Habitats Regulations Assessment for the Daedalus SPD

Black-tailed Godwit, River Itchen, Portsmouth Harbour

Gosport Borough Council

Appropriate Assessment

DATE: September 2011

Contents Page No

Abbreviations

AA	Appropriate Assessment	PPS	Policy Planning Statement
AONB	Area of Outstanding Natural Beauty	RoC	Review of Consents (under the Habitats Directive by the Environment Agency)
CAMS	Catchment Abstraction Management Strategy	RSPB	Royal Society for the Protection of Birds
CEMP	Construction Environment Management Plan	RSS	Regional Spatial Strategy
CS	Core Strategy	SA	Sustainability Appraisal
DC	Development Control/Management	SAC	Special Area of Conservation
DCLG	Department for Communities and Local Government	SDA	Strategic Development Area
DPD	Development Plan Document	SDMP	Solent Disturbance and Mitigation Project
EA	Environment Agency	SEA	Strategic Environmental Assessment
GBLPR	Gosport Borough Local Plan Review (2006)	SPA	Special Protection Area
EEC	European Economic Community (now the European Union)	SPD	Supplementary Planning Document
HRA	Habitats Regulations Assessment	STW	Sewage Treatment Works
IROPI	Imperative Reasons of Overriding Public Interest	UNESCO	United Nations Educational, Scientific and Cultural Organization
LDD	Local Development Document	WRMP	Water Resource Management Plans
NOx	NOx- Nitrogen oxides	WWTW	Waste Water Treatment Works
ODPM	Office of the Deputy Prime Minister (now disbanded)		

Acknowledgements: The template for this document has been based on work undertaken by UE Associates for Gosport Borough Council on its emerging Core Strategy

EXECUTIVE SUMMARY

Introduction

This report presents the findings and recommendations of the Habitats Regulations Assessment for the Daedalus Supplementary Planning Document. It follows the screening[1] process carried out between January and March 2011 which was subject to stakeholder consultation.

Scope

The HRA Screening exercise identified the following European sites for consideration:

- River Itchen (SAC)
- Solent and Isle of Wight Lagoons (SAC)
- Solent Maritime (SAC)
- South Wight Maritime (SAC)
- The New Forest (SAC)
- Chichester and Langstone Harbours (SPA)
- Portsmouth Harbour (SPA)
- Solent and Southampton Water (SPA)
- The New Forest (SPA)
- Chichester and Langstone Harbours (Ramsar site)
- Portsmouth Harbour (Ramsar)
- Solent and Southampton Water (Ramsar)
- The New Forest (Ramsar)

The likely potential significant effects[2] of the Daedalus SPD identified during the screening exercise were:

- Atmospheric pollution;
- Disturbance from recreational pressure;
- Water abstraction and consumption; and
- Waste water.

However as a result of the consultation on the Screening Statement, Natural England and other environmental groups have advised that additional potential impacts need to be considered:

- Noise pollution
- Light pollution
- Vibration
- Impacts during construction

Findings

It is recognised that there remains a number of uncertainties at the SPD level. The document primarily provides a framework for developers and the wider community regarding the type and quantum of development suitable for the Daedalus site. The principle for mixed use development at Daedalus has already been established by 'saved policy' R/DP4 of the Gosport Borough Local plan Review and the level of residential development has been determined by 'saved policy R/H3'.

The SPD also provides guidance on a number of development considerations. Consequently detailed assessments would not be meaningful at this stage and would be more appropriate at the project level, i.e. planning application stage. In order to deal with the uncertainties that remain it has been necessary for the SPD to incorporate a precautionary approach and make it

[1] The Screening report can be viewed at www.gosport.gov.uk/daedalus-spd
[2] These had been identified as a result of the emerging HRA for the Council's Daedalus policy contained in the draft Core Strategy

clear that development that would have a detrimental impact on the European sites in-combination with other development would be refused.

That said the HRA Report demonstrates that there will be no adverse effects on European site ecological integrity as a result of the Daedalus SPD, based on the envisaged level of development, in relation to the following impacts and sites:

- Water consumption and abstraction impacts in relation to the River Itchen and Solent Maritime SACs, and Chichester and Langstone Harbours, Portsmouth Harbour and Solent and Southampton Water SPAs/Ramsar; and
- Waste water impacts in relation to Portsmouth Harbour and Solent and Southampton Water SPAs/Ramsar.

The Report further demonstrates that potential adverse effects associated with the Daedalus SPD Strategy can be overcome provided the avoidance and mitigation measures are successfully adopted and implemented, including the need to take a precautionary approach. This includes measures to address the following potential impacts and uncertainties at the following sites:

- Air pollution and disturbance from recreation in relation to Chichester and Langstone Harbours, New Forest, Portsmouth Harbour, and Solent and Southampton Water SPAs/Ramsar sites
- Disturbance from potential increased use of the slipway and aviation movements, noise and vibration, and light pollution on the Solent and Southampton Water SPAs/Ramsar site.

1.0 INTRODUCTION

Purpose and contents of this Report

1.1 The report presents the findings and recommendations of the Habitats Regulations Assessment (HRA) for the Daedalus Supplementary Planning Document (SPD). The SPD has been produced by Gosport Borough Council to provide guidance for developers and the local community regarding future development of the Daedalus site at Lee-on-the-Solent.

1.2 The remainder of this section provides a background to the Habitats Regulations Assessment and how it links to land use plans. This is followed by a brief outline of the Daedalus SPD.

1.3 Section 2 sets out the methodology and approach to the HRA for the Daedalus SPD and takes into account guidance produced by Natural England. The section includes an outline of the process, key evidence studies, a consideration of what is appropriate to be assessed for an SPD and acknowledged limitations. The section also sets out how stakeholders have been engaged to date.

1.4 Section 3 outlines details of the European sites and Section 4 outlines the results of the screening process. This includes the findings of the consultation on the HRA Screening Statement for the Daedalus SPD which took place between 24th January and 4th March 2011. Detailed representations were received from Natural England and other environmental organisations which have significantly shaped how the appropriate assessment stage of the HRA Report has been undertaken.

1.5 Sections 5-13 are the appropriate assessment itself which considers a number of potential impacts on the integrity of European sites. The assessment includes measures for avoiding and mitigating adverse effects on site integrity as well as a list of changes to the SPD. This is followed by Section 14 which sets out the conclusion and whether it can be ascertained that, in the light of the application of these measures, the Daedalus SPD would not have an adverse effect on the integrity of any European site alone or in combination with other plans and projects.

Habitats Regulations Assessment of Land Use Plans

1.6 The application of Habitats Regulations Assessment to land use plans is a requirement of the Conservation of Habitats and Species Regulations 2010 (the Habitats Regulations), the UK's transposition of European Union Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora (the Habitats Directive). The HRA must be applied to all Local Development Documents (LDDs) in England and Wales and aims to assess the potential effects of a land use plan against the conservation objectives of any sites designated for their nature conservation importance as part of a system known collectively as the Natura 2000 network of European sites.

1.7 European sites provide ecological infrastructure for the protection of rare, endangered or vulnerable natural habitats and species of exceptional importance within the European Union. These sites consist of Special Areas of Conservation (SACs, designated under the Habitats Directive) and Special Protection Areas (SPAs, designated under European Union Directive 2009/147/EC on the conservation of wild birds (the Birds Directive)). Meanwhile, Government policy (PPS9 (ODPM, 2005) and Circular 06/05 (ODPM, 2005)) requires that Ramsar sites (designated under the International Wetlands Convention, UNESCO, 1971) are treated as if they are fully designated European sites for the purposes of considering development proposals that may affect them.

1.8 Under Regulation 102 of the Habitats Regulations, the assessment must determine whether or not a plan will adversely affect the integrity of the European site(s) concerned. Where negative effects are identified, the process should consider alternatives to the proposed actions and explore mitigation opportunities, whilst adhering to the precautionary principle. The European Commission (2000) describes the principle as follows:

> *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.*
>
> *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.*
>
> *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.*

1.9 The hierarchy of intervention is important. Where effects on ecological integrity are identified, plan makers must:

- Consider alternative ways of achieving the plan's objectives that avoid significant effects entirely.
- Where it is not possible to meet objectives through other means, mitigation measures that allow the plan to proceed by removing or reducing significant effects may be considered.
- If it is impossible to avoid or mitigate the adverse effect, plan-makers must demonstrate, under the conditions of Regulation 103 of the Habitats Regulations, that there are Imperative Reasons of Overriding Public Interest (IROPI) to continue with the proposal. This is widely perceived as an undesirable position and should be avoided if at all possible.

Background to the Plan

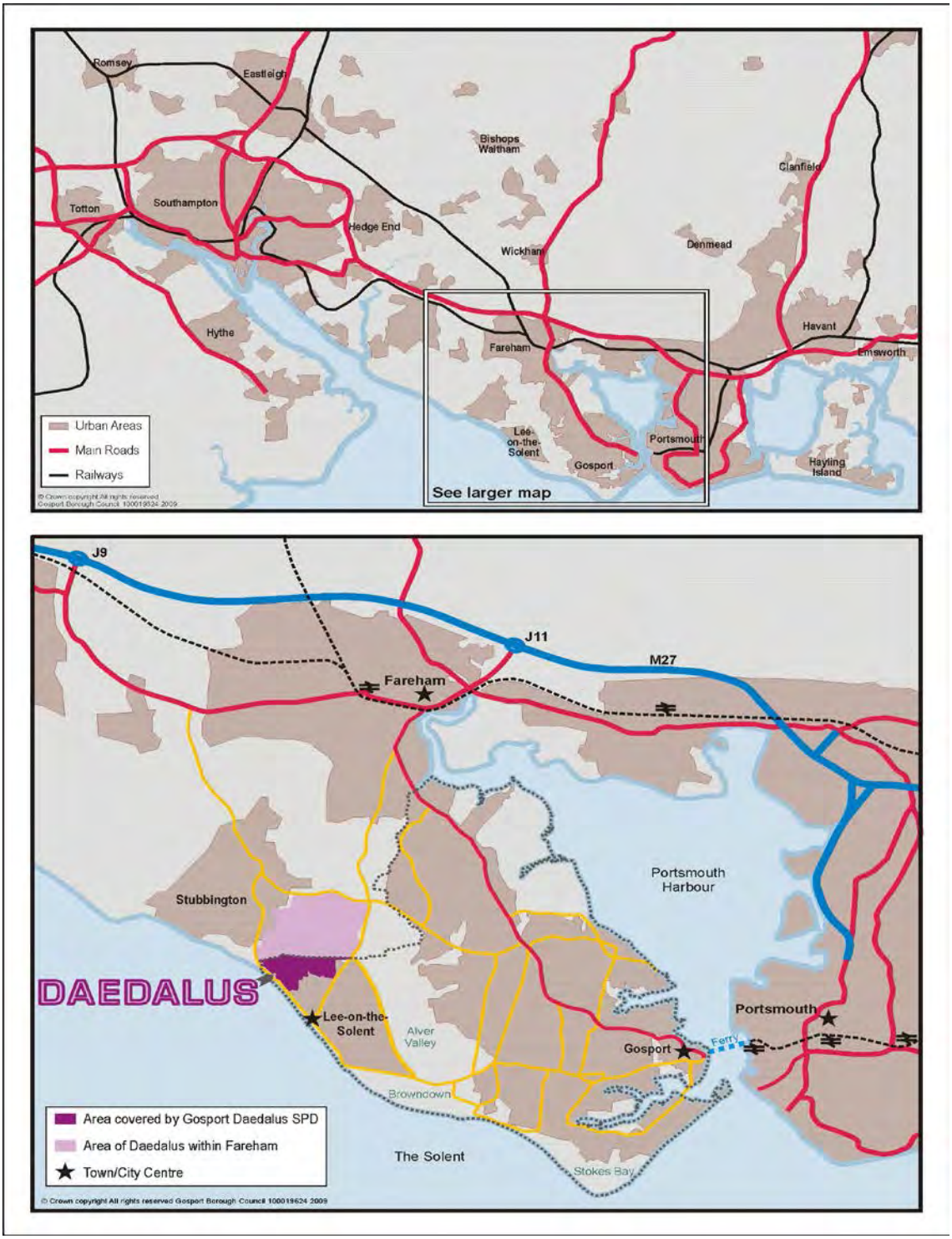
1.10 The purpose of the Daedalus Supplementary Planning Document (SPD) is to provide guidance regarding the potential scale and mix of future proposals for the Daedalus site within Gosport Borough (See Figure 1). The SPD will be used by the Borough Council as a key consideration when determining future planning applications on the site.

1.11 The SPD is linked to 'saved' Policy R/DP4 of the Gosport Borough Local Plan Review (GBLPR) (Adopted May 2006) which identifies the Daedalus site as a mixed use site. The detailed guidance of the SPD has been prepared in accordance with the relevant saved policies of the GBLPR. The SPD also takes into account the emerging Gosport Core Strategy and its supporting evidence. The emerging Core Strategy has been subject to a screening process under the Habitats Regulations process. The Screening Report[3], was published at the Preferred Options Stage (Reg 25) and includes an

[3] www.gosport.gov.uk/cs-hra

assessment of the Daedalus policy (CS8) which outlines the proposed type and quantum of development and other proposals for the site. The Screening Report for the Core Strategy and the ongoing Habitats Regulation Assessment being prepared for the Pre-submission version of the Core Strategy (Reg 27) has informed the Daedalus SPD and has formed the basis for the HRA Screening Report for the Daedalus SPD. Once the Core Strategy is adopted the SPD will be linked to the Daedalus Strategic Site policy in the Core Strategy.

Figure 1: Location of Daedalus within Sub-Region



1.12 The SPD has been prepared in the context of a site-wide Masterplan which also takes into account Fareham Borough Council's latest policy position in order to ensure the site is planned in a comprehensive manner. Proposals in the Fareham Borough part of the

site have been subject to a Habitats Regulation Assessment through the preparation of the Pre-Submission version of the Fareham Core Strategy published in December 2010.

1.13 As way of a background Gosport Borough Council's Vision for Daedalus is set out below together with the overall development objectives. This has been amended since the consultation version on the advice of Natural England in order to be clear that development at Daedalus needs to respect its environment.

The Vision for Daedalus

Daedalus will be transformed into a sustainable strategic business location.

The site will provide significant new job opportunities particularly within key business clusters including aviation, high-tech manufacturing and marine.

It will provide a significant number of highly skilled jobs contributing to Gosport's and South Hampshire's economic growth and diversification.

Daedalus will include a range of uses and facilities which complement the identity of the site as a strategic business location.

The design and use of existing and new buildings and spaces will be of a high quality to ensure the preservation and enhancement of the environment, the Daedalus Conservation Area and its Listed Buildings.

The prestigious development will be an identifiable place in its own right, well related to, and benefiting, the wider community.

The Development Strategy

1.14 The Development Strategy sets out the key principles for development and outlines the preferred mix of uses. Redevelopment of the Daedalus site presents an excellent opportunity to create a strategic high technology employment site providing a variety of jobs as well as leisure, commercial and residential uses within walking distance of each other.

1.15 Redevelopment will bring an under-used and partly derelict site back into productive use whilst being sensitive to its historic land use, the Listed Buildings and the designated Conservation Area. This site will provide significant employment opportunities to the local area and consequently can help alleviate local deprivation, and reduce out-commuting and the consequent congestion.

1.16 To ensure delivery of a comprehensive development it is necessary to consider the site as a whole.

1.17 The key objectives for the development of the Daedalus site have been amended since the consultation version on the advice of Natural England to be more explicit regarding the need to conserve and enhance the natural environment. The objectives are as follows:

- To provide significant new employment opportunities for local residents which will assist in alleviating deprivation and reducing out-commuting from the Gosport Peninsula;
- To provide a variety of employment premises to meet the needs of a wide range of modern businesses including those associated with aviation, marine, and hi-tech industries;
- To ensure future development maximises the benefit of the existing runways for aviation industries;
- To ensure that any new development enables the site to benefit from its direct links to the Solent (via the slipway) for marine industries and recreational uses;
- To create a vibrant place with a mix of uses that is integrated with Lee-on-the-Solent and complements and supports the regeneration of the existing local centre and sea-front;
- To provide public access to the site;
- To ensure the site has good transport accessibility to make it attractive to new investment;
- To ensure the provision of leisure and community facilities which complement existing facilities to the benefit of local residents;
- To ensure that dwellings provided on the site include affordable housing and a mix of sizes and types to meet local requirements;
- To foster a distinctive identity for Daedalus based on its heritage, through the careful reuse and restoration of existing buildings and the creation of high quality new buildings which complement and enhance the Daedalus Conservation Area and historic buildings;
- To conserve and enhance the natural environment including: the protection of internationally and nationally important habitats within the vicinity; and the incorporation of green infrastructure within the site as well as the creation of appropriate linkages to the wider green infrastructure network;
- To promote sustainable development and meet high standards of sustainable construction and design including energy efficient buildings, the use of renewable energy sources, the use of sustainable modes of transport, maximising recycling and minimising waste; and
- To require that the site will be served by infrastructure to meet the requirements of businesses, residents and other users.

2.0 HRA Methodology

The HRA Process

2.1 Guidance on Habitats Regulations Assessment has been published in draft form by the Government. This draws on advice from a range of experts as well as European Union guidance regarding methodology for appropriate assessment of plans. The guidance recognises that there is no statutory method for undertaking Habitats Regulations Assessment and that the adopted method must be appropriate to its purpose under the Habitats Directive and Regulations; this concept is the reason why HRA is also often referred to as appropriate assessment.

2.2 The latest revised draft guidance produced by David Tyldesley and Associates for Natural England (February 2009) identifies the various stages of the HRA procedure as included in Appendix 1.

2.3 The guidance states that it is necessary on a case-by-case basis to decide how best to carry out the assessment of a LDD, what information and analysis may be required and what assumptions and predictions need to be made. The method and level of detail of the Habitats Regulations Assessment will vary with the scale, the stage it has reached, the nature of its policies and proposals, the sites it may affect and how it will affect them.

2.4 Selection of the best method that will make the assessment appropriate is a judgement that should take account of good practice and may be limited by the information available and the technical and scientific know-how.

2.5 The process in Natural England's guidance outlined in Appendix 2 is not fully applicable to Supplementary Planning Documents such as the Daedalus SPD as the documents do not go through a formal examination. This is because the document is not a Development Plan Document (DPD) instead it is guidance for developers and the local community. The SPD does not introduce new policies or proposals, instead it builds on the adopted development plan i.e. the Gosport Borough Local Plan Review.

2.6 The document also has regard to the emerging Core Strategy which is being subject to a Habitats Regulations Assessment.

2.7 The Natural England guidance recognises that it will not be possible for a Habitats Regulations Assessment of a LDD to apply the same level of detail as would be applied to a specific project which is the subject of a planning application.

2.8 This is very much the case for the Daedalus SPD which outlines what could be possible and sets out the issues that a developer needs to consider. It provides a broad framework where different developers could come up with a range of projects. Therefore it is not considered appropriate to provide detailed assessments of all the various proposals, instead it is necessary to highlight issues and identify circumstances where developers will need to provide sufficient information to enable an appropriate assessment to be carried out at the more detailed planning application stage.

2.9 That said the Borough Council has taken the detailed comments provided by Natural England and others at the Screening Stage of the HRA and incorporated them within the SPD and/or the HRA Report, including the need to fully incorporate a precautionary approach.

Relevant Evidence and consultation

2.10 The HRA for the Daedalus SPD has been based on the emerging HRA work for the Core Strategy being undertaken by UE Associates. The document is particularly

applicable for the Daedalus SPD as the emerging Core Strategy includes a detailed policy relating to Daedalus which includes the quantum of employment and residential development which has been included in the SPD.

2.11 The appropriate assessment of the Core Strategy and the SPD has been informed by a number of evidence studies. Key documents are set out below:

- Assessing the Impact of the Harbour Authorities LDF Proposals in the Strategic Highway Network (PBA 2009)[4]
- Changing Patterns of Visitor Numbers within the New Forest National Park, with particular reference to the New Forest SPA (J Sharpe, J Lowen and D Liley 2008)
- Daedalus- The Aviation Study (York Aviation 2011)
- Road Transport Emissions Impacts on Nature Conservation Sites (AEA Technology 2010)
- South Hampshire Integrated Water Management Strategy (for PUSH) (Atkins 2008)
- Strategic Environmental Impact Assessment for Daedalus SPD (Drivers Jonas for SEEDA 2009)
- Water Resource Plans for Portsmouth Water and Southern Water

2.12 However it is recognised that a number of studies are still outstanding and the findings will need to be taken into account where relevant when considering the proposals for Daedalus. Consequently it will be necessary for the SPD to take a precautionary response and highlight where further work is required or where findings will need to be taken into account.

2.13 One of the key studies that could have a bearing on development at Daedalus relates to the issue of disturbance. The Solent Forum which includes a number of local authorities, harbour authorities and environmental organisations has commissioned the Solent Disturbance and Mitigation Project (SDMP)[5]. The SDMP seeks to assess the current impacts of visitor numbers and activities on the survival rates of internationally designated wintering waterbirds throughout the Solent coast and to establish the likely additional impact from the residents of the development proposed in the area. Phase 1 of the SDMP, a literature review, has been completed. Phase 2, Primary Research, is underway and has 4 parts:

- Bird Surveys assessing disturbance to overwintering birds – 1st Year Report 2009 (Jonathan Cox) and 2nd year report Dec 2010 (Footprint Ecology);
- Visitor Survey 2010;
- Household Surveys and Visitor Model work currently underway;
- Modelling the impact of disturbance to birds.

2.14 Phase 3 will comprise of an Avoidance and Mitigation Plan when it becomes clear that mitigation needs to be undertaken. The findings of the Project are due towards the end of 2011.

[4] http://www.gosport.gov.uk/sections/your-council/council-services/planning-section/local-development-framework/evidence-base-for-ldf/transport-assessment/

[5] Full project details and outputs can be found on website.

http://www.solentforum.org/forum/sub_groups/Nature_Conservation_Group/Disturbance%20and%20Mitigation%20Project/

2.15 The HRA is an iterative process and has been informed by various stages of consultation. The key stages of the Core Strategy HRA are outlined below:

- Screening Statement (September 2009)
- Interim Appropriate Assessment (July 2010)
- Draft Appropriate Assessment for Pre-Submission Version (October 2010-on-going)

2.16 A stakeholder engagement meeting was held on 5th March 2009, with representatives from relevant organisations including Natural England, the Environment Agency and the RSPB. The purpose of the meeting was to seek opinions on the screening statement of the Core Strategy, gain access to further data that are readily available and come to agreement on the exact nature of the appropriate assessment. A further meeting was held on 13 July 2010, where representatives from these organisations and the Wildlife Trust were given the opportunity to discuss a further iteration of the Core Strategy, its interim assessment and how they relate to wider planning objectives in Gosport and South Hampshire. Specifically, a package of avoidance and mitigation measures has been discussed including issues relating to the emerging Daedalus policy.

2.17 These measures have helped inform the Daedalus SPD. When the consultation draft was produced in January 2011 it was accompanied by a HRA Screening Report. The comments received to both the SPD and the Screening Statement has further informed this HRA Report.

2.18 Subsequently the Borough Council has consulted with Natural England on the findings of this HRA Report including a meeting on 9th August 2011 where it was considered that the conclusions of the HRA addressed their concerns at the SPD stage.

In-Combination Test

2.19 In addition to assessing the impacts of development at Daedalus alone, it is also necessary to consider the development in combination with other plans and projects in the sub-region which together may have the potential to cause negative effects on the integrity of European sites. These effects may be exacerbated when experienced in combination with the effects of the plan in question, possibly leading to an insignificant effect becoming significant. It is therefore important to consider which other plans and projects could generate similar effects to policies and proposals in Gosport Borough at the same European sites, and which may act in-combination. Appendix 3 includes a list of plans and major projects that have been considered relevant when screening the Preferred Options Version of Gosport Core Strategy including the Daedalus Policy. However in some cases new plans are not yet in operation. These new plans still need to be considered for in-combination effects, but significant uncertainty will remain over the nature of effects they might generate until they are adopted.

2.20 Of particular relevance to the proposals outlined in the Daedalus SPD are the proposals set out in the Fareham Core Strategy (Pre-Submission version (December 2010)) which outline the scale and type of development of the Fareham part of the Daedalus site. These proposals have been subject to a Habitat Regulation Assessment as part of the Core Strategy process. Details can be viewed on Fareham Borough Council's website[6]

[6] www.fareham.gov.uk/council/departments/planning/ldf/cstexam.aspx#Docs

3.0 EUROPEAN SITES

Scope of the Study

3.1 Each European site has its own intrinsic qualities, besides the habitats or species for which it has been designated, that enable the site to support the ecosystems that it does. An important aspect of this is that the ecological integrity of each site can be vulnerable to change from natural and human induced activities in the surrounding environment. For example, sites can be affected by land use plans in a number of different ways, including the direct land-take of new development, the type of use the land will be put to (for example, a noise emitting use), the pollution a development generates and the resources it uses (during both construction and operation).

3.2 An intrinsic quality of any European site is its functionality at the landscape ecology level; in other words, how the site interacts with the zone of influence of its immediate surroundings, as well as the wider area. Best practice guidance on Habitats Regulations Assessment suggests that all European sites within the area of coverage of a plan, together with all those within a 10km buffer zone should be considered in the first instance as potential receptors for negative effects. In addition to these, other European sites further than 10km from the area of coverage of a plan may also be affected due to their specific environmental sensitivities. This is particularly the case where there is potential for developments resulting from the plan to generate water-borne pollutants, where there are particularly high demands for water resources, or a specific recreational resource has a catchment area of greater than 10km. There are 14 European sites wholly or partially within the area covered by the plan, or close to it, and which may potentially be affected by activities arising from the plan. These are shown in Figure 2 and Table 1.

Figure 2:
European sites within a 10km vicinity of the Gosport part of the Daedalus site

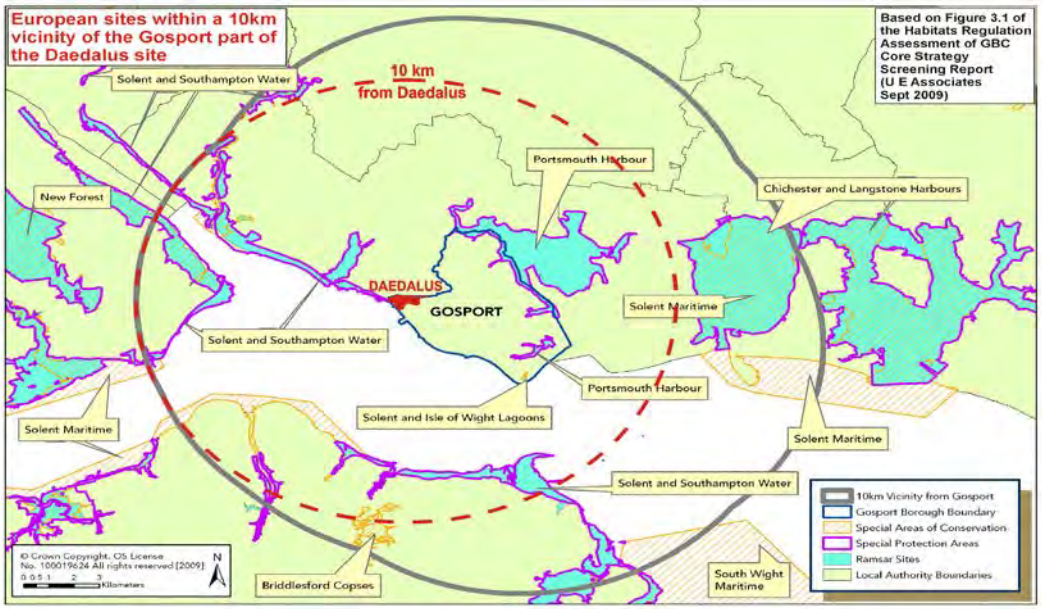


Table 1: European sites in the vicinity of Gosport Borough

Name	Location	Type
Briddlesford Copses	Within 10km buffer zone	SAC
River Itchen	Beyond buffer, still relevant	SAC
Solent and Isle of Wight Lagoons	Within Gosport Borough	SAC
Solent Maritime	Within 10km buffer zone	SAC
South Wight Maritime	Within 10km buffer zone	SAC
The New Forest	Beyond buffer, still relevant	SAC
Chichester and Langstone Harbours	Within 10km buffer zone	SPA
Portsmouth Harbour	Within Gosport Borough	SPA
Solent and Southampton Water	Within 100m of the Daedalus site	SPA
The New Forest	Beyond buffer, still relevant	SPA
Chichester and Langstone Harbours	Within 10km buffer zone	Ramsar
Portsmouth Harbour	Within Gosport Borough	Ramsar
Solent and Southampton Water	Within 100m of the Daedalus site	Ramsar
The New Forest	Beyond buffer still relevant	Ramsar

Site Descriptions

3.3 An ecological description of each European site is given in Appendix I of the Habitats Regulation Assessment of the Gosport Borough Council Core Strategy: Screening Report (UE Associates September 2009)[7].

Qualifying Features

3.4 The qualifying features of each site (that is, the reasons for which the sites were designated) are included in Appendix II of the Habitats Regulation Assessment of the Gosport Borough Council Core Strategy: Screening Report (UE Associates September 2009)[8]. To summarise, the main species and habitats protected under the group of designations are as follows in Table 2.

Table 2: Species (as protected by the designation of SPAs and Ramsars)

• Bar-tailed Godwit *Limosa lapponica*	• Little Egret *Egretta garzetta*
• Black-tailed Godwit *Limosa limosa islandica*	• Little Tern *Sterna Albifrons*
• Common Shelduck *Tadorna tadorna*	• Mediterranean Gull *Larus melanocephalus*
• Common Tern *Sterna hirundo*	• Nightjar *Caprimulgus europaeus*

[7] Available to view at: www.gosport.gov.uk/cs-hra

[8] Available to view at: www.gosport.gov.uk/cs-hra

• Dark-bellied Brent Goose *Branta bernicla bernicla*	• Red-breasted Merganser *Mergus serrator*
• Dartford Warbler *Sylvia undata*	• Redshank *Tringa totanus*
• Dunlin *Calidris alpina alpina*	• Ringed Plover *Charadrius hiaticula*
• Grey Plover *Pluvialis squatarola*	• Roseate Tern *Sterna dougallii*
• Hen Harrier *Circus cyaneus*	• Sandwich Tern *Sterna sandvicensis*
• Honey Buzzard *Pernis apivorus*	• Teal *Anas crecc*
	• Woodlark *Lullulla arborea*

Habitats and species (as protected by the designation of SACs and Ramsars)

• Alkaline fens	• Reefs
• Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior*	• Sandbanks - slightly covered by sea water all the time
• Annual vegetation drift lines	• Salt tolerant plants *(Salicornia)* and other annuals colonising mud and sand
• *Asperulo-Fagetum* beech forests	• Shifting white dunes with *Ammophila arenaria*
• Atlantic acidophilous beech forests with *Ilex* and sometimes also *Taxus* in the shrublayer	• Spartina swards (*Spartinion maritimae*)
• Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*)	• Submerged or partially submerged sea caves
• Bog woodland	• Transition mires and quaking bogs
• Coastal lagoons	• Vegetated sea cliffs of the Atlantic and Baltic coasts
• Depressions on peat substrates of the *Rhynchosporion*	• Water courses of plain to montane levels with the *Ranunculion fluitantis* and *Callitricho-Batrachion* vegetation
• Estuaries	• Atlantic salmon *Salmo salar*
• European dry heaths	• Bechstein's bat (*Myotis bechsteinii)*
• *Molinea* Meadows on calcareous, peaty of clayey-silt-laden soils (*Molinion caeruleae*)	• Brook lamprey *Lampetra planeri*
• Mudflats and sandflats – not submerged at low tide	• Bullhead *Cottus gobio*
• Northern Atlantic wet heaths with *Erica tetralix*	• Desmoulin's whorl snail *Vertigo moulinsiana*
• Old acidophilous oak woods with *Quercus robur* on sandy plains	• Great crested newt *Triturus cristatus*
• Oligotrophic to mesotrophic standing waters with vegetation of the *Littorelletalia uniflorae* and/or of the *Isoeto-Nanojuncetea*	• Otter *lutra lutra*
• Oligotrophic waters containing very few minerals of sandy plains (*Littorelletalia uniflorae*)	• Southern damselfly *Coenagrion mercuriale*
• Perennial vegetation -stony banks	• Stag beetle *Lucanus cervus*
• White-clawed (or Atlantic stream) crayfish *Austropotamobius pallipes*	

Conservation Objectives

3.5 Natural England is in the process of setting out conservation objectives for all SACs and SPAs, and progress towards these objectives can be taken as an indicator of favourable condition at European sites. Ramsar sites do not have agreed conservation objectives, but in most instances overlap with SPA site boundaries. However, it should be noted that Ramsar qualifying features include a range of habitats and non-bird species common to SAC designations, as well as bird species and assemblages and their supporting habitats, which are common to SPAs.

3.6 The conservation objectives of the above sites are currently work in progress and are provided in Appendix III of the Habitats Regulation Assessment of the Gosport Borough Council Core Strategy: Screening Report (UE Associates September 2009).[9]

Vulnerabilities and Opportunities

3.7 Every European site has distinctive characteristics that make it vulnerable to a variety of impact-inducing activities. Many sites, due to their location or condition, also offer various opportunities for improvement.

3.8 The vulnerabilities and opportunities of the above named sites are shown in Appendix IV of the Habitats Regulation Assessment of the Gosport Borough Council Core Strategy: Screening Report (UE Associates September 2009).[8]

[9] Available to view at: www.gosport.gov.uk/cs-hra

4.0 Screening Stage

Introduction

4.1 The Screening Statement[10] for the Daedalus SPD was subject to consultation between the 24th January and 4th March 2011 and a number of representations were received including from Natural England.[11]

4.2 The Screening Statement for the Daedalus SPD was based on the Screening Statement for the Core Strategy (UE Associates September 2009) which included screening of the Daedalus Strategic Site policy contained in the Preferred Options version of the Core Strategy. Since this stage there has been a stakeholder meeting with a number of organisations including Natural England, the RSPB, The Wildlife Trust and the Environment Agency which has informed a draft Appropriate Assessment for the emerging Pre-Submission version of the Core Strategy. This work, together with the consultation responses received as part of the SPD Screening Report, has further informed the HRA Report for the Daedalus SPD.

4.3 As part of the screening process proposals were sorted into one of nine categories which are listed below in Figure 3. These categories help to determine which, if any, elements of the plan would be likely to have a significant effect on any interest feature of any international site, alone or in combination with other projects and plans, directly or indirectly.

4.4 Those policies falling within categories one to seven are deemed not to have an effect on a European site and can be eliminated from the assessment procedure. Those falling within category eight require further analysis including an in-combination assessment to determine whether they should be included in the next stage of the HRA process; whilst an appropriate assessment must be carried out for any policy falling within category nine.

Figure 3: Categories of policies (Source David Tyldesley and Associates (draft, 2006))[12]

Reasons why policy will have no effect on a European Site:

1. The policy will not itself lead to development (e.g. it relates to design or other qualitative criteria for development, or it is not a land use planning policy).

2 The policy makes provision for a quantum / type of development (and may or may not indicate one or more broad locations e.g. a district, town or suburb) but the location of the development is to be selected following consideration of options in lower tier plans.

3. No development could occur through this policy alone, because it is implemented through sub-ordinate policies which are more detailed and therefore more appropriate to assess

[10] Available to view at: www.gosport.gov.uk/cs-hra

[11] Details can be viewed in 'Daedalus SPD: - Summary and Analysis of Consultation Responses (GBC 2011)

[12] Acknowledge that latest unpublished NE guidance 2009 has different categories. However for the purposes of consistency with the approach used in the emerging Core Strategy and the matrix used in the Screening Statement for the Daedalus SPD it is considered appropriate to use the accepted method in the 2006 document.

for their effects on European sites and associated sensitive areas.

4 Concentration of development in urban areas will not affect European sites and will help to steer development and land use change away from European sites and associated sensitive areas.

5. The policy will help to steer development away from European sites and associated sensitive areas, e.g. not developing in areas of flood risk or areas otherwise likely to be affected by climate change.

6. The policy is intended to protect the natural environment, including biodiversity.

7. The policy is intended to conserve or enhance the natural, built or historic environment, and enhancement measures will not be likely to have any effect on a European site.

Reason why policy could have a potential effect:

8. The plan steers a quantum or type of development towards, or encourages development in, an area that includes a European site or an area where development may indirectly affect a European site.

Reason why policy would be likely to have a significant effect:

9. The policy makes provision for a quantum, or kind of development that in the location(s) proposed would be likely to have a significant effect on a European site. The proposal must be subject to appropriate assessment to establish, in light of the site's conservation objectives, whether it can be ascertained that the proposal would not adversely affect the integrity of the site.

Key Findings

4.5 The consultation responses on the screening statement has led to a number of changes in relation to the consideration of effects and their impact on European sites. The salient points arising from the consultation on the Screening Statement are set out below.

Relevant European sites

4.6 Natural England (NE) and Environment Agency (EA) agreed that all the European sites relevant to Daedalus have been identified in the Screening Statement. As a result of the Screening Report the Habitats Regulations Assessment Report will focus on the possible effects of the plan on the nature conservation interests of the following sites:

- River Itchen (Special Area of Conservation SAC)
- Solent and Isle of Wight Lagoons (SAC)
- Solent Maritime (SAC)
- South Wight Maritime (SAC)
- The New Forest (SAC)
- Chichester and Langstone Harbours (Special Protection Area, SPA)
- Portsmouth Harbour (SPA)
- Solent and Southampton Water (SPA)

- The New Forest (SPA)
- Chichester and Langstone Harbours (Ramsar site)
- Portsmouth Harbour (Ramsar)
- Solent and Southampton Water (Ramsar)
- The New Forest (Ramsar).

Briddlesford Copses SAC was screened out from further consideration.

Ecological descriptions, qualifying features, conservation objectives, vulnerability and opportunities

4.7 Natural England agreed that these have all been identified.

Identified effects

4.8 Natural England made a number of comments regarding the Screening Matrix and Effects tables. Consequently additional considerations have been included in the HRA Report. The additional effects are outlined below and summarised in Tables 3 and 4 which have been amended since the Screening Statement Report. Natural England also had a number of queries regarding specific elements of the matrix.

4.9 The potential impacts of employment floorspace have been 'screened-in'. Previously these effects had only been included in relation to residential development. Consequently the following impacts and sites have been included within the HRA linked to employment uses:

- Air pollution - which could affect the Southampton and Solent SPA and Ramsar Site.
- Water abstraction - which could affect River Itchen SAC, Solent Maritime SAC, Chichester Harbours SPA and Ramsar, Portsmouth Harbour SPA and Ramsar and the Southampton and Solent SPA and Ramsar Site.
- Waste Water Pollution - which could affect Portsmouth Harbour SPA and Ramsar and the Southampton and Solent SPA and Ramsar Site.
- Disturbance implications for Solent and Southampton Water SPA/Ramsar due to potential increased use of the slipway and runway.

4.10 The potential impacts of leisure and recreation floorspace have also been 'screened-in' and consequently the following impacts and sites have been included within the HRA:

- Water abstraction - which could affect River Itchen SAC, Solent Maritime SAC, Chichester Harbours SPA and Ramsar, Portsmouth Harbour SPA and Ramsar and the Southampton and Solent SPA and Ramsar Site.
- Waste Water Pollution - which could affect Portsmouth Harbour SPA and Ramsar and the Southampton and Solent SPA and Ramsar Site.
- Disturbance implications for Solent and Southampton Water SPA/Ramsar due to potential increased use of the slipway and airfield.

4.11 The potential impacts of enhanced access arrangements have been 'screened-in' and consequently the following impacts and sites have been included within the HRA:

- disturbance implications for Solent and Southampton Water SPA/Ramsar due to potentially increased use of the waterfront.

Additional effects

4.12 Natural England considered that at the SPD level, additional impacts need to be considered including noise and vibration, and light pollution. The RSPB also consider that vibration and construction effects need to be assessed. Consequently a consideration of these potential impacts have been included in the HRA Report. The following construction effects have been assessed:

- dust- included as part of the air pollution assessment (Section 6)
- noise and vibration during construction including as part of the wider noise and vibration assessment (Section 12)

It unlikely that visual disturbance in relation to construction will be a particular issue at Daedalus due to the site's position in relation to the European habitat and presence of existing buildings along Marine Parade which will effectively screen the site.

Guidance on any potential marina

4.13 There was significant concern from Natural England, the Environment Agency and the RSPB that the Borough Council had screened out the marina in its Screening Statement. However the Borough Council is still of the view that the marina does not form part of an appropriate assessment as it does not form part of the SPD and has been included as guidance in case any proposals should come forward. In order to alleviate the concerns of Natural England and others, text relating to the marina has been revised to reflect Natural England's comments and reads '

> 'In terms of other marine activity issues, consideration has been given in the past to a possible marina option at Lee-on-the-Solent adjacent the Daedalus site. It is important to note that a marina does not form part of the SPD nor is it within the Daedalus site. However for the purposes of providing a comprehensive guidance document for developers it is considered important to outline the potential issues if a marina proposal were to come forward by a developer with the potential complementary links with the Daedalus site.
>
> 'There are a number of significant issues that would need to be addressed when designing any marina proposal. This includes the proximity to the internationally important habitats of the Solent including the Special Protection Area immediately adjacent at Hill Head; the impacts on the Site of Special Scientific Interest (SSSI) on Lee beach for geological reasons; and the SSSI at Browndown further to the east which could be affected by changes to the local hydrology. Early dialogue with Natural England and the Environment Agency will be critical. Any development should provide appropriate measures that would mitigate any significant effects on a designated site either alone or in combination with other plans and projects. If these effects can not be successfully mitigated the proposal would not be in accordance with the Gosport Borough Local Plan or the emerging Core Strategy and would be refused.'

4.14 The advisory text has been relocated as part of development consideration rather than being part of the development strategy. It is therefore considered that the marina should not be subject to an appropriate assessment as part of the SPD.

4.15 It is also useful to note that following concerns raised regarding the marina option at the Preferred Options stage of the Core Strategy (September 2009) the Borough Council has undertaken an appropriate assessment (conducted by UE Associates) of this option in order to inform the Pre-submission version of the Core Strategy. It concludes that 'in the absence of further information about the marina proposal at the current point in time a precautionary assessment must conclude that there will be adverse effects on the integrity of Solent and Southampton Water SPA/Ramsar as a result of the Core Strategy policy.' Potential effects could include coastal hydrodynamics and sedimentation, disturbance, atmospheric pollution and pollution of the marine environment. It adds that

the marina element of Daedalus Core Strategy policy should be removed. However it states that the explanatory text could still acknowledge independent development ambitions for a marina, but also makes it clear that challenging environmental and ecological issues require consideration.

Revised Screening Matrix and Effects Table

4.16 Table 3 includes the results of the screening process of the Daedalus policy in the Core Strategy with amendments in the light of comments received from Natural England and others at the Screening stage of the Daedalus SPD. The numbers in each of the cells relates to the categories in Figure 3.

Table 3: Revised Screening matrix of the Daedalus Core Strategy Policy (CS8 of the Core Strategy: PreferredOptions stage)

Site Name CS8	Briddlesford Copses SAC	River Itchen SAC	Solent and Isle of Wight Lagoons SAC	Solent Maritime SAC	South Wight Maritime SAC	Chichester & Langstone Harbours SPA	Chichester & Langstone Harbours Ramsar	Portsmouth Harbour SPA	Portsmouth Harbour Ramsar	Solent & Southampton Water SPA	Solent & Southampton Water Ramsar	The New Forest SAC	The New Forest SPA	The New Forest Ramsar
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2	1	1	1	1	1	1	1	1	1	1	1	1	1	1
3*a	5	8	5	8	5	8	8	8	8	8	8	5	5	5
3b	5	5	5	5	5	5	5	5	5	8	8	5	5	5
3c	4	8	8	8	8	8	8	8	8	8	8	8	8	8
4	5	5	5	5	5	5	5	5	5	8	8	5	5	5
5	5	5	5	5	5	5	5	5	5	8	8	5	5	5
6	5	5	5	5	5	5	5	5	5	8	8	5	5	5
7	5	5	5	5	5	5	5	5	5	8	8	5	5	5
8	4	8	8	8	8	8	8	8	8	8	8	8	8	8
9	7	7	7	7	7	7	7	7	7	7	7	7	7	7
10	1	1	1	1	1	1	1	1	1	8	8	1	1	1
11	1	1	1	1	1	1	1	1	1	8	8	1	1	1
12	1	1	1	1	1	1	1	1	1	8	8	1	1	1
13	1	1	1	1	1	1	1	1	1	1	1	1	1	1
14	1	1	1	1	1	1	1	1	1	1	1	1	1	1
15	6	6	6	6	6	6	6	6	6	6	6	6	6	6
16	1	1	1	1	1	1	1	1	1	1	1	1	1	1

4.17 The potential effects of the Daedalus SPD are outlined in Table 4 (i.e those shown as '8s' in Table 3). Consequently the proposals of the Daedalus SPD in combination with other proposals in the sub region could potentially lead to significant adverse effects on site integrity.

Table 4: Potential Effects on European sites

Potential Effect	Potential Pathway	Potential Receptor
Air pollution	Nitrogen deposition as a result of emissions from vehicles, and residential and employment development. Increased dust during the construction phase affecting the immediate locality.	Solent and Southampton Water SPA/Ramsar, Portsmouth Harbour SPA/Ramsar, River Itchen SAC, Chichester and Langstone Harbours SPA/Ramsar, New Forest SAC/SPA/Ramsar.
Disturbance from recreation	Increased number of residents and tourists resulting from new housing and/or improved facilities.	Solent and Southampton Water SPA/Ramsar, Potentially in-combination impacts on the following: Chichester and Langstone Harbours SPA/Ramsar, Portsmouth Harbour SPA/Ramsar, and the New Forest SPA/Ramsar
Disturbance from increased use of the slipway	Increased use of the slipway either through increased recreation use or use related to business and thereby potentially increasing disturbance.	Solent and Southampton Water SPA
Disturbance from aviation	Increased use of airfield resulting from increased business or leisure use and thereby potentially increasing disturbance.	Solent and Southampton Water SPA
Water abstraction and consumption	Increased abstraction for new residential and employment developments.	Solent and Southampton Water SPA/Ramsar, River Itchen SAC, Solent Maritime SAC, Chichester and Langstone Harbours SPA/Ramsar, Portsmouth Harbour SPA/Ramsar,
Waste water pollution	Increased waste water production from new residential and employment developments putting	Portsmouth Harbour SPA/Ramsar, Solent and Southampton Water

	pressure on treatment works	SPA/Ramsar
Noise and vibration	Increased noise and vibration during construction phase as well as potential for certain types of employment/leisure uses at an operational stage.	Solent and Southampton Water SPA/Ramsar
Light	Increased light pollution through street lighting or similar outdoor lighting	Solent and Southampton Water SPA/Ramsar

Other relevant comments

4.18 There were also a number of comments made specifically to the SPD rather than the screening statement which are applicable to conducting the HRA.

Scale of residential development

4.19 Natural England had concerns that whilst the Borough Council will not encourage proposals to exceed 352 dwellings, it does state that in exceptional circumstances it may be appropriate to consider a higher residential figure in order to achieve the Council's key objective in relation to maximising employment opportunities. Natural England advises that the potential maximum number of residential units should be assumed for the purposes of HRA, applying the precautionary principle required by the Habitats Regulations.

4.20 Natural England note that the relevant paragraph (para 4.28 in consultation draft) identifies that any additional residential units will require a robust justification relating to the economic benefits to the scheme. Natural England recommends that this should also refer to environmental capacity and social benefits of the scheme.

4.21 In response to these comments it is clear from the SPD that the Borough Council does not wish to encourage proposals over the 352 dwellings and will only consider proposals in **exceptional circumstances** and that this must be backed up by robust evidence. It is therefore not considered appropriate to consider a potential maximum number of residential units for the site over 352 dwellings when this is not what the SPD is seeking. The Council however fully accepts the point that any higher residential figure that may be considered in exceptional circumstances will need to demonstrate that there is no detrimental impact on the European sites alone or in combination. **Consequently Natural England's proposed wording regarding environmental capacity has been included in the revised Daedalus SPD**.

4.22 It is also worth noting that the Borough Council has already taken into account the potential for higher levels of growth. These have been built-in to the Council's emerging Appropriate Assessment for its Core Strategy where an assessment is made not only of the target figure of 2,500 dwellings but also a 4,000 dwelling scenario. This higher figure is not a target but aims to explore the effects of higher numbers of residential development above 2,500 dwellings to allow for potential enabling development on the numerous complex brownfield sites in the Borough. This higher figure has also been tested in a number of evidence studies including the PBAs transport study (referred to in the air pollution section).

Overarching comments

4.23 Natural England considered that the Consultation version of the SPD did not 'provide sufficient assurances that adverse impacts will be avoided or clear commitment to enhance the natural environment and how this will be achieved.' It is considered that the subsequent changes made to the SPD (explained as part of Sections 5-13 of this HRA Report) address these concerns and ensure that developers are aware of these issues that need to be fully considered at the project (planning application) stage.

4.24 Natural England comments that the consultation version of the HRA makes references to an HRA to be undertaken at project level. However it adds that Habitats Regulations require that there is reasonable certainty at policy level that development allocations are deliverable without adverse effects in the integrity of designated sites. Therefore the Core Strategy and SPD must be subject to robust assessment, applying the precautionary principle required by the regulations. This may include the need for policy caveats where, after robust assessment, there are residual uncertainties depending on how a policy is implemented. It is considered that this advice has been incorporated in the appropriate assessment outlined in the following sections.

5.0 Appropriate Assessment Stage

Introduction

5.1 The purpose of the Appropriate Assessment stage is to analyse the likely significant effects identified during the screening stage, as well as those effects which were uncertain or not well understood and taken forward for assessment in accordance with the precautionary principle. The assessment should seek to establish whether or not the plan's effects, either alone or in combination with other plans or projects, will lead to adverse effects on the integrity of the European sites, with regard to the sites' conservation objectives[13]. Site integrity can be described as follows:

> *' the integrity of a site is the coherence of its ecological structure and function, across its whole area, that enables it to sustain the habitat, complex of habitats and/or the levels of populations of the species for which it was classified*.'[14]

5.2 It should be borne in mind that appropriate assessment for a plan is unlikely to be as detailed as an assessment undertaken at project level. The object is to assess whether it can be ascertained that the elements of the plan, alone or in combination with each other would have an adverse effect on the integrity of a European site.

5.3 The following measures may be necessary in order for the local planning authority to ascertain that there would be no adverse effects on the integrity of a European site:

- deletion of the policy or proposal that may cause the adverse effect;
- reduction in the scale of the potentially damaging provision;
- relocation or alteration of the spatial distribution of the potentially damaging provision;
- introduction of counteracting measures, especially of a strategic nature, including the addition of appropriate caveats to policies;
- lower tier Habitats Regulations Assessment where certain criteria is met.

[13] see Appendix III of the Council's Core Strategy: Screening HRA Report www.gosport.gov.uk/cs-hra. .

[14] ODPM (2005): Government Circular: Biodiversity and Geological Conservation – Statutory Obligations and their Impact within the Planning System. ODPM (2005): Government Circular.

5.4 Each of the identified effects contained in Table 4 are outlined in the following sections and include the following:

- signpost to key evidence or outline forthcoming evidence not yet available;
- explanation of the type of impact;
- potential source of impact;
- relevant sites and potential effects on their integrity;
- key considerations relating to the assessment;
- avoidance and mitigation measures;
- key changes to the SPD; and
- overall findings.

5.5 As previously stated much of the assessment work, but not all, has been based on the emerging HRA work for the Gosport Core Strategy.

6.0 Air Pollution

Key evidence:

Road Transport Emissions Impacts on Nature Conservation Sites (AEA Technology 2010)

This was commissioned in 2007 by PUSH to examine the atmospheric pollution effects of growth planned within the South Hampshire Sub Regional Strategy on nationally and internationally important nature conservation sites. 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 Core Strategy including development at Daedalus

Assessing the Impact of the Harbour Authorities LDF Proposals in the Strategic Highway Network (PBA 2009)
http://www.gosport.gov.uk/sections/your-council/council-services/planning-section/local-development-framework/evidence-base-for-ldf/transport-assessment/

This was prepared on behalf of the four south-east Hampshire local authorities; Gosport, Fareham, Portsmouth and Havant. The assessment uses pre-existing transport models, together with additional validating data and details of strategic housing (2,500 dwellings in Gosport Borough), employment and retail development across the four authority areas and beyond. It makes predictions of traffic flow increases for the years 2016 and 2026, and takes into account strategic developments such as Daedalus and transport measures (proposed and planned). An assessment has also been made for a higher scenario (4,000 dwellings) in Gosport to understand the impact of higher levels of development above the 2,500 dwelling target.

Non-statutory strategic environmental assessment undertaken by SEEDA to support GBC's SPD (Drivers Jonas 2009)

This was background work commissioned by SEEDA to help inform the SPDs. Whilst the document has not been formally published by SEEDA the contents have not only informed the SPDs but have provided an environment assessment on the potential impacts of Daedalus site. This work is more useful for assessing local impacts for Daedalus rather than in-combination aspects which are covered by the previous two studies. This study includes advice relating to potential pollution arising from dust.

Potential type of impact

6.1 Atmospheric pollution was originally identified as a potential impact in the Screening Report because proposals at Daedalus in-combination with other residential, employment, leisure and other development in the sub-region is likely to increase road traffic. This additional traffic will cause pollution which could impact upon the European sites.

6.2 Road traffic emits a range of pollutants including oxides of nitrogen (NOx), volatile organic compounds, heavy metals, particulates and ammonia. The habitats most

sensitive to air pollution present in the European sites within the scope for the assessment are:

- Grazing marsh
- Shingle
- Other litteral and supralittoral rocks and sediments
- Beech, oak and bog woodland
- Acid calcareous and neutral grasslands.
- Saltmarsh
- Sand dunes
- Lowland heathland
- Mires and bog

6.3 The main pollutant effects of interest are acid deposition and eutrophication by nitrogen deposition. High concentrations of nitrogen oxides can have a number of detrimental impacts on vegetation including reducing rates of photosynthesis, affecting rates of regeneration and growth, and damaging the health of plants with consequent effects on the wider food chain.

6.4 Nitrogen plays an important role in all impact mechanisms. Over half of all emissions of nitrogen and nitrogen oxides in the UK are the result of vehicle exhausts, with an estimated 92% of those associated with residential development being contributed by road traffic (Dore et al, 2005). Nitrogen emissions and associated ammonia from traffic generated by residential and commercial developments will therefore be the focus of this part of the assessment. The scope can be further refined by concentrating on traffic growth on roads within 200m of European sites, as beyond 200m effects of emissions from this source diminish to the equivalent of background levels (Laxen & Wilson (2002), DfT (2005)).

6.5 Natural England in response to the Council's Screening Statement confirmed that the HRA should consider the potential impacts of air pollution due to increased traffic from the development on all roads that pass within 200m of a designated site, where there is likely to be a significant increase in traffic as result of the development. This may be at some distance from the new development itself.

6.6 Sulphur dioxide emissions, which have decreased significantly in the UK over the last two to three decades through tighter regulation, are generally associated with centralised power generation. Ammonia emissions are closely related to agricultural sources and some industrial processes. The Core Strategy does not promote new centralised energy generation facilities and does not have an agricultural economy.

6.7 It is also recognised that dust largely resulting from construction phases can impact on important habitats through effects such as smothering. There may be, in some limited circumstances, the issue of toxicity related to particular types of dust such as cement, which is very alkaline and could affect the pH of an area.

Potential source of impact

6.8 It is recognised that traffic generated by the development can produce air pollution. This traffic may be generated from residential, employment or leisure uses on the site and can have alone or in-combination impacts over a wider area or more localised impacts. This potentially includes:

- Traffic travelling to and from Daedalus and the Gosport peninsula in-combination with other development in the PUSH area having an impact on a wide number of European sites- this could occur at both the construction and operational phases;
- A significant proportion of traffic travelling to/from Daedalus will travel from/to Junction 11 of the M27 via Quay Street in Fareham. This route passes within 200m of the Portsmouth Harbour SPA/Ramsar in Fareham.

- The southern end of Daedalus will be served by Stubbington Lane/Marine Parade within 60 metres of the Solent and Southampton Water with the potential for a new junction.

6.9 Dust generated during the construction phase has the potential to impact on the immediate vicinity i.e. Hill Head part of the Solent and Southampton Water SPA.

Relevant sites and potential effects on their integrity

6.10 Based on the AEA Technology (2010) study and the Core Strategy HRA assessment it is clear that planned development in South Hampshire, of which the proposals in the Gosport Core Strategy including development at Daedalus is an integral part, will lead to adverse effects on the ecological integrity of some habitat types as pollutant levels exceed established critical load/level. Sites include:

- River Itchen SAC;
- Solent Maritime SAC (Langstone Harbour and Lower Test valley in particular)
- Chichester and Langstone Harbours SPA/Ramsar (especially Langstone Harbour)
- Portsmouth Harbour SPA/Ramsar
- Solent and Southampton Water SPA/Ramsar (Lower Test Valley in particular).

6.11 Atmospheric pollution effects on the New Forest SAC/SPA/Ramsar are not considered likely.

6.12 In considering all the sites that could be affected at least seven effects on the ecological integrity are possible:

- Interrupts progress towards achieving the conservation objectives of the site;
- Disrupts those factors that help to maintain favourable conservation status onsite;
- Interferes with the balance, distribution and density of key species that are the indicators of the favourable conservation status of the site;
- Causes changes to the vital defining aspects (e.g. nutrient balance) that determine how the site functions as a habitat or ecosystem;
- Reduces the area of key habitats;
- Changes the balance between key species; and
- Reduces the diversity of the site.

Key considerations

<u>Traffic pollution</u>

6.13 The AEA Technology Study includes detailed technical data of the potential effects. Key considerations are outlined below. 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 Core Strategy. Due to conflicting forecasts of traffic growth from development across the area, the report assumes growth at a rate of 45% for the M271 and Redbridge Causeway, and 15% for all other modelled roads. The report acknowledges this is likely to be an overestimate in some cases.

6.14 Critical levels for oxides of nitrogen and ammonia concentrations and critical loads for nitrogen and total acid deposition provide benchmarks for assessing the potential for

harm from air pollution. Nilsson and Grennfelt (1988) define critical loads and levels as "a quantitative estimate of exposure to one or more pollutants below which significant harmful effects on specified sensitive elements of the environment do not occur according to present knowledge".

6.15 However, these critical loads and levels are already exceeded at background locations, away from roads, throughout much of South Hampshire. In order to assess the impact of traffic growth on air quality within the nature conservation sites, AEAT (2010) compared pollutant concentrations and deposition rate for the following scenarios.

- Recent year (2007/08);
- Future year 2026 without development promoted by the South Hampshire Sub Regional Strategy; and
- Future year 2026 with South Hampshire Sub Regional Strategy development.

6.16 The findings are presented as a comparative analysis of the scale of impact rather than drawing conclusions as to the level of significance of harm to habitats. The overall findings conclude that, of the relevant European sites assessed, only Langstone Harbour (including parts of Solent Maritime SAC, but not Chichester Harbour) is likely to be a recipient of the greatest air pollution impacts in 2026.

6.17 The report shows that:

- Modelled concentration levels of NOX are lower in 2026 with South Hampshire development than in 2007 for all sites;
- Modelled concentrations of ammonia (NH3) are higher in 2026 with South Hampshire development than in 2007 for Portsmouth Harbour SPA/Ramsar and River Itchen SAC;
- Modelled deposition loads of nutrient nitrogen are lower in 2026 with South Hampshire development than in 2007 for all sites
- Modelled deposition loads of acidity from nitrogen are lower in 2026 with South Hampshire development than in 2007 for all sites.

6.18 The critical load or level for most pollutant types is likely to be exceeded to some extent in 2026. However, in many cases this is predominantly the case close to the road (but still within the European site) rather than throughout the site. This is particularly so for atmospheric concentrations (levels) of nitrogen and ammonia. Deposition of nutrient nitrogen tends to disperse more widely over each site, and this is more pronounced for nitrogen acidification.

6.19 Cases where atmospheric nitrogen from development adds more than 3% of the critical level and affects 60% or more of a given habitat type are generally restricted to Langstone Harbour and Lower Test Valley. Portsmouth Harbour and the River Itchen are the only sites to experience an increase in atmospheric ammonia as a result of development by 2026. Sites receiving more than around an additional 1% of nutrient nitrogen across more than 60% of multiple habitat areas as a result of development are limited to Langstone and Portsmouth Harbours, and less so River Itchen and Lower Test Valley.

6.20 Importantly it is considered that the Lee-on-the-Solent to Itchen Estuary part of the Solent and Southampton Water SPA, which is in close proximity to Daedalus will receive very little additional pollution as a result of South Hampshire development in 2026. It is considered that in broad terms the access strategy of the Daedalus SPD will assist in diverting traffic from the road closest to the Solent/Southampton Water SPA. It is anticipated that the main access serving the site will be on Broom Way which will take the bulk of the traffic movements including heavier vehicles. This access is some 1.4km east north east of the European site and is therefore likely to take traffic off Stubbington

Lane closest to the SPA. There will be a signage strategy in place to route heavy goods vehicles to the primary access at Broom Way which is highlighted in the SPD.

6.21 However the SPD anticipates that a new secondary access point serving Daedalus could be created within 100 metres of the site and that this will be traffic-signal controlled. The impact of this new junction and whether it has any air pollution implications will need to be assessed as part of a planning application both in relation to human health and impact on European sites.

6.22 Little additional pollution will also be received at Chichester Harbour, Eling and Bury Marshes, New Forest, and Upper Hamble Estuary and Woods

Traffic modelling

6.23 An extensive transport assessment has been prepared on behalf of the four south-east Hampshire local authorities (PBA, 2009); Gosport, Fareham, Portsmouth and Havant. The assessment uses pre-existing transport models, together with additional validating data and details of strategic housing (2,500 dwellings in Gosport borough), employment and retail development across the four authority areas and beyond. It makes predictions of traffic flow increases for the years 2016 and 2026, and takes into account the following strategic developments and transport measures (proposed and planned; not exhaustive):

- Housing, employment and retail allocations of Fareham, Portsmouth, Gosport and Havant;
- North of Fareham Strategic Development Area (SDA);
- Whitely major development;
- West of Waterlooville major development;
- North Hedge End SDA;
- M27 climbing lanes between junctions 11 and 12;
- Tipner interchange on the M275;
- Link road from North of Fareham SDA to M27 J11;
- Premium Bus Network improvements; and
- Bus Rapid Transit (BRT; Gosport – Fareham – Fareham SDA – Cosham – Portsmouth – Horndean)

6.24 The assessment uses 22 key junctions to illustrate projected traffic growth, two of which are within 200m of Solent Maritime SAC and Chichester and Langstone Harbours SPA/Ramsar at Langstone Harbour (Farlington and Broadmarsh). A further three junctions are within 200m of Portsmouth Harbour SPA/Ramsar, at Horsea Island, Wallington roundabout and Quay Street, Fareham.

6.25 The Study indicates that the projection of traffic increase on roads serving development on the Gosport peninsula is likely to be at a lower rate than the projections for the AEAT Study.

Dust

6.26 Dust could have an impact on the European sites during future construction works. Most dust is normally deposited within 100 metres of the source. Parts of the SPA are within 100 metres of the site and consequently it may be necessary to consider mitigation measures.

Scope and Limitations of Assessments

6.27 The AEA Technology (2010) report is predicated on a number of assumptions and limitations, not least the difficulty in acquiring robust estimations of additional traffic growth. Those limitations apply to the findings of this section of the assessment. It is assumed that transport improvements contained in the PBA (2009 and 2010) assessments are deliverable and lead to anticipated levels of modal shift.

6.28 The proposed revocation of the South East Plan in July 2010 introduced an extra degree of uncertainty into the assessment: the supporting studies referred to above base many of their assumptions on the level and distribution of development agreed through the plan. But it seems likely that the quantum of development to be pursued across the sub-region would decrease rather than increase in response.

6.29 It is considered that it is not within the scope of the appropriate assessment for an SPD to include quantified detailed information regarding traffic movements and their potential emissions given that the document is to provide a broad framework and that the details of what type of development is proposed and the level of traffic movements can only be assessed at the project level i.e. at the planning application stage. It is considered that the assessment conducted at the Core Strategy stage is the most applicable level of assessment for the Daedalus SPD particularly as the similar levels and types of development identified in the SPD were included in the transport assessment conducted by PBA.

6.30 In the light of the above considerations further information will be required at the planning application stage to inform an appropriate assessment. This includes:

- further detail on local baseline air quality. Discussion with GBCs and FBCs Environmental Health Officers should be carried out to establish the scope of the assessment. Additional monitoring using diffusion tubes may be necessary.
- An assessment of traffic emissions during future development will be required in accordance with the requirements of PPS23-Planning and Pollution Control
- Specific studies may be required for particular uses such as any waste type facilities
- Measures to minimise the impact of construction works on air quality (typically the control of dust) should be established and integrated into a site-wide Construction Environment Management Plan (CEMP).

Avoidance and mitigation

6.31 As a result of the findings of the assessment, development may in-combination with other plans and projects have an effect on the European sites within the sub-region and consequently a number of measures are required or could be required (depending on the results of more detailed assessment at the project level (i.e. planning application).

6.32 The assessment below outlines key measures that can be taken. Some measures were included in the Consultation version of the SPD and are retained in the SPD whereas as other have resulted in changes to the SPD (see section below). It will also be appropriate for developers as part of a planning application to consider the detailed implications of these measures.

<u>Reduce number of car trips, reduce journey lengths, reduce out-commuting, congestion and resulting air pollution impacts:</u>

6.33 The development strategy at Daedalus can contribute to reducing air pollution impacts by creating significant local employment opportunities and thereby assist in reducing out-commuting and reducing air pollution. A mixed use site will create the potential for linked trips thereby reducing the need to use the car. Development at Daedalus could

potentially reduce the amount of traffic using Quay Street junction in Fareham which is an Air Quality Management Area and close to the Portsmouth Harbour SPA.

6.34 A 'do-nothing' approach could potentially lead to even greater out-commuting by car resulting in increased levels of congestion and pollution.

Facilitate opportunities for people to use modes of transport other than the private car.

6.35 Local opportunities for employment as well as leisure will lead to shorter journeys and greater potential for use of other modes of transport other than the private car such as public transport, cycling and walking. The Borough already has some of the highest cycling rates in the country[15] and consequently there is tremendous scope to encourage this form of transport to the Daedalus site

6.36 The SPD includes measures to help facilitate the use of other modes of transport including:

- Bus - need for improved bus serves to serve the site;
- Cycle - new cycle routes to serve the site; and
- Pedestrian - improved linkages between the Daedalus site and Lee Centre, surrounding residential areas and Lee Seafront.

6.37 It will be necessary for developers to provide a travel plan for the site demonstrating how car trips can be minimised.

Routing of traffic

6.38 The SPD requires a signage strategy is in place to route traffic to the Broom Way Access and therefore consequently away from Stubbington Lane and Marine Parade which is significantly closer to the SPA.

Use of green infrastructure to mitigate any identified impacts

6.39 The use of green infrastructure can help reduce emissions at the source and the effects on receptors. Mitigation at source includes:

- the incorporation of green roofs into the design of schemes within development sites, which can help remove dust, heavy metals and nitrogen from the air. Other benefits relate to drainage and biodiversity as well as reducing the heat island effect, which is the main cause of ozone production.
- Tiling and building materials are available which have a coating that absorbs nitrous oxide from the atmosphere.
- Mitigation can also include extensive tree planting acting as a buffer against potentially polluting activities such as transport corridors. Measures can be used around any new industrial plant and energy centres.

6.40 It will be necessary to choose the right species in order to filter air pollution and to be able to withstand its environment. The scale of planting may be considerably greater than that required for its landscaping role. The appropriateness for the Daedalus site will depend on uses proposed and its suitability for an airfield location. There may be scope on certain parts of the site.

[15] 6th highest proportion of any local authority area for cycling to work in 2001 Census

Construction impacts

6.41 In relation to the identified impacts during the construction phase (site preparation, demolition and construction) a number of mitigation measures may be necessary:

- the use of low level screens to enclose appropriate areas of the site throughout the construction period;
- the construction and hard surfacing of existing roads prior to the construction of buildings;
- the provision of easily cleaned hardstanding areas for vehicles;
- the position of any concrete crushing facilities away from sensitive receptors and enclosed with low level screens;
- the regular cleaning by brushing and water spraying of heavily used areas and access routes;
- the provision of wheel-washing facilities adjacent the exit point onto the public highway;
- dusty materials, stockpiles and dusty activities such as cutting and grinding should be located away from the site boundary and effectively screened;
- vehicles carrying waste material off-site to be sheeted, if there is any risk of dust blow; and
- no fires should be allowed on the site.

The SPD requires that a Construction Environmental Management Plan (CEMP) should be prepared in consultation with GBC, FBC and the Environment Agency to ensure that the likely effects of construction are fully understood and that sufficient controls for the environmental management of air quality are in place throughout the construction period.

Monitoring

6.42 It may be necessary for the developer to assist with the monitoring of air quality in the area particularly in the Stubbington Lane/Marine Parade area close to the SPA at Hill Head.

Key changes to the SPD

6.43 As a result of comments received at the Consultation stage and further consideration of many of the potential measures identified above a number of changes have been made to the SPD (see Table 5).

Table 5: Changes to the SPD in relation to the potential air pollution impact

Issue	Comment
Recognise the need to consider the environmental capacity of the area in relation to additional dwellings.	Add new sentence (at the end of paragraph 4.28) in the residential part of the Development Strategy '*It will also be necessary to ensure that the environmental capacity of the area will be considered in relation to any additional dwellings, particularly with regard to potential impacts on internationally important habitats within the vicinity.'*
Make an explicit reference that makes it clear that development that will have a significant impact on the European sites will be refused.	Include text in the biodiversity section of the Daedalus SPD to read: 'It is important to recognise that any development that would be likely to have a significant effect on a designated site, either alone or in combination with other plans and projects would not be in accordance with the Habitats Regulations 2010 or the development plan and would be refused.'
Strengthen text in the SPD that recognises the	Include text in the biodiversity section of the Daedalus SPD to read:

in-combination effects of development across the sub-region and the potential impact on European sites.	*The Daedalus SPD has been subject to assessment under the Habitats Regulations 2010 which has influenced the development options for the site. The Council recognises that additional growth in the Borough, in-combination with growth in neighbouring authorities could without appropriate management and mitigation, lead to adverse effects on European sites. In order to prevent such effects, the Borough Council will work with other authorities (including the Partnership for Urban South Hampshire) to develop and implement a strategic approach to protecting European sites from recreation pressures and other impacts of development. Where development at Daedalus is shown to have an impact on European sites, the developer will be required to consider and implement a range of mitigation measures which are outlined below and in the other relevant sections of this SPD.*
Ensuring that the potential impacts of traffic-related emissions are assessed and where necessary avoided and/or mitigated.	Include text in the transport and accessibility section of the Daedalus SPD to ensure that the details relating to traffic movements included in the Traffic Assessment are used to support the Environmental Statement[16] (which will be necessary to provide evidence in order that the Council can undertake a project-level appropriate assessment).
Use of green infrastructure to mitigate any identified impacts	A new green infrastructure section identifies measures identified in the HRA Report

Appropriate Assessment findings

6.44 The Core Strategy's and SPD's effects on atmospheric pollution are integrally assessed in combination with the effects of other plans and programmes elsewhere in the sub-region; AEA Technology (2010) takes into account development planned throughout South Hampshire, while PBA (2009 and 2010) addresses the traffic growth of the four south east Hampshire authorities, as well as selected strategic development.

6.45 The significance of air pollution is not possible to quantify at the SPD level and given the uncertainty relating to the type of development it would not be meaningful to provide further assessment at this stage. However it is clear from the above assessment that air pollution at the construction and operational stages of development at Daedalus could have an impact on the Solent and Southampton Water SPA as well as other internationally important sites in-combination with other developments in the sub-region. Therefore it is necessary to incorporate a precautionary approach in the SPD including further guidance to developers.

6.46 It is considered that subject to the measures outlined above being successfully incorporated into the SPD and implemented together with the Core Strategy's transport strategy, effects associated with air pollution can be satisfactorily avoided and reduced. Importantly, this includes a commitment to flexibility in the rate, scale and distribution of development, and the ability to respond to the findings of new evidence where this suggests the need for an adjusted approach to the protection of European sites. It is therefore considered necessary for the SPD to highlight issues with air pollution and recommend what control measures are necessary to ensure that development does not have a detrimental impact on the European Sites.

6.47 Detailed air pollution assessments will be completed at the project level as planning applications come forward. Such assessment will allow construction and operation

[16] part of the Environmental Impact Assessment process

phase impacts to be defined in greater detail and where possible quantified to allow the incorporation of mitigation and/or enhancement measures within the general framework set out by the SPD.

7 Disturbance from recreation

Key evidence:

Changing Patterns of Visitor Numbers within the New Forest National Park, with particular reference to the New Forest SPA (J Sharpe, J Lowen and D Liley 2008)

This report explores whether the numbers of people visiting the New Forest are currently having a detrimental effect on species and habitats of European importance. The study is based on an assessment of recreational impacts on selected bird species, on the basis that they are indicators of the general health of the National Park's protected habitats and because work on other areas of southern England has shown these species to be impacted by human disturbance. This assessment looks at the present day, but also considers the implications of new housing developments planned for southern England which will have an impact on recreational patterns, and thus, potentially, on the Park's biodiversity.

Forthcoming Evidence: Solent Disturbance and Mitigation Strategy (Solent Forum)

The project seeks to assess the current impacts of visitor numbers and activities on the survival rates of internationally designated wintering waterbirds throughout the Solent coast, and to establish the likely additional impact from the residents of development proposed in the area. This study will help inform whether sites around the Solent require new management measures to reduce disturbance to the birds using protected habitats. Further details regarding this multi-staged project can be found on the Solent Forum website.

http://www.solentforum.org/forum/sub_groups/Nature_Conservation_Group/Disturbance%20and%20Mitigation%20Project/

Potential type of impact

7.1 Recreational development and developments that may increase the recreational use of coastal areas, or the nearby New Forest, are seen as having potential detrimental impacts on important bird assemblages. The impact hypothesis is that targeted development will increase the level of recreation that will adversely impact on the bird populations supported by European sites; although establishing the impact at population level is very difficult and is likely to be site-specific and species-specific. The impacts may be experienced through direct habitat loss, disturbance while feeding/breeding/roosting, effects on food resource and so on, while factors may act in combination. Evaluation of the impacts of proposed development plans should consider the characteristics and scale of both the recreational use change and the impacts on the bird populations.

7.2 Impacts associated with disturbance from recreation differ at coastal and inland areas, and between seasons, species, and individuals. Birds' responses to disturbance can be observed as behavioural or physiological, with possible effects on feeding, breeding and taking flight. Disturbance can be caused by a wide variety of activities and, generally, both distance from the source of disturbance and the scale of the event will influence the nature of the response. Factors such as habitat, food requirements, breeding behaviour, cold weather, variations in food availability and flock size, will influence birds' abilities to respond to disturbance and hence the scale of the impact (Stillman et al, 2009).

7.3 On the other hand, birds can modify their behaviour to compensate for disturbance, for example by feeding for longer time periods, while some birds can become habituated to particular disturbance events or types of disturbance, and this habituation can develop over short time periods (Stillman et al, 2009). The New Forest SPA experiences different challenges as a result of recreational pressure to the Chichester and Langstone Harbours SPA/Ramsar, Portsmouth Harbour SPA/Ramsar and Solent and Southampton Water SPA/Ramsar.

7.4 At the coastal areas, it can be helpful to divide impacts into the effects of disturbance on overwintering birds, or on breeding birds (Stillman et al, 2009). Impacts to wintering birds are thought to be centred on interruption to foraging, and less so roosting, and individuals alter their threshold in response to shifts in the basic trade-off between increased perceived predation risk (tolerating disturbance) and the increased starvation risk of not feeding (avoiding disturbance) (Stillman et al, 2009). During the breeding season, impacts on shorebirds are akin to those on ground-nesting inland birds, in that predation of eggs, as well as trampling and increased thermal stress, when birds flush the nest in response to a disturbance event has a negative impact on breeding success (Stillman et al, 2009).

7.5 At the New Forest, it is the ground and near-ground nesting birds that are particular receptors of negative effects, such as Dartford warbler, nightjar and woodlark. Studies by Langston et al (2007), Liley and Clarke (2003), and Murison (2002) for example, investigated the effect of disturbance on nightjar on heaths in Dorset, finding that breeding success of nightjar is significantly lower close to paths, and that proximity to housing has a negative relationship with the size of the population (Langston et al, 2007).

7.6 The most common cause of breeding failure for this ground-nesting species was due to daytime predation of eggs when disturbance caused an incubating bird to leave the nest. Similarly, the study by Murison et al (2007) revealed that for Dartford warbler on Dorset heathland, disturbance also reduced breeding activity, particularly so in heather-dominated territories. Birds in heavily disturbed areas (eg, close to access points and car parks) delayed the start of their breeding by up to six weeks, preventing multiple broods and so reducing annual productivity. Most of this disturbance was found to come from dog-walkers as a result of dogs being encouraged to run through the vegetation after sticks.

Potential source of impact

7.7 Development at Daedalus could have a recreational disturbance impact on European sites in several ways as set out below:

- recreational disturbance generated by new residents of the development on the immediate area - i.e. the SPA at Hill Head (Solent and Southampton Water SPA) which is within 100m of the site
- residents using areas further afield within South Hampshire for recreational purposes, particularly in combination with development at other sites in the sub-region.
- recreational disturbance generated by particular leisure/recreational uses associated with development at Daedalus (eg increased access along the coast and water sports)

Relevant sites and potential effects on their integrity

7.8 At least nine effects on the ecological integrity of Chichester and Langstone Harbours SPA/Ramsar, Portsmouth Harbour SPA/Ramsar, Solent and Southampton Water SPA/Ramsar, and New Forest SPA are possible:

- Interrupts progress towards achieving the conservation objectives of the site;
- Disrupts those factors that help to maintain favourable conservation status onsite;
- Interferes with the balance, distribution and density of key species that are the indicators of the favourable conservation status of the site;
- Reduces the area of key habitats;

- Reduces the population of key species;
- Changes the balance between key species;
- Reduces the diversity of the site;
- Results in disturbance that could affect population size or density or the balance between key species; and
- Results in fragmentation.

Key considerations

7.9 Two key studies have been initiated in recent years to examine the effects of recreational pressure at Solent European sites and the New Forest. The following sections discuss the way in which strategic development objectives across south Hampshire, including that in Gosport, could impact on European sites at coastal and inland areas.

7.10 Analysis of impacts of disturbance from recreation remains a complex challenge, and where many significant data gaps and methodological limitations arise. The impacts may affect overwintering birds and breeding birds, and therefore the effects and locations of potential impacts will vary seasonally. The level of recreational use will also vary seasonally, with the highest levels of recreational use of the New Forest, coast and near-shore areas being experienced during summer. The duration of potential impact is also longer during the summer months. Disturbance needs to be considered for different recreational activities (e.g. walking, dog walking, canoeing, and other watersports), and for the variety of species and habitats.

7.11 The majority of recreational users across the Hampshire coast are local (within 10km), and whilst around half of visitors to the New Forest are from outside the South East, the number of people it attracts from the Solent is extensive (Scott Wilson and Levett-Therivel, 2008). Recreational hotspots are generally away from key bird roosts, feeding or breeding grounds and are predominantly summer usage sites.

7.12 Further research into this impact type in relation to European sites in South Hampshire is currently underway through the Solent Disturbance and Mitigation Project (SDMP). Unfortunately the results and potential mitigation measures will not be known until later in the year and consequently the Daedalus SPD will need to take a precautionary approach. Opportunities to respond to, and avoid, any predicted effects are likely to require a combination of measures, including the provision of suitable alternative recreational facilities to deflect pressure from European sites. In addition it will be necessary to consider access and site management measures at European sites themselves.

<u>Consideration for cumulative and in-combination effects</u>

Coastal areas around the Solent

7.13 The Solent provides locations for a wide range of recreational activities and there are high levels of housing around the Solent shoreline, with particularly high densities in the urban areas of Southampton and Portsmouth. An estimated 1.44 million people live within a ten minute drive of a car park at the Solent coast (Stillman et al, 2009).

7.14 Tourists make up a significant proportion of visitors at some sites, although sites vary in their: attractiveness to tourists; suitability for particular kinds of access; and accessibility to the local population. To the east of Southampton Water there are much higher densities of housing and at many sites local people are likely to account for a higher proportion of visitors.

7.15 Future development is likely to result in a large increase in the residential population, particularly in the vicinity of Southampton, Portsmouth and Fareham. Monitoring of recreational access has been limited to date, making it difficult to determine how patterns of access have changed over time and how they may change in the future.

7.16 The Solent Disturbance and Mitigation Project was initiated in response to concern over the impact of disturbance on coastal birds and their habitats. The focus of the project is on the likely effects of increased visitor pressure and recreational use arising from planned development around the Solent. The Project has gathered data on bird numbers and their responses to various forms of recreational disturbance, visiting patterns at specific sites, household surveys to help gauge which locations are most popular and why, and then to model predicted effects on birds at hotspots of recreational visiting activity. The Project will then combine findings of earlier phases in order to determine how development planning can influence these responses and ways in which impacts might be mitigated.

7.17 Whilst the Daedalus SPD (and the emerging Core Strategy) set out potential measures that could be implemented to mitigate any effects it will not be until the SDMP is completed that the Borough Council will have a full understanding of what mitigation measures are actually necessary for different development. Hence it is necessary for the SPD to adopt a precautionary approach which makes it clear that these findings will be taken into account at the project stage.

Inland areas: The New Forest

7.18 Analysis of changing patterns of visitor behaviour in the New Forest informs this section (Sharp et al, 2008). The work shows that most day visitors to the Forest, and a large proportion of total visitors, come from within 20km of the National Park boundary, while between 78% and 95% of visits are made by car. The report states that the estimated number of current annual visits to the New Forest (over 13 million per year) is predicted to increase by 1.05 million visits annually by 2026 based on sub-regional development objectives.

7.19 Sharp et al (2008) estimate that around three quarters (764,000) of this increase will originate from within the first 10km from the Forest. Separating distances into individual 1km bands, between 10,000 and 50,000 additional visitors will originate from within each of the bands 8 to 18 km from the Forest in any direction. At its closest point, Gosport borough lies approximately 11.5km from the New Forest as the crow flies although by road access from Gosport to the New Forest National Park is approximately 35km taking the most likely M27 route.

7.20 Approximately 3,000 - 4,000 additional visitors per year will come from within each 1km band (in any direction) from the Forest beyond a distance of 20km. The report concludes that development close to the [National] Park will have the greatest impacts on visitor pressure, with a high proportion of the increase being generated by development within 7km of the National Park boundary, and relatively little impact beyond 20km.

<u>Considerations for Site Specific Proposals</u>

7.21 Daedalus is within 100 metres of the Solent and Southampton Water SPA. The intertidal areas to the west at Hill Head, support an important bird assemblage vulnerable to disturbance from recreational activity, and proposed residential development.

7.22 The local area to Daedalus is relatively well served by semi-natural greenspace, with scope to make improvements to areas such as the Alver Valley which can help deflect pressure from sensitive sites. Consequently it is necessary to improve linkages between Daedalus and the Alver Valley and countryside areas to the north within the strategic gap.

7.23 Importantly Daedalus is close to the already popular Lee-on-the-Solent seafront with its pebble beach, promenade and clifflands. This stretch of open space will continue to provide recreational opportunities for residents of Daedalus. It will be important that Lee Seafront, eastwards of Daedalus, continues to be an attraction for residents to use. It may be necessary to consider management measures westwards of Daedalus towards Hill Head if it is shown that development at Daedalus will have a disturbance impact. The findings of the SDMP will help identify any impacts together with any evidence at the project stage to support a future planning application.

Scope and limitations of assessment

7.24 This section of the assessment is limited by the ongoing nature of the Solent Disturbance and Mitigation Project, the findings of which would allow a more robust assessment of the likely effects of the SPD on Solent European sites.

7.25 The proposed revocation of the South East Plan in July 2010 introduced an extra degree of uncertainty into the assessment. The supporting studies referred to above base many of their assumptions on the level and distribution of development agreed through the plan, but it seems likely that the quantum of development to be pursued across the sub-region would decrease rather that increase in response.

Avoidance and mitigation measures

7.26 The assessment below outlines key measures that can be taken. Some measures were included in the consultation version of the SPD and are retained in the SPD whereas others have resulted in changes to the SPD (see section below). It will also be appropriate for developers as part of a planning application to consider the detailed implications of these measures.

Use of green infrastructure to mitigate any identified impacts

7.27 The Council recognises that additional growth in the Borough, including development at Daedalus, could in-combination with growth in neighbouring districts, lead to adverse effects upon European sites. Consequently there is a need for appropriate mitigation measures. These will be identified through the forthcoming Solent Disturbance and Mitigation Strategy with the PUSH authorities working together to ensure sub-regional implementation where appropriate. This is being coordinated through the implementation of the PUSH Green Infrastructure Strategy (UE Associates, 2010) currently being undertaken by the local authorities and their partners.

7.28 Natural England expects to see a commitment within the SPD to implement the recommendations of the Solent Disturbance and Mitigation Project. Consequently the SPD will include an appropriate commitment.

7.29 Measures could include the adequate provision of alternative recreational space as well as support via developer contributions for access management measures within and around European sites at the Solent and New Forest.

7.30 A number of specific measures are already included in the Daedalus SPD including:

- The provision of a new country park at the Alver Valley can help ease pressure on sensitive parts of the coast. The Alver Valley is particularly well-placed due to its close-proximity to popular and less sensitive sections of the coast at Lee-on-the-Solent and Stokes Bay. The three areas together will provide a strong destination for a variety of recreation pursuits and thereby potentially reducing pressure on sensitive sites.
- Complementary to this, recreational access towards the south and east should be promoted and maximised, while also managing activity to avoid effects on important offsite Brent goose and wader sites.

- Cross-boundary cooperation on management of European sites to deflect pressure from sensitive habitats.

7.31 Access towards Hill Head will also require careful management to avoid such effects, including sufficient screening of activity (dog-walking, cycling, etc) to prevent disturbance to birds on the intertidal habitat. Further assessment will be required at the project level on this issue as much will depend on the location of dwellings on the site. The SPD proposes to locate most on the eastern side of Daedalus further from the SPA.

7.32 The Daedalus SPD will need to make it clear to developers of the need to mitigate potential recreational disturbance effects.

Key changes to the SPD

7.33 As a result of comments received at the Consultation stage of the Daedalus SPD and Screening Report and further consideration of many of the potential measures identified above, a number of changes have been made to the SPD (see Table 6).

Table 6: Changes to the SPD in relation to the potential disturbance from recreation

Issue	Comment
Recognise the need to consider the environmental capacity of the area in relation to additional dwellings.	Add new sentence (at the end of paragraph 4.28) in the residential part of the Development Strategy '*It will also be necessary to ensure that the environmental capacity of the area will be considered in relation to any additional dwellings, particularly with regard to potential impacts on internationally important habitats within the vicinity.'*
Make an explicit reference that makes it clear that development that will have a significant impact on the European sites will be refused.	Include text in the biodiversity section of the Daedalus SPD to read: ***'It is important to recognise that any development that would be likely to have a significant effect on a designated site, either alone or in combination with other plans and projects would not be in accordance with the Habitats Regulations 2010 or the development plan and would be refused.'***
Strengthen text in the SPD that recognises the in-combination effects of development across the sub-region and the potential impact on European sites.	Include text in the biodiversity section of the Daedalus SPD to read: *The Daedalus SPD has been subject to assessment under the Habitats Regulations 2010 which has influenced the development options for the site. The Council recognises that additional growth in the Borough, in-combination with growth in neighbouring authorities could without appropriate management and mitigation, lead to adverse effects on European sites. In order to prevent such effects, the Borough Council will work with other authorities (including the Partnership for Urban South Hampshire) to develop and implement a strategic approach to protecting European sites from recreation pressures and other impacts of development. Where development at Daedalus is shown to have an impact on European sites, the developer will be required to consider and implement a range of mitigation measures which are outlined below and in the other relevant sections of this SPD.*
Include a commitment to implementing the recommendations of the Solent Disturbance and Mitigation Project	Include text in the biodiversity section of the Daedalus SPD to read: *'The Borough Council where applicable to the Daedalus site will require developers to contribute towards mitigation measures identified in the Solent Disturbance and Mitigation Project* [include footnote providing more detail of the study]

Use of green infrastructure to mitigate any identified impacts	A new green infrastructure section has been included that identifies a range of measures which are applicable to mitigating any effects of recreational disturbance including provision and links to alternative attractive multi-functional green infrastructure such as the Alver Valley.
Make specific reference to the potential disturbance impact on Hill Head	The SPD includes text relating to the need for cross-boundary working to deal with any management issues relating to European sites and that in certain circumstances it may be appropriate for developer contributions to support management measures. Specific mention for improved cycle assess westwards from Lee has been removed from the SPD (Transport and Accessibility) Section as this is unlikely to be achieved as part of proposals at the Daedalus site.
Strengthening access routes to less sensitive areas	The Transport and Accessibility section includes additional text that read: *There are opportunities off-site to fill gaps in existing networks, such as the creation of a cycle link along Marine Parade which would link with the existing network in Gosport Borough. There is also potential to improve links between Daedalus and the proposed Alver Valley Country Park with through-movements to Rowner and other parts of the Borough. There may be further opportunities within the Fareham part of the site to improve cycle and pedestrian links with surrounding settlements including Stubbington and the existing network.*

Appropriate Assessment findings

7.34 The Core Strategy's effects in relation to recreation disturbance (and consequently those included in the Daedalus SPD) are being integrally assessed in combination with the effects of other plans and programmes in the sub-region. The Solent Disturbance and Mitigation Project takes into account development planned throughout South Hampshire, while the joint strategic approach to avoidance and mitigation encapsulated in the South Hampshire Green Infrastructure Strategy (PUSH) promotes a unified means of managing the impacts of access. This will be further developed through joint working currently underway and local strategies and actions. The PUSH Green Infrastructure Strategy includes a specific project related to the Solent Disturbance and Mitigation Project.

7.35 In the absence of detailed monitoring and modelling data being developed through the Solent Disturbance and Mitigation Project, at the current point in time a precautionary assessment must conclude that there will be adverse disturbance effects on the integrity of Chichester and Langstone Harbours SPA/Ramsar, Portsmouth Harbour SPA/Ramsar, Solent and Southampton Water SAP/Ramsar and the New Forest SPA as a result of the SPD, either alone or in combination with other plans and projects. Avoidance and/or mitigation measures are required to remove or reduce the effects.

7.36 It is considered that subject to the measures outlined above being successfully incorporated in the SPD and implemented where deemed necessary, effects associated with recreational pressure can be satisfactorily avoided and reduced.

8 Disturbance from increased use of the slipway

Key evidence:

Forthcoming Evidence: Solent Disturbance and Mitigation Strategy (Solent Forum)

The project seeks to assess the current impacts of visitor numbers and activities on the survival rates of internationally designated wintering waterbirds throughout the Solent coast, and to establish the likely additional impact from the residents of development proposed in the area. This study will help inform whether sites around the Solent require new management measures to reduce disturbance to the birds using protected habitats. Further details regarding this multi-staged project can be found on the Solent Forum website.

http://www.solentforum.org/forum/sub_groups/Nature_Conservation_Group/Disturbance%20and%20Mitigation%20Project/

Potential type of impact

8.1 Further to the consultation on the Screening Statement, Natural England and the RSPB consider that guidance set out in the SPD could encourage uses that will ultimately lead to an increase in the use of the existing slipway. Such usage could increase the disturbance of over-wintering birds on the mudflats at Hill Head.

Potential source of impact

8.2 The disturbance effects would be related to the operational use of the existing slipway with the coming and going of watercraft. The source of the impact could be from

- recreational activities such as watersports linked to potential uses within the Daedalus site;
- uses connected with marine related businesses which could potentially require the use of the slipway.

Relevant sites and potential effects on their integrity

8.3 It is considered that the Solent and Southampton Water SPA the only site that could be potentially affected given its proximity to the slipway.

Key considerations

8.4 The existing slipway is currently owned by SEEDA. The slipway is very heavily used particularly in the summer and at weekends by jet ski users, windsurfers and waterskiers. Gosport and Fareham Borough Councils work together with the Queen's Harbour Master (Portsmouth) and have zoned the seafront for different types of users.[17] Consequently there is already intensive existing use which is not connected with development at Daedalus and this level of use could increase without the need for any planning permission.

8.5 The slipway is considered an integral part of the future development of the Daedalus site and it is clear that the potential to use the slipway in connection with uses at Daedalus has been set out in the SPD. This could include marine businesses and recreational uses such as water sports. However whether there will be demand to use the slipway is very unclear at this stage. It is only at the planning application stage when there would be a clearer indication of the types of uses proposed for the site and whether any of these uses will result in a decrease or increase in current usage. In theory a decrease could occur if any new operator chose to manage the slipway in an alternative way for different types of users.

[17] http://www.gosport.gov.uk/sections/your-council/council-services/leisure-amenities/water-activity-information/

8.6 It is also not known what type of activity that will occur on the slipway. For example it could be considered that current recreation activities such as jetskiers which use a restricted area could cause greater disturbance than the launch of an occasional boat built on the site. Much therefore depends on how the slipway is managed, the type of users, what times it is used and the level of use.

8.7 It is therefore not appropriate to assess potential impacts at the SPD stage when there is no indication of whether any users of slipway will be based at the Daedalus site. However it is fully recognised that the Council needs to take a precautionary approach and consequently text is proposed (see section below) which clearly identifies the need to address this issue further at the project level.

Scope and Limitations of Assessments

8.8 Much will depend on future uses on the site and ownership arrangement. It is clear from the above assessment that there is insufficient detail at the SPD stage to make any meaningful assessment of the likely impacts of slipway use in connection with development at Daedalus. Consequently a precautionary approach has been taken highlighting key issues to developers and identifying that further assessment will be required at the planning application stage.

Avoidance and mitigation measures

8.9 There are two main measures that can be included within the SPD which will help address the uncertainty surrounding the future type and use of the slipway.

8.10 Firstly it needs to be made explicitly clear in the SPD that planning permission will be refused for proposals that would have a detrimental impact on the features of the European sites and that any planning application would need to be supported by sufficient evidence to allow the Council to undertake an appropriate assessment of the impacts on the European sites and consider any proposed mitigation measures.

8.11 Secondly, as with the wider recreational disturbance issue highlighted in Section 7, there may be measures in the Solent Disturbance and Mitigation Project which deal with the management of different types of coastal users at different sections of the coast. Again this would need to be considered on a cross-boundary and may require a sub-regional approach. This may require developers to contribute towards specific mitigation measures. PUSH are currently considering how the PUSH Green Infrastructure Strategy can be implemented which includes a specific project relating to the SDMP. This will seek to implement the findings of the SDMP on a sub-regional or cross-boundary basis.

Key changes to the SPD

8.12 As a result of comments received at the Consultation stage and further consideration of potential measures identified above a number of changes have been made to the SPD (see Table 7).

Table 7: Changes to the SPD in relation to the potential disturbance from increased slipway use

Issue	Comment
Make an explicit reference that makes it clear that development that will have a significant impact on the European sites will be refused.	Include text in the biodiversity section of the Daedalus SPD to read: ***'It is important to recognise that any development that would be likely to have a significant effect on a designated site, either alone or in combination with other plans and projects would not be in accordance with the Habitats Regulations 2010 or the development plan and would be refused.'***
Strengthen text in the SPD that recognises the in-combination effects of development across the sub-region and the potential impact on European sites.	Include text in the biodiversity section of the Daedalus SPD to read: *The Daedalus SPD has been subject to assessment under the Habitats Regulations 2010 which has influenced the development options for the site. The Council recognises that additional growth in the Borough, in-combination with growth in neighbouring authorities could without appropriate management and mitigation, lead to adverse effects on European sites. In order to prevent such effects, the Borough Council will work with other authorities (including the Partnership for Urban South Hampshire) to develop and implement a strategic approach to protecting European sites from recreation pressures and other impacts of development. Where development at Daedalus is shown to have an impact on European sites, the developer will be required to consider and implement a range of mitigation measures which are outlined below and in the other relevant sections of this SPD.*
Include a commitment to implementing the recommendations of the Solent Disturbance and Mitigation Project	Include text in the biodiversity section of the Daedalus SPD to read: *'The Borough Council where applicable to the Daedalus site will require developers to contribute towards mitigation measures identified in the Solent Disturbance and Mitigation Project* [include footnote providing more detail of the study]
Make specific reference relating to the need to ensure the use of slipway associated with development at Daedalus will not have a detrimental impact on the SPA	The following text relating to slipways is included in the SPD in the 'marine-specific considerations' section: '*It will be necessary to ensure the type and level of usage associated with marine activities generated by the site does not have any detrimental impact on the nature conservation features of internationally important sites within the vicinity. This needs to be demonstrated with detailed studies at the planning application stage to inform an appropriate assessment under the requirements of Habitats Regulations 2010. Proposals that will harm the features of the internationally important sites will not be permitted.*' (a previous paragraph requires developers to provide details of the anticipated level of use of the slipway)

Appropriate Assessment findings

8.13 Further details are required at the project stage regarding the level and type of slipway use which is likely to occur in association with development at Daedalus. It is considered that subject to the measures outlined above being successfully incorporated in the SPD and implemented where deemed necessary, effects associated with slipway use outlined in the SPD can be satisfactorily avoided and mitigated.

9 Disturbance from increased aviation movements

Key evidence:
Daedalus- The Aviation Study (York Aviation 2011)

This study was commissioned by SEEDA to seek advice on current and potential demand for aircraft movements and associated facilities at Daedalus.

Potential type of impact

9.1 Further to the consultation on the Screening Statement, Natural England and the RSPB consider that guidance set out in the SPD could encourage uses that will ultimately lead to an increase in aviation movements. Such usage could increase the disturbance of over-wintering birds on the mudflats at Hill Head

Potential source of impact

9.2 The source of the impact could be from increased aviation movements in connection with potential aviation-related businesses located at the Daedalus site.

Relevant sites and potential effects on their integrity

9.3 It is considered that the Solent and Southampton Water SPA could be potentially affected given its proximity to the airfield.

Key considerations/ Limitation and scope of assessment

9.4 It is not considered that guidance set out in the SPD itself will necessarily lead to an increase in aviation movements. Key considerations are set out below.

9.5 Firstly the usage of the airfield is outside of the scope of the Daedalus SPD. There is the potential to increase aviation movements to at least the levels which occurred when it was an MoD base without the need for further planning application. Even then it would be up to Fareham Borough Council as local planning authority covering the airfield to determine at what level beyond this a planning permission will be required.

9.6 Secondly it is unclear at the SPD stage whether there will be any businesses located within Gosport that would contribute to additional flights and if so what the level and frequency of air movements would be. Much would depend on the type of businesses involved. It is anticipated that many businesses located on the Gosport part of the site will be those that require a site in close proximity to aviation businesses rather than using the runway themselves. However that said there may be some businesses that do require use of the runway. Consequently it is considered that assessment at this stage would not be meaningful and that proposals covered by the Daedalus SPD would not necessarily lead to increased aviation movements.

Avoidance and mitigation measures

9.7 It is considered that the reference included in the text (included in previous sections and repeated in the box below) explicitly incorporates the precautionary principle in assessing future applications. This will therefore address the issue of uncertainty at this stage in relation to the future use of the runway which is largely outside the scope of the SPD for the Gosport part of the site.

9.8 It will be necessary to ensure developers provide sufficient information in relation to the scale and type of use of the airfield.

Key changes to the SPD

9.9 As a result of comments received at the Consultation stage and further consideration of potential measures identified above a number of changes have been made to the SPD (see Table 8).

Table 8: Changes to the SPD in relation to the potential disturbance from increased aviation use

Issue	Comment
Make an explicit reference that makes it clear that development that will have a significant impact on the European sites will be refused.	Include text in the biodiversity section of the Daedalus SPD to read: ***'It is important to recognise that any development that would be likely to have a significant effect on a designated site, either alone or in combination with other plans and projects would not be in accordance with the Habitats Regulations 2010 or the development plan and would be refused.'***
Strengthen text in the SPD that recognises the in-combination effects of development across the sub-region and the potential impact on European sites.	Include text in the biodiversity section of the Daedalus SPD to read: *The Daedalus SPD has been subject to assessment under the Habitats Regulations 2010 which has influenced the development options for the site. The Council recognises that additional growth in the Borough, in-combination with growth in neighbouring authorities could without appropriate management and mitigation, lead to adverse effects on European sites. In order to prevent such effects, the Borough Council will work with other authorities (including the Partnership for Urban South Hampshire) to develop and implement a strategic approach to protecting European sites from recreation pressures and other impacts of development. Where development at Daedalus is shown to have an impact on European sites, the developer will be required to consider and implement a range of mitigation measures which are outlined below and in the other relevant sections of this SPD.*
To ensure sufficient information is submitted with a planning application.	Include text in the aviation considerations section A*n application which proposes aviation use will need to be accompanied by an aviation study which sets out details regarding the level and type of use of the airfield. This will be necessary to ascertain the overall infrastructure requirements for the site including for the airfield itself. It will also inform any ecological assessments that may be necessary.*

Appropriate Assessment findings

9.10 The arrangements relating to the operation of the airfield are outside the remit of this particular SPD. Further details are required at the project stage regarding the level and nature of airfield use in association with development at Daedalus.

10 Water abstraction and consumption

Key evidence:
Water Resources Plan 2009 (Southern Water 2009)
Draft Final Water Resources Plan 2009 (Portsmouth Water March 2011)

These are statutory plans that set out how each water company will manage its water resources.

Potential type of impact

10.1 Additional housing development is widely accepted as the most significant factor in increasing demand on water supplies. This is despite recent efforts towards greater water efficiency and metering of supply. However, additional employment and industrial development will also add to this pressure. Existing water abstractions are already well regulated through the Environment Agency's Catchment Abstraction Management Strategies, which seek to identify where environmental pressures exist, and then take steps, including licence adjustments, to rectify these. However, significant quantities of new development, particularly when taken together with forthcoming development in other parts of South Hampshire, may require new water resources to be developed.

Potential source of impact

10.2 The screening exercise identified the residential (and less so employment) elements of the SPD as the drivers of increasing water consumption and associated abstraction.

Relevant sites and potential effects on their integrity

10.3 At least nine effects on the ecological integrity of River Itchen and Solent Maritime SACs, and Chichester and Langstone Harbours, Portsmouth Harbour, and Solent and Southampton Water SPAs/Ramsars are possible:

- Interrupts progress towards achieving the conservation objectives of the site;
- Disrupts those factors that help to maintain favourable conservation status onsite;
- Interferes with the balance, distribution and density of key species that are the indicators of the favourable conservation status of the site;
- Causes changes to the vital defining aspects (e.g. nutrient balance) that determine how the site functions as a habitat or ecosystem;
- Changes the dynamics of the relationships (between, for example, soil and water or plants and animals) that define the structure and/or function of the site;
- Interferes with predicted or expected natural changes to the site (such as water dynamics or chemical composition);
- Reduces the area of key habitats;
- Reduces the population of key species; and
- Reduces the diversity of the site.

Key considerations

10.4 Southern Water and Portsmouth Water are the water companies with responsibility for water supply and treatment in South Hampshire; water supply in Gosport is provided by Portsmouth Water only. New homes require the development of new infrastructure, including the provision of fresh water supply. However, the South East region has been declared an area of serious water stress, and this is illustrated by the Environment Agency's Review of Consents (RoC) under the Habitats Directive, completed in late 2007.

10.5 The RoC process has determined sustainable levels of water abstraction and waste water discharge that can be met without adverse effects on the ecological integrity of European sites, including the marine habitats of the Solent system and freshwater habitats of its rivers. The chalk Rivers Test and Itchen, fed by groundwater, supply substantial quantities of potable water, and abstractions from these systems alter the surface water regime, in turn impacting on important ecological receptors. There is a further freshwater requirement in maintaining ecological integrity of the intertidal zones of coastal sites.

10.6 Most Portsmouth Water abstractions have major impacts on river flows, either directly on the Itchen at Gaters Mill, or indirectly through groundwater abstraction on the Hamble, Meon, Wallington, Ems and Lavant which are all (except for the Meon) subject to Water Framework Directive (WFD) investigations during the 'Asset Management Plan 5' period (2010 – 2015). All Portsmouth Water catchments are listed as over-licensed or over-abstracted in the relevant Catchment Abstraction Management Strategy (CAMS).

10.7 Portsmouth Water has accepted (or is in the process of accepting) changes to its licences on the River Itchen (SAC), Havant and Bedhampton Springs and a group of Sussex licences (Chichester and Langstone Harbour SPA/Ramsar and Solent Maritime SAC) to protect European sites. Gosport's water supply is principally from the River Itchen, as well as sources in the Hamble and Meon valleys. However, license changes proposed as a result of the RoC will create a supply-demand deficit in excess of 100 megalitres per day (Ml/d) across the sub-region (Atkins, 2009) without further counterbalancing supply-demand measures.

10.8 Planning for the delivery of 352 new dwellings at Daedalus as part of the overall 2,500 dwelling allocation in the Core Strategy, will require significant volumes of water supply, the impact of which is magnified when placed in the context of housing allocations across the South Hampshire sub-region. Higher dwelling scenarios for the Borough as a whole have also been considered as part of the Core Strategy HRA as well as in discussions with Portsmouth Water. A figure of 4,000 dwellings in the Borough over the Plan period has been tested although it should be stated that this is not an alternative target but enables the authority to test higher growth scenarios up to this level to potentially allow enabling development on difficult brownfield sites.

10.9 When combined with sustainability reductions to licensed abstraction limits to protect European sites' integrity, a combination of supply-side and demand-side measures will be required to address the resulting deficit envelope. Demand management is primarily achieved through metering of supply and water efficiency measures, including leakage reduction, while new supplies can be developed by optimising abstraction and treatment infrastructure to make the most of available abstractions or constructing new storage reservoirs.

Water Resources Management Plans

10.10 Draft Water Resource Management Plans (WRMP) for the 2010-2035 period were prepared by the two water companies during 2008. Southern Water adopted its plan in 2009 following consultation.

10.11 Portsmouth Water has published a Draft Final Water Resources Management Plan on 16 March 2011, which incorporates the changes that the Company set out in the Statement of Response published on 3rd March 2011. Defra is now considering the Company's Statement of Response and will advise the Company in due course either to publish the Plan, provide further information or that an examination in public of the Plan will be required.

10.12 Portsmouth Water calculates that the Baseline Supply/Demand Balance under Average Conditions offers a surplus of supply over demand throughout the planning period, and this surplus falls from 46Ml/d at the base year to just over 14Ml/d by 2034/35. The falling availability of water resources is principally due to climate change impacts upon the flow in the River Itchen and the implementation of abstraction licence sustainability reductions at Gaters Mill in 2015. During Critical Period Peak Demand (summer months in dry years) the situation is quite different; By 2015/16 Water Available for Use falls below the required total demand plus Headroom and the shortfall grows to a total of 14 Ml/d by 2034/35.

10.13 To deal with this eventuality several measures are proposed in the Draft Final Plan:

- A compulsory metering programme utilising automatic meter reading (AMR) technology over a 15 year period from 2015-2030.
- A programme of leakage savings delivering a 3Ml/d leakage reduction between 2015 and 2020.
- The construction of a Washwater Recovery Plant at Farlington Water Treatment Works in 2017/18.
- The development of Havant Thicket Winter Storage Reservoir filled by surplus yield from the Company's Havant and Bedhampton Springs between 2025 and 2035.

10.14 The Company justifies the selection of this solution through;

- A 15 year compulsory metering programme will help to minimise the financial impact for customers. By delaying the start of this programme in 2015 the Company will draw from the experiences of Southern Water Services which has recently announced a similar programme.
- Leakage savings are supported by customers and they demonstrate the Company's commitment to encouraging water efficiency.
- Developing the Washwater Recovery Plant will demonstrate the Company's commitment to using water wisely.
- The development of Havant Thicket Winter Storage Reservoir will maximise the use of the Company's Havant and Bedhampton Springs source whilst providing significant environmental and "Green Infrastructure" benefits for the Community.

10.15 A significant reduction in licensed abstraction is required to the Company's Gaters Mill abstraction to maintain a Minimum Residual Flow (MRF) on the River Itchen. The Company has included an assessment of that reduction in its Draft Final Plan. Confirmation of the reduction is complicated by the influence of Southern Water Services' abstractions and discharges upstream and a Memorandum of Understanding with Southern Water and the Environment Agency has been agreed which is expected to confirm licence variations for inclusion in the next Water Resources Management Plan in 2014.

10.16 Post Implementation Monitoring is being carried out to identify the impacts of abstractions from five of the Company's Hampshire sources upon the Solent Maritime SAC and the Solent and Southampton Water SPA. Until a decision is reached by the Environment Agency in relation to this monitoring work, no sustainability reductions have been included in this Draft Plan. Any variations will be included in the next Water Resources Management Plan in 2014.

10.17 Further work during the next five years is also being undertaken to determine the ecological impacts of abstraction on the rivers Hamble, Wallington, Ems and Lavant to meet the requirements of the River Basin Management plans which satisfy the UK's compliance with the EU Water Framework Directive. The Company anticipates the possibility of further abstraction licence sustainability reductions being required although these have not been incorporated in the forecasts for this Updated Draft Plan.

10.18 The Draft Final Plan includes a commitment to work with the Environment Agency and other stakeholders in conducting a further review of the key assumptions which will be needed in time for the next Water Resources Management Plan in 2015. It should be noted that the Draft Final Plan does not include the need for any supply/demand investment in the period up to 2015.

Scope and Limitations of Assessments

10.19 The Core Strategy's potential effects (and consequently the quantum proposed in the Daedalus SPD) on water resources are integrally assessed in combination with the effects of other plans and programmes elsewhere in the sub-region; both water companies have prepared their WRMPs on the basis of providing sufficient resources for development across South Hampshire as allocated under the South East Plan. The latter is proposed to be revoked which is likely to lead to an overall reduction in the amount of development delivered during the plan period.

10.20 The assessment assumes that a recent Memorandum of Understanding (MoU) between Southern Water, Portsmouth Water and Environment Agency is successful in delivering the EA's sustainability reductions, imposed as a result of its stage 4 Review of Consents process to ensure favourable conservation status at River Itchen SAC, Solent Maritime SAC, Chichester & Langstone Harbours SPA/Ramsar, Portsmouth Harbour SPA/Ramsar, Solent & Southampton Water SPA/Ramsar. The MoU's summary states the following:

> *'All parties recognise that the series of actions outlined in the Environment Agency's review of consents Site Action Plan are required to be undertaken to remove the risks of adverse effect on the integrity of the [European sites] from licensed water company abstraction.*
>
> *This memorandum of understanding sets out the intention of all parties to enable these actions to be completed in a timely manner, whilst recognising the statutory duties placed upon each party.*
>
> *'Therefore we all agree to work together during the AMP5 period 2010 to 2015 to enable licence modifications to be made. Every effort will be made to secure all the licence changes necessary to comply with the requirements of the Site Action Plan for the River Itchen (October 2007) during this period. However, in the event that not all of the licence amendments can be made during this time, due to a conflict of a party's statutory undertaking, then any outstanding amendments will be made to the licences as soon as practically possible thereafter' (MoU quoted in Southern Water, 2009).*

Avoidance and mitigation measures

10.21 By drawing on the water companies' WRMPs and their agreement with the Environment Agency on implementing reductions required to maintain favourable conservation status at European sites in the area, the assessment demonstrates that there are unlikely to be any adverse effects from water abstraction associated with the Gosport Core Strategy which includes the Daedalus proposals.

10.22 In order to address the uncertainty of potentially higher levels of dwellings in exceptional circumstances it has been necessary to include additional text within the SPD which incorporates a precautionary approach and that if higher levels are proposed that these aspects must be considered as part of an appropriate assessment at the project level. The SPD includes measures that aim to minimise the impact on water consumption by following a national timetable for the Code for Sustainable Homes and BREEAM Standards.

Key changes to the SPD

10.23 In the light of the above key changes to the SPD are out below (Table 9).

Table 9: Changes to the SPD in relation to water abstraction and consumption

Issue	Comment
Recognise the need to consider the environmental capacity of the area in relation to additional dwellings.	Add new sentence (at the end of paragraph 4.28) in the residential part of the Development Strategy '*It will also be necessary to ensure that the environmental capacity of the area will be considered in relation to any additional dwellings, particularly with regard to potential impacts on internationally important habitats within the vicinity.'*
Make an explicit reference that makes it clear that development that will have a significant impact on the European sites will be refused.	Include text in the biodiversity section of the Daedalus SPD to read: ***'It is important to recognise that any development that would be likely to have a significant effect on a designated site, either alone or in combination with other plans and projects would not be in accordance with the Habitats Regulations 2010 or the development plan and would be refused.'***
Strengthen text in the SPD that recognises the in-combination effects of development across the sub-region and the potential impact on European sites.	Include text in the biodiversity section of the Daedalus SPD to read: *The Daedalus SPD has been subject to assessment under the Habitats Regulations 2010 which has influenced the development options for the site. The Council recognises that additional growth in the Borough, in-combination with growth in neighbouring authorities could without appropriate management and mitigation, lead to adverse effects on European sites. In order to prevent such effects, the Borough Council will work with other authorities (including the Partnership for Urban South Hampshire) to develop and implement a strategic approach to protecting European sites from recreation pressures and other impacts of development. Where development at Daedalus is shown to have an impact on European sites, the developer will be required to consider and implement a range of mitigation measures which are outlined below and in the other relevant sections of this SPD.*

Appropriate Assessment Findings

10.24 It is considered that the envisaged level of development at Daedalus is unlikely to have any adverse effects from water abstraction. However as there may be higher levels of housing as part of the Core Strategy including some in exceptional circumstances at Daedalus it is considered appropriate to take a precautionary approach and consequently text identified above has been incorporated into the SPD although it is likely that any increases within the Borough would be more than offset by reduced development elsewhere in the light of the proposed revocation of the SE Plan.

11 Waste water pollution

Key evidence:
South Hampshire Integrated Water Management Strategy (for PUSH) (Atkins 2008) www.push.gov.uk/081223_-_iwms_final.pdf

The aim of the IWMS is to reduce the risk to the proposed growth posed by coastal and fluvial processes, water management and the water environment and *vice versa*. Key objectives include:

- guide and inform the level and location of development to be accommodated in South Hampshire;
- identify a preferred high level strategy for water management for the period to 2026, including the general location and timing of infrastructure requirements, the agencies responsible and the means of funding the necessary work;
- identify further work necessary to implement the preferred strategy and to monitor its effectiveness over the plan period.

Potential type of impact

11.1 The screening exercise identified residential (and less so employment) elements as the drivers of increased waste water production. Southern Water is the water company with responsibility for waste water treatment in South Hampshire. Gosport Borough falls within the catchment area of Southern Water's Peel Common Waste Water Treatment Works (WWTW) between Stubbington and Gosport.

11.2 New homes require the development of new infrastructure, including the provision of connections to the foul water and surface water drainage networks. The ability of WWTWs to receive foul water is limited both by conveyance infrastructure capacity and technological capability to treat waste water to the quality standard required for safe release into aquatic and marine environments. This is illustrated by the Environment Agency's Review of Consents (RoC) under the Habitats Directive, completed in late 2007. The RoC process has determined sustainable levels of water abstraction and waste water discharge that can be met without adverse effects on the ecological integrity of European sites, including the marine habitats of the Solent system and freshwater habitats of its rivers.

11.3 Nutrient enrichment and in particular nitrogen (N) pollution can arise from wastewater treatment required in support of planned development. The Environment Agency has identified the effects of nutrient enrichment in the form of dense macroalgal mats occurring in the intertidal zone, which reduce dissolved oxygen content and impacts on food availability. The major sources of nitrogen to the Solent European marine sites are from:

- Coastal background seawater from the English Channel;
- Direct rivers and streams discharging into the site;
- Indirect rivers and streams discharging elsewhere in the Solent;
- Effluent discharges permitted by the EA.

11.4 The Agency states that nitrogen is the most important constraint affecting WWTWs in South Hampshire which discharge into the marine environment. The most important non-point sources of nitrogen are from coastal background seawater in the English Channel, natural and diffuse sources in rivers and streams and nitrogen bound within sediment. Future management of coastal inputs is not realistically achievable, but some limited management of agricultural diffuse sources is achievable as is the limitation of nitrogen concentrations in point source discharges (WWTWs).

11.5 Environmental capacity relates to the nature of the receiving water and its ability to accept the biological, solids, nutrient and metal loads contained within WWTW effluents. Effluent discharges are strictly regulated and acceptable loads are determined and consented by the Environment Agency.

Potential source of impact

11.6 It is considered that the source is primarily residential but also from other uses at Daedalus including employment and leisure uses.

Relevant sites and potential effects on their integrity

11.7 At least nine effects on the ecological integrity of Portsmouth Harbour, and Solent and Southampton Water SPAs/Ramsars are possible:

- Interrupts progress towards achieving the conservation objectives of the site;
- Disrupts those factors that help to maintain favourable conservation status onsite;
- Interferes with the balance, distribution and density of key species that are the indicators of the favourable conservation status of the site;
- Causes changes to the vital defining aspects (e.g. nutrient balance) that determine how the site functions as a habitat or ecosystem;
- Changes the dynamics of the relationships (between, for example, soil and water or plants and animals) that define the structure and/or function of the site;
- Interferes with predicted or expected natural changes to the site (such as water dynamics or chemical composition);
- Reduces the area of key habitats;
- Reduces the population of key species; and
- Reduces the diversity of the site.

Key considerations

11.8 Planning for the delivery of 352 new dwellings at Daedalus as part of the overall 2,500 dwelling allocation in the Core Strategy, will require sufficient capacity to convey and treat significant volumes of waste water, the impact of which is magnified when placed in the context of housing allocations across the South Hampshire sub-region. Higher dwelling scenarios for the Borough as a whole have also been considered as part of the Core Strategy HRA as well as in discussions with Southern Water. A figure of 4,000 dwellings in the Borough over the Plan period has been tested although it should be stated that this is not an alternative target but enables the authority to test higher growth scenarios up to this level to potentially allow enabling development on difficult brownfield sites.

11.9 The volume of waste water production can be managed through the appropriate spatial distribution of development (ie, locating new development within WWTW catchments that have capacity, or potential capacity available) and through decreasing the amount of freshwater return to the sewer system through water efficiency and demand management measures (such as metering of supply) and separation of foul and surface water drainage. Managing the pollutant load of discharges is achieved by upgrading treatment works to the Best Available Techniques (often with associated sustainability implications, such as increasing carbon emissions) and new advances in technology.

11.10 For all parameters monitored, the allowable discharge load is calculated and concentration limits set as a function of 'dry weather flow' (DWF). For example, if the acceptable nitrogen load from a works is determined to be 10kg per day, and the consented DWF is 1,000m^3 per day, then the maximum effluent concentration (ie, the N consent) will be 10mg per litre (Atkins, 2009). The acceptable load determined by the Environment Agency will be a function of the sensitivity of the receiving water and whether or not it has been designated as such under environmental protection legislation

11.11 The impact of Environment Agency permissions on the marine SPAs and SACs has involved the development of a complex model for both flows and for quality. The primary concern has been the impacts of nitrogen in effluents and the link between this element and the growth of algae/green weed mats within the designated areas. The principal outcome has been the EA's intention to apply consents at 'best available techniques' (BAT) for total nitrogen of 10mg/l at the following WWTWs in the PUSH area: Budds Farm (proposed consent actually 9.7mg/l in 2012); Bursledon; Millbrook; Peel Common (proposed consent actually 9.1mg/l in 2012); Slowhill Copse Marchwood; Thornham; and Woolston.'(Atkins, 2008, p.75).

11.12 Atkins (2009) concludes that 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 Environment Agency under the Urban Wastewater Treatment Directive and those proposed to fulfil the requirements of the Habitats and Birds Directives.

11.13 Furthermore, on 22 July 2010, Eastleigh Borough Council formally resolved that the north and east Hedge End SDA will not be taken forward in the Council's planning work. This follows the Government's announcement to revoke the South East Plan, which included policies for the SDA. This will not necessarily lead to an equivalent reduction in the number of dwellings to be provided for within Eastleigh borough, but it does seem likely that there will be some form of reduction over the planning period. Fareham Borough Council have reduced the numbers of dwellings in the proposed SDA and Portsmouth City Council are proposing a reduced housing figure across the city. This would free-up some additional waste water treatment capacity at Peel Common.

Scope and Limitations of Assessment

11.14 The Core Strategy's potential effects through waste water pollution are integrally assessed in combination with the effects of other plans and programmes elsewhere in the sub-region; Atkins (2009) modelling predictions are prepared on the basis of providing sufficient capacity for development across South Hampshire as allocated under the South East Plan. The latter is now proposed to be revoked which is likely to lead to an overall reduction in the amount of development delivered during the plan period.

11.15 The assessment is based in part on the assumption that both Portsmouth Water and Southern Water will be pursuing a policy of universal metering of supply, which is expected to reach 93% over the next twenty to thirty years, together with a number of other water efficiency measures. This has been confirmed by the two companies (Southern Water, 2009, Portsmouth Water 2011), albeit over differing timescales.

Avoidance and mitigation measures

11.16 In order to address the uncertainty identified by Natural England in its comments to the Screening Statement in relation to potentially higher levels of dwellings in exceptional circumstances it has been necessary to include additional text within the SPD. This incorporates a precautionary approach and that if higher levels are proposed that these aspects must be considered as part of an appropriate assessment at the project level. In addition the SPD includes measures that aim to minimise the impact on water

consumption by following a national timetable for the Code for Sustainable Homes and BREEAM Standards.

Key changes to the SPD

11.17 As a result of comments received at the Consultation stage and further consideration of potential measures identified above a number of changes have been made to the SPD (see Table 10).

Table 10: Changes to the SPD in relation to water abstraction and consumption

Recognise the need to consider the environmental capacity of the area in relation to additional dwellings.	Add new sentence at the end of paragraph 4.28 in the residential part of the Development Strategy '*It will also be necessary to ensure that the environmental capacity of the area will be considered in relation to any additional dwellings, particularly with regard to potential impacts on internationally important habitats within the vicinity.'*
Make an explicit reference that makes it clear that development that will have a significant impact on the European sites will be refused.	Include text in the biodiversity section of the Daedalus SPD to read: ***'It is important to recognise that any development that would be likely to have a significant effect on a designated site, either alone or in combination with other plans and projects would not be in accordance with the Habitats Regulations 2010 or the development plan and would be refused.'***
Strengthen text in the SPD that recognises the in-combination effects of development across the sub-region and the potential impact on European sites.	Include text in the biodiversity section of the Daedalus SPD to read: *The Daedalus SPD has been subject to assessment under the Habitats Regulations 2010 which has influenced the development options for the site. The Council recognises that additional growth in the Borough, in-combination with growth in neighbouring authorities could without appropriate management and mitigation, lead to adverse effects on European sites. In order to prevent such effects, the Borough Council will work with other authorities (including the Partnership for Urban South Hampshire) to develop and implement a strategic approach to protecting European sites from recreation pressures and other impacts of development. Where development at Daedalus is shown to have an impact on European sites, the developer will be required to consider and implement a range of mitigation measures which are outlined below and in the other relevant sections of this SPD.*

Appropriate Assessment Findings

11.18 It is considered that there are unlikely to be any adverse effects from waste water associated with the Gosport Core Strategy and consequently the quantum of development proposed by the Daedalus SPD. However, a number of precautionary measures are considered necessary to address any uncertainties arising from higher levels of growth in exceptional circumstances, although even this is likely to be more than offset by lower levels of growth in neighbouring districts as a consequence of them considering lower housing figures as a result of the proposed revocation of the South East Plan.

12 Noise and Vibration

Key evidence:
Non-statutory strategic environmental assessment undertaken by SEEDA to support GBC's SPD (Drivers Jonas 2009)

Potential type of impact

12.1 Following consultation on the Screening Statement for the Daedalus SPD, Natural England consider that the issue of noise and vibration should be included in the HRA Report for the Daedalus SPD (it had previously not been included in the Core Strategy HRA).

12.2 Noise and vibration can have a potential impact on the European sites by causing disturbance of birds.

Potential source of impact

12.3 The noise and vibration from the development can occur through the following sources:

- Noise and vibration generated during the construction of development at Daedalus;
- Noise and vibration generated during the operation of the site including process connected with employment uses as well as those linked with noisy activities such as certain sports; and
- Noise and vibration from traffic accessing the site during the future operation of the site

Relevant sites and potential effects on their integrity

12.4 It is considered that these impacts will be of a localised nature and consequently the Solent and Southampton Water SPA/Ramsar site could be affected. The potential effects could include:

- Interrupts progress towards achieving the conservation objectives of the site;
- Disrupts those factors that help to maintain favourable conservation status onsite;
- Interferes with the balance, distribution and density of key species that are the indicators of the favourable conservation status of the site;
- Reduces the area of key habitats;
- Reduces the population of key species;
- Changes the balance between key species;
- Reduces the diversity of the site;
- Results in disturbance that could affect population size or density or the balance between key species; and
- Results in fragmentation.

Key considerations

12.5 Many of the noise issues associated with disturbance from recreation have been detailed in previous sections with a number of mitigation measures proposed. However noise associated with both the construction phase and particular employment operations have not previously been considered.

12.6 The principal existing noise sources within Daedalus are the existing operational airfield, industrial premises within the site and traffic on the main roads in the vicinity of the site.

12.7 Further studies are required to inform development at the planning application stage including:

- Consultation with the Environmental Health officers for both GBC and FBC should be undertaken to identify what noise data already exists in this area and to discuss and agree the scope of work for future planning applications;
- Background noise monitoring will be required to establish existing ambient noise levels within and around the site;
- An assessment of the impacts of operational traffic on noise levels adjacent to the key access roads for the development will be required;
- Measures to minimise the impact of construction works on noise and vibration should be established in a Construction Environmental Management Plan:
- Consultations with Natural England to establish the level of assessment required to predict noise impacts on the SPA.

Scope and Limitations of Assessment

12.8 At this stage it is unclear what noise and vibration would be generated by development at Daedalus as it is unclear what will be constructed and what types of businesses will be accommodated on the site that may have noisy or vibrating operations. These effects will need to be determined through an appropriate assessment at the project level.

Avoidance and mitigation measures

12.9 Due to the uncertainties relating to the nature of development at this stage it will be necessary for the SPD to take a precautionary approach.

12.10 At the planning application stage any effects will need to be determined through an appropriate assessment. From the experience of other sites in the Borough which are in close proximity to European sites there a number of control measures which can be included as conditions. These measures have followed advice given by Natural England and include matters such as the timing of works to avoid periods when birds are over-wintering if it has been shown that the impact of construction works would have an impact on over-wintering birds. The Borough Council will therefore continue to take Natural England's advice on these matters.

12.11 Good construction practice will be necessary to minimise the effect of construction noise and vibration on important ecological receptors. Professional advice will be required at the planning application stage to inform the siting of any potential noise operations in the vicinity of ecologically sensitive areas.

12.12 In order to ensure that no adverse impacts occur to sensitive species noisier activities such as site excavation, demolition and/or concrete crushing may need to be avoided during the over-wintering season. These activities should also be located away from existing populations of birds, where possible and practical to further reduce any potential impacts.

12.13 The consultation draft of the SPD already acknowledged that detailed assessment related to noise impacts would need to be undertaken. A number of mitigation measures were identified including:

- locating potentially noisy operations further from residential areas and noise sensitive uses;
- hours of operation;
- sound proofing of buildings; and
- the incorporation of sound-proofing barriers such as bunds.

12.14 In relation to construction noise mention is made of the potential disturbance to residents and wildlife. The SPD aims to ensure good construction practice is carried out through

the implementation of best practice mitigation measures in a Construction Environment Management Plan (CEMP) to minimise noise disturbance.

12.15 Measures outlined in the SPD to reduce traffic will also contribute towards reducing traffic noise close to the SPA. Most traffic will be directed to areas away from the SPA, primarily the Broom Way access.

Key changes to the SPD

12.16 As a result of comments received at the Consultation stage and further consideration of many of the potential measures identified above a number of changes have been made to the SPD (see Table 11).

Table 11: Changes to the SPD in relation to noise and vibration

Issue	Comment
Make an explicit reference that makes it clear that development that will have a significant impact on the European sites will be refused.	Include text in the biodiversity section of the Daedalus SPD to read: ***'It is important to recognise that any development that would be likely to have a significant effect on a designated site, either alone or in combination with other plans and projects would not be in accordance with the Habitats Regulations 2010 or the development plan and would be refused.'***
Strengthen text in the SPD that recognises the in-combination effects of development across the sub-region and the potential impact on European sites.	Include text in the biodiversity section of the Daedalus SPD to read: *The Daedalus SPD has been subject to assessment under the Habitats Regulations 2010 which has influenced the development options for the site. The Council recognises that additional growth in the Borough, in-combination with growth in neighbouring authorities could without appropriate management and mitigation, lead to adverse effects on European sites. In order to prevent such effects, the Borough Council will work with other authorities (including the Partnership for Urban South Hampshire) to develop and implement a strategic approach to protecting European sites from recreation pressures and other impacts of development. Where development at Daedalus is shown to have an impact on European sites, the developer will be required to consider and implement a range of mitigation measures which are outlined below and in the other relevant sections of this SPD.*
Provide further guidance on noise and also mention vibration	Re name 'Noise pollution' section as 'Noise pollution and vibration' Amend text as follows to reflect the above. 5.18 Airfields and employment sites can be noisy locations and therefore noise will be a very important consideration when determining future planning applications. Noise levels will need to be assessed against previous levels when the site was in greater use. Saved Policy R/ENV10 of the Local Plan Review and the latest Government guidance is applicable in this instance. Such operations are often associated with increased vibration effects. 5.19 Construction noise and associated vibration could cause disturbance to nearby residents and wildlife. Good construction practice through the implementation of best practice mitigation measures in a Construction Environment Management Plan should be followed to minimise ~~noise~~ these disturbance effects.

	5.20	Detailed assessments to determine the likely noise and vibration impacts from operational activities should be undertaken at the planning application stage to determine suitable mitigation measures. Potential mitigation measures include: • locating potentially noisy operations further from residential areas and other noise sensitive uses; • hours of operation; • sound-proofing of buildings; and • the incorporation of sound-proofing barriers such as bunding, where appropriate.
	5.21	To ensure a suitable internal noise environment in new residential units, PPG 24 assessments should be undertaken to enable acoustic ventilation requirements to be determined. High levels of sound-proofing and screening as part of sustainable housing design and construction will be an important consideration and forms part of the Code for Sustainable Homes.
	5.22	It will be necessary at the planning application stage to provide sufficient information to enable an appropriate assessment to be undertaken regarding these effects. Natural England should be consulted on the potential for noise and vibration impacts on the Solent and Southampton Water SPA and Ramsar site and determine necessary mitigation measures. These could include the timing of particular operations to avoid disturbing over-wintering birds if these are deemed to have a detrimental effect as identified in an appropriate assessment.

Appropriate Assessment Findings

12.17 The significance of potential noise and vibration impacts are not possible to quantify at the SPD level and given the uncertainty relating to the type of development it would not be meaningful to provide further assessment at this stage. However it is clear from the above assessment both noise and vibration at the construction and operational stages of development at Daedalus could have an impact on the Solent and Southampton Water SPA. Therefore it is necessary to incorporate a precautionary approach in the SPD including further guidance to developers.

12.18 The use of land within the site in relation to ecological sites will be an important consideration. Detailed noise assessments will be completed at the project level as planning applications come forward. Such assessment will allow construction and operation phase impacts to be defined in greater detail and where possible quantified to allow the incorporation of mitigation and/or enhancement measures within the general framework set out by the SPD.

13 Light pollution

Key evidence: None available at this stage

Potential type of impact

13.1 Light pollution can alter the natural patterns of light and dark in ecosystems through direct glare, chronically increased illumination and temporary, unexpected fluctuation in ambient light (Longcore and Rich 2004).

13.2 Sources of ecological light pollution include sky glow, lighted buildings and streetlights, security lights and lights on vehicles, ships and boats. Its range therefore operates across significant spatial and temporal scales. Impacts are particularly likely for species sensitive to alterations in natural diel patterns of light and dark, or where critical behaviour are triggered by seasonal day length. The changes in behaviour exhibited by individual animals in response to ambient illumination normally relate to orientation and disorientation. Reactions to luminence (brightness) are usually exhibited through attraction to, or repulsion from the source. Such behavioural responses can lead to changes in foraging, reproduction, migration and communication, while community ecology interactions are also influenced through competition and predation (UE Associates 2011).

13.3 Many usually diurnal birds will continue to forage under artificial light and, while this could be seen as an advantage, also leads to prolonged exposure to predation risk. Birds can be disorientated or entrapped by night lights, where a bird within a lighted zone will not leave the lighted area which increases collision risk. Light pollution can also affect the movement of zooplankton which can have an impact on some waders (UE Associates 2011).

13.4 In general terms a precautionary approach is required and that there is a need to consider mitigation of lighting impacts on sites close to areas of high conservation value.

Potential source of impact

13.5 The potential for light pollution will come largely through street lighting and other lighting associated with the residential and employment development.

Relevant sites and potential effects on their integrity

13.5 Any potential impact will be localised and therefore could affect the Solent and Southampton Water SPA/Ramsar site. Potential impacts could include:

- Interrupts progress towards achieving the conservation objectives of the site;
- Disrupts those factors that help to maintain favourable conservation status onsite;
- Interferes with the balance, distribution and density of key species that are the indicators of the favourable conservation status of the site;
- Reduces the area of key habitats;
- Reduces the population of key species; and
- Results in disturbance that could affect population size or density or the balance between key species.

Key considerations

13.6 As a result of consultation on the screening statement the RSPB considered that this element should be included in the HRA Report for the Daedalus SPD.

13.7 The area proposed for development is a former military base adjacent a built-up area which is lit by street lighting. The technical (i.e. built-up part) of Daedalus, which is most of the area in Gosport Borough, had street lighting when it was operational

13.8 The lighting scheme for proposed development at Daedalus will need to be considered at the application stage and sufficient information will need to be available to inform an appropriate assessment. This will need to be assessed in the light of the Solent Waders and Brent Goose Strategy (Hampshire and Isle of Wight Wildlife Trust 2010) and the findings of the emerging Solent Disturbance and Mitigation Project (being produced on behalf of the Solent Forum).

Scope and Limitations of Assessments

13.9 The SPD only provides a framework for development and identifies the key consideration relating to lighting and consequently it is not possible to quantify the impact of light pollution at this stage. Further information is required at the project level.

Avoidance and mitigation measures

13.10 The consultation draft of the SPD recognises the potential effects of light pollution and the need to mitigate it by ensuring it is the minimum necessary to be effective and be designed to limit spillage above the horizontal plane and reduce skyward pollution. It is also recognised that the dark area of the strategic gap which covers the airfield needs to be safeguarded.

Key changes to the SPD

13.11 The key changes in Table 12 below highlight the precautionary approach incorporated in the SPD.

Table 12: Changes to the SPD in relation to light pollution

Issue	Comment
Make an explicit reference that makes it clear that development that will have a significant impact on the European sites will be refused.	Include text in the biodiversity section of the Daedalus SPD to read: ***'It is important to recognise that any development that would be likely to have a significant effect on a designated site, either alone or in combination with other plans and projects would not be in accordance with the Habitats Regulations 2010 or the development plan and would be refused.'***
Strengthen text in the SPD that recognises the in-combination effects of development across the sub-region and the potential impact on European sites.	Include text in the biodiversity section of the Daedalus SPD to read: *The Daedalus SPD has been subject to assessment under the Habitats Regulations 2010 which has influenced the development options for the site. The Council recognises that additional growth in the Borough, in-combination with growth in neighbouring authorities could without appropriate management and mitigation, lead to adverse effects on European sites. In order to prevent such effects, the Borough Council will work with other authorities (including the Partnership for Urban South Hampshire) to develop and implement a strategic approach to protecting European sites from recreation pressures and other impacts of development. Where development at Daedalus is shown to have an impact on European sites, the developer will be required to consider and implement a range of mitigation measures which are outlined below and in the other relevant sections of this SPD.*
Include text outlining the	Include new text in the light pollution section

need to consider the potential impact of light pollution on European sites.	Lighting is needed for the safety of workers, residents and visitors and assists with overall security. However unsuitable lighting can cause a number of problems including shadowing and intrusion by glare and dazzle. There are a number of considerations relating to light pollution at the Daedalus site including: • the need to ensure that there is no significant effect on the integrity of European sites within the vicinity

Findings of the appropriate assessment

13.12 Based on the information above it is not possible to conclude that there will be no adverse effect on the integrity of the Solent and Southampton Water SPA/Ramsar. Avoidance and/or mitigation measures may be required to remove or reduce the effects. Assessment is required at the project stage when further details are available regarding the nature of development on the site and associated lighting and how this will impact on the European sites within the vicinity. The SPD therefore takes a precautionary approach and provides guidance to developers of the key considerations which need to be addressed when submitting a planning application. It is considered that measures included in the SPD which aim to ensure lighting design eliminates spillage onto adjacent habitats will significantly reduce this impact.

14 Conclusions

14.1 This Report presents the Habitats Regulations Assessment for the Daedalus SPD and follows a screening exercise undertaken between January and March 2011 which included consultation with Natural England, the Environment Agency, the RSPB and the Wildlife Trust. The comments arising from this consultation have been addressed in the HRA Report including the need to assess a wider number of impacts.

14.2 The assessment established the nature of effects on the ecological integrity of the European sites of interest. It recommends a variety of avoidance and mitigation measures which have been incorporated into the Daedalus SPD which help remove a number of identified effects.

14.3 It is clear that it has not been possible to conduct a detailed assessment on a number of issues as it would not be meaningful at this stage when little is known about the actual type of development that will take place. Instead the SPD provide details to developers and the wider community on what issues need to be considered and how any potential impacts on the European sites could be mitigated.

14.4 It is considered that if the quantum of development is achieved that is set out in the Daedalus SPD the HRA has demonstrated that there will be no adverse impacts on the Europeans sites in terms of:

- water abstraction and consumption;
- waste water

The report further demonstrates that any potential adverse effects associated with the Daedalus SPD in relation to the following impact types can be overcome provided the avoidance and mitigation measures are successfully adopted and implemented:

- atmospheric pollution;
- disturbance;
- noise and vibration; and
- light pollution.

14.5 The SPD requires that sufficient information is submitted with a planning application in order that an appropriate assessment can be undertaken. It also includes the precautionary principle and clearly highlights that where development is shown to have an impact on the European sites it will be contrary to national regulations and local planning policy and will therefore be refused.

14.6 The HRA is therefore considered to be appropriate for an SPD and that the SPD provides sufficient guidance to developers to ensure that there is not a detrimental impact on the European sites.

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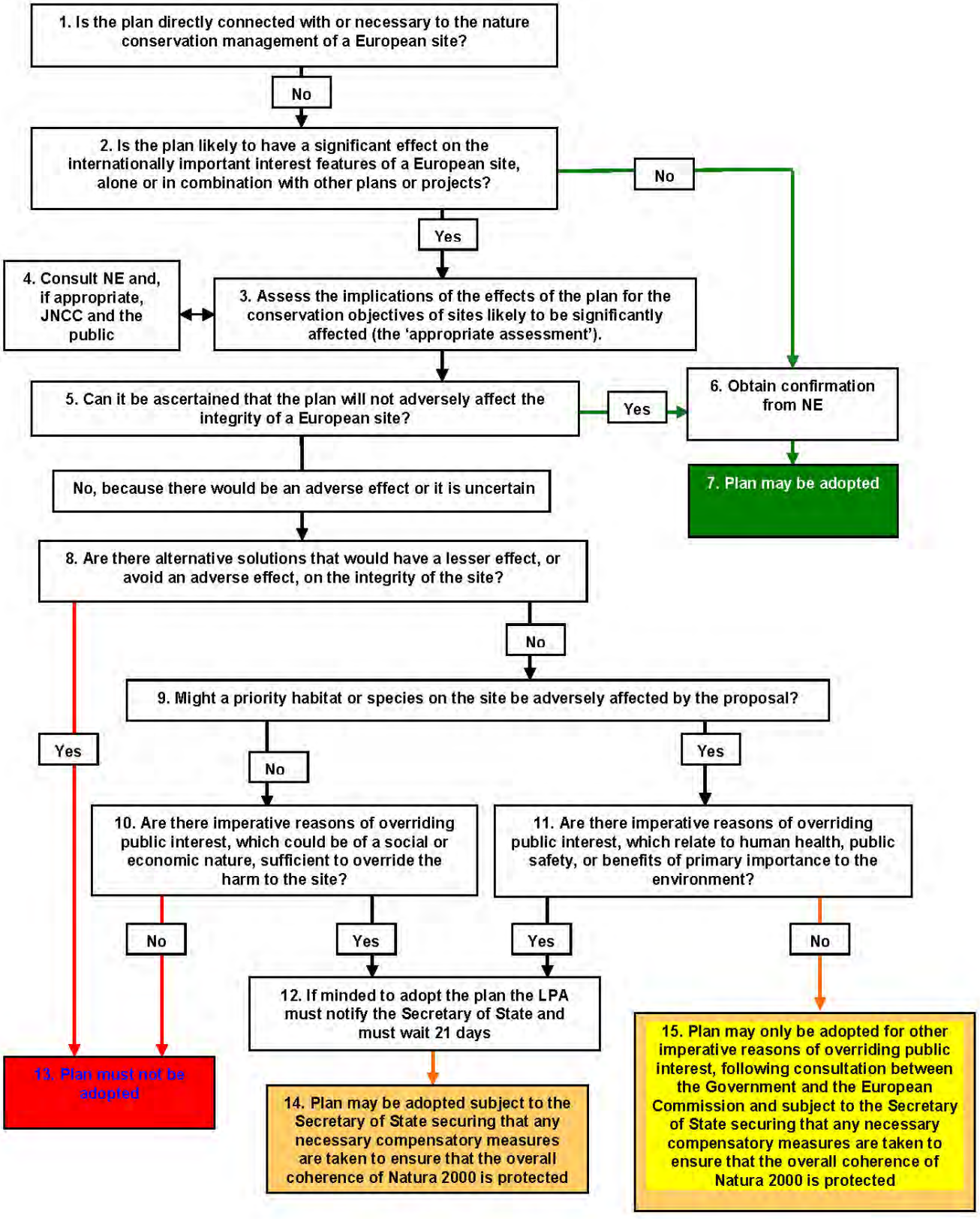
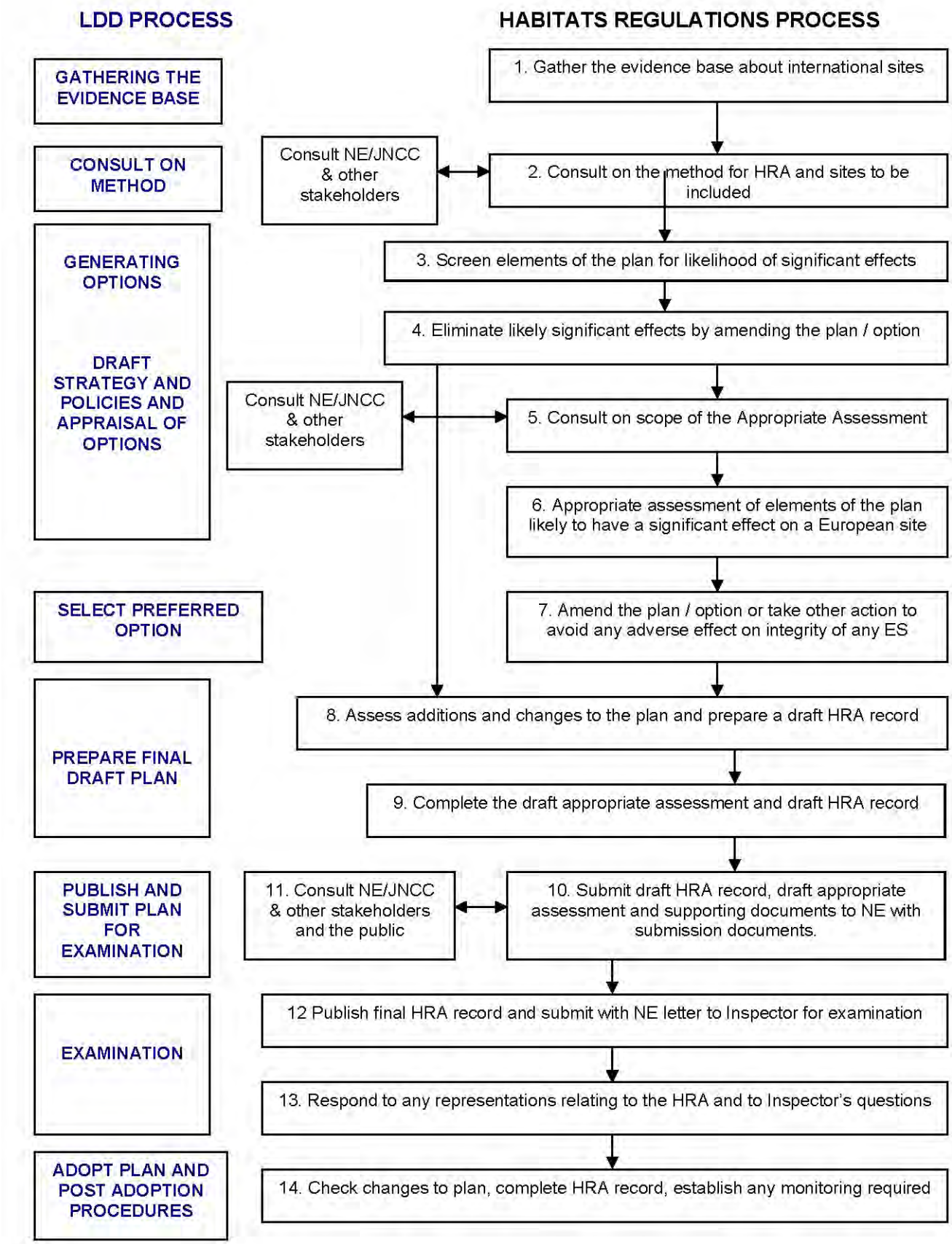
Appendix 1: Flow chart outline Habitats Regulations procedure



Appendix 2: Outline of the Habitats Regulations Assessment Process for LDD's where an Appropriate Assessment is required



Appendix 3: List of plans and major projects which are relevant for in-combination purposes

- East Hampshire CAMS (2008);
- East Solent Shoreline Management Plan (1997);
- Eastern Yar River and Coastal Strategy (2006);
- Eastleigh Core Strategy (not yet adopted);
- Fareham Borough Local Plan (2000);
- Fareham Core Strategy (not yet adopted);
- Hampshire Local Transport Plan 2 (2006);
- Hampshire Minerals and Waste Core Strategy (2007);
- Hampshire Water Strategy (2003);
- Havant Borough District-Wide Local Plan (2005);
- Island Plan Core Strategy (not yet adopted);
- Isle of Wight AONB Management Plan (2004);
- Isle of Wight Strategic Flood Risk Assessment (2007);
- Medina Estuary Management Plan (2000);
- Portchester Castle to Emsworth Coastal Defence Strategy (2006);
- Portsea Island Coastal Strategy Study (2004, under review);
- Portsmouth City Local Plan (2006);
- Portsmouth Core Strategy (not yet adopted);
- Portsmouth Harbour Plan Review (2000);
- Second Local Transport Plan for Portsmouth (2006);
- Southampton Core Strategy (not yet adopted);
- Southampton to Hamble Coastal Defence Strategy (2006);
- The South East Plan (2009);
- Test and Itchen CAMS (2006);
- Test Valley Core Strategy (not yet adopted);
- Western Solent and Southampton Water Shoreline Management Plan (1998);
- Winchester Local Plan (2006); and
- Winchester Core Strategy (not yet adopted).

Major projects that may become relevant as they progress are listed below. These will be examined further during the appropriate assessment stage, and as more design detail becomes available.

- Havant Thicket Reservoir;
- North of Fareham Strategic Development Area;
- Portsmouth Harbour and Solent dredging operations;
- Woolston Pipeline; and
- Whiteley Strategic Growth Option (Winchester).