and west of Dodwell Lane	448586,111865	An area of 7.3 hectares allocated for approximately 125 dwellings.	Site is 1.7km from the Solent Maritime SAC and Solent & Southampton Water SPA/Ramsar site. A tributary of the River Hamble flows through the development site resulting in a pathway for potential impact on the Solent complex.	There is the potential for water quality impacts on the SPA/Ramsar site/SAC through surface water runoff via the tributaries that flow through the site and drain into the Solent & Southampton Water SPA/Ramsar site. **Therefore this site cannot be screened out at this stage.**	Potential for invasive non-native species and adverse water quality effects during construction could be addressed by careful design and adherence to a Construction Environmental Management Plan coupled with utilisation of standard pollution control guidance (e.g. storage of chemicals and fuel away from the watercourse). In addition, risk of introducing invasive non-native species could be controlled by careful design of the development to ensure that it doesn't make access to the river corridor for fly-tipping easier and potentially by introducing a monitoring commitment by the developer as part of estate-maintenance.
Policy HE3, Household Waste Recycling Centre, Shamblehurst Lane, Hedge End	449203, 114362	Approximately 0.4 ha of land comprising the household waste recycling centre at Shamblehurst Lane is allocated for residential development	Site is located approximately 3km from the nearest part of the Solent Maritime SAC; there is no specific pathway connecting the site to	There will be no site-specific Likely Significant Effect	N/A

Site	Location (centroid)	Details	Impact pathways	Likely Significant Effect?	Avoidance
			the Solent European sites		
Policy HE4, Land off Peewit Hill Close and Dodwell Lane	448511, 111521	Approximately 3.6 ha of land off Peewit Hill Close and Dodwell Lane is allocated for employment and part of new road link (HE6).	Site is 1.7km from the Solent Maritime SAC and Solent & Southampton Water SPA/Ramsar site. A tributary of the River Hamble is flows through this site.	There is the potential for water quality impacts on the SPA/Ramsar site/SAC through surface water runoff via the tributaries that flow through the site and drain into the Solent & Southampton Water SPA/Ramsar site. **Therefore this site cannot be screened out at this stage.**	Potential for invasive non-native species and adverse water quality effects during construction could be addressed by careful design and adherence to a Construction Environmental Management Plan coupled with utilisation of standard pollution control guidance (e.g. storage of chemicals and fuel away from the watercourse). In addition, risk of introducing invasive non-native species could be controlled by careful design of the development to ensure that it doesn't make access to the river corridor for fly-tipping easier and potentially by introducing a monitoring commitment by the developer as part of estate-maintenance. There is a risk of impact on air quality resulting from new road link.
Policy HE5, Land adjoining the Botleigh Grange business park west of Woodhouse Lane	450106,113606	An area of 2.6 hectares of land adjoining the existing Botleigh Grange office campus is allocated for employment use.	Site is 1.8km from the River Itchen SAC (a tributary of the Solent European Sites). However, there is no pathway connecting the site to the Solent complex.	There will be no site specific Likely significant effect	N/A
Policy HE6, Land at Netley Firs, Kanes Hill, Hedge End (employment)	447861,112160	An area of 1.8 hectares of land at Netley Fir's, Kanes Hill, Hedge End as defined on the proposals map is	Site is 2km from the Solent Maritime SAC and Solent & Southampton Water SPA/Ramsar site.	There will be no site specific Likely significant effect	N/A

Site	Location (centroid)	Details	Impact pathways	Likely Significant Effect?	Avoidance
		allocated for employment use.	However there is no pathway connecting the site to the Solent complex.		
Policy HE7, Land at Netley Firs, Kanes Hill, Hedge End (travelling showpeople)	447954,112210	An area of 1.5 hectares of land at Netley Fir's, Kanes Hill, Hedge End as defined on the proposals map is allocated for use as a Travelling Showmans yards for approximately 8 plots.	Site is 2km from the Solent Maritime SAC and Solent & Southampton Water SPA/Ramsar site. However there is no pathway connecting the site to the Solent complex.	There will be no site specific Likely significant effect	N/A
Policy HE8, Dodwell Lane to St John's Road link, Hedge End	448471, 111665	A new road is proposed between Dodwell Lane and St John's Road, Hedge End as defined on the policies map. The road will be of distributor road design continuing the proposed Sunday's Hill bypass (policy BU4) with an adjoining cycleway and footpath.	Site is 1.7km from the Solent Maritime SAC and Solent & Southampton Water SPA/Ramsar site. A tributary of the River Hamble is flows through this site.	There is the potential for water quality impacts on the SPA/Ramsar site/SAC through surface water runoff via the tributaries that flow through the site and drain into the Solent & Southampton Water SPA/Ramsar site. **Therefore this site cannot be screened out at this stage.**	Potential for invasive non-native species and adverse water quality effects during construction could be addressed by careful design and adherence to a Construction Environmental Management Plan coupled with utilisation of standard pollution control guidance (e.g. storage of chemicals and fuel away from the watercourse). In addition, risk of introducing invasive non-native species could be controlled by careful design of the development to ensure that it doesn't make access to the river corridor for fly-tipping easier and potentially by introducing a monitoring commitment by the developer as part of estate-maintenance
Policy HE9, St John's Road/West End Road junction		Improve the capacity of the St John's Road/West End Road junction including traffic signals and junction	No pathways of impact.	No	N/A

Site	Location (centroid)	Details	Impact pathways	Likely Significant Effect?	Avoidance
		layout improvements.			
Policy HE10, Hedge End Station	449595, 115061	Improvements to Hedge End station including a new accessible footbridge	The site is 3.2km form the Solent Maritime SAC and Solent & Southampton Water SPA/Ramsar site. However, there is no pathway connecting the site to the Solent complex.	There will be no site specific Likely significant effect	N/A
Policy HE11, Land at Kanes Hill, Hedge End	447584,112764	Cemetery	Site is 3.4km from the River Itchen SAC and the Solent Maritime SAC and Solent & Southampton Water SPA/Ramsar site. However, there is no pathway connecting the site to the Solent complex.	There will be no site-specific Likely Significant Effect due to the distance between the development site and European sites, beyond the strategic 'in combination' recreational impact that will apply across South Hampshire.	N/A
Policy HO1, Land at Abbey Fruit Farm, Grange Road	446106,109435	An area of 3.2 hectares allocated for approximately 90 dwellings and employment development.	Site is approximately 1km from the Solent & Southampton Water SPA/Ramsar site (Netley frontage) with relatively easy access for recreation. However, there is no reason to conclude a site-specific recreational pressure issue beyond the strategic 'in combination' recreational impact	There will be no site-specific Likely Significant Effect beyond the strategic 'in combination' recreational impact that will apply across South Hampshire.	N/A

Site	Location (centroid)	Details	Impact pathways	Likely Significant Effect?	Avoidance
			that will apply across South Hampshire.		
Policy HO2, Land at Former Netley Court School, Victoria Road, Netley	445510,108412	An area of 0.8 hectares of land allocated for residential development including up to 30 dwellings.	Site is located immediately adjacent to the cliffs that form the boundary with the intertidal mudflats of the Solent and Southampton Water SPA/Ramsar site along the Netley frontage and there are existing steps allowing access to the foreshore. However, given the small amount of development proposed there is no reason to conclude a site-specific recreational pressure issue beyond the strategic 'in combination' recreational impact that will apply across South Hampshire.	There will be no site-specific Likely Significant Effect beyond the strategic 'in combination' recreational impact that will apply across South Hampshire. There is no indication that new piling will be required during construction but given its proximity immediately adjacent to the SPA there is the potential for disturbance of waterfowl.	A planning-application level HRA will be required to confirm that no adverse effects on the SPA/Ramsar site will result. This should focus particularly on the potential for disturbance from construction. Given that this part of the SPA/Ramsar site is essentially of interest for its wintering/passage birds it may be that simply avoiding the noisiest construction activities (i.e. those which would be audible above the existing noise baseline) during October to March will be sufficient.
Policy WE1, Land west of Horton Heath	449046, 116798	An area of approximately 100 hectares west of Horton Heath and around Chalcroft Farm is	The site is 1.8km from the River Itchen SAC and has a number of tributaries running into the River Itchen	Potential impacts on the River Itchen SAC itself are considered separately. Depending upon the layout of the site there is the potential	Potential for invasive non-native species and adverse water quality effects during construction could be addressed by careful design and adherence to a Construction Environmental Management Plan coupled

Site	Location (centroid)	Details	Impact pathways	Likely Significant Effect?	Avoidance
		allocated as a strategic location for development to include 950 dwellings, employment, open space and associated community facilities.	(itself a tributary of the Solent complex), and therefore does provide a water quality pathway downstream to the Solent.	for water quality impacts on the SPA/Ramsar site/SAC through surface water runoff via the Monks Brook that lies adjacent to the site and drains into the River Itchen which itself drains into the Solent & Southampton Water SPA/Ramsar site. **Therefore this site cannot be screened out at this stage.**	with utilisation of standard pollution control guidance (e.g. storage of chemicals and fuel away from the watercourse). In addition, risk of introducing invasive non-native species could be controlled by careful design of the development to ensure that it doesn't make access to the river corridor for fly-tipping easier and potentially by introducing a monitoring commitment by the developer as part of estate-maintenance
Policy WE2, Land at Hatch Farm, north of Barbe Baker Avenue, West End	446298,115041	An area of approximately 12 hectares is for public open space and approximately 80 dwellings.	The site is 750m east of the River Itchen SAC and has a number of tributaries running into the River Itchen adjacent to the site (itself a tributary of the Solent complex), and therefore does provide a water quality pathway downstream to the Solent.	Potential impacts on the River Itchen SAC itself are considered separately. Depending upon the layout of the site there is the potential for water quality impacts on the SPA/Ramsar site/SAC through surface water runoff via the Monks Brook that lies adjacent to the site and drains into the River Itchen which itself drains into the Solent & Southampton Water SPA/Ramsar site. **Therefore this site cannot be screened out at this stage.**	Potential for invasive non-native species and adverse water quality effects during construction could be addressed by careful design and adherence to a Construction Environmental Management Plan coupled with utilisation of standard pollution control guidance (e.g. storage of chemicals and fuel away from the watercourse). In addition, risk of introducing invasive non-native species could be controlled by careful design of the development to ensure that it doesn't make access to the river corridor for fly-tipping easier and potentially by introducing a monitoring commitment by the developer as part of estate-maintenance
Policy WE3, Romill Close	448627,110426	Area of 3.8 hectares allocated for approximately 60 dwellings	Site is located approximately 150m from the nearest part of the River Itchen	Site has been granted planning permission and is part of the background for this assessment.	N/A

Site	Location (centroid)	Details	Impact pathways	Likely Significant Effect?	Avoidance
			SAC (a tributary of the Solent European sites).		
Policy WE4, Coach Depot, Botley Road, West End	449324,110135	Area of approximately 1.8 hectares allocated for approximately 80 dwellings	Site is located approximately 2.1km from the nearest part of the River Itchen SAC and 4km from the nearest part of the Solent European sites. No pathway therefore exists.	There will be no site-specific Likely Significant Effect	N/A
Policy WE5, Moorgreen Hospital, West End	447549,114605	Subject to need analysis the an area of approximately 10.4 hectares is allocated for residential development of approximately 115 dwellings, including provision within the hospital site to meet the needs of West End surgery for future expansion.	Site is located approximately 2.1km from the nearest part of the River Itchen SAC and 4km from the nearest part of the Solent European sites. No pathway therefore exists.	There will be no site-specific Likely Significant Effect	N/A
Policy WE6, Chalcroft Distribution Park	448446,116306	Proposals for the alteration, extension, change of use or redevelopment of existing land and buildings within the Chalcroft Distribution Park.	The site has a number of tributaries running into the River Itchen (itself a tributary of the Solent complex), and therefore does provide a water quality pathway downstream to the Solent.	Potential impacts on the River Itchen SAC itself are considered separately. Depending upon the layout of the site there is the potential for water quality impacts on the SPA/Ramsar site/SAC through surface water runoff via the Monks Brook that lies adjacent to the site and drains into the River Itchen which	Potential for invasive non-native species and adverse water quality effects during construction could be addressed by careful design and adherence to a Construction Environmental Management Plan coupled with utilisation of standard pollution control guidance (e.g. storage of chemicals and fuel away from the watercourse). In addition, risk of introducing invasive non-native species could be controlled by

Site	Location (centroid)	Details	Impact pathways	Likely Significant Effect?	Avoidance
				itself drains into the Solent & Southampton Water SPA/Ramsar site. **Therefore this site cannot be screened out at this stage.**	careful design of the development to ensure that it doesn't make access to the river corridor for fly-tipping easier and potentially by introducing a monitoring commitment by the developer as part of estate-maintenance
Policy WE7, Land adjoining the Chalcroft Distribution Park	448767, 115953	Approximately 1.6ha between the Chalcroft Distribution Park and Burnett's Lane is allocated for employment	The site has a number of tributaries running into the River Itchen (itself a tributary of the Solent complex), and therefore does provide a water quality pathway downstream to the Solent.	Potential impacts on the River Itchen SAC itself are considered separately. Depending upon the layout of the site there is the potential for water quality impacts on the SPA/Ramsar site/SAC through surface water runoff via the Monks Brook that lies adjacent to the site and drains into the River Itchen which itself drains into the Solent & Southampton Water SPA/Ramsar site. **Therefore this site cannot be screened out at this stage.**	Potential for invasive non-native species and adverse water quality effects during construction could be addressed by careful design and adherence to a Construction Environmental Management Plan coupled with utilisation of standard pollution control guidance (e.g. storage of chemicals and fuel away from the watercourse). In addition, risk of introducing invasive non-native species could be controlled by careful design of the development to ensure that it doesn't make access to the river corridor for fly-tipping easier and potentially by introducing a monitoring commitment by the developer as part of estate-maintenance
Policy WE8, Land west of Tollbar way and south of Berrywood Business Park, Hedge End	448650,115005	An area of 0.8 hectares of land west of Tollbar way and south of Berrywood business park, Hedge End allocated for use as an employment site.	Site is approximately 4km from the River Itchen SAC (a tributary of the Solent European sites). However, there is no pathway connecting the site to the River Itchen.	There will be no site specific likely significant effect.	N/A
Policy WE9,	448809,11	Allocation for	Site is connected to	Depending upon the layout of	Potential for invasive non-native species

Site	Location (centroid)	Details	Impact pathways	Likely Significant Effect?	Avoidance
Land at the Ageas Bowl (commercial development)	1500	commercial purposes	the Solent complex via a tributary of the River Hamble.	the site there is the potential for water quality impacts on the SPA/Ramsar site/SAC through surface water runoff via the tributary that lies adjacent to the site and drains into the River Hamble. **Therefore this site cannot be screened out at this stage.**	and adverse water quality effects during construction could be addressed by careful design and adherence to a Construction Environmental Management Plan coupled with utilisation of standard pollution control guidance (e.g. storage of chemicals and fuel away from the watercourse). In addition, risk of introducing invasive non-native species could be controlled by careful design of the development to ensure that it doesn't make access to the river corridor for fly-tipping easier and potentially by introducing a monitoring commitment by the developer as part of estate-maintenance
Policy WE10, Household waste recycling centre, Botley Road, West End	448072, 114378	A new household waste recycling centre is proposed on land north of Botley Road	The site is 3.9km from the nearest point of the Solent complex designations, however there are no tributaries of the River Hamble that pass within or are adjacent to the site. There is no pathway of impact.	There will be no site specific likely significant effect.	N/A
Policy WE11, Land at Ageas Bowl and Tennis Centre (sporting facilities policy)	449074,110008	Allocation for outdoor sport and recreation facilities	Site is located immediately adjacent to a tributary of the Solent Maritime SAC	On the assumption that only outdoor sporting facilities will be based at this site there will be no site-specific Likely Significant Effect	N/A
Policy WE12, Pinewood Park, Kanes Hill, West End	447669, 112042	0.5 hectares of land adjoining Pinewood Park and Dumbleton Close for development	The site is located approximately 3.2km from the nearest part of the Solent	There will be no site-specific Likely Significant Effect	N/A

Site	Location (centroid)	Details	Impact pathways	Likely Significant Effect?	Avoidance
		of up to 6 dwellings provided that Dumbleton Copse is restored and managed in the long term for open space and informal recreation.	European sites; there is no pathway connecting the site to the Solent complex.		

Strategic Policy Assessment

Policy number	Summary	Impact Pathways	Likely Significant Effect?	Avoidance
Policy S1, Sustainable development		No pathways – policy is concerned solely with making development sustainable	No	N/A
Policy S2, New development	The preferred development strategy is to promote the delivery of − 10,140 new dwellings; and − 133,000sq.m new employment development; and related transport infrastructure, open space, sports facilities and other community facilities, between April 2011 and March 2029	Principally recreational pressure, in combination with the other new dwellings to be delivered across South Hampshire. All other impacts are site-specific and are therefore covered in the assessment of site allocations.	Yes	Following discussion with Natural England, supporting text to Policy S11 has been included to bring this in line with policies in surrounding authorities to cover continued inputs to the Solent Forum work in addressing 'in combination' recreational pressure. In order to prevent adverse effects upon sensitive European sites in and around the Borough, the Council will work with other local authorities (including the Partnership for Urban South Hampshire) to develop and implement a strategic approach to protecting European sites from recreational pressure and development. This will include a suite of mitigation measures, supported by developer contributions or CIL where appropriate. The Council will monitor, through its Annual Monitoring Report the effectiveness of the joint strategic approach to

				avoidance and mitigation of effects on European sites. It will respond to the findings of new evidence where appropriate, including the Solent Disturbance and Mitigation Project in order to preserve the integrity of European sites'.
Policy S3, Location of new housing	• 4,450 dwellings within the urban edge • 4,880 dwellings on strategic sites at Boorley Green, east of Hedge End, north of Fair Oak, Horton Heath and south of Eastleigh at Stoneham • 1,030 more new dwellings on smaller green field sites adjoining settlements	At a strategic 'in combination' level, none beyond those already identified for S2. All other impacts are site-specific and are therefore covered in the assessment of site allocations.	No	N/A
Policy S4, Employment provision	Additional employment floorspace, mixed-use regeneration and greenfield development. Small scale sites across the borough, re-use of buildings in the countryside. Office development – focused in Eastleigh Town Centre, at Eastleigh River Side and district and local centres.	No pathways relevant to the Solent complex. Although the policy states that '*The Borough Council will seek to maintain the national and international importance of the River Hamble* [which drains into the Solent complex] *for marine enterprises … and recreational sailing*' it also adds the caveat '*whilst ensuring the protection of its landscape setting, features of ecological importance and its heritage interest'*. Although the policy refers to the Borough's boatyards it is only within the context of retaining them for marine uses. Site specific impacts are covered in the assessment of site allocations.	No	N/A
Policy S5, Green	The Borough Council will seek to achieve the provision, retention and or enhancement of multi-	There are pathways to the Solent complex through encouraging	There is potential	This is addressed further in section 4.5.1 and supporting text of policy

Infrastructure	functional green infrastructure. This includes: i. Strategic links to and between the borough's settlements and the major areas of open space including the country parks and the coast. ii. Publically accessible open space including formal sports facilities and informal amenity space iii. Urban green infrastructure iv. Historic landscapes v. Areas of biodiversity value vi. Opportunities for local food growing including allotments	access to the coast however the policy must be read within the context of policy DM9 which states that '*Development which is likely to adversely affect the integrity of an International or European nature conservation site will not be permitted*' supporting text to this policy outlines the Borough Councils commitment to the Solent Disturbance and mitigation strategy. None of the other schemes will present pathways of impact relevant to the Solent complex and improved green infrastructure will give the community alternative options to the coast.	Likely Significant Effect from this proposal through increased recreational disturbance.	S11 outlines the Borough Councils commitment to the protection of sensitive areas to recreational disturbance, and to avoid detriment to biodiversity and protect and enhance biodiversity interest.
Policy S6, Community facilities	The Borough Council will work with Hampshire County Council, health authorities, town and parish councils, and other groups to ensure adequate community facilities through the provision of: i. New schools and enhancements to existing schools ii. New and enhanced medical facilities iii. Cemeteries to meet local needs iv. Other new and enhanced facilities necessary to ensure sustainability of development.	No pathways of impact. This policy is intended to control development rather than promoting it.	No	N/A
Policy S7, Transport infrastructure	The Borough Council will promote in consultation with the Highway Authority and the Highways Agency: i. A new road bypassing Botley to the north of the village and improvements to Woodhouse Lane;	The Botley bypass would involve a new bridge across the River Hamble approximately 1km upstream of the Solent Maritime SAC. There is therefore potential for water quality impacts during the	Yes	This is addressed through wording in policy BO3 in conjunction with wording in policies S11 and DM9.

	ii. A new road linking Burnett's Lane and Bubb Lane, serving Chalcroft Distribution and Horton Heath; iii. A bypass to the Sunday's Hill junction between Heath House Lane and Bursledon Road; iv. A new road to the south of Hedge End linking the western end of Sunday's Hill bypass with St John's Road; v. Improvements to along key corridors consistent with the County Council's Borough Transport Statement, including the A27, A335 and B3037. vi. Improvements to Junctions 5, 7 and 8 of the M27 motorway; vii. New road accesses into Eastleigh River Side; viii. A public transport priority route from Hedge End/ West End to Southampton centre including a Botley Road bus corridor; and ix. The Eastleigh Cycle Route Network and improved pedestrian routes as set out in the Eastleigh Cycling Strategy and the Eastleigh Walking Strategy and strategic policy S7. x. Enhancements to the railway system to improve access to Southampton Airport Parkway from the east; xi. Local improvements to railway stations to enhance accessibility and use. xii junction improvements at: • Bishopstoke (as set out in Chapter 6 section 6.2); • Botley (as set in Chapter 6 section 6.3); • Eastleigh (as set out in Chapter 6 section 6.6); • Fair Oak (as set out in Chapter 6 section 6.7); • Hedge End (as set out in Chapter 6 section 6.9)	construction process which could affect the downstream SAC. The policy BO3 makes it clear that '*The design of the bridge over the upper reaches of the Hamble River should minimise damage to the river and to the adjoining Botley Mill Woodland Site of Importance for Nature Conservation*' and adds that '*A Habitats Regulations Assessment is required to support a planning application for this proposal as it has been identified as having potential significant effects on the Solent Maritime SAC and River Itchen SAC through impacts on water quality and otters'.* In addition, this policy must be read within the context of policy DM9 which states that '*Development which is likely to adversely affect the integrity of an International or European nature conservation site will not be permitted*'. None of the other schemes will present pathways of impact relevant to the Solent complex and improved junctions, bypasses and public transport will aid traffic flows and potentially improve air quality in the Borough (since standing traffic is generally more polluting than moving vehicles).		

Policy S8. Strategic footpath, cycleway and bridleway links	The Borough Council will seek to create new and improved footpath, cycleway and bridleway links throughout the borough, including connecting the country parks, increasing access along the coast and to the South Downs National Park and the parishes and Eastleigh town centre. Specific routes are identified in the policy. New development should integrate with existing routes and where possible maintain, protect and enhance their function. Development that would sever, obstruct or otherwise have a detrimental impact on the existing or proposed network of green routes will not be permitted.	There are pathways to the Solent complex through encouraging access to the coast however the policy must be read within the context of policy DM9 which states that '*Development which is likely to adversely affect the integrity of an International or European nature conservation site will not be permitted'* supporting text to this policy outlines the Borough Councils commitment to the Solent Disturbance and mitigation strategy. The policy does state that *'all these routes will avoid conflict with established nature conservation interests'.* None of the other schemes will present pathways of impact relevant to the Solent complex and improved green infrastructure will give the community alternative options to the coast.	There is potential Likely Significant Effect from this proposal through increased recreational disturbance.	This is addressed further in section 4.5.1 and supporting text of policy S11 outlines the Borough Councils commitment to the protection of sensitive areas to recreational disturbance, and to avoid detriment to biodiversity and protect and enhance biodiversity interest.
Policy S9, Countryside and countryside gaps	Identifies areas outside of the urban edge as countryside and identifies countryside gaps to support the identity and character of settlements and the countryside. Establishes criteria for development at these locations.	No pathways of impact. This policy is intended to control development rather than promoting it.	No	N/A
Policy S10, The Coast	The policy defines the coast. The borough Council will seek to maintain the national and international importance of the River Hamble and Southampton Water for recreational sailing and for marine-related enterprises that contribute to the local and sub-regional economy, balancing the protection of their unique and attractive environment with support for the marine economy and recreational	There are pathways to the Solent complex through encouraging access to the coast however the policy is intended to control development rather than promoting it and must be read within the context of policy DM9 which states that '*Development which is likely to*	There is potential Likely Significant Effect from this proposal through increased	This is addressed further in section 4.5.1 and supporting text of policy S11 which outlines the Borough Councils commitment to the protection of sensitive areas to recreational disturbance, and to avoid detriment to biodiversity and protect and enhance biodiversity

	activities. The Council will seek to: Protect and enhance the landscape, biodiversity and heritage interest of the coast….. enable the provision of infrastructure relating to recreational sailing…. Whilst protecting more sensitive locations…. Maintain and enhance other coast related recreational activities including enhancing coastal access where this can be achieved without detriment to biodiversity… achieve coast protection and flood management measures where necessary in accordance with the adopted North Solent Shoreline Management Plan.	*adversely affect the integrity of an International or European nature conservation site will not be permitted*'. Policy S11 outlines the Borough Councils commitment to the protection of sensitive areas to recreational disturbance, and to avoid detriment to biodiversity and protect and enhance biodiversity interest.	recreational disturbance.	interest.
Policy S11, Nature Conservation	The Borough Council will work with statutory and voluntary agencies and developers to: i. Protect, conserve and enhance areas subject to nature conservation designations ii. Assist in achieving BAP targets iii. Protect and conserve networks of natural habitats iv. Seek enhancement of biodiversity through new development v. Encourage public understanding of biodiversity. This policy also outlines the Borough Councils commitment to the protection of sensitive areas to recreational disturbance, and to avoid detriment to biodiversity and protect and enhance biodiversity interest.	No pathways of impact. This policy is intended to ensure protection of the integrity of European sites from negative impacts from development, rather than promoting development.	No	N/A
Policy S12, Heritage Assets	The Borough Council will preserve and enhance heritage assets through: identification; conservation area appraisals; restriction development which may harm them or their settings, and encouraging development which enhances.	No pathways of impact. This policy is intended to control development, rather than promoting it.	No	N/A

Development Management Policies

Policy number	Impact Pathways	Likely Significant Effect?	Avoidance
Policy DM1, General criteria for new development	No pathways of impact. This policy is intended to control development rather than promoting it.	No	N/A
Policy DM2, Environmentally sustainable development	No pathways of impact. This policy is intended to control development rather than promoting it.	No	N/A
Policy DM3, Zero or low carbon energy	No pathways of impact. This policy is intended to control development rather than promoting it.	No	N/A
Policy DM4, Flood risk	No pathways of impact. This policy is intended to control development rather than promoting it.	No	N/A
Policy DM5, Sustainable surface water management and watercourse management	No pathways of impact. This policy is intended to control development rather than promoting it.	No	N/A
Policy DM6, Flood management, land reclamation and coast protection	No pathways of impact. This policy is intended to control development rather than promoting it. Although the policy states that 'Flood defence and coast protection works will be permitted provided that they accord with the management plans' which could be taken to mean that adverse effects might be permitted, this policy must be read in conjunction with policy DM9 which states that 'Development which is likely to adversely affect the integrity of an International or European nature conservation site will not be permitted '. The policy also states that 'Development proposals on the coast of	No	N/A

	Southampton Water, the River Itchen and the River Hamble estuary and in other areas at risk of fluvial or surface water flooding should not give rise to need for additional flood risk management or coast protection works beyond those approved in the management plans, provide or contribute to costs of works needed to protect the sites as set out in the management plans and have regard to watercourse ownership and long term management.		
Policy DM7, Pollution	No pathways of impact. This policy is intended to control development rather than promoting it.	No	N/A
Policy DM8, Public utilities and communications	No pathways of impact. This policy is intended to control development rather than promoting it.	No	N/A
Policy DM9, Nature Conservation	No pathways of impact. This policy is intended to control development rather than promoting it.	No	N/A
Policy DM10, Heritage Assets	No pathways of impact. This policy is intended to control development rather than promoting it.	No	N/A
Policy DM11, New employment development in urban areas	No pathways of impact. This policy is intended to control development rather than promoting it.	No	N/A
Policy DM12, Existing employment sites	No pathways of impact. This policy is concerned with changes of use within limited categories and training provision.	No	N/A
Policy DM13, Workforce training requirements and new jobs	No pathways of impact. This policy is intended to control development rather than promoting it.	No	N/A
Policy DM14, Agricultural development	No pathways of impact. This policy is intended to control development rather than promoting it.	No	N/A
Policy DM15, protection of the best and most valuable agricultural land	No pathways of impact. This policy is intended to control development rather than promoting it.	No	N/A
Policy DM16, extension and replacement of	No pathways of impact. This policy is intended to control development rather than promoting it.	No	N/A

existing non-residential buildings in the countryside			
Policy DM17, Change of use of buildings in the countryside	No pathways of impact. This policy is intended to control development rather than promoting it.	No	N/A
Policy DM18, Boatyard and marina sites on the River Hamble	No pathways of impact. Although the policy states that certain types of development will be permitted at boatyards and marinas on the Hamble (upstream of the Solent complex) it also specifically states that they will not be permitted if they 'adversely affect nature conservation …'	No	N/A
Policy DM19, Retail development	No pathways of impact. This policy is intended to control development rather than promoting it.	No	N/A
Policy DM20, Change of use in retail frontages in district and local centres	No pathways of impact. This policy is intended to control development rather than promoting it.	No	N/A
Policy DM21, Upper floors	No pathways of impact. This policy is intended to control development rather than promoting it.	No	N/A
Policy DM22, Retail uses outside the urban edge	No pathways of impact. This policy is intended to control development rather than promoting it.	No	N/A
Policy DM23, General development criteria – transport	No pathways of impact. This policy is intended to control development rather than promoting it.	No	N/A
Policy DM24, Parking	No pathways of impact. This policy is intended to control development rather than promoting it.	No	N/A
Policy DM25, Residential development in urban areas	No pathways of impact. This policy specifically states that development in the urban areas will only be permitted if it complies with other policies in the plan. This would include DM9 which states that 'Development which is likely to adversely affect the integrity of an International or European nature conservation site will not be permitted '.	No	N/A
Policy DM26, Residential extensions and	No pathways of impact. The types of development permitted in the countryside would not raise any pathways related to the Solent complex and must comply with policy DM9 which states that 'Development which is	No	N/A

replacement dwellings in the countryside	likely to adversely affect the integrity of an International or European nature conservation site will not be permitted '.		
Policy DM27, Rural workers' dwellings	No pathways of impact. This policy is intended to control development rather than promoting it.	No	N/A
Policy DM28, Affordable housing	No pathways of impact. This policy is intended to control development rather than promoting it.	No	N/A
Policy DM29, Internal space standards for residential development	No pathways of impact. This policy is intended to control development rather than promoting it.	No	N/A
Policy DM30, Gypsies, travellers and travelling showpeople	No pathways of impact. Although gypsy and traveller and travelling showpeople sites could potentially lead to effects on European sites as could other residential development, any site application must comply with policy DM9 which states that 'Development which is likely to adversely affect the integrity of an International or European nature conservation site will not be permitted '.	No	N/A
Policy DM31, Protection of recreation and open space facilities	No pathways of impact. This policy is intended to control development rather than promoting it.	No	N/A
Policy DM32, Provision of recreation and open space facilities with new development	No pathways of impact. This policy is intended to control development rather than promoting it.	No	N/A
Policy DM33, New and enhanced recreation and open space facilities	No pathways of impact. This policy is intended to control development rather than promoting it.	No	N/A
Policy DM34, Recreational sailing on the River Hamble	No pathways of impact. This policy is intended to control development rather than promoting it. Although it allows for new jetties etc it states that they will not have an adverse impact on landscape, biodiversity or heritage interests.	No	N/A
Policy DM35, Community, leisure	No pathways of impact. This policy is intended to control development rather than promoting it.	No	N/A

and cultural facilities			
Policy DM36, Cemeteries	No pathways of impact. This policy is intended to control development rather than promoting it.	No	N/A
Policy DM37, funding infrastructure	No pathways of impact. This policy is intended to control development rather than promoting it.	No	N/A

4.4.10 In summary, the following twenty-six sites cannot currently be screened out as being unlikely to lead to significant effects on their own:

- Policy BO1, Land north and east of Boorley Green, Botley
- Policy BO2, Land north-east of Winchester Street
- Policy BO3, Botley Bypass
- Policy BU1, Land at Providence Hill and Oakhill, Bursledon
- Policy BU2, Land north of Bridge Road (A27) and west of Blundell Lane, Bursledon
- Policy BU3, Land east of Dodwell Lane & North of Pylands Lane, Bursldeon
- Policy BU4, Sunday's Hill Bypass
- Policy BU5, Riverside Boatyard, Blundell Lane, Bursledon
- Policy CF1, Land at Fire and former Ambulance Stations, Steele Close, Chandler's Ford
- Policy CF2, Central Precinct, Chandler's Ford
- Policy CF3, Land at Common Road Industrial Estate, Chandler's Ford
- Policy E1, Land south of Chestnut Avenue, Eastleigh
- Policy E2, Land at Civic Offices, Leigh Road, Eastleigh
- Policy E9, Eastleigh River Side
- Policy E10, Development opportunities adjoining Eastleigh River Side
- Policy E13, Land South-west M27 junction 5
- Policy FO5, Hammerley Farm, Anson Road, Fair Oak
- Policy HA2, Mercury Marina and Riverside camping and caravan park
- Policy HE4, Land off Peewit Hill Close and Dodwell Lane
- Policy HE8, Dodwell Lane to St John's Road link, Hedge End
- Policy HO2, Land at Former Netley Court School, Victoria Road, Netley
- Policy WE1, Land west of Horton Heath
- Policy WE2, Land at Hatch Farm, north of Barbe Baker Avenue, West End
- Policy WE6, Chalcroft Distribution Park
- Policy WE7, Land adjoining the Chalcroft Distribution Park
- Policy WE9, Land at the Ageas Bowl (commercial development)

4.4.11 For most of these sites the large amount of development and proximity to rivers (or tributaries of rivers) leading into the Solent Maritime SAC and Solent & Southampton Water Ramsar site (and to a lesser extent the SPA) increases the risk of introduction

of invasive non-native species into the system. For these sites there is also potential for adverse water quality effects during construction, although this is easily controllable using standard pollution control protocols. The construction of the Botley Bypass (Policy BO3) could theoretically lead to water quality impacts on the Solent Maritime SAC downstream.

4.4.12 It has been possible to conclude that Likely Significant Effects will not result from most Local Plan policies.

4.4.13 Policy S7 is also screened in due to the effects of the Botley Bypass on the River Itchen and thus downstream water quality impacts on the Solent Maritime SAC/Solent & Southampton Water SPA/Ramsar site. The detail of this will be picked up in the site specific assessment Policy BO3.

4.5 Other Plans and Projects (In Combination)

Recreational pressure

4.5.1 Data on visitor activity in the Solent complex was obtained through the Solent Disturbance and Mitigation Project. Overall, Southampton Water had a relatively high predicted density of future visitors. Based on data presented in the Phase 2 Solent Disturbance and Mitigation Project[37] five of the twelve sections of frontage in Southampton Water predicted to receive an increase in visitor density to over 30/ha (in some cases more than three times over) are located in Eastleigh (from Weston to Hound). This increase cannot be entirely attributed to Eastleigh any more than it can be stated that Eastleigh will not be contributing visitor pressure along other sections of frontage. However, it is reasonable to assume that a significant proportion of the additional visitors to the Eastleigh frontage will be Eastleigh residents.

4.5.2 There are also a series of coastal and marine projects being implemented over the Local Plan period including the ABP Project Capital dredge of berths 204 and 205, ABP Project Southampton Approach Channel Dredge and Netley Coastal Defence Scheme. All of these could potentially result in disturbance of SPA birds depending upon when they are scheduled to occur.

4.5.3 It is therefore the case that, when taken as a whole and 'in combination' with development across South Hampshire, the scale of development set out in the Eastleigh Local Plan cannot be screened out as leading to no Likely Significant Effects.

Air quality

4.5.4 The Partnership for Urban South Hampshire initiated a sub-region wide transport and air quality study, the first stage of which reported in 2010[38]. This study identified that the growth in traffic associated with the 80,000 new dwellings to be delivered in PUSH up until 2026 would have relatively little impact on the following designated sites:

- Botley Wood and Everetts and Mushes Copses SSSI;
- The New Forest SSSI;
- Chichester Harbour SSSI;

[37] Stillman, R. A., West, A. D., Clarke, R. T. & Liley, D. (2012) Solent Disturbance and Mitigation Project Phase II: Predicting the impact of human disturbance on overwintering birds in the Solent. Report to the Solent Forum

[38] AEA Technology. 2010. Road transport emissions impacts on Nature Conservation Sites. Report to the Partnership for Urban South Hampshire

- River Test SSSI;
- Sinah Common SSSI;
- Southampton Common SSSI; and
- Upper Hamble Estuary and Woods SSSI.

4.5.5 The analysis indicated that the growth in traffic associated with PUSH would have the greatest impact on the following sites:

- Moorgreen Meadows SSSI;
- Langstone Harbour SSSI;
- Portsdown SSSI;
- Downend Chalk Pit SSSI;
- Lower Test Valley SSSI; and
- River Itchen SSSI.

4.5.6 Two of these six sites, Langstone Harbour and Portsmouth Harbour, are part of the Solent complex of European sites – specifically Portsmouth Harbour SPA/Ramsar site and Chichester & Langstone Harbours SPA/Ramsar site. In both instances the modelling predicted that nitrogen deposition would exceed the critical load for the habitats and that development in the PUSH region would collectively contribute over 1kg N/ha/yr in additional nitrogen to these sites; a considerable additional amount.

4.5.7 Given that this is a collective pan-authority issue it is considered that severe control of nitrogen deposition due to additional traffic arising specifically from Eastleigh would be disproportionate and that policy should instead focus on maximising opportunities for sustainable transport and reducing reliance on private vehicles.

4.5.8 In consultation on Core Strategies for other Hampshire local authorities, Natural England have referred to the following document for mitigation measures that could be included in Core Strategies: http://www.westlondonairquality.org.uk/uploads/documents/Best%20Practice%20Guide/WLA%20Best%20Practice%20Air%20Quality%20and%20Transport%20Guide%20200051.pdf. The report identifies four broad types of mitigation measure:

- Behavioural measures and modal shift - reducing the amount of traffic overall;
- Traffic management - modifying traffic behaviour to control where emissions are generated;
- Emissions reduction at source - reducing the emissions level per vehicle; and
- Roadside barriers - reducing the impact on the public of emissions.

4.5.9 The measures identified in Local Plan policy cover all of these categories, except for the fourth (roadside barriers) which is not within the remit of local planning policy. The Local Plan does contain positive measures that should aim to mitigate or avoid the likelihood of significant adverse effects from reduced air quality:

Strategic policy S1 (Sustainable Development) states that: '*To be sustainable, new development in the borough should … have regard to the potential impacts of climate change, and the need to limit greenhouse gas emissions by promoting measures to minimise ….emissions from motorised transport, industrial activity and domestic uses*';

Among the list of measures included in Strategic policy S7 (Transport Infrastructure) are enhancements to the railway system to improve access to Southampton Airport Parkway from the east, a public transport priority route from Hedge End/ West End to Southampton centre including a Botley Road bus corridor and the Eastleigh Cycle Route Network.

Policy DM7 (Pollution) states: '*Development will not be permitted if it is likely to cause loss of amenity or other unacceptable environmental impacts through air pollution'*;

Policy DM23 (General development criteria – transport) states that: *'All new development must … make provision for access to, and by, other transport modes including public transport and cycle and pedestrian routes. Access arrangements to the highway network must … be provided without unacceptable environmental impact … Development proposals in excess of those outlines in the DfT 'Guidance on Transport Assessment' Appendix B that will generate vehicle movements likely to have an adverse impact on traffic conditions beyond the immediate vicinity of the development site must be subject to Transport Assessment, and will be required to incorporate and implement mitigation measures such as Travel Plans to reduce car use. New development intended to serve or accommodate large numbers of people will only be permitted in locations that as well as having adequate road access, are or can be served by means of transport other than the private car, including bus, train, cycle and pedestrian access'*;

4.5.10 For those sustainable transport measures which are available at the strategic planning level, it is not possible to predict in advance the precise quantum of improvement that can be delivered by a given mitigation measure due to both the novel nature of the mitigation tools available and the limitations of the science. Vegetative changes that theory identifies as being likely to result from changes (either negative or positive) in atmospheric nitrogen deposition can fail to appear in practice since they are relatively subtle and can be dwarfed by changes in management regime. Moreover, it is rarely possible to separate the effects of atmospheric nitrogen deposition and other causes and the effects of atmospheric nitrogen deposition arising from vehicle exhausts from those arising from other sources (e.g. agriculture). For example, a policy to 'require developers to produce travel plans indicating that they have maximised opportunities for sustainable transport' may prove effective in practice, but cannot be predictively linked to a specific scale of improvement of air quality.

4.5.11 It is therefore important that where air quality problems are identified there is also a mechanism established to monitor the effectiveness of the measures adopted (using the critical load/level as a monitoring target against which the success or failure of mitigation measures can be evaluated) and amend them as required.

4.5.12 This is in line with the precautionary principle as set out in EC Guidance[39] on its use:

4.5.13 '*If a preliminary scientific evaluation shows that there are reasonable grounds for concern that a particular activity might lead to damaging effects on the environment, or on human, animal or plant health, which would be inconsistent with the protection normally afforded to these within the European Community, the Precautionary Principle is triggered.*

4.5.14 *Decision-makers then have to determine what action to take. They should take account of the potential consequences of taking no action, the uncertainties inherent in the scientific evaluation, and they should consult interested parties on the possible ways of managing the risk. Measures should be proportionate to the level of risk, and*

[39] European Commission (2000): Communication from the Commission on the use of the Precautionary Principle.

to the desired level of protection. They should be provisional in nature pending the availability of more reliable scientific data.

4.5.15 *Action is then undertaken to obtain further information enabling a more objective assessment of the risk. The measures taken to manage the risk should be maintained so long as the scientific information remains inconclusive and the risk unacceptable'*.

4.6 Conclusion

Strategic recreational pressure

4.6.1 Following discussion with Natural England, the text of policies S11 and DM9 (Nature Conservation) has been revised in relation to Solent Disturbance and Mitigation Project. Policy S11 states: '*In order to prevent any adverse effects/impacts upon sensitive European sites within and outside the Borough… the Council will work with PUSH, Natural England, the Environment Agency and other wildlife organisations to develop and implement a strategic approach to the protection of European sites from the direct and indirect effects of development including recreational disturbance'.* Criterion (a) has been amended and states this approach will include '*implementing a suite of detailed mitigation proposals for the borough's coast as recommended by the Solent Disturbance and Mitigation Project'*. The Council will monitor, through its Annual Monitoring Report the effectiveness of the joint strategic approach to avoidance and mitigation of effects on European sites. It will respond to the findings of new evidence where appropriate, including the Solent Disturbance and Mitigation Project in order to preserve the integrity of European sites'.

4.6.2 Phase III [40] of the Solent Disturbance and Mitigation Project has assessed mitigation measures associated with the forecast future number of people visiting the Solent and the associated impact on the survival rates of shorebirds. Appendix 5 of the report sets out a series of potential schemes that could be delivered by local authorities working with housing developers, although no definitive choice of schemes has yet been made.

Air quality

4.6.3 The Council should commit to working with Hampshire County Council, Southampton City Council and Transport for South Hampshire to progress schemes which promote modal shift and ensure a coordinated approach to sub-regional transport. This would be in line with Core Strategy commitments given by other south Hampshire authorities such as Portsmouth Council. The Council should as a corollary of this also commit to working with other local authorities, land managers, and strategic highway authorities) to develop a framework by which air quality measures can be linked to monitoring of the air quality in the European site before and for a number of years after introduction of the measures, such that further measures[41] can be devised if the air quality does not improve. In making these assessments the critical load for the relevant habitat should be used as the target for assessment.

4.6.4 While not mitigation in itself, monitoring is an essential factor when dealing with an issue such as air quality which has a high degree of uncertainty, since it will enable the effectiveness of air quality improvement measures to be evaluated and amended over the Local Plan period.

[40] Liley D & Tyldesley, D. 2013. Solent Disturbance and Mitigation Project: Phase III, Mitigation. Unpublished report. Footprint Ecology/David Tyldesley & Associates

[41] Such as low emission zone(s) (applicable to road traffic and non-road mobile machinery), reallocation of road space (high occupancy vehicle lanes), re-routing of heavy goods and older vehicles, traffic management and calming measures (such as residential / access only zones), one way systems etc

Site-specific policies

4.6.5 In addition to the strategic policies, the supporting text for each of the site-specific policies outline the when HRA is required at planning application level. This enables the site specific policies within the Local Plan to be screened out:

Policies BO1, BO2, BU1, BU2, BU3, BU4, CF1, CF2, CF3, E1, E2, E9, E10, E13, FO5, HA2, HE4, HE8, WE1, WE2, WE6, WE7 and WE9:

- the risk of introducing non-native species into the river system will need to be minimised through circulation of information leaflets to new residents, careful design of the development to ensure that it doesn't make access to the river corridor for fly-tipping easier and ensures that the river corridor is overlooked by dwellings and potentially by introducing a monitoring commitment by the developer as part of estate-maintenance.
- There will also be the need for pollution control protocols to be implemented during construction to avoid adverse water quality effects.

Policy BO3, Botley Bypass:

- The policy should be amended to refer specifically to the need for a Construction Environment Management Plan to be drawn up and for the EIA to include specific consideration of water quality impacts on the SAC and how adverse effects on the SAC will be avoided.

Policy HO2, Land at Former Netley Court School, Victoria Road, Netley:

- A planning-application level HRA will be required to confirm that no adverse effects on the SPA/Ramsar site will result. This should focus particularly on the potential for disturbance from construction. Given that this part of the SPA/Ramsar site is essentially of interest for its wintering/passage birds it may be that simply avoiding the noisiest construction activities (i.e. those which would be audible above the existing noise baseline) during October to March will be sufficient.

Concluding statement – Solent Complex sites

4.6.6 It can be concluded that the Pre-submission Eastleigh Borough Local Plan 2011-2012 contains adequate provisions (as set out above) to avoid or mitigate effects on the Solent Complex sites. No likely significant effects would therefore result.

5 River Itchen SAC

5.1 Introduction

5.1.1 This site comprises chalk stream and river, fen meadow, flood pasture and swamp habitats, particularly formations of in-channel vegetation dominated by water crowfoot *Ranunculus* spp, riparian vegetation communities (including wet woodlands) and side channels, runnels and ditches associated with the main river and former water meadows. There are significant populations of the nationally-rare southern damselfly *Coenagrion mercuriale* and assemblages of nationally-rare and scarce freshwater and riparian invertebrates, including the white-clawed crayfish *Austropotamobius pallipes*. Other notable species include otter *Lutra lutra*, water vole *Arvicola terrestris*, freshwater fishes including bullhead *Cottius gobbo*, brook lamprey *Lampetra planeri* and Atlantic salmon *Salmo salar*. A good range of wetland bird species breed.

5.2 Reasons for Designation

5.2.1 The River Itchen is designated as a Special Area of Conservation for the following species and habitats:

- Water courses of plain to montane levels with the *Ranunculion fluitantis* and *Callitricho-Batrachion* vegetation - The Itchen is a classic example of a sub-type 1 chalk river. The river is dominated throughout by aquatic *Ranunculus* spp. The headwaters contain pond water-crowfoot *Ranunculus peltatus*, while two *Ranunculus* species occur further downstream: stream water-crowfoot *R. penicillatus ssp. pseudofluitans*, a species especially characteristic of calcium-rich rivers, and river water-crowfoot *R. fluitans*.
- Southern damselfly *Coenagrion mercuriale* - Strong populations of southern damselfly occur here, estimated to be in the hundreds of individuals. The site in central southern England represents one of the major population centres in the UK. It also represents a population in a managed chalk-river flood plain, an unusual habitat for this species in the UK, rather than on heathland.
- Bullhead *Cottus gobio* - The Itchen is a classic chalk river that supports high densities of bullhead throughout much of its length. The river provides good water quality, extensive beds of submerged plants that act as a refuge for the species, and coarse sediments that are vital for spawning and juvenile development.
- White-clawed crayfish *Austropotamobius pallipes*
- Brook lamprey *Lampetra planeri*
- Atlantic salmon *Salmo salar*
- Otter *Lutra lutra*

Conservation Objectives

To maintain*, in favourable condition, the river as a habitat for:

- floating formations of water crowfoot (*Ranunculus*) of plain and sub-mountainous rivers
- populations of Atlantic salmon (*Salmo salar*)
- populations of bullhead (*Cottus gobio*)
- populations of brook lamprey (*Lampetra planeri*)

- populations of white-clawed crayfish (*Austropotamobius pallipes*)

and the river and adjoining land as habitat for:

- populations of southern damselfly (*Coenagrion mercuriale*)
- populations of otter (*Lutra lutra*)

*maintenance implies restoration, if the feature is not currently in favourable condition.

5.3 Historic Trends and Current Pressures

5.3.1 A principal threat to the habitats within this SAC has been decreases in flow velocities and increases in siltation, in turn affecting macrophyte cover. Surveys during the 1990s showed declines in *Ranunculus* cover since 1990, attributable to increased abstractions in the upper catchment, coupled with a series of years with below-average rainfall. Low flows interact with nutrient inputs from point sources to produce localised increases in filamentous algae and nutrient-tolerant macrophytes at the expense of *Ranunculus*. The Environment Agency has undertaken assessments to inform licensed water abstraction at critical times. Efforts are currently being made to increase the viability of the southern damselfly population through population studies and a Species Action Plan. Evidence indicates that otter populations in the River Itchen are good and widespread in addition to being stable[42].

5.3.2 Recent Condition Assessment process reviews indicated that large sections of the river are suffering from inappropriate water levels, with siltation and abstraction cited as problems in places. In some areas, discharges were causing reduced water quality.

5.3.3 The key environmental conditions needed to maintain site integrity include:

- Maintenance of flow velocities - low flows interact with nutrient inputs from point sources to produce localised increases in filamentous algae and nutrient-tolerant macrophytes at the expense of *Ranunculus*.
- Low levels of siltation,
- Unpolluted water and low nutrient inputs, particularly phosphorus which is the key limiting nutrient in the system (i.e. the nutrient availability of which controls the vegetation's growth response to other nutrients such as nitrogen).
- Maintenance of grazing pressure is essential for Southern damselfly habitat.

5.4 Likely Significant Effects

Air quality

5.4.1 Excessive nutrient inputs could have an adverse effect on the River Itchen SAC. However, not all nutrients will have an equal effect. As with most freshwater systems phosphorus is the key limiting nutrient in the River Itchen since it is normally scarce. As such, in freshwater environments changing the nitrogen inputs is likely to have much less of an impact than changing the phosphorus loadings. In addition, as with all watercourses, nitrogen inputs from fluvial or runoff sources are likely to dominate nitrogen inputs into the River Itchen compared to nitrogen deposited from atmosphere. Most of the interest features of the SAC (Watercourses of plain to montane levels with

[42] Whyte, P. 2011. Itchen Navigation Otter Survey 2010/2011. Report by Hampshire & Isle of Wight Wildlife Trust for the Itchen Navigation Heritage Trail Project Partnership

the *Ranunculion fluitantis* and *Callitricho-Batrachion* vegetation, bullhead, white-clawed crayfish, brook lamprey, and Atlantic salmon) are therefore likely to be little affected by changes in nitrogen deposition, particularly from atmosphere.

5.4.2 The habitat of the otter will include 'dry' habitats outside of the watercourse itself and these could be affected by changes in nitrogen inputs from the atmosphere. However, the relatively subtle changes in vegetation structure that would result from most increases in nitrogen deposition are unlikely to alter usage of areas by otter. Considerable increases in deposition would probably be required to overcome the influence of grazing, drainage and other factors and cause the significant shifts in vegetation structure that would deter otters.

5.4.3 Therefore, the only species that is considered likely to be susceptible in practice to changes in nitrogen deposition from atmosphere is the Southern damselfly as this also utilises riparian habitats out of the water column and (unlike otter) could be deterred from utilising an area by relatively subtle changes in vegetation structure and species composition.

5.4.4 The southern damselfly has very specialised habitat requirements, being confined to shallow, well-vegetated, base-rich runnels and flushes in open areas or small side-channels of chalk rivers. The larvae live in flushes and shallow runnels, often less than 10 cm deep, with slow-flowing water. Adults fly from June to August. Females lay eggs onto submerged plants, and the predatory aquatic larvae probably take two years to mature.

5.4.5 The Southern damselfly is identified as utilising 'fenland' and 'grazing marsh' areas of the SAC away from the main watercourse. Fenland and grazing marsh is identified on the UK Air Pollution Information System (APIS; www.apis.ac.uk) as being susceptible to excess deposition of atmospheric nitrogen and both habitats have a minimum critical load of 10 kgN/ha/yr. The M27 and A27 in (or immediately adjacent to the boundary of) Eastleigh Borough both cross (or lie within 200m of) the River Itchen SAC including areas of fenland south of Southampton Airport. The B3037 also crosses the River Itchen.

5.4.6 According to APIS these crossing points (Grid references: M27- 449680, 110159; A27- 449256, 109699; B3037- 446533, 119141) have current nitrogen deposition rates of 17.5 kgN/ha/yr, 15.4 kgN/ha/yr and 17.64 kg/N/ha/yr respectively. Nitrogen deposition derived from site-specific measurements undertaken for the Eastleigh River Side development in 2010[43] identified a rate of nitrogen deposition within the SAC in the vicinity of Chickenhall WwTW of 14.74 kgN/ha/yr. In other words the nitrogen deposition rate at the SAC within 200m of the M27 and A27 (the zone within which the roads can be expected to be having an influence on local deposition) is between 54% and 75% above the Critical Load for the relevant habitat. As such, it is entirely possible that atmospheric nitrogen deposition from traffic on the M27 and A27 could have a deleterious effect upon the fenland and grazing marsh habitat within the SAC and thus potentially on the use of the area by Southern damselfly. Although APIS predicts that by 2020 nitrogen deposition rates will have fallen due to on-going improvements in background air quality, they are nonetheless predicted to remain above the Critical Load.

5.4.7 Department for Transport Guidance as expressed in the Design Manual for Roads and Bridges (DMRB) states that the first process in determining air quality impacts from road schemes is to determine whether the road in question is an 'affected road' which is defined as, among other criteria, if it will experience an increase in flows of more

[43] Hamilton S, Monaghan D. 2010. Eastleigh Riverside Air Quality Study. Unpublished report for Eastleigh Borough Council by AEA Technology plc

than 1,000 Average Annual Daily Traffic (AADT). The traffic modelling being undertaken for the Local Plan was used to identify whether predicted flows on the aforementioned three main routes that lie within 200m of the River Itchen SAC would be likely to exceed 1,000 AADT. It can be seen that in no instance was the increase expected to exceed the threshold. Following DMRB guidance therefore these would not be 'affected roads' and no further air quality assessment is required. Note that these scenarios are the most precautionary in that they do not allow for the Botley Bypass. Transport modelling indicates that with the Botley Bypass in place flows would be lower than in the absence of the bypass.

	Direction	Predicted increase in vehicle flows by 2031 in terms of AADT as a result of Local Plan development
B3037 at the River Itchen	Eastbound	878
	Westbound	-156
M27 at the River Itchen	Eastbound	663
	Westbound	156
A27 at the River Itchen	Eastbound	-795
	Westbound	-198

5.4.8 While empirical studies have identified that nitrogen deposition rates above the critical load for fenland can result in adverse effects on this habitat through excessive growth of coarse competitive species, this does not mean that deposition above the critical load will result in adverse effects in every given situation. Other factors must be taken into account, such as management regime and the relevant limiting nutrient.

5.4.9 'Poor fens' (i.e. acidic fens) are strongly nitrogen limited. In other words, nitrogen availability is the factor which ultimately controls vegetation response to other nutrients and a small change in nitrogen inputs can result in a major change in the vegetation composition. In contrast, other types of fen with a relatively alkaline pH (called 'rich' fens) such as those along the River Itchen are phosphorus-limited meaning that phosphorus availability is the factor which ultimately controls vegetation response to other nutrients. In a phosphorus limited system, high nitrogen availability may not result in a deleterious effect on vegetation provided that phosphorus availability is controlled[44]. That is not to say that nitrogen inputs would therefore be irrelevant, but it does mean that a proportionate response must be made to the risk posed by small additional nitrogen inputs. The River Itchen system is already nitrogen-rich primarily due to effluent discharge from Chickenhall WwTW and other WwTWs upstream. Nitrogen always will be present in excess in the River Itchen system, primarily due to fluvial sources.

5.4.10 The system is believed to be sufficiently phosphorus-limited that the Environment Agency Review of Consents for the River Itchen SAC, scopes out nitrogen loading early in the process. The likely ecological consequences of further exceedence of the fenland critical load for nitrogen deposition from atmospheric sources due to development in Eastleigh must therefore be set against the background of:

- phosphorus remaining the key limiting nutrient in the system; and

[44] '*In a nutrient limited system, excess of the non-limiting nutrient may not result in any signs of enrichment in the vegetation as the plants are unable to make use of one nutrient without sufficient amounts of the other*'. Source: Understanding Fen Nutrients http://www.snh.gov.uk/docs/A416930.pdf

- nitrogen being already in excess and dominated by fluvial/WwTW/agricultural rather than atmospheric inputs.

5.4.11 Within this context it is considered that severe control of nitrogen deposition due to additional traffic would be disproportionate and that policy should instead focus on maximising opportunities for sustainable transport and reducing reliance on private vehicles.

5.4.12 In consultation on Core Strategies for other Hampshire local authorities, Natural England have referred to the following document for mitigation measures that could be included in Core Strategies: http://www.westlondonairquality.org.uk/uploads/documents/Best%20Practice%20Guide/WLA%20Best%20Practice%20Air%20Quality%20and%20Transport%20Guide%2020051.pdf. The report identifies four broad types of mitigation measure:

- Behavioural measures and modal shift - reducing the amount of traffic overall;
- Traffic management - modifying traffic behaviour to control where emissions are generated;
- Emissions reduction at source - reducing the emissions level per vehicle; and
- Roadside barriers - reducing the impact on the public of emissions.

5.4.13 The measures identified in Local Plan policy cover all of these categories, except for the fourth (roadside barriers) which is not within the remit of local planning policy, however roadside barriers should be explored as a potential mitigation measure. The Local Plan does contain positive measures that should aim to mitigate or avoid the likelihood of significant adverse effects from reduced air quality on the River Itchen SAC:

Strategic policy S1 (Sustainable Development) states that: '*To be sustainable, new development in the borough should … have regard to the potential impacts of climate change, and the need to limit greenhouse gas emissions by promoting measures … by minimising emissions from motorised transport, industrial activity and domestic uses*';

Among the list of measures included in Strategic policy S7 (Transport Infrastructure) are enhancements to the railway system to improve access to Southampton Airport Parkway from the east, a public transport priority route from Hedge End/ West End to Southampton centre including a Botley Road bus corridor and the Eastleigh Cycle Route Network;

Policy DM7 (Pollution) states: '*Development will not be permitted if it is likely to causes loss of amenity or other unacceptable environmental impacts through air pollution'*;

Policy DM23 (General development criteria – transport) states that: *'All new development must … make provision for access to, and by, other transport modes including public transport and cycle and pedestrian routes. Access arrangements to the highway network must … be provided without unacceptable environmental impact … Development proposals in excess of those outlined in the DfT 'Guidance on Transport Assessment' Appendix B that will generate vehicle movements likely to have an adverse impact on traffic conditions beyond the immediate vicinity of the development site must be subject to Transport Assessment, and will be required to incorporate and implement mitigation measures to reduce car use such as Travel Plans. New development intended to serve or accommodate large numbers of people will only be permitted in locations that as well as having adequate road access, are or*

can be served by means of transport other than the private car, including bus, train, cycle and pedestrian access';

5.4.14 For those sustainable transport measures which are available at the strategic planning level, it is not possible to predict in advance the precise quantum of improvement that can be delivered by a given mitigation measure due to both the novel nature of the mitigation tools available and the limitations of the science. Vegetative changes that theory identifies as being likely to result from changes (either negative or positive) in atmospheric nitrogen deposition can fail to appear in practice since they are relatively subtle and can be dwarfed by changes in management regime. Moreover, it is rarely possible to separate the effects of atmospheric nitrogen deposition and other causes and the effects of atmospheric nitrogen deposition arising from vehicle exhausts from those arising from other sources (e.g. agriculture). For example, a policy to 'require developers to produce travel plans indicating that they have maximised opportunities for sustainable transport' may prove effective in practice, but cannot be predictively linked to a specific scale of improvement of air quality.

5.4.15 It is therefore important that where air quality problems are identified there is also a mechanism established to monitor the effectiveness of the measures adopted (using the critical load/level as a monitoring target against which the success or failure of mitigation measures can be evaluated) and amend them as required.

5.4.16 This is in line with the precautionary principle as set out in EC Guidance[45] on its use:

5.4.17 '*If a preliminary scientific evaluation shows that there are reasonable grounds for concern that a particular activity might lead to damaging effects on the environment, or on human, animal or plant health, which would be inconsistent with the protection normally afforded to these within the European Community, the Precautionary Principle is triggered.*

5.4.18 *Decision-makers then have to determine what action to take. They should take account of the potential consequences of taking no action, the uncertainties inherent in the scientific evaluation, and they should consult interested parties on the possible ways of managing the risk. Measures should be proportionate to the level of risk, and to the desired level of protection. They should be provisional in nature pending the availability of more reliable scientific data.*

5.4.19 *Action is then undertaken to obtain further information enabling a more objective assessment of the risk. The measures taken to manage the risk should be maintained so long as the scientific information remains inconclusive and the risk unacceptable'*.

Noise/vibration

5.4.20 For the purposes of this HRA, and to be precautionary, any development site which could involve piling within 100m of the River Itchen SAC or tributaries known/likely to be used by otters is screened in for the devising of site-specific measures at the planning application stage.

Water quality

5.4.21 An assessment undertaken into the Eastleigh River Side site[46] identified a number of current and historic activities that could represent potential sources of contamination.

[45] European Commission (2000): Communication from the Commission on the use of the Precautionary Principle.

[46] Mott Gifford and Hampshire County Council. October 2008. Contaminated Land and Hydrology Research Study for Eastleigh Borough Council Area Action Plan. Report No:227552HA/002, for Eastleigh County Council

These contaminants, if present, have the potential to migrate into the River Itchen SAC and adversely affect the habitats and species within it. Contaminants carried into the River Itchen SAC by surface water drainage and surface runoff, including sediment, could also have an adverse affect on the River Itchen SAC qualifying features.

Allocated sites assessment table[47]

Allocated site	Location (centroid)	Details	Impact Pathways	Likely Significant Effect?	Avoidance
Policy AL1, Land at Portchester Rise/ Boyatt Lane, Allbrook	445127,121195	Approximately 1 hectare site allocated for approximately 25 dwellings	Site is located approximately 600m from the nearest part of the River Itchen SAC; however a tributary of the Monks Brook does lie adjacent to this site.	Building at this location may increase the risk of invasive non-native species being introduced to the river corridor. Depending upon the layout of the site there is the potential for water quality impacts on the SAC through surface water runoff or deterioration of water quality during construction. **Therefore this site cannot be screened out at this stage.**	Risk of introducing invasive non-native species could be controlled by circulation of information leaflets to new residents, careful design of the development to ensure that it doesn't make access to the river corridor for fly-tipping easier and ensures that the river corridor is overlooked by dwellings and potentially by introducing a monitoring commitment by the developer as part of estate-maintenance. Potential for adverse water quality effects during construction could be addressed by careful design and adherence to a Construction Environmental Management Plan coupled with utilisation of standard pollution control guidance (e.g. storage of chemicals and fuel away from the watercourse). Avoidance measures would be required to ensure no damage occurs to the stream or disturbance of otters during construction. It will be necessary to ensure that all watercourses in the

[47] In this table potential water quality pathways are identified linking development sites and internationally important wildlife sites. A distance of 7km has been used as a cut-off threshold for screening out specific development sites associated with this impact pathway. This distance is considered sufficiently precautionary to include all sites where there is a realistic possibility of a likely significant effect while excluding sites that are so far from the internationally important wildlife site that (given the limited risk and scale of pollution associated with housing and general commercial development) an effect, while not impossible, is clearly unlikely. This does not mean that pollution control would not be required as a general principle when working near watercourses.

					Borough are protected to preserve the otter movement network in this part of Hampshire. These requirements should be picked up in the supporting text of the policy.
Policy AL2, Land east of Pitmore Road and north of Allbrook Farmhouse	446030, 121403	Residential allocation of 50 dwellings and 4.6ha of public open space to the north.	The site is adjacent to a tributary of the River Itchen and there is therefore a water quality pathway and could form part of a corridor for movement of otter populations associated with the River Itchen SAC.	Building at this location may increase the risk of invasive non-native species being introduced to the river corridor. Depending upon the layout of the site there is the potential for water quality impacts on the SAC through surface water runoff or deterioration of water quality during construction. **Therefore this site cannot be screened out at this stage.**	Risk of introducing invasive non-native species could be controlled by circulation of information leaflets to new residents, careful design of the development to ensure that it doesn't make access to the river corridor for fly-tipping easier and ensures that the river corridor is overlooked by dwellings and potentially by introducing a monitoring commitment by the developer as part of estate-maintenance. Potential for adverse water quality effects during construction could be addressed by careful design and adherence to a Construction Environmental Management Plan coupled with utilisation of standard pollution control guidance (e.g. storage of chemicals and fuel away from the watercourse). Avoidance measures would be required to ensure no damage occurs to the stream or disturbance of otters during construction. It will be necessary to ensure that all watercourses in the Borough are protected to preserve the otter movement network in this part of Hampshire. These requirements should be picked up in the supporting text of the policy.
Policy AL3,	445853, 121179	Approximately	The site is adjacent to	Building at this location may	Risk of introducing invasive non-native

Land north of Allbrook Hill and west of Pitmore Lane		1.25ha of land for 20 off-street car parking spaces, 20 dwellings and public open space.	a tributary of the River Itchen and there is therefore a water quality pathway and could form part of a corridor for movement of otter populations associated with the River Itchen SAC.	increase the risk of invasive non-native species being introduced to the river corridor. Depending upon the layout of the site there is the potential for water quality impacts on the SAC through surface water runoff or deterioration of water quality during construction. **Therefore this site cannot be screened out at this stage.**	species could be controlled by circulation of information leaflets to new residents, careful design of the development to ensure that it doesn't make access to the river corridor for fly-tipping easier and ensures that the river corridor is overlooked by dwellings and potentially by introducing a monitoring commitment by the developer as part of estate-maintenance. Potential for adverse water quality effects during construction could be addressed by careful design and adherence to a Construction Environmental Management Plan coupled with utilisation of standard pollution control guidance (e.g. storage of chemicals and fuel away from the watercourse). Avoidance measures would be required to ensure no damage occurs to the stream or disturbance of otters during construction. It will be necessary to ensure that all watercourses in the Borough are protected to preserve the otter movement network in this part of Hampshire. These requirements should be picked up in the supporting text of the policy.
Policy Bi1, Land west of Church Road, including The Mount Hospital, Bishopstoke	446541,120148	Area 9.7 hectares allocated for approximately 260 dwellings. Development brief for part of site. A new bridge across	Site is located approximately 100m from the nearest part of the River Itchen SAC. There is therefore a pathway linking the	There is a likely significant effect from piling and other construction activities adjacent to the River Itchen and potentially increased shading from proposed bridge. There has however been site specific	A scheme for this site should use the HRA work at the site level which would enable likely significant effects to be avoided for all elements except the bridge. For the bridge, a project-specific HRA would be required. This requirement and the need to avoid water

		the Itchen will also be included.	development site to the SAC through increased disturbance (construction of a new bridge), noise, air quality and hydrological links.	HRA work which zones the areas within the site and sets out appropriate types of development in each zone to ensure there are no significant effects on the River Itchen SAC. **Therefore this site cannot be screened out at this stage.**	quality or disturbance impacts (e.g. through piling adjacent to the river) should be picked up in the supporting text of the policy.
Policy Bi2, Land south-west and north-east of Bishopstoke Cemetery, Stoke Common Road, Bishopstoke	447258,119994	Area of 4.4 hectares allocated for approximately 55 dwellings, cemetery extension and allotments	Site is located approximately 820m from the nearest part of the River Itchen SAC; there is no specific pathway connecting the site to the River Itchen.	There will be no site-specific Likely Significant Effect due to the distance between the development site and the River Itchen SAC	N/A
Policy Bi3, Riverside Road junction, Bishopstoke	446656, 119140	The Borough Council will support the County Council in developing and delivering a scheme to improve junction capacity (Church Road/Bishopstoke Road) involving provision of traffic signals	No pathways of impact.	No	N/A
Policy BO1, Land north and east of Boorley Green	451054,114872	An area of 83.5 hectares allocated as a strategic location for development to include approximately 1,400 new homes,	Site is located approximately 4km from the nearest part of the River Itchen SAC. It does however have a stream along its boundary which could form part of a	There is a lack of evidence that the ditch network is important to the integrity of the River Itchen SAC. **Therefore this site cannot be screened out at this stage.**	Avoidance measures would be required to ensure no damage occurs to the stream or disturbance of otters during construction. It will be necessary to ensure that all watercourses in the Borough are protected to preserve the otter movement network in this part of Hampshire. These requirements should

		a local centre to include shops and employment opportunities, and community facilities and services possibly including a primary school	corridor for movement of otter populations associated with the River Itchen SAC.		be picked up in the supporting text of the policy.
Policy BO2, Land north-east of Winchester Street	451206,113724	Area of 26 hectares allocated for approximately 300 dwellings, single carriage way bypass, relocation of powerlines, allotments and cemetery provision.	Site is located approximately 5km from the nearest part of the River Itchen SAC. The River Hamble close to the site could form part of a corridor for movement of otter populations associated with the River Itchen SAC.	There is a lack of evidence that the River Hamble is important to the integrity of the River Itchen SAC. **Therefore this site cannot be screened out at this stage.**	Avoidance measures would be required to ensure no damage occurs to the stream or disturbance of otters during construction. It will be necessary to ensure that all watercourses in the Borough are protected to preserve the otter movement network in this part of Hampshire. These requirements should be picked up in the supporting text of the policy.
Policy BO3, Botley bypass	448627,110426	Indicative route for a new road including improvements to local road network. Bridge over River Hamble	Site is located approximately 4.8km from the nearest part of the River Itchen SAC. The route does however cross the River Hamble which could form part of a corridor for movement of otter populations associated with the River Itchen SAC.	There is a lack of evidence that the River Hamble is important to the integrity of the River Itchen SAC. **Therefore this site cannot be screened out at this stage.**	Avoidance measures would be required to ensure no damage occurs to the stream or disturbance of otters during construction. It will be necessary to ensure that all watercourses in the Borough are protected to preserve the otter movement network in this part of Hampshire. These requirements should be picked up in the supporting text of the policy.
Policy BO4, Transport improvements	i) 449772, 116161 ii) 450818, 114075	The Borough Council will support the County Council as highway authority in	No pathways of impact.	No	N/A

	iii) 451421, 113017	delivering capacity improvements as required at: i. Botley Road/ Bubb Lane roundabout (Denham's Corner); and (if necessary, pending the construction of the Botley bypass) at: ii. Winchester Road/ Woodhouse Lane; and iii. Winchester Street/ Mill Street.			
Policy BO5, Botley Mill	451431,113031	Policy addresses the sympathetic redevelopment for the retention and enhancement of the Mill.	No pathways of impact.	There will be no site-specific Likely Significant Effect due to the distance between the development site and the River Itchen SAC	N/A
Policy BU1, Land at Providence Hill and Oakhill, Bursledon	449074,110008	Area of 5.3 hectares for approximately 75 dwellings.	Site is located approximately 6km from the nearest part of the River Itchen SAC; there is no specific pathway connecting the site to the River Itchen.	There will be no site-specific Likely Significant Effect due to the distance between the development site and the River Itchen SAC	N/A
Policy BU2, Land north of Bridge Road (A27) and west of Blundell Lane,	448809,111500	Area of 9.2 hectares allocated for approximately 100 dwellings.	Site is located approximately 6.2km from the nearest part of the River Itchen SAC; there is no specific pathway	There will be no site-specific Likely Significant Effect due to the distance between the development site and the River Itchen SAC	N/A

Bursledon			connecting the site to the River Itchen.		
Policy BU3, Land east of Dodwell Lane and North of Pylands lane	449324,110135	Area of 20.9 hectares allocated for approximately 250 dwellings and a bypass	Site is located approximately 5km from the nearest part of the River Itchen SAC; there is no specific pathway connecting the site to the River Itchen.	There will be no site-specific Likely Significant Effect due to the distance between the development site and the River Itchen SAC	N/A
Policy BU4, Sunday's Hill Bypass	443945,119621	New distributor road between Heath House Lane and Dodwell Lane.	No pathways of impact. This policy is intended to control development rather than promoting it.	There will be no site-specific Likely Significant Effect due to the distance between the development site and the River Itchen SAC	N/A
Policy BU5, Riverside Boatyard, Blundell Lane, Bursledon	449347,110060	An area of 0.6 hectares of land off Blundell Lane adjoining the Riverside Boatyard allocated for expansion of the boatyard for boatbuilding and repair etc.	Site is located approximately 6.5km from the nearest part of the River Itchen SAC; there is no specific pathway connecting the site to the River Itchen.	There will be no site-specific Likely Significant Effect due to the distance between the development site and the River Itchen SAC	N/A
Policy BU6, Land at Long Lane, Bursledon	448406,109863	Policy identifies land at Long Lane, Old Bursledon to meet any additional open space needs in the Parish.	No pathway of impact. This policy is intended to control development rather than promoting it.	There will be no site-specific Likely Significant Effect due to the distance between the development site and the River Itchen SAC	N/A
Policy BU7, Residential extensions and replacement dwellings, Old Bursledon	N/A	Policy sets a special policy area for Old Bursledon and controls the size of extensions within that area.	No pathway of impact. This policy is intended to control development rather than promoting it.	There will be no site-specific Likely Significant Effect due to the distance between the development site and the River Itchen SAC	N/A

Special Policy Area.					
Policy CF1, Central precinct, Chandler's Ford	443175,118485	Area of 1.2 hectares allocated for approximately 85 dwellings, retention of retail uses, relocation of social club and bus stop.	Site is located approximately 2.2km from the nearest part of the River Itchen SAC and immediately adjacent to the Monks Brook which provides a water quality pathway downstream to the River Itchen and possibly a corridor for otter movement. .	Building new housing immediately adjacent to the Monks Brook, a tributary of the River Itchen may also increase the risk of invasive non-native species being introduced to the river corridor. Depending upon the layout of the site there is the potential for water quality impacts on the SAC through surface water runoff or deterioration of water quality in the Monks Brook during construction. **Therefore this site cannot be screened out at this stage.**	Risk of introducing invasive non-native species could be controlled by circulation of information leaflets to new residents, careful design of the development to ensure that it doesn't make access to the river corridor for fly-tipping easier and ensures that the river corridor is overlooked by dwellings and potentially by introducing a monitoring commitment by the developer as part of estate-maintenance. Potential for adverse water quality effects during construction could be addressed by careful design and adherence to a Construction Environmental Management Plan coupled with utilisation of standard pollution control guidance (e.g. storage of chemicals and fuel away from the watercourse). Avoidance measures would be required to ensure no damage occurs to the stream or disturbance of otters during construction. It will be necessary to ensure that all watercourses in the Borough are protected to preserve the otter movement network in this part of Hampshire. These requirements should be picked up in the supporting text of the policy.
Policy CF2, Land at Common Road Industrial	443728,117841	Area of 0.8 hectares allocated for approximately 30 dwellings	Site is located approximately 2.7km from the nearest part of the River Itchen	Building new housing immediately adjacent to the Monks Brook, a tributary of the River Itchen may also increase	Risk of introducing invasive non-native species could be controlled by circulation of information leaflets to new residents, careful design of the development to

Estate, Chandler's Ford			SAC and immediately adjacent to the Monks Brook which provides a water quality pathway downstream to the River Itchen and possibly a corridor for otter movement.	the risk of invasive non-native species being introduced to the river corridor. Depending upon the layout of the site there is the potential for water quality impacts on the SAC through surface water runoff or deterioration of water quality in the Monks Brook during construction. **Therefore this site cannot be screened out at this stage.**	ensure that it doesn't make access to the river corridor for fly-tipping easier and ensures that the river corridor is overlooked by dwellings and potentially by introducing a monitoring commitment by the developer as part of estate-maintenance. Potential for adverse water quality effects during construction could be addressed by careful design and adherence to a Construction Environmental Management Plan coupled with utilisation of standard pollution control guidance (e.g. storage of chemicals and fuel away from the watercourse). Avoidance measures would be required to ensure no damage occurs to the stream or disturbance of otters during construction. It will be necessary to ensure that all watercourses in the Borough are protected to preserve the otter movement network in this part of Hampshire. These requirements should be picked up in the supporting text of the policy.
Policy CF3, Land at Fire and former Ambulance stations, Steele Close, Chandler's Ford	442939,121713	Area of 1.3 hectares allocated for Bib, B1c, B2, B8, car showroom or similar sui generis uses	Site is located approximately 2km from the nearest part of the River Itchen SAC. A tributary of the River Itchen runs within the site which provides a water quality pathway downstream to the	Depending upon the layout of the site there is the potential for water quality impacts on the SPA/Ramsar site/SAC through surface water runoff via the Monks Brook that lies adjacent to the site and drains into the River Itchen which itself drains into the Solent & Southampton Water SPA/Ramsar site.	Potential for adverse water quality effects during construction could be addressed by careful design and adherence to a Construction Environmental Management Plan coupled with utilisation of standard pollution control guidance (e.g. storage of chemicals and fuel away from the watercourse). Avoidance measures would be required

			River Itchen and possibly a corridor for otter movement.	Depending upon the layout of the site there is the potential for water quality impacts on the SAC through surface water runoff or deterioration of water quality in the Monks Brook during construction. **Therefore this site cannot be screened out at this stage.**	to ensure no damage occurs to the stream or disturbance of otters during construction. It will be necessary to ensure that all watercourses in the Borough are protected to preserve the otter movement network in this part of Hampshire. These requirements should be picked up in the supporting text of the policy. Risk of introducing invasive non-native species could be controlled by circulation of information leaflets, careful design of the development to ensure that it doesn't make access to the river corridor for fly-tipping easier and ensures that the river corridor is overlooked by units and potentially by introducing a monitoring commitment by the developer as part of site-maintenance.
Policy CF4, Land south of the supermarket and east of Bournemouth Road, Chandler's Ford	443282,118283	An area of 1.9 hectares of land south of the supermarket and east of Bournemouth Road, Chandler's Ford allocated for use as an employment site.	Site is over 3km from the River Itchen SAC and there is no pathway connecting the site to the River Itchen.	There will be no site-specific Likely Significant Effect due to the distance between the development site and the River Itchen SAC	N/A
Policy CF5, Land east of Stoneycroft Rise and south-west of Chestnut Avenue	444628,119021	Area of 1.62 hectares allocated for a household waste recycling centre	Site is located approximately 2.8km from the nearest part of the River Itchen SAC; there is no specific pathway connecting the site to	There will be no site-specific Likely Significant Effect due to the distance between the development site and the River Itchen SAC	N/A

			the River Itchen.		
Policy E1, Land south of Chestnut Avenue, Eastleigh	445142,119475	Area of 61 hectares allocated for approximately 1300 dwellings, local centre, primary school, sports pitches, retention of key features of historic landscape	Site is located approximately 2.5km from the nearest part of the River Itchen SAC. Several tributaries of the Monks Brook drain into the River Itchen at the tidal limit which provides a water quality pathway downstream to the River Itchen.	Building new housing immediately adjacent to the Monks Brook, a tributary of the River Itchen may also increase the risk of invasive non-native species being introduced to the river corridor. Depending upon the layout of the site there is the potential for water quality impacts on the SAC through surface water runoff or deterioration of water quality in the Monks Brook during construction. **Therefore this site cannot be screened out at this stage.**	Risk of introducing invasive non-native species could be controlled by circulation of information leaflets to new residents, careful design of the development to ensure that it doesn't make access to the river corridor for fly-tipping easier and ensures that the river corridor is overlooked by dwellings and potentially by introducing a monitoring commitment by the developer as part of estate-maintenance. Potential for adverse water quality effects during construction could be addressed by careful design and adherence to a Construction Environmental Management Plan coupled with utilisation of standard pollution control guidance (e.g. storage of chemicals and fuel away from the watercourse). Avoidance measures would be required to ensure no damage occurs to the stream or disturbance of otters during construction. It will be necessary to ensure that all watercourses in the Borough are protected to preserve the otter movement network in this part of Hampshire. These requirements should be picked up in the supporting text of the policy.
Policy E2, Land at Civic Offices, Leigh Road, Eastleigh	449658,117821	An area of 1.9 hectares allocated for development which may include residential, office (B1a) and/or	Site is located approximately 1.6km from the nearest part of the River Itchen SAC. The Monks Brook, a tributary of	Building new housing immediately adjacent to the Monks Brook, a tributary of the River Itchen may also increase the risk of invasive non-native species being introduced to the	Risk of introducing invasive non-native species could be controlled by circulation of information leaflets to new residents, careful design of the development to ensure that it doesn't make access to the river corridor for fly-tipping easier and

		training and meeting facilities.	the River Itchen is adjacent to the site which provides a water quality pathway downstream to the River Itchen and a possible corridor for otter movement.	river corridor. Depending upon the layout of the site there is the potential for water quality impacts on the SAC through surface water runoff or deterioration of water quality in the Monks Brook during construction. **Therefore this site cannot be screened out at this stage.**	ensures that the river corridor is overlooked by dwellings and potentially by introducing a monitoring commitment by the developer as part of estate-maintenance. Potential for adverse water quality effects during construction could be addressed by careful design and adherence to a Construction Environmental Management Plan coupled with utilisation of standard pollution control guidance (e.g. storage of chemicals and fuel away from the watercourse). Avoidance measures would be required to ensure no damage occurs to the stream or disturbance of otters during construction. It will be necessary to ensure that all watercourses in the Borough are protected to preserve the otter movement network in this part of Hampshire. These requirements should be picked up in the supporting text of the policy.
Policy E3, Land at Woodside Avenue, Eastleigh	450258,114054	Area of 3.3 hectares allocated for approximately 80-100 dwellings and 3200 square metres of employment class B1b and B1c. Development brief for this site.	Site is located approximately 1.2km from the nearest part of the River Itchen SAC; there is no specific pathway connecting the site to the River Itchen.	There will be no site-specific Likely Significant Effect due to the distance between the development site and the River Itchen SAC.	N/A
Policy E4, Land at Toynbee	445947,119335	Area of 5.6 hectares allocated	Site is located approximately 700m	There will be no site-specific Likely Significant Effect due to	N/A

Road, Eastleigh		for approximately 190 dwellings	from the nearest part of the River Itchen SAC; there is no specific pathway connecting the site to the River Itchen	the distance between the development site and the River Itchen SAC	
Policy E5, Land at Travis Perkins, Twyford Road, Eastleigh	449702,118746	Area of 2.1 hectares allocated for approximately 115 dwellings	Site is located approximately 175m from the nearest part of the River Itchen SAC. However, Natural England have been formally consulted on this planning application (planning application F/11/70108) and have confirmed that there would be no likely significant effects.	N/A	N/A
Policy E6, Eastleigh Town centre	444232,119356	Regeneration of Town Centre including mixed use development	Site is located approximately 250m from the nearest part of the River Itchen SAC; however it is likely that the road network that is used to connect to this development is adjacent to the River Itchen.	There is a potential likely significant effect on air quality within 200m of the River Itchen associated with traffic generated by development. **Therefore this site cannot be screened out at this stage.**	A transport and air quality assessment would be required as part of any planning application and this should be picked up in the supporting text of the policy.
Policy E7, Urban renaissance quarter	444714,119483	Residential, office, hotel, community facilities, leisure and cultural development	Site is located approximately 150m from the nearest part of the River Itchen SAC; there is thus the potential for local air	There is a potential likely significant effect on air quality within 200m of the River Itchen associated with traffic generated by the development.	A transport and air quality assessment would be required as part of any planning application and this should be picked up in the supporting text of the policy.

			quality effects on the River to arise from this development.	**Therefore this site cannot be screened out at this stage.**	
Policy E8, Public realm improvements in and adjoining Eastleigh town centre.	N/A	Policy sets out the public realm improvements in and adjoining Eastleigh town centre.	No pathways of impact. This policy is intended to control development rather than promoting it.	No	N/A
Policy E9, Eastleigh River Side	450196,118534	Employment led regeneration including older industrial premises and Greenfield sites.	Site is located adjacent to the nearest part of the River Itchen SAC.	There is a potential likely significant effect on the River Itchen SAC through air quality, noise, hydrological links and contaminated land. These impacts were established through the previous screening work undertaken for the South Hampshire Strategic Employment Zone Area Action Plan in March 2007; both Natural England and the Environment Agency signed off the screening assessment. Studies which covered each of these elements including setting critical load thresholds were completed between 2007 and 2009. **Therefore this site cannot be screened out at this stage.**	Site level HRA would be required including assessment of air quality, noise, hydrology and contaminated land. This requirement should be picked up in supporting text. Potential for adverse water quality effects during construction could be addressed by careful design and adherence to a Construction Environmental Management Plan coupled with utilisation of standard pollution control guidance (e.g. storage of chemicals and fuel away from the watercourse). It will be necessary to ensure that all watercourses in the Borough are protected to preserve the otter movement network in this part of Hampshire. These requirements should be picked up in the supporting text of the policy.
Policy E10, Development opportunities adjoining Eastleigh River Side	446360, 117789	The development of land to the east of the railway works will be permitted for employment uses	Site is immediately adjacent to the River Itchen SAC	There is a potential likely significant effect on the River Itchen SAC through air quality, noise, hydrological links and contaminated land. These impacts were established	Site level HRA would be required including assessment of air quality, noise, hydrology and contaminated land. This requirement should be picked up in supporting text.

				through the previous screening work undertaken for the South Hampshire Strategic Employment Zone Area Action Plan in March 2007; both Natural England and the Environment Agency signed off the screening assessment. Studies which covered each of these elements including setting critical load thresholds were completed between 2007 and 2009. **Therefore this site cannot be screened out at this stage.**	Potential for adverse water quality effects during construction could be addressed by careful design and adherence to a Construction Environmental Management Plan coupled with utilisation of standard pollution control guidance (e.g. storage of chemicals and fuel away from the watercourse). It will be necessary to ensure that all watercourses in the Borough are protected to preserve the otter movement network in this part of Hampshire. These requirements should be picked up in the supporting text of the policy.
Policy E11, Junction improvements, Eastleigh	(i) 445694, 119276 (ii) 446122, 119176 (iii) 444304, 118182 (iv) 445422, 118071	Improvements are proposed to (i) the Twyford Road roundabout to ease traffic flows, including increasing its size and widening approached to it. (ii) Chickenhall Lane/Bishopstoke Road junction – widening Bishopstoke Road approaches and traffic signals (iii) Chestnut Avenue/Passfield Avenue – enlargement of existing roundabout	No pathways of impact.	No	N/A

		(iv) Chestnut Avenue/Southampton Road – widening of highway, pedestrian crossing and signals.			
Policy E12, Southampton Airport.	N/A	The Borough Council will continue to work with the operators of Southampton Airport to promote its viability, and will support the expansion of the airport's operations and related development provided that: i. are necessary for the improvement of operational efficiency and passenger safety and convenience. ii. would not physically or visually diminish the	Site is immediately adjacent to the River Itchen SAC which is a tributary of the Solent Maritime SAC and Solent & Southampton Water SPA/Ramsar site, situated approximately 4.5km downstream. There is therefore a pathway linking the development site to the SPA/Ramsar site/SAC through fluvial flows in the River Itchen.	As the policy is intended to control development rather than to promote, there is not expected to be Likely significant effects.	N/A

		countryside gap between Eastleigh and Southampton. iii. Are supported by transport assessment which confirm local network capacity and are consistent with the airport operators' agreed Airport Surface Access Strategy; and iv. Will not unacceptable increase in noise and other environmental impacts on the			

		borough's residents. The Borough Council will ensure that the Airport's operational constraints re respected, including height limits on development in the vicinity of the airport. Development within the Southampton Airport Public Safety Zone (as shown on the policies map)will be restricted in accordance with DfT Circular 01/2010.			
Policy E13, Land south-west of M27 junction 5.	443927,116742	Land south-west of M27 junction 5 is allocated for use as playing fields	Site is located approximately 2.4km from the nearest part of the River Itchen SAC. A tributary of the River Itchen runs through the site.	Depending upon the scheme there is the potential for water quality impacts on the SAC through surface water runoff or deterioration of water quality in the Monks Brook during construction, although the risk is likely to be low. **Therefore this site cannot be screened out at this stage.**	Potential for invasive non-native species and adverse water quality effects during construction could be addressed by careful design and adherence to a Construction Environmental Management Plan coupled with utilisation of standard pollution control guidance (e.g. storage of chemicals and fuel away from the watercourse). Avoidance measures would be required to ensure no damage occurs to the stream or disturbance of otters during construction. It will be necessary to ensure that all watercourses in the

					Borough are protected to preserve the otter movement network in this part of Hampshire. This requirement should be picked up in the supporting text of the policy. In addition, risk of introducing invasive non-native species could be controlled by careful design of the development to ensure that it doesn't make access to the river corridor for fly-tipping easier and potentially by introducing a monitoring commitment by the developer as part of estate-maintenance
Policy E14 Western extension to Lakeside Country Park	449157,114647	Area of 3.6 hectares allocated for open space, new footway and cycleway	Site is located approximately 1.4km from the nearest part of the River Itchen SAC. A tributary to the River Itchen is adjacent to the site; however, this development will not involve any construction or development work being simply an extension to the Park.	Depending upon the scheme there is the potential for water quality impacts on the SAC through surface water runoff or deterioration of water quality in the Monks Brook during construction, although the risk is likely to be low. **Therefore this site cannot be screened out at this stage.**	Potential for invasive non-native species and adverse water quality effects during construction could be addressed by careful design and adherence to a Construction Environmental Management Plan coupled with utilisation of standard pollution control guidance (e.g. storage of chemicals and fuel away from the watercourse). Avoidance measures would be required to ensure no damage occurs to the stream or disturbance of otters during construction. It will be necessary to ensure that all watercourses in the Borough are protected to preserve the otter movement network in this part of Hampshire. These requirements should be picked up in the supporting text of the policy. In addition, risk of introducing invasive non-native species could be controlled by careful design of the development to ensure that it doesn't make access to the

					river corridor for fly-tipping easier and potentially by introducing a monitoring commitment by the developer as part of estate-maintenance
Policy E15, Aviary Estate	N/A	Policy seeks to protect the special character of the Aviary Estate	No pathways of impact. This policy is intended to control development rather than promoting it.	No	N/A
Policy FO1, Land off Harding Lane and Winchester Road, Fair Oak	448741.70, 119546.06	An area of 18ha of land is allocated for residential development of approximately 330 homes and public open space	The site is adjacent to a tributary of the River Itchen SAC.	Depending upon the scheme there is the potential for water quality impacts on the SAC through surface water runoff or deterioration of water quality in the Monks Brook during construction, although the risk is likely to be low. **Therefore this site cannot be screened out at this stage.**	Potential for invasive non-native species and adverse water quality effects during construction could be addressed by careful design and adherence to a Construction Environmental Management Plan coupled with utilisation of standard pollution control guidance (e.g. storage of chemicals and fuel away from the watercourse). Avoidance measures would be required to ensure no damage occurs to the stream or disturbance of otters during construction. It will be necessary to ensure that all watercourses in the Borough are protected to preserve the otter movement network in this part of Hampshire. These requirements should be picked up in the supporting text of the policy. In addition, risk of introducing invasive non-native species could be controlled by careful design of the development to ensure that it doesn't make access to the river corridor for fly-tipping easier and potentially by introducing a monitoring commitment by the developer as part of estate-maintenance

Policy FO2, Land north of Mortimers Lane, Fair Oak	448586,111865	Area of 1 hectare allocated for approximately 30 dwellings, with potential to expand allocation to the west	Site is located approximately 2.4km from the nearest part of the River Itchen SAC.	There is a lack of evidence that the ditch network is important to the integrity of the River Itchen SAC. Building new housing immediately adjacent to a tributary of the River Itchen SAC may also increase the risk of invasive non-native species being introduced to the river corridor. Depending upon the layout of the site there is the potential for water quality impacts on the SAC through surface water runoff or deterioration of water quality in the tributary of the River Itchen during construction. **Therefore this site cannot be screened out at this stage.**	Avoidance measures would be required to ensure no damage occurs to the stream or disturbance of otters during construction. It will be necessary to ensure that all watercourses in the Borough are protected to preserve the otter movement network in this part of Hampshire. These requirements should be picked up in the supporting text of the policy. Risk of introducing invasive non-native species could be controlled by circulation of information leaflets to new residents, careful design of the development to ensure that it doesn't make access to the river corridor for fly-tipping easier and ensures that the river corridor is overlooked by dwellings and potentially by introducing a monitoring commitment by the developer as part of estate-maintenance. Potential for adverse water quality effects during construction could be addressed by careful design and adherence to a Construction Environmental Management Plan coupled with utilisation of standard pollution control guidance (e.g. storage of chemicals and fuel away from the watercourse).
Policy FO3, Land at Scotland Close, Fair Oak	447584,112764	Allocation dependant on outcomes of geotechnical study, educational, institutional or recreational uses.	Site is located approximately 2.8km from the nearest part of the River Itchen SAC	There is a lack of evidence that the ditch network is important to the integrity of the River Itchen SAC. Building new housing immediately adjacent to a	Avoidance measures would be required to ensure no damage occurs to the stream or disturbance of otters during construction. It will be necessary to ensure that all watercourses in the Borough are protected to preserve the otter movement network in this part of

				tributary of the River Itchen SAC may also increase the risk of invasive non-native species being introduced to the river corridor. Depending upon the layout of the site there is the potential for water quality impacts on the SAC through surface water runoff or deterioration of water quality in the tributary of the River Itchen during construction. **Therefore this site cannot be screened out at this stage.**	Hampshire. this requirement should be picked up in the supporting text of the policy. Risk of introducing invasive non-native species could be controlled by circulation of information leaflets to new residents, careful design of the development to ensure that it doesn't make access to the river corridor for fly-tipping easier and ensures that the river corridor is overlooked by dwellings and potentially by introducing a monitoring commitment by the developer as part of estate-maintenance. Potential for adverse water quality effects during construction could be addressed by careful design and adherence to a Construction Environmental Management Plan coupled with utilisation of standard pollution control guidance (e.g. storage of chemicals and fuel away from the watercourse).
Policy FO4, Land at Whitetree Farm	446106,109435	Area of 0.7 hectares allocated for approximately 15-20 dwellings and parish council office and compound. Potential for contaminated land to be examined.	Site is located approximately 2.2km from the nearest part of the River Itchen SAC; there is no specific pathway connecting the site to the River Itchen.	There will be no site-specific Likely Significant Effect due to the distance between the development site and the River Itchen SAC	N/A
Policy FO5, Hammerley Farm. Anson	449105,117394	1.1 hectares of land at Hammerley Farm, Anson road	Site is approximately 2km from the River Itchen SAC To the	There is a lack of evidence that the ditch network is important to the integrity of the River Itchen	Avoidance measures would be required to ensure no damage occurs to the stream or disturbance of otters during

Road, Fair Oak		allocated for employment use.	north of the site runs a tributary of the River Itchen.	SAC. Building new housing immediately adjacent to a tributary of the River Itchen SAC may also increase the risk of invasive non-native species being introduced to the river corridor. Depending upon the layout of the site there is the potential for water quality impacts on the SAC through surface water runoff or deterioration of water quality in the tributary of the River Itchen during construction. **Therefore this site cannot be screened out at this stage.**	construction. It will be necessary to ensure that all watercourses in the Borough are protected to preserve the otter movement network in this part of Hampshire. this requirement should be picked up in the supporting text of the policy. Risk of introducing invasive non-native species could be controlled by circulation of information leaflets to new residents, careful design of the development to ensure that it doesn't make access to the river corridor for fly-tipping easier and ensures that the river corridor is overlooked by dwellings and potentially by introducing a monitoring commitment by the developer as part of estate-maintenance. Potential for adverse water quality effects during construction could be addressed by careful design and adherence to a Construction Environmental Management Plan coupled with utilisation of standard pollution control guidance (e.g. storage of chemicals and fuel away from the watercourse).
Policy FO6, Junction improvements, Fair Oak	(i) 448916, 118438 (ii) 449480, 118476 (iii) 449639, 117419	Borough Council will support the County Council as highway authority in developing and delivering capacity improvements at	No pathways of impact.	No	N/A

	Fir Tree Lane: 449046, 117290 Blind Lane: 449378, 116257	i. the Allington Lane/ Fair Oak Road junction to include traffic signals and additional turning lanes; ii. the Botley Road/ Eastleigh Road junction to include additional turning lanes on Botley Road north and Eastleigh Road; iii. the Botley Road/ Burnett's lane junction by means of changes to signalling arrangements; And introduction of measures to manage and restrict traffic movements along Fir Tree Lane and Blind Lane			
Policy HA1, Railway station	447250,108245	Allocation of land for car park to	Site is located approximately 7.5km	There will be no site-specific Likely Significant Effect due to	N/A

parking, Hamble		serve railway station	from the nearest part of the River Itchen SAC; there is no specific pathway connecting the site to the River Itchen.	the distance between the development site and the River Itchen SAC	
Policy HA2, Mercury Marina and Riverside camping and caravan park	448402,108091	An area of 4.7 hectares of and at Mercury Marina and Riverside camping and caravan park allocated for a marina, hotel and a range of holiday accommodation.	Site is located approximately 8km from the nearest part of the River Itchen SAC; there is no specific pathway connecting the site to the River Itchen.	There will be no site-specific Likely Significant Effect due to the distance between the development site and the River Itchen SAC	N/A
Policy HA3, Hamble Airfield	447773, 107764	Following completion of gravel and sand extraction and restoration (in accordance with the Hampshire Minerals and Waste Plan), site shall be retained as accessible countryside and open space.	Site is located approximately 5.3km from the nearest part of the River Itchen SAC; there is no specific pathway connecting the site to the River Itchen.	There will be no site-specific Likely Significant Effect due to the distance between the development site and the River Itchen SAC.	N/A
Policy HE1, Land west of Woodhouse Lane, Hedge End	446298,115041	Area of 51.1 hectares allocated for approximately 800 dwellings and open space. Pipelines and power lines through site	Site is located approximately 3.9km from the nearest part of the River Itchen SAC	There will be no site-specific Likely Significant Effect due to the distance between the development site and the River Itchen SAC.	N/A

Policy HE2, Land south of Foord Road and west of Dodwell Lane, Hedge End	445589,121323	Area of 5 hectares allocated for approximately 100 dwellings	Site is located approximately 4.7km from the nearest part of the River Itchen SAC; there is no specific pathway connecting the site to the River Itchen.	There will be no site-specific Likely Significant Effect due to the distance between the development site and the River Itchen SAC	N/A
Policy HE3, Household Waste Recycling Centre, Shamblehurst Lane, Hedge End	449203, 114362	Approximately 0.4 ha of land comprising the household waste recycling centre at Shamblehurst Lane is allocated for residential development	Site is located approximately 4km from the nearest part of the River Itchen SAC; there is no specific pathway connecting the site to the River Itchen.	There will be no site-specific Likely Significant Effect	N/A
Policy HE4, Land off Peewit Hill Close and Dodwell Lane	448511, 111521	Approximately 3.6 ha of land off Peewit Hill Close and Dodwell Lane is allocated for employment	Site is located approximately 4.2km from the nearest part of the River Itchen SAC; there is no specific pathway connecting the site to the River Itchen.	There will be no site-specific Likely Significant Effect	N/A
Policy HE5, Land adjoining the Botleigh Grange Business Park west of Woodhouse Lane	450106,113606	An area of 2.6 hectares of land adjoining the existing Botleigh Grange office campus is allocated for employment use.	Site is 1.8km from the River Itchen SAC however there is no pathway connecting the site to the River Itchen	There will be no likely significant effect	N/A
Policy HE6, Land at Netley Firs, Kanes Hill, Hedge End	447861,112160	An area of 1.8 hectares of land at Netley Firs, Kanes Hill, Hedge End as	Site is approximately 4km from the River Itchen SAC there is no pathway connecting	There will be no site-specific Likely Significant Effect due to the distance between the development site and the River	N/A

(employment)		defined on the proposals map is allocated for employment use.	the site to the River Itchen.	Itchen SAC	
Policy HE7, Land at Netley Firs, Kanes Hill, Hedge End (travelling showpeople)	447954,112210	An area of 1.5 hectare of land at Netley Firs, Kanes Hill, Hedge End as defined on the proposals map is allocated for use as a Travelling Showmans yard for approximately 8 plots..	Site is approximately 4km from the River Itchen SAC there is no pathway connecting the site to the River Itchen	There will be no site-specific Likely Significant Effect due to the distance between the development site and the River Itchen SAC	N/A
Policy HE8, Dodwell Lane to ST John's Road link, Hedge End	448471, 111665	A new road is proposed between Dodwell Lane and St John's Road, Hedge End as defined on the policies map. The road will be of distributor road design continuing the proposed Sunday's Hill bypass (policy BU4) with an adjoining cycleway and footpath	Site is approximately 4.2km from the River Itchen SAC there is no pathway connecting the site to the River Itchen	There will be no site-specific Likely Significant Effect due to the distance between the development site and the River Itchen SAC	N/A
Policy HE9,, Junction improvements		St John's Road/West End Road including traffic signals and junction layout improvements	No pathways of impact.	No	N/A

Policy HE10, Hedge End Station	449595, 115061	Improvements to Hedge End station including a new accessible footbridge	Site is approximately 3.7km from the River Itchen SAC there is no pathway connecting the site to the River Itchen	There will be no site-specific Likely Significant Effect due to the distance between the development site and the River Itchen SAC	N/A
Policy HE11, Land at Kanes Hill, Hedge End	446541,120148	Allocation for cemetery provision.	Site is located approximately 3.5km from the nearest part of the River Itchen SAC; there is no specific pathway connecting the site to the River Itchen.	There will be no site-specific Likely Significant Effect due to the distance between the development site and the River Itchen SAC	N/A
Policy HO1, Land at Abbey Fruit Farm, Grange Road	447258,119994	Area of 3.2 hectares allocated for approximately 90 dwellings and employment. Any gravel to be removed prior to construction. Potential contamination to be investigated.	Site is located approximately 5.9km from the nearest part of the River Itchen SAC; there is no specific pathway connecting the site to the River Itchen.	There will be no site-specific Likely Significant Effect due to the distance between the development site and the River Itchen SAC	N/A
Policy HO2, Land at former Netley Court School, Victoria Road, Netley	451054,114872	Area of 0.8 hectares allocated for up to 30 dwellings	Site is located approximately 6.8km from the nearest part of the River Itchen SAC; there is no specific pathway connecting the site to the River Itchen.	There will be no site-specific Likely Significant Effect due to the distance between the development site and the River Itchen SAC	N/A
Policy WE1, Land west of Horton Heath	449046, 116798	An area of approximately 100 hectares west of Horton Heath and	The site is 1.8km from the River Itchen SAC and has a number of tributaries running into	Building new housing immediately adjacent to a tributary of the River Itchen SAC may also increase the risk of	Site level HRA would be required including assessment of air quality, noise, hydrology and contaminated land. This requirement should be picked up in

		around Chalcroft Farm is allocated as a strategic location for development to include 950 dwellings, employment, open space, primary and secondary school, and associated community facilities.	the River Itchen.	invasive non-native species being introduced to the river corridor. Depending upon the layout of the site there is the potential for water quality impacts on the SAC through surface water runoff or deterioration of water quality in the tributary of the River Itchen during construction. **Therefore this site cannot be screened out at this stage.**	supporting text. Potential for adverse water quality effects during construction could be addressed by careful design and adherence to a Construction Environmental Management Plan coupled with utilisation of standard pollution control guidance (e.g. storage of chemicals and fuel away from the watercourse). It will be necessary to ensure that all watercourses in the Borough are protected to preserve the otter movement network in this part of Hampshire. These requirements should be picked up in the supporting text of the policy.
Policy WE2, Land at Hatch Farm, north of Barbe Baker Avenue, West End	451206,113724	Allocated for approximately 80 dwellings	Site is located approximately 800m from the nearest part of the River Itchen SAC. A tributary to the River Itchen is adjacent to the site which could provide a corridor for otter movement.	Building new housing immediately adjacent to a tributary of the River Itchen SAC may also increase the risk of invasive non-native species being introduced to the river corridor. Depending upon the layout of the site there is the potential for water quality impacts on the SAC through surface water runoff or deterioration of water quality in the tributary of the River Itchen during construction. **Therefore this site cannot be screened out at this stage.**	Risk of introducing invasive non-native species could be controlled by circulation of information leaflets to new residents, careful design of the development to ensure that it doesn't make access to the river corridor for fly-tipping easier and ensures that the river corridor is overlooked by dwellings and potentially by introducing a monitoring commitment by the developer as part of estate-maintenance. Potential for adverse water quality effects during construction could be addressed by careful design and adherence to a Construction Environmental Management Plan coupled with utilisation of standard pollution control guidance (e.g. storage of chemicals and

					fuel away from the watercourse). Avoidance measures would be required to ensure no damage occurs to the stream or disturbance of otters during construction. It will be necessary to ensure that all watercourses in the Borough are protected to preserve the otter movement network in this part of Hampshire. These requirements should be picked up in the supporting text of the policy.
Policy WE3, Romill Close, West End	448627,110426	Area for 3.8 hectares allocated for approximately 60 dwellings	Site is located approximately 150m from the nearest part of the River Itchen SAC	Site has been granted planning permission and is part of the background for this assessment.	N/A
Policy WE4, Coach Depot, Botley Road, West End	449324,110135	Area of approximately 1.8 hectares allocated for approximately 80 dwellings	Site is located approximately 2.2km from the nearest part of the River Itchen SAC; there is no specific pathway connecting the site to the River Itchen.	There will be no site-specific Likely Significant Effect due to the distance between the development site and the River Itchen SAC	N/A
Policy WE5, Moorgreen Hospital, West End	447549,114605	Subject to need analysis the an area of approximately 10.4 hectares is allocated for residential development of approximately 115 dwellings, including provision within the hospital site to	Site is located approximately 2.1km from the nearest part of the River Itchen SAC; there is no specific pathway connecting the site to the River Itchen.	There will be no site-specific Likely Significant Effect due to the distance from the River Itchen SAC	N/A

		meet the needs of West End surgery for future expansion.			
Policy WE6, Chalcroft Distribution Park	448446,116306	Proposals for the alteration, extension, change of use or redevelopment of existing land and buildings within the Chalcroft Distribution Park	Site is located approximately 950m from the nearest part of the River Itchen SAC; a tributary of the River Itchen runs through the site..	. Depending upon the layout of the site there is the potential for water quality impacts on the SAC through surface water runoff or deterioration of water quality, risk of introduction of invasive non-native species, and potential disturbance of the otter network in the tributary of the River Itchen during construction. **Therefore this site cannot be screened out at this stage.**	Site level HRA would be required including assessment of air quality, noise, hydrology and contaminated land. This requirement should be picked up in supporting text. Potential for adverse water quality effects during construction could be addressed by careful design and adherence to a Construction Environmental Management Plan coupled with utilisation of standard pollution control guidance (e.g. storage of chemicals and fuel away from the watercourse). It will be necessary to ensure that all watercourses in the Borough are protected to preserve the otter movement network in this part of Hampshire. These requirements should be picked up in the supporting text of the policy.
Policy WE7, Land adjoining the Chalcroft Distribution Park	448767, 115953	Approximately 1.6ha between the Chalcroft Distribution Park and Burnett's Lane is allocated for employment	Site is located approximately 950m from the nearest part of the River Itchen SAC; a tributary of the River Itchen runs through the site.	Depending upon the layout of the site there is the potential for water quality impacts on the SAC through surface water runoff or deterioration of water quality, risk of introduction of invasive non-native species, and potential disturbance of the otter network in the tributary of the River Itchen during construction	Site level HRA would be required including assessment of air quality, noise, hydrology and contaminated land. This requirement should be picked up in supporting text. Potential for adverse water quality effects during construction could be addressed by careful design and adherence to a Construction Environmental Management Plan coupled with

				Therefore this site cannot be screened out at this stage.	utilisation of standard pollution control guidance (e.g. storage of chemicals and fuel away from the watercourse). It will be necessary to ensure that all watercourses in the Borough are protected to preserve the otter movement network in this part of Hampshire. These requirements should be picked up in the supporting text of the policy.
Policy WE8, Land west of Tollbar Way and south of Berrywood	448650,115005	An area of 0.8 hectares of land west of Tollbar Way and south of Berrywood business spark, Hedge End allocated for use as an employment iste	The site is approximately 4km from the River Itchen SAC, there is no specific pathway connecting the site to the River Itchen.	There will be no site-specific Likely Significant Effect due to the distance from the River Itchen SAC	N/A
Policy WE9, Land at the Rose Bowl (commercial development)	448809,111500	Allocation for commercial purposes	Site is located approximately 2.4km from the nearest part of the River Itchen SAC; there is no specific pathway connecting the site to the River Itchen.	There will be no site-specific Likely Significant Effect due to the distance between the development site and the River Itchen SAC	N/A
Policy WE10, Household waste recycling centre, Botley Road, West End	448072, 114378	A new household waste recycling centre is proposed on land north of Botley Road			
Policy WE11, Land at Rose Bowl and	449074,110008	Allocation for outdoor sport and recreation facilities	Site is located approximately 2.4km from the nearest part	There will be no site-specific Likely Significant Effect due to the distance between the	N/A

Tennis Centre (sporting facilities policy)			of the River Itchen SAC; there is no specific pathway connecting the site to the River Itchen.	development site and the River Itchen SAC	
Policy WE12, Pinewood Park, Kanes Hill, West End	447669, 112042	0.5 hectares of land adjoining Pinewood Park and Dumbleton Close for development of up to 6 dwellings provided that Dumbleton Copse is restored and managed in the long term for open space and informal recreation.	The site is 3.9km from the nearest part of the River Itchen SAC. There is tributary of the SAC at the edge of the adjacent woodland	There will be no site-specific Likely Significant Effect due to the distance between the development site and the River Itchen SAC	N/A

Strategic Policy Assessment

Policy number	Details	Impact Pathways	Likely Significant Effect?	Avoidance
Policy S1, Sustainable development		No pathways – policy is concerned solely with making development sustainable	No	N/A
Policy S2, New development	The preferred development strategy is to promote the delivery of − 10,140 new dwellings; and − 133,000 sq.m new employment development; and related transport infrastructure, open space, sports facilities and other community facilities, between April 2011 and March 2029	Principally air quality impacts, in combination with the other new dwellings to be delivered. These in combination impacts are considered collectively in the following section of this report. All other impacts are site-specific and are therefore covered in the assessment of site allocations.	Yes, air quality impacts.	Addressed in the following section of this report
Policy S3,	• 4,450 dwellings within the urban edge	At a strategic 'in combination' level,	No	N/A

Location of new housing	• 4,680 dwellings on strategic sites at Boorley Green, east of Hedge End, north of Fair Oak, Horton Heath, and south of Eastleigh at Stoneham • 1,000 more new dwellings on smaller green field sites adjoining settlements	none beyond those already identified for S2. All other impacts are site-specific and are therefore covered in the assessment of site allocations.		
Policy S4, Employment Provision	Additional employment floorspace, mixed-use regeneration and greenfield development. Small scale sites across the borough, re-use of buildings in the countryside. Office development – focused in Eastleigh Town Centre, at Eastleigh River Side and district and local centres.	This policy is site specific and site level detail is picked up in the relevant site specific policies in the table above.	No	Reflect any outcomes from site specific assessments.
Policy S5, Green Infrastructure	The Borough Council will seek to achieve the provision, retention and or enhancement of multi-functional green infrastructure. This includes: vii. Strategic links to and between the borough's settlements and the major areas of open space including the country parks and the coast. viii. Publically accessible open space including formal sports facilities and informal amenity space ix. Urban green infrastructure x. Historic landscapes xi. Areas of biodiversity value xii. Opportunities for local food growing including allotments xiii.	There are potential for pathways to the River Itchen SAC however the policy must be read within the context of policy DM9 which states that 'Development which is likely to adversely affect the integrity of an International or European nature conservation site will not be permitted' supporting text to this policy outlines the Borough Councils commitment to the Solent Disturbance and mitigation strategy.	There is therefore no Likely Significant Effect from this policy on the River Itchen SAC.	N/A.
Policy S6, Community facilities	The Borough Council will work with Hampshire County Council, health authorities, town and parish councils, and other groups to ensure adequate community facilities through the provision of: v. New schools and enhancements to existing schools vi. New and enhanced medical facilities vii. Cemeteries to meet local needs viii. Other new and enhanced facilities necessary to ensure sustainability of development.	No pathways of impact. This policy is intended to control development rather than promoting it.	No	N/A
Policy S7, Transport infrastructure	The Borough Council will promote in consultation with the Highway Authority and the Highways Agency: i. A new road bypassing Botley to the north of the village and improvements to Woodhouse Lane;	Principally air quality impacts, in combination with the other new dwellings to be delivered. All other impacts are site-specific and are therefore covered in the assessment of site allocations.	Yes, air quality and water quality	In combination work for air quality impacts borough-wide.

	ii. A new road linking Burnett's Lane and Bubb Lane, serving Chalcroft Distribution and Horton Heath; iii. A bypass to the Sunday's Hill junction between Heath House Lane and Bursledon Road; iv. A new road to the south of Hedge End linking the western end of Sunday's Hill bypass with St John's Road; v. Improvements to along key corridors consistent with the County Council's Borough Transport Statement, including the A27, A335 and B3037. vi. Improvements to Junctions 5, 7 and 8 of the M27 motorway; vii. New road accesses into Eastleigh River Side; viii. A public transport priority route from Hedge End/ West End to Southampton centre including a Botley Road bus corridor; and ix. The Eastleigh Cycle Route Network and improved pedestrian routes as set out in the Eastleigh Cycling Strategy and the Eastleigh Walking Strategy and strategic policy S7. x. Enhancements to the railway system to improve access to Southampton Airport Parkway from the east; xi. Local improvements to railway stations to enhance accessibility and use.			
Policy S8. Strategic footpath, cycleway and bridleway links	The Borough Council will seek to create new and improved footpath, cycleway and bridleway links throughout the borough, including connecting the country parks, increasing access along the coast and to the South Downs National Park and the parishes and Eastleigh town centre. Specific routes are identified in the policy. New development should integrate with existing routes and where possible maintain, protect and enhance their function. Development that would sever, obstruct or otherwise have a detrimental impact on the existing or proposed network of green routes will not be permitted.	There are potential for pathways to the River Itchen SAC however the policy must be read within the context of policy DM9 which states that 'Development which is likely to adversely affect the integrity of an International or European nature conservation site will not be permitted ' and The policy does state that *'all these routes will avoid conflict with established nature conservation interests'.*	There is therefore no Likely Significant Effect from this policy on the River Itchen SAC.	N/A.
Policy S9, Countryside and	Identifies areas outside of the urban edge as countryside and identifies countryside gaps to support the identity and character of	No pathways of impact. This policy is intended to control development	No	N/A

countryside gaps	settlements and the countryside. Establishes criteria for development at these locations.	rather than promoting it.		
Policy S10, The Coast	The policy defines the coast. The borough Council will seek to maintain the national and international importance of the River Hamble and Southampton Water for recreational sailing and for marine-related enterprises that contribute to the local and sub-regional economy, balancing the protection of their unique and attractive environment with support for the marine economy and recreational activities. The Council will seek to: Protect and enhance the landscape, biodiversity and heritage interest of the coast….. enable the provision of infrastructure relating to recreational sailing…. Whilst protecting more sensitive locations…. Maintain and enhance other coast related recreational activities including enhancing coastal access where this can be achieved without detriment to biodiversity… achieve coast protection and flood management measures where necessary in accordance with the adopted North Solent Shoreline Management Plan.	No pathways of impact. This policy is intended to control development rather than promoting it.	There is therefore no Likely Significant Effect from this policy on the River Itchen SAC.	N/A.
Policy S11, Nature Conservation	The Borough Council will work with statutory and voluntary agencies and developers to: vi. Protect, conserve and enhance areas subject to nature conservation designations vii. Assist in achieving BAP targets viii. Protect and conserve networks of natural habitats ix. Seek enhancement of biodiversity through new development x. Encourage public understanding of biodiversity. This policy also outlines the Borough Councils commitment to the protection of sensitive areas to recreational disturbance, and to avoid detriment to biodiversity and protect and enhance biodiversity interest.	No pathways of impact. This policy is intended to ensure protection of the integrity of European sites from negative impacts from development, rather than promoting development.	No	N/A
Policy S12, Heritage Assets	The Borough Council will preserve and enhance heritage assets through: identification; conservation area appraisals; restriction development which may harm them or their settings, and encouraging development which enhances.	No pathways of impact. This policy is intended to control development, rather than promoting it.	No	N/A

Development Management Policies

Policy number	Impact Pathways	Likely Significant Effect?	Avoidance
Policy DM1, General criteria for new development	No pathways of impact. This policy is intended to control development rather than promoting it.	No	N/A
Policy DM2, Environmentally Sustainable Development	No pathways of impact. This policy is intended to control development rather than promoting it.	No	N/A
Policy DM3, Zero or low carbon energy	No pathways of impact. This policy is intended to control development rather than promoting it.	No	N/A
Policy DM4, Flood Risk	No pathways of impact. This policy is intended to control development rather than promoting it.	No	N/A
Policy DM5, Sustainable surface water management and watercourse management	No pathways of impact. This policy is intended to control development rather than promoting it.	No	N/A
Policy DM6, Flood Management, land reclamation and coast protection	No pathways of impact. This policy is intended to control development rather than promoting it. Although the policy states that 'Flood defence and coast protection works will be permitted provided that they accord with the management plans which could be taken to mean that adverse effects might be permitted, this policy must be read in conjunction with policy DM9 which states that 'Development which is likely to adversely affect the integrity of an International or European nature conservation site will not be permitted '. The policy also states that 'Development proposals on the coast of Southampton Water, the River Itchen and the River Hamble estuary and in other areas at risk of fluvial or surface water flooding should not give rise to need for additional flood risk management or coast protection works beyond	No	N/A

	those approved in the management plans, provide or contribute to costs of works needed to protect the sites as set out in the management plans and have regard to watercourse ownership and long term management.		
Policy DM7, Pollution	No pathways of impact. This policy is intended to control development rather than promoting it.	No	N/A
Policy DM8, Public utilities and communications	No pathways of impact. This policy is intended to control development rather than promoting it.	No	N/A
Policy DM9, Nature Conservation	No pathways of impact. This policy is intended to control development rather than promoting it.	No	N/A
Policy DM10, Heritage Assets	No pathways of impact. This policy is intended to control development rather than promoting it.	No	N/A
Policy DM11 New employment development in urban areas	No pathways of impact. This policy is intended to control development rather than promoting it.	No	N/A
Policy DM12, Existing employment areas	No pathways of impact. This policy is concerned with changes of use within limited categories and training provision	No	N/A
Policy DM13, Workforce training requirements and new jobs	No pathways of impact. This policy is intended to control development rather than promoting it.	No	N/A
Policy DM14, Agricultural Development	No pathways of impact. This policy is intended to control development rather than promoting it.	No	N/A
Policy DM15, Protection of the best and most valuable agricultural land.	No pathways of impact. This policy is intended to control development rather than promoting it.	No	N/A
Policy DM 16, extension and replacement of existing non-residential buildings in the countryside	No pathways of impact. This policy is intended to control development rather than promoting it.	No	N/A
Policy DM17, re-use of buildings in the countryside	No pathways of impact. This policy is intended to control development rather than promoting it.	No	N/A
Policy DM18, Boatyard and marina sites on the River Hamble	No pathways of impact. This policy is intended to control development rather than promoting it.	No	N/A
Policy DM19, Retail development	No pathways of impact. This policy is intended to control development rather than promoting it.	No	N/A
Policy DM20, Change of use in retail frontages	No pathways of impact. This policy is intended to control development rather than promoting it.	No	N/A

Policy DM21, Upper floors	No pathways of impact. This policy is intended to control development rather than promoting it.	No	N/A
Policy DM22, Retail uses outside the urban edge	No pathways of impact. This policy is intended to control development rather than promoting it.	No	N/A
Policy DM23, General development criteria – transport	No pathways of impact. This policy is intended to control development rather than promoting it.	No	N/A
Policy DM24, Parking	No pathways of impact. This policy is intended to control development rather than promoting it.	No	N/A
Policy DM25, Residential development in urban areas	No pathways of impact. This policy would also need to comply with other policies in the plan. This would include DM9 which states that 'Development which is likely to adversely affect the integrity of an International or European nature conservation site will not be permitted '.	No	N/A
Policy DM26, residential extensions and replacement dwellings in the countryside	No pathways of impact. This policy would also need to comply with other policies in the plan. This would include DM9 which states that 'Development which is likely to adversely affect the integrity of an International or European nature conservation site will not be permitted	No	N/A
Policy DM27, Rural workers' dwellings	No pathways of impact. This policy is intended to control development rather than promoting it.	No	N/A
Policy DM28, Affordable housing	No pathways of impact. This policy is intended to control development rather than promoting it.	No	N/A
Policy DM29, Internal space standards for residential development	No pathways of impact. This policy is intended to control development rather than promoting it.	No	N/A
Policy DM30, Gypsies, travellers and travelling showpeople	No pathways of impact. Although gypsy and traveller and travelling showpeople sites could potentially lead to effects on European sites as could other residential development, any site application must comply with policy DM9 which states that 'Development which is likely to adversely affect the integrity of an International or European nature conservation site will not be permitted '.	No	N/A
Policy DM31, protection of recreation and open space facilities	No pathways of impact. This policy is intended to control development rather than promoting it.	No	N/A

Policy DM32, Provision of recreation and opens pace facilities with new development	No pathways of impact. This policy is intended to control development rather than promoting it.	No	N/A
Policy DM33, New and enhanced recreation and open space facilities	No pathways of impact. This policy is intended to control development rather than promoting it.	No	N/A
Policy DM34, Recreational sailing on the River Hamble	No pathways of impact. This policy is intended to control development rather than promoting it. Although it allows for new jetties etc it states that they will not have an adverse impact on landscape, biodiversity or heritage interests.	No	N/A
Policy DM35, Community, leisure and cultural facilities	No pathways of impact. This policy is intended to control development rather than promoting it.	No	N/A
Policy DM36, Cemeteries	No pathways of impact. This policy is intended to control development rather than promoting it.	No	N/A
Policy DM37, Funding infrastructure	No pathways of impact. This policy is intended to control development rather than promoting it.	No	N/A

5.4.22 In summary, the twenty-six sites below cannot currently be screened out as being unlikely to lead to significant effects:

- Policy AL1, Land at Portchester Rise/Boyatt Lane, Allbrook
- Policy AL2, Land east of Pitmore Road and north of Allbrook Farmhouse
- Policy AL3, Land north of Allbrook Hill and west of Pitmore Lane
- Policy Bi1, Land west of Church Road, including The Mount Hospital, Bishopstoke
- Policy BO1, Land north and east of Boorley Green, Botley
- Policy BO2, Land north-east of Winchester Street
- Policy BO3, Botley Bypass
- Policy CF1, Land at Fire and former Ambulance Stations, Steele Close, Chandler's Ford
- Policy CF2, Central Precinct, Chandler's Ford
- Policy CF3, Land at Common Road Industrial Estate, Chandler's Ford
- Policy E1, Land south of Chestnut Avenue, Eastleigh
- Policy E2, Land at Civic Offices, Leigh Road, Eastleigh
- Policy E6, Eastleigh Town centre
- Policy E7, Urban renaissance quarter
- Policy E9, Eastleigh River Side
- Policy E10, Development opportunities adjoining Eastleigh River Side
- Policy E13, Land South-west M27 junction 5
- Policy E14, Western extension to Lakeside Country Park
- Policy FO1, Land off Harding Lane and Winchester Road, Fair Oak
- Policy FO2, Land north of Mortimers Lane, Fair Oak
- Policy FO3, Land at Scotland Close, Fair Oak
- Policy FO5, Hammerley Farm, Anson Road, Fair Oak
- Policy WE1, Land west of Horton Heath
- Policy WE2, Land at Hatch Farm, north of Barbe Baker Avenue, West End
- Policy WE6, Chalcroft Distribution Park
- Policy WE7, Land adjoining the Chalcroft Distribution Park

5.4.23 For some of the housing sites, the large amount of development and proximity to the River Itchen SAC or its tributaries increases the risk of introduction of non-native species into the system and, including E14, there is also potential for adverse water quality effects during construction, although this is easily controllable using standard

pollution control protocols. For sites AL1, AL2, AL3, BO1, BO2, BO3, CF1, CF2, CF3, E1, E2, E9, E10, E13, E14, FO1, FO2, FO3, FO5, WE1, WE2, WE6 and WE7 there are potential impacts on otter terrestrial network although it is unclear how important the streams which link to the sites are for the integrity of the River Itchen SAC; this would be dealt with at the planning application level. For sites E6, E7 and E9 there are potential air quality impacts; this would be dealt with at the planning application level and through transport and air quality assessments being required. Policy Bi1 has had detailed site work undertaken and the site has been zoned to avoid significant impacts on the River Itchen SAC there remains an issue of increased access to the River Itchen through provision of a new footbridge which would need to go through detailed assessment at the planning application stage.

5.4.24 Site E9 has been previously screened for likely significant effects on the River Itchen SAC this work screened in impacts on air quality, noise, hydrology, contaminated land; studies were undertaken on this looking at the pre, post and during construction stages and avoidance and mitigation measures were set out; this screening assessment has also screened in non-native species. These impacts would be dealt with at the planning application stage requiring an air quality assessment, noise quality assessment, contaminated land and hydrology assessment and details of dealing with construction methods and non-native species. These requirements have been picked up in the supporting text of the policy.

5.4.25 It has been possible to conclude that Likely Significant Effects will not result from most Local Plan strategic and development management policies. The exceptions are policies S2, S3 which are screened in due to a likely significant effect on air quality which is being assessed in the in combination section of this report.

5.5 Other Plans and Projects (In Combination)

Air quality

5.5.1 The Partnership for Urban South Hampshire initiated a sub-region wide transport and air quality study, the first stage of which reported in 2010[48]. This study identified that the growth in traffic associated with the 80,000 new dwellings to be delivered in PUSH up until 2026 would have relatively little impact on the following designated sites:

- Botley Wood and Everetts and Mushes Copses SSSI;
- The New Forest SSSI;
- Chichester Harbour SSSI;
- River Test SSSI;
- Sinah Common SSSI;
- Southampton Common SSSI; and
- Upper Hamble Estuary and Woods SSSI.

5.5.2 The analysis indicated that the growth in traffic associated with PUSH would have the greatest impact on the following sites:

- Moorgreen Meadows SSSI;
- Langstone Harbour SSSI;
- Portsdown SSSI;

[48] AEA Technology. 2010. Road transport emissions impacts on Nature Conservation Sites. Report to the Partnership for Urban South Hampshire

- Downend Chalk Pit SSSI;
- Lower Test Valley SSSI; and
- River Itchen SSSI.

5.5.3 In the case of the River Itchen SSSI (which is the core component of the River Itchen SAC) the modelling predicted that nitrogen deposition would exceed the critical load for the fenland habitats and that development in the PUSH region would collectively contribute over 1kg N/ha/yr in additional nitrogen to these sites; a considerable additional amount. This analysis must also however be considered within the context of phosphorus being a more important limiting nutrient in the Itchen system as documented in the Environment Agency Review of Consents report for the SAC.

5.6 Conclusion

Air quality

5.6.1 The Council should commit to working with Hampshire County Council, Southampton City Council and Transport for South Hampshire to progress schemes which promote modal shift and ensure a coordinated approach to sub-regional transport. This would be in line with Core Strategy commitments given with other south Hampshire authorities such as Portsmouth Council. The Council should as a corollary of this also commit to working with other local authorities, land managers, and strategic highway authorities) to develop a framework by which air quality measures can be linked to monitoring of the air quality in the European site before and for a number of years after introduction of the measures, such that further measures[49] can be devised if the air quality does not improve. In making these assessments the critical load for the relevant habitat should be used as the target for assessment.

5.6.2 While not mitigation in itself, monitoring is an essential factor when dealing with an issue such as air quality which has a high degree of uncertainty, since it will enable the effectiveness of air quality improvement measures to be evaluated and amended over the Local Plan period.

5.6.3 For those specific allocated sites that have been screened in over air quality (E6 Eastleigh Town Centre and E7 Urban renaissance quarter, Eastleigh and E9 and E10, Eastleigh River Side), this issue has been picked up in the supporting text of the site specific policy.

5.6.4 Guidance from the Department for Transport identifies those levels of increase in vehicle movements on roads which trigger the need for further environmental assessment as increases of over 1000 vehicle movements per day or 200 Heavy Duty Vehicle movements per day[50]. Transport modelling will therefore be required for each development to identify whether occupation/operation will lead to vehicle movements on roads within 200m of the River Itchen SAC exceeding the thresholds above.

5.6.5 Where these thresholds will be exceeded it will then be necessary for an air quality assessment to be undertaken to determine whether the Process Contribution (PC i.e. the emissions from the development-related transport) will result in a rate of nitrogen deposition that would exceed 1% of the Critical Load for fenland habitats (i.e. whether it will exceed 0.1 kg N/ha/yr) and if so, whether the Predicted Environmental

[49] Such as low emission zone(s) (applicable to road traffic and non-road mobile machinery), reallocation of road space (high occupancy vehicle lanes), re-routing of heavy goods and older vehicles, traffic management and calming measures (such as residential / access only zones), one way systems etc

[50] The Design Manual for Roads and Bridges (Volume 11, Section 3, Part 1) regarding air quality environmental impact assessment from roads indicates that if the increase in traffic will amount to less than 200 HDV movements per day the development can be scoped out of further assessment.

Concentration (i.e. the total deposition rate when the PC is added to the baseline) will exceed 70% of the Critical Load[51]. If not, then air quality issues relating to the specific development can be dismissed. If the thresholds will be exceeded, then an ecological appraisal will need to be undertaken in order to confirm that an adverse effect on the interest features of the SAC will not result.

Noise and vibration/disturbance

5.6.6 Mitigation measures for *Salmo salar* involve the use of non-percussive piling techniques where this can be feasibly adopted. Where this is not feasible then certain construction activities may need to be restricted during the salmon migration season. Real time monitoring of underwater noise levels, at critical salmon migrating times during construction activities, can be used to determine if restrictions in operations need to be applied.

5.6.7 Where spawning or migration of key species occurs in particular time windows, it is sometimes possible to de-conflict the activity, for instance by only conducting it outside these periods. The Environment Agency has also expressed concern over the potential risks to incubating salmon eggs from vibration. Whilst Bureau Veritas is of the opinion that a greater risk from vibration would occur when the eggs hatch, it would nevertheless be prudent for a preconstruction habitat survey to be undertaken by a fisheries biologist to determine the likelihood of salmon spawning occurring in this part of the River Itchen SAC and the Barton River in particular. If the likelihood was low, or the anticipated levels of vibration were also low (through the use of non-percussive methods of piling for example) then the timing of the works would probably not be affected from this consideration. If the likelihood of the presence of salmon eggs and vibration were both high, then timing of the works might be affected. The Environment Agency judge that the lowest risk period would be mid May to mid June (between smolts and adult migrations).

5.6.8 Previous experience on works within the River Thames indicates that a 'silent' piling technique is likely to be preferred. In terms of salmonid fish migrating or juveniles of other species using tidal stream transport, piling may create an effective barrier across the river. That being the case, silent piling methods should be used, or if this is not an option then slowly increasing the power of the driving over a 5 minute period would deter those fish able to swim away before the full power of the pile driver is felt through the river.

Site specific policies

5.6.9 The supporting text for each of the site-specific policies outline when HRA is required at planning application level. This enables the site specific policies within the Local Plan to be screened out:

5.6.10 Policies AL1, Al2, AL3, CF1, CF2, CF3, CF4, E1, E2, E9, E10, E13, E14, FO1, FO2, FO3, FO5, WE1, WE2, WE6, WE7:

- The risk of introducing non-native species into the river system will need to be minimised through circulation of information leaflets to new residents, careful design of the development to ensure that it doesn't make access to the river corridor for fly-tipping easier and ensures that the river corridor is overlooked by dwellings and potentially by introducing a monitoring commitment by the developer as part of estate-maintenance.

- Avoidance measures would be required to ensure no damage occurs to the stream or disturbance of otters during construction. It will be necessary to ensure that all

[51] Environment Agency. April 2010. Integrated Pollution Prevention and Control - Environmental Assessment and Appraisal of BAT. Horizontal Guidance Note IPPC H1, Annex F

watercourses in the Borough are protected to preserve the otter movement network in this part of Hampshire.

- There will also be the need for pollution control protocols to be implemented during construction to avoid adverse water quality effects.

5.6.11 Policies BO1, BO2 and BO3:

- Avoidance measures would be required to ensure no damage occurs to the stream or disturbance of otters during construction. It will be necessary to ensure that all watercourses in the Borough are protected to preserve the otter movement network in this part of Hampshire.

5.6.12 Policies E6, E7 and E9:

- A transport and air quality assessment would be required as part of any planning application

Concluding statement – River Itchen SAC

5.6.13 It can be concluded that the Pre-submission Eastleigh Borough Local Plan 2011-2012 contains adequate provisions (as set out above) to avoid or mitigate effects on the River Itchen SAC. No likely significant effects would therefore result.

6 Emer Bog SAC

6.1 Introduction

6.1.1 The site comprises an extensive valley bog together with associated damp acidic grassland, heathland and developing woodland over Bracklesham Beds in the Hampshire Basin. Emer Bog is an excellent example of an ungrazed valley bog with a rich flora and fauna which includes most typical bog species. The main elements of the bog vegetation include tall stands of reed *Phragmites australis* and a shorter mixed association of sedges (especially white sedge *Carex curta*, bottle sedge *C. rostrata* and star sedge *C. echinata*), with notable quantities of marsh cinquefoil *Potentilla palustris* and bog bean *Menyanthes trifoliata*, together with marsh violet *Viola palustris* and southern marsh orchid *Dactylorchis praetermissa.* The bog grades downstream into mature alder carr and upstream into heathland, heavily invaded, and partly planted, with pine, birch and scrub.

6.1.2 The invertebrate fauna of the bog and heath is of considerable interest and very large numbers of moths have been recorded. To the south and west of Emer Bog, the site includes remnants of former common land, now acidic grassland dominated by purple moor-grass *Molinia caerulea*, but with a rich flora, including petty whin *Genista anglica*, dwarf gorse *Ulex minor*, meadow thistle *Cirsium dissectum* and cross-leaved heath *Erica tetralix*.

6.2 Reasons for Designation

6.2.1 Emer Bog is designated as a Special Area of Conservation for its transition mires and quaking bogs.

Conservation Objectives

To maintain*, in favourable condition, the:

- Transition Mires and Quaking Bogs

*maintenance implies restoration, if the feature is not currently in favourable condition.

6.3 Historic Trends and Current Pressures

6.3.1 Recent Condition Assessment process reviews indicated that while a relatively small proportion of the site is in favourable condition, the vast majority has ‘recovering’ status.

6.3.2 The key environmental conditions needed to maintain site integrity include:

- Maintenance of water levels and input of water from surrounding catchment;
- Maintenance of grazing;
- Unpolluted water entering the site;
- Good air quality.

6.4 Likely Significant Effects

6.4.1 Discussions undertaken by Test Valley Council linked to a planning application in the vicinity have identified that the vegetation on site is not at risk of direct trampling damage but that excessive recreational activity (particularly involving dogs) could disrupt grazing of the site which would have an indirect adverse effect on the interest features of the SAC. However, surveys undertaken to support a planning application in the area[52] identified that the SAC has relatively few (albeit well-used) parking spaces which provide a control on the number of vehicles that can park at any one time and means that it is only used by visitors from a local catchment (essentially within easy walking distance, with most visitors deriving from North Baddesley and Romsey). The survey identified that the most popular method of transport to Emer Bog was on foot (58%) and these visitors travelled an average of 560m to reach the site. Overall average distance travelled to reach the site (including people arriving by car) was 1.6 km and no visitors from Eastleigh Borough were recorded.

6.4.2 Eastleigh Borough is located approximately 2.3 km from the SAC at its closest which is on the limits of easy walking distance. More importantly there are numerous areas of publically accessible countryside (such as Flexford Nature Reserve, Valley Park Woodland Local Nature Reserve, Hocombe Mead Local Nature Reserve) closer to these parts of Eastleigh Borough (the Chandler's Ford area) such that there are many alternatives to use of the SAC which due to its wet boggy nature will naturally deter many dog walkers if drier and equally appealing walks are available. Given this and the fact that no visitors from Eastleigh were recorded in the surveys it is considered unlikely that development in the Local Plan will contribute to recreational pressure on Emer Bog SAC and therefore this site can be screened out.

6.4.3 The hydrology of Emer Bog is integral to the designation, in terms of the quantity and quality of water entering the site. Two background studies have been completed considering the hydro-ecology of the site[53]. As a result of these studies, the surface water catchment of Emer Bog has been identified. This catchment is restricted to a zone of approximately 500m around the SAC. Since Eastleigh Borough is 2.3km from the SAC at its closest no development in the Borough will affect the hydrology of the bog. The Local Plan can therefore be screened out with regard to this SAC.

6.5 Other Plans and Projects (In Combination)

6.5.1 Since development in Eastleigh will make no contribution to impacts on Emer Bog SAC, there is no mechanism for it to act in combination with other plans and projects.

6.6 Conclusion

6.6.1 It can be concluded that development set out in the Local Plan is unlikely to lead to significant effects on Emer Bog SAC either alone or in combination with other projects and plans.

[52] Nutburn Road, North Baddesley: Visitor Questionnaire Survey of Emer Bog and Baddesley Common, EPR, 2011

[53] R.H. Allen (The Environmental Project Consulting Group), 2003. Desk Study: Hydro-Ecological Appraisal of Emer Bog cSAC, North Baddesley, Hampshire, R.H. Allen (The Environmental Project Consulting Group), 2002 and Emer Bog cSAC: Review of Consents: Surface Water Quality and Hydro-Ecological Regime of Emer Bog cSAC

7 Mottisfont Bats SAC

7.1 Introduction

7.1.1 The woodland habitat around Mottisfont supports an internationally important population of the rare barbastelle bat *Barbastella barbastellus*. It is the only known maternity roost in Hampshire and one of only six known sites in the UK (2002 data)[54].

7.1.2 Mottisfont contains a mix of woodland types including hazel coppice with standards, broadleaved plantation and coniferous plantation which the bats use for breeding, roosting, commuting and feeding. A total of nine bat species have been recorded at Mottisfont, the others being whiskered *Myotis mystacinus*, brown long-eared *Plecotus auritus*, the two pipistrelles *Pipistrellus pygmaeus* and *P. pipistrellus*, serotine *Eptesicus serotinus*, noctule *Nyctalus noctula*, Daubenton's *Myotis daubentonii* and Natterer's *Myotis nattererii*.

7.2 Reasons for Designation

7.2.1 The site is designated for its Habitats Directive Annex II species barbastelle bat (*Barbastella barbastellus*).

Conservation Objectives

Subject to natural change, maintain, in favourable condition*, the broadleaved, mixed and yew woodland as a habitat for:

- Barbastelle *Barbastella barbastellus*

* or restored to favourable condition if features are judged to be unfavourable.

7.3 Historic Trends and Current Pressures

7.3.1 Approximately 70% of the site is owned by the National Trust and is open to public access. The National Trust has actively carried out woodland operations over recent years, including opening up coppice, gradually removing conifer plantations and replanting to native broadleaved woodland. A Woodland Grant Scheme which is targeted at restoration and general woodland management should enhance the habitats and ensure future sustainability. Twenty-five percent of the site is privately owned and not open to public access. The majority of this area is also subject to a Woodland Grant Scheme renewal which is targeted primarily at maintaining the rotational coppicing programme which should also ensure sustainability of woodland management. This part of the site is managed for rearing game birds.

7.3.2 The environmental requirements of the Mottisfont Bats SAC are not fully understood, due to incomplete understanding of barbastelle bat ecology, although continued woodland management practices will clearly be important. However, a study of the Mottisfont barbastelles[55] found that bats foraged up to 16km from the SAC, but the average distance was 5km.

[54] http://www.jncc.gov.uk/ProtectedSites/SACselection/sac.asp?EUCode=UK0030334
[55] Davidson-Watts, I. & McKenzie, A. (2006). Habitat use and Ranging of Barbastelle Bats of the Mottisfont Estate, Hampshire. ID Wildlife Ltd

7.3.3 Typical foraging distances for this species are 6-8km, though this may extend to reach 20km[56]. Natural England has determined that for the purposes of spatial planning a zone of 7.5km should be used as encapsulating the core foraging areas of the barbastelle population. This is the distance over which Natural England have expressed a requirement to be consulted over land use issues and development.

7.4 Likely Significant Effects

7.4.1 Eastleigh Borough is approximately 12km from Mottisfont Bats SAC if measured in a direct line. As such it lies outside the 7.5km consultation zone and therefore the Plan can be screened out as being unlikely to lead to significant effects on the SAC.

7.5 Other Plans and Projects (In Combination)

7.5.1 Since development in Eastleigh will make no contribution to impacts on Mottisfont Bats SAC, there is no mechanism for it to act in combination with other plans and projects.

7.6 Conclusion

7.6.1 It can be concluded that development set out in the Local Plan is unlikely to lead to significant effects on Mottisfont Bats SAC either alone or in combination with other projects and plans.

[56] Greenaway F (2004) Advice for the management of flightlines and foraging habitats of the Barbastelle Bat *Barbastella barbastellus*, English Nature Research Report 657

8 New Forest SAC, SPA and Ramsar site

8.1 Introduction

8.1.1 The New Forest embraces the largest area of 'unsown' vegetation in lowland England and includes the representation on a large scale of habitat formations formerly common but now fragmented and rare in lowland Western Europe. They include lowland heath, valley and seepage step mire, or fen, and ancient pasture woodland, including riparian and bog woodland.

8.1.2 Older trees support the richest known woodland lichen flora in lowland Europe, and an exceptionally species-rich deadwood fauna. The woods are also rich in fungi that are specific to pasture woodland. The vascular plants include about 60 species associated with old woodland. These older trees also support a high density of hole nesting, insectivorous birds, and provide roost sites for several species of bat including the very rare Bechstein's bat *Myotis bechsteinii.*

8.1.3 The silvicultural enclosures include 40% broad-leaved trees, mainly oak and beech, which, with the unenclosed woods, comprises the largest tract of native broad-leaved woodland in southern England.

8.1.4 The heathlands, including grass heaths and acid grasslands comprise a series of plant communities, the composition of which is related to soil structure and permeability and the effects of grazing.

8.1.5 The acid and neutral grasslands are strongly influenced by the underlying geology and by grazing. The acid grasslands are often quite extensive, relatively species-rich and comprise two main elements: (a) species which benefit from heavy grazing and are mostly prostrate or are able to survive in dwarf form and (b) species which are less palatable. The more neutral grasslands known locally as 'lawns' occur as linear features following many of the small streams, roadside verges around settlements and village greens, and as glades in association with pasture woodland.

8.1.6 The unimproved meadows in and around the Forest have similarities with the acid to neutral grasslands within the Open Forest. The frequent spring-lines and infertility of the soils have hindered agricultural improvement and these meadow communities are now rare or scarce in England.

8.1.7 The Forest contains about 90 clearly separable valley mires, or fen, within about 20 different valley systems. This is thought to be more than survive in the remainder of Britain and Western Europe. This suite of mires sits within a relatively unpolluted catchment and for this reason the greater part of the New Forest has been designated as an internationally important wetland, a Ramsar site.

8.1.8 Of the many ponds within the Forest the less acidic ponds support important populations of amphibians, including the great crested newt *Triturus cristatus*. The wetland habitats collectively form probably the most important single suite of habitats for dragonflies in Britain. Twenty-seven species breed in the New Forest. The temporary ponds that dry out in the summer provide ideal conditions for some specially adapted invertebrates and one such pond is the only known British locality for the tadpole shrimp *Triops cancriformis*.

8.1.9 The Forest supports populations of nine rare and twenty-five nationally scarce vascular plants. Nationally important breeding populations of birds as listed in Annex 1 of the EU Directive on the Conservation of Wild Birds include nightjar *Caprimulgus europaeus*, woodlark *Lullula arborea*, Dartford warbler *Sylvia undata*, and kingfisher *Alcedo atthis*. The Forest also supports a wintering population of hen harrier *Circus*

cyaneus which is also listed on Annex 1. Populations of all Britain's native reptiles are present in the New Forest including sand lizard *Lacerta angilis* and smooth snake *Coronella austriaca*, which both occur in suitable localities throughout the heathland. Otter *Lutra lutra* are found. Almost half of Britain's butterflies and moths have been recorded, and over a third of the beetle fauna.

8.2 Reasons for Designation

8.2.1 The New Forest qualifies as a SAC for both habitats and species. Firstly, the site contains the Habitats Directive Annex I habitats of:

- Nutrient-poor shallow waters with aquatic vegetation on sandy plains: Hatchet Pond has an example of an oligotrophic waterbody amidst wet and dry lowland heath developed over fluvial deposits. It contains shoreweed *Littorella uniflora* and isolated populations of northern species alongside rare southern species.
- Clear-water lakes or lochs with aquatic vegetation and poor to moderate nutrient levels: In the New Forest large temporary ponds, shallow ephemeral pools and poached damp hollows in grassland support a number of specialist species. These include the two nationally scarce species coral-necklace *Illecebrum verticillatum* and yellow centaury *Cicendia filiformis*. Temporary ponds occur throughout the Forest in depressions capable of holding water for part of the year. Most ponds are small (between 5-10 m across) and, although great in number, amount to less than 10 ha in total area.
- Wet heathland with cross-leaved heath: The New Forest contains the most extensive stands of lowland northern Atlantic wet heaths in southern England.
- Dry heaths: The New Forest represents European dry heaths in southern England and is the largest area of lowland heathland in the UK. It is particularly important for the diversity of its habitats and the range of rare and scarce species which it supports.
- Purple moor grass meadows: This vegetation occurs in situations of heavy grazing by ponies and cattle in areas known locally as 'lawns', often in a fine-scale mosaic with wet heaths and other mire and grassland communities. The New Forest meadows are unusual in the UK in terms of their species composition, management and landscape position
- Depressions on peat substrates: The New Forest, one of three sites selected in southern England, is considered to hold the largest area in England of depressions on peat substrates.
- Beech forests on acid soils: The New Forest is the largest area of mature, semi-natural beech *Fagus sylvatica* woodland in Britain.
- Beech forests on neutral to rich soils: The New Forest is the largest area of mature, semi-natural beech *Fagus sylvatica* woodland in Britain.
- Dry, oak-dominated woodland: The most extensive area of active wood-pasture with old oak *Quercus* spp. and beech *Fagus sylvatica* in north-west Europe and contains outstanding invertebrate and lichen populations.
- Bog woodland
- Alder woodland on floodplains: The New Forest contains many streams and some small rivers that are less affected by drainage and canalisation than those in any other comparable area in the lowlands of England.

8.2.2 The site also contains the Habitats Directive Annex I habitats 'Very wet mires often identified by an unstable, quaking surface' and 'Calcium-rich, spring-water fed fens', although these are not a primary reason for site selection.

8.2.3 The site contains the Habitats Directive Annex II species:

- Southern damselfly *Coenagrion mercuriale*: Several population centres and strong populations estimated to be in the hundreds or thousands of individuals, representing one of four major centres of population in the UK.
- Stag beetle *Lucanus cervus*: its Hampshire/Sussex population centre, and a major stronghold for the species in the UK.

8.2.4 The site also contains the Habitats Directive Annex II species great-crested newt *Triturus cristatus*, although this is not a primary reason for site selection.

8.2.5 The New Forest is designated as a SPA for its breeding bird populations, specifically:

- 33.6% of the British population of Dartford warbler *Sylvia undata*
- 10% of the British population of honey buzzard *Pernis apivorus*
- 8.8% of the British population of nightjar *Caprimulgus europaeus*
- 12.3% of the British population of woodlark *Lullula arborea* (1997 counts)

8.2.6 The SPA is also designated for its over-wintering population of:

- 2% of the British population of hen harrier *Circus cyaneus.*

8.2.7 The reasons for designation of the New Forest as a Ramsar site are illustrated in Table 4.

Table 4: The New Forest Ramsar site criteria

Ramsar criterion	Description of Criterion	New Forest Ramsar site
1	A wetland should be considered internationally important if it contains a representative, rare, or unique example of a natural or near-natural wetland type found within the appropriate biogeographic region.	Valley mires and wet heaths are found throughout the site and are of outstanding scientific interest. The mires and heaths are within catchments whose uncultivated and undeveloped state buffer the mires against adverse ecological change. This is the largest concentration of intact valley mires of their type in Britain.
2	A wetland should be considered internationally important if it supports vulnerable, endangered, or critically endangered species or threatened ecological communities	The site supports a diverse assemblage of wetland plants and animals including several nationally rare species. Seven species of nationally rare plant are found on the site, as are at least 65 British Red Data Book species of invertebrate.
3	A wetland should be considered internationally important if it supports populations of plant and/or animal species important for maintaining the biological diversity of a particular biogeographic region.	The mire habitats are of high ecological quality and diversity and have undisturbed transition zones. The invertebrate fauna of the site is important due to the concentration of rare and scare wetland species. The whole site complex, with its examples of semi-natural habitats is essential to the genetic and ecological diversity of southern England.

Conservation Objectives

New Forest SAC
The conservation objectives for the European interest on the SSSI are To maintain*, in favourable condition, the: - Alkaline fens - Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-Padion, Alnion*

incanaem Salicion albae)
- *Asperulo-Fagetum* beech forests
- Atlantic acidophilous beech forests with *Ilex* and sometimes also *Taxus* in the shrublayer (*Quercion robori-petraeae* or *Ilici-Fagenion*)
- Bog woodland
- Depressions on peat substrates of the *Rhyncosporion*
- European dry heath
- *Molinia* meadows on calcareous, peaty or clayey-silt-laden soils (*Molinion caeruleae*)
- North Atlantic wet heaths with *Erica tetralix*
- Old acidophilous oak woods with *Quercus robur* on sandy plains
- Oligotrophic to mesotrophic standing waters with vegetation of the *Littorelletea uniflorae* and or of the *Isoeto-Naonjuncetea*
- Oligotrophic waters containing very few minerals of sandy plains: *Littorelletalia uniflora*
- Transition mires and quaking bogs

To maintain*, in favourable condition, the habitats for the population of:

- Great crested newt (*Triturus cristatus*)
- Southern damselfly (*Coenagrion mercuriale*)
- Stag beetle (*Lucanus cervus*)

* maintenance implies restoration if the feature is not currently in favourable condition

New Forest SPA

The conservation objectives for the European interest on the SSSI are
To maintain*, in favourable condition, the:

- Alkaline fens
- Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-Padion, Alnion incanaem Salicion albae*)
- *Asperulo-Fagetum* beech forests
- Atlantic acidophilous beech forests with *Ilex* and sometimes also *Taxus* in the shrublayer (*Quercion roboripetraeae* or *Ilici-Fagenion*)
- Bog woodland
- Depressions on peat substrates of the *Rhyncosporion*
- European dry heath
- *Molinia* meadows on calcareous, peaty or clayey-silt-laden soils (*Molinion caeruleae*)
- North Atlantic wet heaths with *Erica tetralix*
- Old acidophilous oak woods with *Quercus robur* on sandy plains
- Oligotrophic to mesotrophic standing waters with vegetation of the *Littorelletea uniflorae* and or of the *Isoeto-Naonjuncetea*
- Oligotrophic waters containing very few minerals of sandy plains: *Littorelletalia uniflora*
- Transition mires and quaking bogs

To maintain*, in favourable condition, the habitats for the populations of Annex 1 bird species + of European importance, with particular reference to:

- dry heathland
- dry grassland
- inclosure and pasture woodlands

+ Honey Buzzard, Nightjar, Woodlark, Dartford Warbler, Hen Harrier
* maintenance implies restoration if the feature is not currently in favourable condition

New Forest Ramsar

The conservation objectives for the European interest on the SSSI are
To maintain*, in favourable condition, the:

- Alkaline fens
- Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-Padion, Alnion incanaem Salicion albae)*
- *Asperulo-Fagetum* beech forests
- Atlantic acidophilous beech forests with *Ilex* and sometimes also *Taxus* in the shrublayer (*Quercion robori-petraeae* or *Ilici-Fagenion*)
- Bog woodland
- Depressions on peat substrates of the *Rhyncosporion*
- European dry heath
- *Molinia* meadows on calcareous, peaty or clayey-silt-laden soils (*Molinion caeruleae*)
- North Atlantic wet heaths with *Erica tetralix*
- Old acidophilous oak woods with *Quercus robur* on sandy plains
- Oligotrophic to mesotrophic standing waters with vegetation of the *Littorelletea uniflorae* and or of the *Isoeto-Naonjuncetea*
- Oligotrophic waters containing very few minerals of sandy plains: *Littorelletalia uniflora*
- Transition mires and quaking bogs

To maintain*, in favourable condition, the habitats for the population of:

- Great crested newt (*Triturus cristatus*)
- Southern damselfly (*Coenagrion mercuriale*)
- Stag beetle (*Lucanus cervus*)

To maintain*, in favourable condition, the habitats for the populations of Annex 1 bird species + of European importance, with particular reference to:

- dry heathland
- dry grassland
- inclosure and pasture woodlands

+ Honey Buzzard, Nightjar, Woodlark, Dartford Warbler, Hen Harrier
* maintenance implies restoration if the feature is not currently in favourable condition

8.3 Historical Trends and Current Pressures

8.3.1 Issues that have been highlighted in the Natura 2000 site description for the SAC as affecting habitat condition include drainage of wetland habitats for improved grazing and forestry, afforestation of heathland habitats with conifers and other non-native species, essential grazing by commoners' animals, and increased recreational pressures.

8.3.2 Recreational pressure and disturbance has been shown to adversely affect populations of woodlark elsewhere. However, the population in the New Forest is currently at a high level. Good habitat management is also relevant for maintaining populations of woodlark and Dartford warbler and this is achieved through the grazing, cutting and burning of gorse and heather to provide a diverse age structure and prevent succession to woodland. Most of the valley mires in the Forest have been damaged in the past by drainage which has caused drying out of the peat layers. Work to restore valley mire systems is expected to influence wading bird populations in time. In addition, the Forestry Commission has carried out an exercise to ensure that the dog-walking public are aware of the sensitivities of the site during the nesting season, and liaises with groups such as the New Forest Dog Owners Group.

8.3.3 The most recent condition assessment process carried out by Natural England (1999-2009)[57] has found that 32% of the New Forest is in favourable condition, with 65% recovering from unfavourable status. Data results from assessment of SSSIs, rather

[57] http://www.sssi.naturalengland.org.uk/Special/sssi/

than internationally designated features, but nonetheless, provides a relevant understanding on the habitat status.

8.3.4 The key environmental conditions required to maintain site integrity include:

- Carefully balanced hydrological regime to maintain wet heath, mires and pools.
- Acid soils.
- Minimal air pollution (nitrogen deposition can cause compositional changes over time).
- Unpolluted water.
- Minimal nutrient inputs.
- Low recreational pressure.
- Appropriate grazing regime
- Appropriate habitat management regime

8.4 Likely Significant Effects

8.4.1 The distance from the western boundary of Eastleigh Borough to Ashurst on the eastern edge of the New Forest SAC is 12.2 km by road. This appears to be the shortest route between Eastleigh Borough and the New Forest SAC. The route along the M27 is longer at over 15 km.

8.4.2 An equestrian questionnaire undertaken by Eastleigh Borough Council in February 2010 of horse owners/riders in the Borough resulted in 59 responses. These indicated that 13.6% of respondents visited the New Forest to ride in public spaces, while 6.8% visited the New Forest to ride in private grounds. The survey also revealed that 84% of respondents preferred to ride their horses within 1-3 miles (1.6-4.8 km) of their stables. It is clear from these data that residents of Eastleigh Borough do not make a material contribution towards horse-riding within the New Forest SAC/SPA/Ramsar site since over 80% of Eastleigh equestrians do not ride in the New Forest, preferring to ride much closer to home.

8.4.3 In terms of visitors to the New Forest generally, surveys undertaken on behalf of the National Park Authority[58] identified that visitors to the National Park can be broken down as follows:

- Forty percent (40%) are tourists staying within or adjacent to the Park;
- Thirty-five percent (35%) are locals living within 5 miles (8km) of the site; and
- Twenty-five percent (25%) are day-trippers (i.e. those living more than 5 miles (8km) from the site but who cannot be considered tourists), with most living within 20km.

8.4.4 By definition therefore, South Hampshire residents living more than 8km from the SAC make up a relatively small proportion of visitors (i.e. a proportion of the 25% of visitors who are day-trippers). The Footprint Ecology report estimates that housing development in the period 2006-2026 within 50 km of the New Forest will result in an additional 1.05 million person visits per annum. However, it also identifies that over 75% of these additional visitors will derive from within 10 km of the National Park boundary. Regular visitors (i.e. those who visit at least weekly) tend to be mainly dog walkers and most come from within 7 km of the National Park boundary.

[58] Sharp, J., Lowen, J.& Liley, D. (2008). Changing patterns of visitor numbers within the New Forest National Park, with particular reference to the New Forest SPA. Unpublished report by Footprint Ecology for the New Forest National Park Authority

8.4.5 The Footprint Ecology report indicated that 7% of visitors derive from 'Southampton, Eastleigh and Chandler's Ford'[59]. Further scrutiny of data made available by the Forestry Commission from their PROGRESS database[60] reveals that of those 7% of visitors the majority derive from Southampton. The data indicates that 2.6% of visitors to the New Forest derive from Eastleigh borough, with the vast majority of those coming from either Eastleigh town or Chandler's Ford. It can therefore be concluded that while Eastleigh will make a contribution to future visitor pressure in the New Forest SAC/SPA/Ramsar site, that contribution is very small, most probably because Eastleigh is over 12 km from the National Park boundary (by road[61]) at its closest, with much of the Borough over 15 km away (by road).

8.4.6 Nonetheless, Eastleigh Council has agreed to participate in measures to provide alternative areas of greenspace which will make a proportionate contribution to spreading the recreational load on the New Forest SAC/SPA/Ramsar site.

8.4.7 Eastleigh Borough Council is meeting these requirements (which also mesh with the PUSH Green Infrastructure Strategy) by taking two main approaches:

- Forest Park – this site adjoins the borough and the project is being led by Test Valley Borough Council (TVBC). One of its major purposes is to act as an alternative recreational draw to attract people who would otherwise visit the New Forest. Eastleigh Borough Council is working with TVBC on bringing forward the new Country Park and improving links in the borough to it in order to maximise its accessibility from Eastleigh Borough. Land to the west and south-west of site allocation E1 (land south of Chestnut Avenue, Eastleigh) is within Test Valley borough and has been identified as part of the wider Forest Park proposal. The policy also requires priority biodiversity links to be maintained and enhanced in particular between Lakeside and Forest Park, footpath and cycle path links through the site to Forest Park and from the site to the wider area supporting access to Forest Park, and financial contributions to the Forest Park proposals.

- Improvements to existing green infrastructure assets and creation of new open space facilities where possible – Policies in the Revised Pre-submission Local Plan for improvements to Country Parks (Royal Victoria, Westwood Woodland and Manor Farm run by HCC and Lakeside and Itchen Valley run by EBC) and the Rights of Way network – policies: S5, Green Infrastructure; S8, Strategic footpath, cycleway and bridleway links (in particular iii. Lakeside Country Park to Forest Park; and various site allocation policies which address these particular issues as appropriate for example BO1 and E1).

8.5 Other Plans and Projects (In Combination)

8.5.1 The preceding analysis effectively already considered Eastleigh 'in combination' with the core strategies and local plans of surrounding authorities. Therefore no further such assessment is required.

8.6 Conclusion

8.6.1 It is concluded, that given the involvement of Eastleigh Borough Council in delivering Forest Park, there will be no adverse effect on the integrity of the New Forest SAC/SPA/Ramsar site as a result of Local Plan development in the borough.

[59] 28% of the 25% of people who are day-trippers

[60] Data supplied by Nick Tucker, Forestry Commission, to James Riley, Eastleigh Borough Council on 04/05/12

[61] Although a direct line of only 5km can be drawn from Netley on the east bank of Southampton Water to the New Forest, this is an unrealistic pathway since it would require visitors to cross Southampton Water

9 Overall Concluding Statement

9.1 It can be concluded that the Revised Pre-submission Eastleigh Borough Local Plan 2011-2029 will contain an adequate policy framework to enable the delivery of measures to avoid or adequately mitigate effects on European sites. No likely significant effects would therefore result.

10 Appendix 1 – Objection from Curdridge Parish Council

10.1.1 In an undated letter submitted in response to the Pre-Submission Local Plan consultation, Curdridge Parish Council raised several points of objection relating to internationally important wildlife sites. In summary:

- Firstly, the Parish Council contests the section of Policy S11 (v) a. which discusses *'implementing a suite of detailed mitigation proposals for the borough's coast as recommended by the Solent Disturbance and Mitigation Project* (SDMP)' on the basis that they have interpreted the use of the word 'coast' to mean that some parts of the SPA will not be addressed by mitigation proposals. The Upper Hamble is cited as an example of part of the SPA which is not coast, although it is assumed that this is intended as a reference to the lower Hamble, since the upper reaches of the River Hamble are not tidal and do not constitute part of the SPA. However, Curdridge Parish Council's interpretation of the use of the word 'coast' in this policy is excessively literal. Within the context of the SDMP the policy uses the word 'coast' as shorthand to apply to all areas of the SPA up to the tidal limit, which would include the tidal reaches of the River Hamble. The HRA of the Local Plan does recognise that the Solent & Southampton Water SPA designation includes the tidal lower reaches of the River Hamble; for example the distance of the SPA from 'land north of Winchester Street' is clearly identified in the analysis for Policy BO2.

- The Parish Council makes a comment that the HRA should consider several species (specifically little egret) for which the SPA has not actually been designated, on the basis that (in the opinion of the Parish Council) they should be part of the designation and/or the SPA may become designated for these species in the future. Specific reference is made in the Parish Council's letter to the 2001 SPA Review. We can confirm that the species list for Solent & Southampton Water SPA in the 2001 SPA Review was used in undertaking this HRA. It would be entirely speculative to include other species that may or may not at some unspecified time in the future be added to the SPA citation, as that would be tantamount to the competent authority devising its own SPA citations. It is not the role of the competent authority to determine the species for which a European site should be designated, but to assess impacts on those species for which it has been designated.

- The Parish Council make reference to the 'HRA-lite' of the Habitat Regulations Review of the South Hampshire Strategy (2012) which includes a series of suggested mitigation measures. However, the South Hampshire Strategy and its HRA-lite are intended to provide a highly strategic and fairly generic review of development across the South Hampshire area. It is not intended to supplant the more detailed, specific and tailored assessments undertaken for each Local Plan, such as the HRA of the Eastleigh Local Plan, nor was there any intent that all suggested available mitigation measures would be deployed in all areas irrespective of the more detailed Local Plan analyses.

- Finally, the Parish Council also states that in their view a specific hydrology assessment is required for the River Hamble as part of the Habitats Regulations Assessment because in the view of the Parish Council '*potential impacts on the Ramsar site – in addition to those required under the European Directives – need to be separately assessed*' and '*without such an assessment of the hydrological changes that would be experienced as a result of the development and water from balancing ponds draining into the Hamble and its tributaries*' the application must be found inadequate. Firstly, it is not the case the impacts on Ramsar sites must be 'separately assessed' from impacts on Special Protection Areas. The assessments

can be combined where interest features and impact pathways are similar. Secondly, we can confirm that water quality and water resource impacts were taken into account as potential impact pathways in the HRA (see sections 3.4 and 3.5 of this report). Thirdly, given that policy DM5 (Sustainable Surface Water Management and Watercourse Management) in the Pre-submission Local Plan requires that development will ensure no net increase in surface water run-off, and existing legal protection prohibits pollution of watercourses, there would be no change in flows within the River Hamble as a result of surface water drainage associated with any new development in the Borough.

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