

Forest of Dean District Council

Allocations Plan

Publication Version

March 2015

Habitats Regulations Assessment (Appropriate Assessment)  
Report

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## **Executive Summary**

This report outlines the methods and findings of the HRA for the Allocation Plan for Forest of Dean District Council. This HRA has been undertaken in accordance with good practice and available guidance and has been informed by previous HRA screening work for earlier iterations of the Allocations Plan.

### HRA Screening

This first stage of the HRA process considered the likely significant effects on five European sites within the influence of the Allocations Plan (AP). This initial screening considered potential impacts from policies and allocations for any potential likely significant effects. The re-screening screened out the majority of the policies. The re-screening also identified 3 AP policies for which the impacts could potentially lead to significant effects alone. The re-screening identified a further 27 policies where there was uncertainty as to impacts either alone or in combination. This is set out in Appendix 1 Table 1.

Further detailed screening (Appendix 1 Table 2) screen these policies and their potential impacts against each of the European sites scoped into the HRA. This included consideration of the environmental pathways and sensitivities of the sites, as well as mitigation provided by policies. Uncertainty remained with many of these screened in policies both alone and in combination with regard to identified impacts: air quality, water levels and quality, habitat loss and fragmentation and disturbance. Based on the precautionary approach these uncertain issues were considered in more detail through Appropriate Assessment.

### HRA Appropriate Assessment

The Appropriate Assessment (AA) considered the potential for the Allocations Plan to have adverse effects on the integrity of identified European sites alone and in combination through changes to air quality, increased disturbance (mainly recreational activity), habitat loss and fragmentation and reduced water levels and quality.

#### Air Quality

The AA found that it is unlikely that there would be significant effects on any of the European sites as a result of increased atmospheric pollution (both alone and in-combination) given the mitigation provided through Core Strategy and AP Policies. It was therefore concluded that the mitigation provided through Core Strategy Policies and Allocations Plan policies and if required actions at the project level would address the potential for adverse effects both alone and in-combination on the European Sites as a result of increased atmospheric pollution.

#### Water Levels and Quality

The AA assessed that the mitigation provided by the Core Strategy and Allocations Plan Policies and current regulatory processes would ensure that the potential impacts of proposed development on the water environment would be minimised. In a number of specific cases where issues have been previously raised by the Environment Agency or Severn Trent Water specific recommendations have been made to add wording to "Special Requirements" section of policies.

Given this mitigation and taking into account the recommendations above, it is assessed that the Publications Allocations Plan will not have adverse effects either alone or in combination on the integrity of the identified European sites through changes to water levels or water quality.

#### Habitat Loss and Fragmentation

The AA assessed that the mitigation provided by the Core Strategy and Allocations Plan Policies would ensure that in most circumstance the potential impacts of proposed development on habitat loss or fragmentation would be minimised. A number of specific site allocations had identified impacts either alone or where there was uncertainty or in-combination.

It is concluded that, given existing policy caveats and additional policy changes recommended in mitigation, it is assessed that the Allocations Plan will not have adverse effects either alone or in combination on the integrity of the identified European sites through changes to water levels or water quality.

#### Disturbance

The AA found that a number of significant changes should be made to the Allocations Plan to ensure there were no potential significant adverse impacts of the Severn Estuary European site. These included additional text in the section on Lydney, policy caveats and measures to ensure how adverse effects on site integrity will be avoided by mitigation measures in a lower tier plan, to be confirmed by a more detailed Habitats Regulations Appraisal at that level potential requiring additional information gathering and bespoke management plans or contributing to a large-scale mitigation strategy.

If these amendments were made and embedded in the Allocations Plan it would be able to demonstrate that foreseeable risks have been identified and the plan has established an enforceable framework with the aim of preventing the risks. It is therefore assessed that the AP will not have adverse effects on the integrity of the identified European sites through disturbance.

## **1 Introduction**

- 1.1 This report is a record of the Habitats Regulations Assessment, re-screening and Appropriate Assessment, under Regulation 61 of the Conservation of Habitats & Species Regulations 2010 for the Forest of Dean District Allocations Plan (AP). Habitats Regulation Assessment (HRA) relates to the potential for negative effects on a European designated nature conservation site as a result of a plan or project, alone or in combination with other plans or projects. Negative impacts on other habitats and species, not connected to European designated sites, is not considered by an HRA. Ordinarily, where appropriate, such matters would be considered in relation to other legislation and guidance.
- 1.2 Habitats Regulations Assessment can be seen as sequential process of 4 clear stages (Figure 1), with the requirement to undertake the next stage reliant on the outcome of the previous stage. Each stage can be re-assessed if the details of a plan/project changes or information about the European site changes. In this way HRA is an iterative process until the plan or project is finalised / consented.
- 1.3 A Preliminary Screening was undertaken by Forest of Dean District Council (July 2014) and this report has been informed by that screening work of the pre-consultation draft of the AP. Responses to the HRA Preliminary screening report helped inform this version of the HRA. Forest of Dean District Council is the competent authority responsible for authorising the plan and any assessment of it required by the Regulations. The Habitats Regulations Assessment Handbook produced by DTA Publications, as available at the date of assessment, has guided the approach undertaken by the Council.
- 1.4 This report documents the process and the findings of the HRA for the AP. Following this introductory section the document is organised into a further four sections:
- Section 2 summarises the requirement for HRA and the background to the AP.
  - Section 3 Includes general information on the Allocation Plan document.
  - Section 4 Identifies the scope of sites included in the HRA and relevant site information gathering.
  - Section 5 summarises the findings of the HRA screening. It details any identified likely significant effects of plans and policies on European sites.
  - Section 6 Appropriate Assessment.
  - Section 7 Conclusions.

## 2 HABITATS REGULATIONS ASSESSMENT (HRA)

### Requirement for Habitats Regulations Assessment

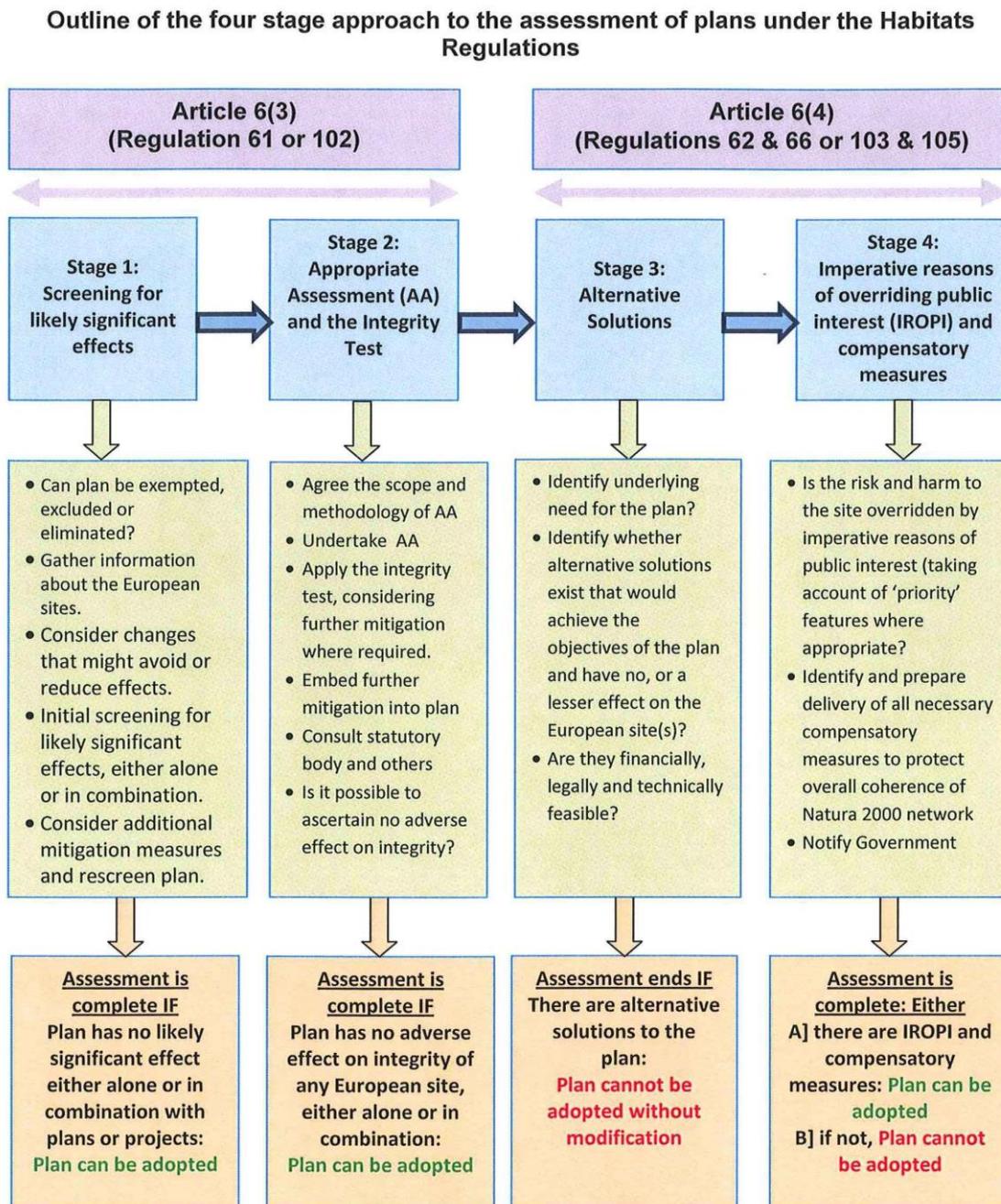
- 2.1 The Conservation of Habitats and Species Regulations 2010 (as amended) [the Habitats Regulations] require that HRA is applied to all statutory land use plans in England and Wales. The aim of the HRA process is to assess the potential effects arising from a plan against the conservation objectives of any European site designated for its nature conservation importance.
- 2.2 The Habitats Regulations transpose the requirements of the European Directive (92/43/EEC) on the Conservation of Natural Habitats and Wild Flora and Fauna [the Habitats Directive] which aims to protect habitats and species of European nature conservation importance. The Directive establishes a network of internationally important sites designated for their ecological status. These are referred to as Natura 2000 sites or European Sites, and comprise Special Areas of Conservation (SACs) and Special Protection Areas (SPAs) which are designated under European Directive (2009/147/EC) on the conservation of wild birds [the Birds Directive]. In addition, Government guidance also requires that Ramsar sites (which support internationally important wetland habitats and are listed under the Convention on Wetlands of International Importance [Ramsar Convention]) are included within the HRA process as required by the Regulations.
- 2.3 For ease of reference during the HRA, all of the designations above are collectively referred to as 'European sites', despite Ramsar designations being at the international level.
- 2.4 **Amendments to the Habitat Regulations 2012**  
In August 2012, amendments to the Habitats Regulations came into force. Whilst the Habitats Directive and Birds Directive directly apply to European Member States, these amendments were made to ensure that a number of elements of the Birds Directive are properly transposed into the domestic Habitats Regulations. Most importantly, the new amendments relate to the need to avoid deterioration or pollution of habitats supporting Annex 1 bird species (i.e. those species for which SPAs are classified) that lie outside SPA boundaries, and also wider duties with regard to the preservation and restoration of wild bird habitat generally.
- 2.5 The overall purpose of the HRA is to conclude whether or not a proposal or policy, or the whole development plan would adversely affect the integrity of any European site. This is judged in terms of the implications of the plan for a European site's 'qualifying features' (i.e. those Annex I habitats, Annex II species, Annex I bird populations or Ramsar criteria for which it has been designated). Significantly, HRA is based on a rigorous application of the precautionary principle; where uncertainty or doubt remains, an adverse impact should be assumed.

### Stages of Habitats Regulations Assessment

- 2.6 The application of HRA to Local Plans is an emerging field and has been informed by a number of key guidance and practice documents. The Habitats Regulations Assessment Handbook produced by DTA Publications, as available at the date of assessment, has guided the approach undertaken by the Council.

2.7 The Habitat Regulations Assessment Handbook outlines a four stage process to the assessment of plans.

Figure 1 – Habitats Regulations Assessment Process



## Habitat Regulations Assessment: Methods

### 2.8 Re-screening

The original Preliminary Screening Assessment set out the approach and findings for a Stage 1 Screening for Likely Significant Effects for the Pre-Publication Draft of the Allocations Plan. The aim of this screening stage was to assess in broad terms whether the policies and proposals set out in the plan are likely to have a significant effect on a European sites.

2.9 The report identified initial views on those policies in the Pre-Publication Draft with potential to cause likely significant effects and identified areas to focus further assessment.

2.10 The preliminary screening assessment has established that the Allocation Plan is a plan that should be subject to Habitats Regulations Assessment.

2.11 The relevant European nature conservation sites which have the potential to be affected by the Allocations Plan are:

- The River Wye SAC;
- The Wye Valley Woodlands SAC;
- The Wye Valley Woodland and Forest of Dean Bat Sites SAC;
- The Severn Estuary European Marine Site (SAC, SPA, Ramsar);
- Walmore Common SPA and Ramsar.

2.12 The first screening stage of the HRA identified 3 allocated sites following polices may result in likely significant effects:

- Stowfield Lydbrook
- Lydney Harbour
- Pine End Works and Land to the North

2.13 A further 23 polices were identified as having the potential for in-combination effects and these can be divided into the following groups:

- a. Water management in relation to the allocations and the Severn Estuary European Marine Site
- b. Impacts of wider cycleway and recreational links with regards to the Wye Valley and Forest of Dean Bat SAC
- c. Allocations in the Lydney Harbour area in relation to the Severn Estuary European Marine Site
- d. River Wye SAC and Severn Estuary SAC in relation to allocations in the Sedbury area.

2.14 The Preliminary Screening report consultation invited comment on the initial results of the screening.

2.15 This HRA report re-screens the Allocation Plan policies and allocations. As a result of the preliminary screening changes has been made to policy wording, allocations have been removed and new allocations have been added. The re-screening will take account of any amendments to the plan as a result of the consultation. As part of re-screening consideration will be given to additional rectification and mitigation measures in relation to the above polices.

#### Allocations Plan Policy and Sites Screening

2.16 The re-screening of the Allocations Plan has been undertaken to consider the potential for policies and the level of development at allocated sites to have likely significant effects on European sites.

2.17 The Allocations Plan was analysed to gain an overview of the allocations of sites. The scanning and site selection list for European sites that could potentially be affected by the plan by various impact pathways is present in Table 3 in Section 5 below. The table is taken from The Habitats Regulations Assessment Handbook, by DTA Publications Limited. This initial stage resulted in a generic description of the impacts that could arise from the types of development proposed: in Table 1 in Section 2 below; these generic impact types are used through the report and within the Appropriate Assessment stage.

2.18 The allocations plan and sites screening results are presented in Appendix 1 of this report.

#### Appropriate Assessment

2.19 Assessing the impacts of plans, polices and proposals against the European Site Conservation Objectives is required by Regulation 102 of the Conservation of Habitats and Species Regulations 2010. This is the appropriate assessment stage of the HRA process. The process identifies likely significant effects as well as in combination with other plans and projects. As shown in "Stage 2" of Figure 1 above.

2.20 Where an Appropriate Assessment identifies potential in-combination impacts then the first stage of this part of the assessment would be to identifying which other plans and projects may affect the European sites that were the focus of this screening assessment.

2.21 The tasks involved in an Appropriate Assessment can be described as:

- Information gathering and initial analysis of potential impacts.
- Assessing the impacts; examination of policies and site allocations; and defining impact (alone or in-combination).
- Consideration of other plans or programmes which could generate effects that have the potential to act cumulatively.
- Identifying mitigation which could avoid or otherwise mitigate potential significant effects by embedding further mitigation into the Allocations Plan. Identification of whether it is possible to ascertain there are no adverse effects in site integrity.

- 2.22 There are a large number of potentially relevant plans and projects which could be considered. The review at this stage has focused on spatial plans for the authorities adjacent to the Forest of Dean as well as the Cinderford Northern Quarter Area Action Plan, which is part of the Local Plan for the district but not part of the Allocations Plan.
- 2.23 The purpose of the review of other plans and projects was to identify any effects that could combine with those of the Forest of Dean District Council Allocations Plan with the result that insignificant effects of the allocations become significant. Generic examples of development impacts with the potential to combine with the effects of nearby plans or projects include:
- Increased local air pollution due to increased road traffic.
  - Increased water abstraction due to increased usage for domestic water supply.
  - Increased water pollution due to increased effluent discharges from wastewater treatment works or from contaminated surface run-off.
  - Increased damage and disturbance to habitats and species due to increased recreation.
- 2.24 The potential for the effects of these other plans to combine with those of the Forest of Dean Allocations Plan has been considered in Section 6.
- 2.25 The Appropriate Assessment stage provides a more detailed consideration of potential impacts, possible measures to mitigate any identified impacts, and finally seeks to ascertain whether there is certainty that implementation of the plan will not lead to adverse effects on the integrity of any European site. The findings of the Appropriate Assessment are detailed in Appendix 4 and in Section 6 below.

### 3. The Allocations plan

- 3.1 This Allocations Plan, together with the Core Strategy (CS) and the Area Action Plan for the Cinderford Northern Quarter will comprise the Local Plan for the Forest of Dean District. It looks forward to 2026 and provides policies which identify specific areas of land whether for protection or for development. The main influence on the AP is the adopted (2012) Core Strategy (CS) and the aims and objectives of this are common to the AP. It follows that the allocations made are underpinned by common evidence although the evidence base for the AP is an extended and updated version of that used for the CS.
- 3.2 The bulk of the AP relates to allocations that apply particular policies to certain areas of the district. These are generally related to the identified settlements but there are some important policies that are not linked to settlements.
- 3.3 The policies in the CS enable development but do not identify precise areas for its various forms. The CS does however include a strategy and settlement hierarchy which sets the pattern for additional change. The AP makes provision for housing and employment which is consistent with this and can ensure that the development required to fulfil the CS requirements can be delivered. Enabling delivery is the prime responsibility of the AP which with the exception of the special case of the Cinderford Northern Quarter AAP covers the whole district. It had been intended at one time to provide an AAP for much of Lydney but the same can be achieved more quickly by including that area in the AP and taking advantage of the flexible format of this plan to enable an appropriate level of guidance to be provided.

#### District Wide Policies

- 3.4 The great majority of the policies in the AP are site specific, however there are some which apply across the whole district in certain circumstances or which apply to certain types of development or alternatively have more general themes. Several form a bridge between the CS (strategic) or the NPPF and the local (AP/NDP) scale.

Table 1

Policy heading	Purpose
AP1 Sustainable development	To illustrate how the sustainable development aims of the CS can be achieved and to provide a policy expressing these aims in a manner which is in keeping with the NPPF.
AP2 Renewable energy	To support renewable energy subject to appropriate environmental safeguards
AP3 Mixed uses and proximity	To encourage complementary land uses between sites and to support proposals for mixed uses within development proposals where appropriate

AP4 Design of Development	To make clear the basis on which the design of new development will be evaluated
AP5 Style and Materials	To encourage the use of locally based assessments of character and assets together with existing information to better inform planning decisions
AP6 Locally distinctive areas	To protect distinctive character areas defined in the plan
AP7 Biodiversity	To ensure that there is a net gain in biodiversity through the implementation of the Plan, in keeping with the NPPF
AP8 Green Infrastructure	To encourage the provision of GI both as an integral part of development and elsewhere and to ensure that development provides GI where appropriate

### Allocations Policies

- 3.5 The remaining of the Allocations Plan is divided into Policies for:
- Sites Allocated that are not within or adjoining defined Settlements
  - Policies for Towns and other Settlements
- 3.6 These policies are listed in the Initial re-screening table for Likely Significant effect as in Appendix 1.
- 3.7 Each policy is allocated an assessment and reasoning category for assessing if the policy is likely to have an adverse effect.

Table 2 Screening Categories

Category	Reason
A	General statement of Policy / general aspiration (screened out)
B	Policy listing general criteria for testing the acceptability / sustainability of proposals (screened out)
C	Proposal referred to but not proposed by the plan (screened out)
D	Environmental Protection / site safeguarding policy (screened out)
E	Policies or proposals which steer change in such a way as to protect European sites from adverse effects (screened out)
F	Policy cannot lead to development or to other change (screened out)
G	Policy or proposal that cannot have any conceivable effect on a site (screened out)
H	Policy of proposal the (actual or theoretical) effects of which cannot undermine the conservation objectives (either alone or in combination with other aspects of this or other plans or projects) (screened out)
I	Policy or proposal with likely significant effects on a site alone (screened in)

J	Policy or proposal with an effect on a site but not likely to be significant alone, so need to check for likely significant effects in combination
K	Policy or proposal not likely to have a significant with an effect either alone or in combination (screened out after combination test)
L	Policy or proposal likely to have a significant effect in combination (screened in after in-combination test)

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#### 4. European Sites within HRA Scope

4.1 The Preliminary HRA report identified that the following sites should be included in the HRA for the Allocations Plan. All these sites are either within or partly within the district council boundaries. The re-screening assessment undertaken as part of this HRA confirmed these sites should be included within the HRA:

- The River Wye SAC
- Severn Estuary SAC, SPA & Ramsar
- Walmore Common SPA & Ramsar
- Wye Valley and Forest of Dean Bat Sites SAC
- Wye Valley Woodlands SAC.

4.2 This section details those European Sites identified where they may be likely significant effects. Brief summaries are provided in this report. Full site information is in Appendix 2. In addition Appendix 3 includes European Site vulnerabilities and condition assessment.

4.3 Additional information accessed for the site analysis included:

Site Improvements Plans for: River Wye, Wye Valley Woodlands and Walmore Common.

Core Management Plan for Wye Valley and Forest of Dean Bat SAC (CCW document)

Core Management Plan for River Wye (CCW document)

Natural England Conservation Objectives for the Wye Valley Bat SAC

The Severn Estuary Regulation 33 Advice (CCW and Natural England)

Walmore Common: Conservation Objectives and definitions of Favourable Condition for designated features of interest.

Wye Valley and Forest of Dean Bat SAC (all sub sites) Conservation Objectives and definitions of Favourable Condition for designated features of interest

Wye Valley Woodlands (all sub sites) Conservation Objectives and definitions of Favourable Condition for designated features of interest.

#### Summary Site Descriptions

4.4 **The River Wye SAC**, on the border of England and Wales, is a large river of plain to montane levels. It has a geologically mixed catchment, including shales and sandstones, and there is a clear transition between the upland reaches, with characteristic bryophyte-dominated vegetation, and the lower reaches, with extensive *Ranunculus* beds. There is an exceptional range of aquatic flora in the catchment including river jelly-lichen. The river channel is largely unmodified and includes some excellent gorges, as well as significant areas of associated woodland. The site is also designated for its populations of Lamprey, White-clawed crayfish, Twaite Shad, Atlantic Salmon, Bullhead and Otter.

4.5 **Severn Estuary SAC, SPA & Ramsar** is the largest coastal plain estuary in the UK with extensive mudflats and sandflats, rocky shore platforms, shingle and islands. Saltmarsh fringes the coast, backed by grazing marsh with freshwater and occasional brackish ditches. The estuary's classic funnel shape, unique in the UK,

is a factor causing the Severn to have the second highest tidal range in the world (after the Bay of Fundy in Canada) at more than 12 meters. This tidal regime results in plant and animal communities typical of the extreme physical conditions of strong flows, mobile sediments, changing salinity, high turbidity and heavy scouring. The resultant low diversity invertebrate communities, that frequently include populations of ragworms, lugworms and other invertebrates in high densities, form an important food source for passage and wintering birds. The site is important in the spring and autumn migration periods for waders moving along the west coast of Europe, as well as in winter for large numbers of waterbirds including swans, geese, ducks and waders. These bird populations are regarded as internationally important.

- 4.6 **Walmore Common SPA & Ramsar** the site is a wetland overlying peat providing a variety of habitats including improved neutral grassland, unimproved marshy grassland and open water ditches. The area is subject to regular winter flooding and this creates suitable conditions for regular wintering by an important number of Bewick's Swan *Cygnus columbianus bewickii*. The highest bird numbers are seen during the harshest winters, when Walmore Common provides an essential feeding and roosting area.
- 4.7 **Wye Valley and Forest of Dean Bat Sites SAC** straddles the Wales-England border and covers an area of 142.7ha. It is underpinned by 4 SSSI in Wales and 9 in England, all of which lie entirely within the SAC. This complex of sites contains by far the greatest concentration of lesser horseshoe bat in the UK, totalling about 26% of the national population. It has been selected on the grounds of the exceptional breeding population, and the majority of sites within the complex are maternity roosts. The site also supports the greater horseshoe bat in the northern part of its range, with about 6% of the UK population. The site contains the main maternity roost for bats in this area, which are believed to hibernate in the many disused mines in the Forest.
- 4.8 **Wye Valley Woodlands SAC** straddles the Wales–England border and covers an area of 914ha. It is underpinned by 16 SSSIs of which 8 in partly or all within the Forest of Dean, all of which lie entirely within the SAC. The woodlands of the lower Wye Valley form one of the most important areas for woodland conservation in Britain. Many rare and local species are present, including some of the rarest native tree species. These woods sit in a matrix of unimproved grassland and other semi-natural habitats.

## 5. Screening

### Likely Significant Effects

- 5.1 The first task is to re-screen the Allocations Plan for the likelihood of significant effects on any European site. Checking a plan for the likelihood of significant effects involves a careful check of each policy proposed, and its supporting text. A record is made of the check for the likelihood of significant effects, recording the check on a policy-by-policy basis, thus demonstrating that the plan in its entirety, and each individual policy, has been fully considered.
- 5.2 The following Table 3 from The Habitats Regulations Assessment Handbook © DTA Publications Limited (September) 2013 has been used to help assist the process of determining potential impact pathways.

**Table 3**

<b>Scanning and potential impact pathways for European sites that could potentially be affected by the plan</b>						
<b>Types of plan</b>	<b>Sites to scan for and check</b>	<b>Names of sites selected</b>				
		Severn Estuary	WV & FoD Bat Sites	River Wye	WV Woodlands	Walmore Common
1. All plans (terrestrial, coastal and marine)	Sites within the geographic area covered by or intended to be relevant to the plan	X	X	X	X	X
2. Plans that could affect the aquatic environment	Sites upstream or downstream of the plan area in the case of river or estuary sites	X	X	X	X	X
	Open water, peatland, fen, marsh and other wetland sites with relevant hydrological links to land within the plan area, irrespective of distance from the plan area	X		X		X
3. Plans that could affect the marine environment	Sites that could be affected by changes in water quality, currents or flows; or effects on the inter-tidal or sub-tidal areas or the sea bed, or marine species	X		X		
4. Plans that could affect the coast	Sites in the same coastal 'cell', or part of the same coastal ecosystem, or where there are interrelationships with or between different physical coastal processes	X		X		

5. Plans that could affect mobile species	Sites whose qualifying features include mobile species which may be affected by the plan irrespective of the location of the plan's proposals or whether the species would be in or out of the site when they might be affected	x	x	x	x	X
6. Plans that could increase recreational pressure on European sites where qualifying features are sensitive to such pressure	Such European sites the plan area	x	x	x	X	x
	Such European sites within an agreed zone of influence, or other reasonable and evidence-based travel distance of the plan area, that may be affected by local recreational or other visitor pressure from within the plan area Such European sites within an agreed zone of influence, or other reasonable and evidence-based longer travel distance of the plan area, which are major (regional or national) visitor attractions such as European sites which are National Nature Reserves where public visiting is promoted, sites in National Parks, coastal sites and sites in other major tourist or visitor destinations					
7. Plans that would increase the amount of development	Sites in the plan area or beyond that are used for, or could be affected by, water abstraction irrespective of distance from the plan area	x	x	x	x	x
	Sites used for, or could be affected by, discharge of effluent from waste water treatment works or other waste management streams serving the plan area, irrespective of distance from the plan area	x		x		
	Sites that could be affected by the provision of new or extended transport or other infrastructure					
	Sites that could be affected by increased deposition of air pollutants arising from the proposals, including emissions from significant increases in traffic	x	x	x	x	x
8. Plans for linear developments or infrastructure	Sites within a specified distance from the centre line of the proposed route (or alternative routes), the distance may be varied for differing types of site / qualifying features and in the absence of established good practice standards, distance(s) to be agreed by the statutory nature conservation body					

9. Plans that introduce new activities or new uses into the marine, coastal or terrestrial environment	Sites considered to have qualifying features potentially vulnerable or sensitive to the effects of the new activities proposed by the plan	x	x	x	x	x
10. Plans that could change the nature, area, extent, intensity, density, timing or scale of existing activities or uses	Sites considered to have qualifying features potentially vulnerable or sensitive to the effects of the changes to existing activities proposed by the plan	X	x	x	x	x
11. Plans that could change the quantity, quality, timing, treatment or mitigation of emissions or discharges to air, water or soil	Sites considered to have qualifying features potentially vulnerable or sensitive to the changes in emissions or discharges that could arise as a result of the plan					
12. Plans that could change the quantity, volume, timing, rate, or other characteristics of biological resources harvested, extracted or consumed	Sites whose qualifying features include the biological resources which the plan may affect, or whose qualifying features depend on the biological resources which the plan may affect, for example as prey species or supporting habitat or which may be disturbed by the harvesting, extraction or consumption					
13. Plans that could change the quantity, volume, timing, rate, or other characteristics of physical resources extracted or consumed	Sites whose qualifying features rely on the physical resources which the plan may affect, for example, as habitat or a physical environment on which habitat may develop or which may be disturbed by the extraction or consumption					
14. Plans which could introduce or increase, or alter the timing, nature or location of disturbance to species	Sites whose qualifying features are considered to be potentially sensitive to disturbance, for example as a result of noise, activity or movement, or the presence of disturbing features that could be brought about by the plan	x	x	x	x	x

15. Plans which could introduce or increase or change the timing, nature or location of light or noise pollution	Sites whose qualifying features are considered to be potentially sensitive to the effects of changes in light or noise that could be brought about by the plan	X	X	X	X	X
16. Plans which could introduce or increase a potential cause of mortality of species	Sites whose qualifying features are considered to be potentially sensitive to the source of new or increased mortality that could be brought about by the plan					

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### Impact Pathways

5.3 A number of generic impact pathways were subsequently identified, this are presented below in Table 4. These generic categorises are subsequently used in the detailed screening and Appropriate Assessment stages of the HRA.

**Table 4:  
Summary of Generic Impacts and Effects on European Sites**

<b>Effects on European Sites</b>	<b>Impact Types</b>
<b>Habitat (&amp; species) fragmentation and loss</b>	Direct land take, removal of green/ connecting corridors/ supporting habitat, changes to sediment patterns (rivers and coastal locations) Introduction of invasive species (predation)
<b>Disturbance</b>	Increased recreational activity (population increase), cycle ways Noise and light pollution (from development and increased traffic)
<b>Changes to water levels</b>	Increased abstraction levels (new housing) Increased hard standing non-permeable surfaces/ accelerated run-off Laying pipes/ cables (surface & ground) Topography alteration
<b>Changes to water quality</b>	Increase in run-off/ pollutants from non-permeable surfaces, construction sites (roads, built areas) Increased air pollution (eutrophication) (traffic, housing) Increased volume of discharges (consented)
<b>Changes in air quality</b>	Increased traffic movements Increased emissions from buildings

- 5.4 The record of the check for the likelihood of significant effects against identified sites is set out in Appendix 1, Table 1. This table identifies that the majority of the policies can be screened out. However, a number of policies are identified as having the potential to result in, or contribute to significant effects.
- 5.5 The screening found that for the majority of site allocations there were no pathways for development to have direct impacts on European sites. The potential for development at the sites to have indirect impacts on European sites was also considered. The screening assessed that the potential indirect impacts of development at all the proposed site allocations could be either mitigated or avoided through the Core Strategy Policies, which seek to protect biodiversity and minimise the impact of development on the environment. This includes the following policy mitigation/ safeguards in the Core Strategy:
- CSP 1: Design and environmental Protection  
CSP2: Climate Change  
CSP4: Development at Settlements
- 5.6 It was also considered that appropriate site level mitigation would be available and could be required at the planning application stage to address any unforeseen impacts of individual developments on European sites.

#### Detailed Screening

- 5.7 This first stage of the HRA process considered the likely significant effects on five European sites within the influence of the Allocations Plan (AP). This initial screening considered potential impacts from policies and allocations for any potential likely significant effects. The re-screening screened out the majority of the policies. The re-screening also identified 3 AP policies for which the impacts could potentially lead to significant effects alone. The re-screening identified a further 27 policies where there was uncertainty as to impacts either alone or in combination. This is set out in Appendix 1 Table 1.
- 5.8 This report therefore proceeds to a more detailed level of assessment for the key areas of concern identified under a number of headings: water levels and quality, air quality, habitat loss and fragmentation and disturbance as shown above in Table 4 and by Policy in Appendix 1 Table 2.
- 5.9 Since the likelihood of significant effects cannot be ruled out at this stage, the District Council, as competent authority, must assess the potential impacts, and identify any mitigation measures required to avoid an adverse effect. This is the 'Appropriate Assessment' stage.
- 5.10 **Other Sources of Information to Inform the Assessment**  
This assessment draws upon particular documents from the Local Plan evidence base. Water resources plans and catchment area management plans from water utility companies and the Environment Agency were also researched. The web based Air Pollution Information system (APIS) enabled detailed consideration of the potential impact of nitrogen and sulphur deposition on specific habitat types.

## 6. APPROPRIATE ASSESSMENT

- 6.1 When undertaking the Appropriate Assessment, the District Council must assess if the AP is likely to adversely affect the integrity of a European site. In order to be certain the district authority should be convinced that no reasonable scientific doubt remains.
- 6.2 There is no absolute guarantee that there will be no adverse effect on site integrity, this is not achievable at the plan stage. Best practice would suggest the best achievable outcome is that the district council should identify the potential risks that are foreseeable using available information. The plan should seek to establish an enforceable framework with the aim of preventing the risks.
- 6.4 The district council should aim to resolve as much uncertainty as possible within the AP. It should not rely solely on the general policy in the adopted Core Strategy (CSP1) aimed at protecting internationally designated nature conservation sites.
- 6.5 If some other aspect of the plan is likely to have a significant effect on a European site, it is not appropriate to decide that there would not be an adverse effect on site integrity simply because there is policy saying that such sites would be protected. The inherent tension, conflict, or contradiction between the two aspects of the plan must be resolved in a way that enables the Council to ascertain that there will not be an adverse effect on the integrity of the European site, with the appropriate degree of certainty.
- 6.6 Consequently, in order to determine no adverse effects on site integrity, various kinds of mitigation or counter-acting measures are recommended below and in Appendix 4 of the Appropriate Assessment to ensure that the Allocations Plan does not result in adverse effects on a European site. The types of measures recommended to be imbedded in the plan are, in summary:
- 6.7 Types of possible policy or site specific restrictions adopted;
- Policy or site specific caveats;
  - Prescribing how adverse effects on site integrity will be avoided by mitigation measures in a lower tier plan, to be confirmed by a more detailed Habitats Regulations Appraisal at that level;
  - Deleting aspects of the plan that will probably fail the tests of the Directive at project application stage;
  - Requiring delivery of explicit and bespoke management plans or contribution to a large-scale mitigation strategy.
- 6.8 The policy screening process, site allocations screening (Appendix 1) and the review of plans and programmes in combination identified four main areas of impact arising that may have the potential for significant effects alone or when combined with the effects arising from other plans, programmes and projects on the integrity of the identified European sites: water resources, water quality, disturbance and air quality. These issues are investigated further below.

### Other plans and projects

- 6.9 In combination assessment is based on identifying potential cumulative impacts on the integrity of a European site resulting from combinations of minor residual effects. These effects can be from policies and proposals within the plan with identified residual effects alone and effects from other plans and projects. An assessment of any minor residual effects from other plans or projects can be made by examination of the HRA record for that plan or project.
- 6.10 It is also recognised that it is impractical to assess the 'in combination' effects of the Forest of Dean Allocations Plan within the context of all other plans and projects within the District and surrounding Local Authority areas. In practice in combination assessments focus on other key plans and projects which relate to additional housing, transportation and commercial/industrial allocations proposed for neighbouring authorities over the lifetime of the Plan. Considering likely impact pathways which relate to the identified impact pathways of the AP, the following plans and projects have been identified for consideration 'in combination' at this stage of the AP:
- Forest of Dean Core Strategy
  - Lydney Neighbourhood Development Plan.
  - Cinderford Northern Quarter Area Action Plan and associated planning application P0663/14/OUT
  - South Worcestershire Development Plan
  - Monmouthshire Local Development Plan
  - Herefordshire Core Strategy
  - Stroud Local Plan
  - Joint Core Strategy: Gloucester, Cheltenham and Tewkesbury
  - Gloucestershire Waste Core Strategy
  - Gloucestershire Minerals Local Plan
- 6.11 Examination of all of these plans and projects (Appendix 5) has determined there would be no in-combination effect as no residual effects have been identified in the Habitats Regulations Assessments for all of these plans or projects. The Appropriate Assessment stage of the HRA identifies recreational impacts on the Severn Estuary as a particular issue which is relevant in a large number of local authorities, agencies, voluntary organisations and users. As such, the collaborative approach to management advocated by the Severn Estuary Partnership will be an important mechanism for ensuring that the integrity of the SAC, SPA and Ramsar site is maintained whilst still ensuring public enjoyment of the Estuary.

### Air quality

#### Traffic Emissions

- 6.12 The screening assessment concluded that there is uncertainty with regard to the potential for likely significant effects on designated sites, in particular the Severn Estuary SAC, SPA & Ramsar and Walmore Common SPA & Ramsar and the River Wye SAC through air quality impacts as the sites are within 200m of

significant roads. The following sites are within 200m of other A roads: Wye Valley Woodlands SAC and Wye Valley and Forest of Dean Bat SAC.

- 6.13 Air quality can be a difficult impact to evaluate: some habitats are susceptible to air pollution. The adopted standard for setting acceptable levels of air pollutants is the use of critical levels of pollutants and critical loads for sensitive habitats. Critical loads identify what levels of deposition of pollutants are acceptable on different habitats. Critical Loads available on the UK Air Pollution Information System ([www.apis.ac.uk](http://www.apis.ac.uk)).
- 6.14 The main impact pathway identified for air quality within the AP is from the potential for increased deposition caused by increased traffic movements as a result of the overall quantum of development within the district projected over the life of the plan.
- 6.15 Guidance produced by the Highways Agency, Transport Scotland, Welsh Assembly Government and the Department for Regional Development Northern Ireland for Design of Roads and Bridges – Air Quality (May 2007) (2), states that: beyond 200m, the contribution of vehicle emissions from the roadside to local pollution levels is not significant. This is therefore the distance that has been used throughout this HRA in order to determine whether European sites are likely to be significantly affected by development under the AP.
- 6.16 There are a number of significant roads within 200m of European sites in the District. These are: the A48 - Walmore Common SPA/Ramsar, Severn Estuary SAC, SPA and Ramsar and the River Wye SAC; the M48 Severn Estuary SAC, SPA and Ramsar and River Wye SAC. This includes river crossings for the A48 and M48.
- 6.16 There are two smaller roads: A466 is also within 200m of some of the component sites of the Wye Valley Woodlands SAC, the River Wye SAC and the A4136 within 200m of the River Wye and component sites of the Wye Valley and Forest of Dean Bat SAC.
- 6.17 Walmore Common, Severn Estuary and River Wye are discussed in more detail below together with information from Gloucestershire's Local Transport Plan 3.
- Severn Estuary SAC, SPA & Ramsar*
- 6.18 The Site Relevant Critical Loads available on the UK Air Pollution Information System ([www.apis.ac.uk](http://www.apis.ac.uk)) indicate that many of the habitats and species for which the SAC was designated are either insensitive to atmospheric sources of nitrogen or sulphur (intertidal mudflats and sandflats, reefs, subtidal sandbanks) or are indirectly affected by nitrogen in marine situations (since nitrogen is usually the main limiting nutrient in marine systems and therefore influences eutrophication) but do not have specific critical loads for atmospheric sources (sea lamprey, river lamprey, twaite shad).
- 6.19 Nitrogen sources within the Severn Estuary are likely to be overwhelmingly dominated by a combination of marine and fluvial sources rather than atmospheric sources, as with any estuary or major tidal river.

- 6.20 Critical Loads for atmospheric nitrogen deposition are available for habitats for which the SAC was designated – mud flats/sandflats, saltmarsh and ‘estuaries’ generally. (no load class data available for mudflats and sandflats). In both cases where load class estimates are available the modelled nitrogen deposition rates available on APIS for a 3 year average 2009-2011 show levels below the critical load; average of 8 kg N/ha/yr for the estuary and saltmarsh; which is well below the critical load (20-30 kg N/ha/yr for both habitats). APIS also predicts that by 2020 deposition rates will have declined further from transport sources, essentially due to expected improvements in background air quality across the UK.
- 6.21 The UK Air Pollution Information System does not present critical loads for the species for which the SPA are designated since birds are only indirectly affected by atmospheric nitrogen deposition via their habitats. The two key habitats within the Severn Estuary SPA/Ramsar site of relevance to its waterfowl interest are the intertidal sandflats and mudflats and the saltmarsh. The Severn Estuary SAC habitats have modelled deposition rates well below their critical load, which provides a considerable ‘buffer’ for the SPA.
- 6.22 Assuming the APIS prediction that improvements in background atmospheric emissions will have reduced nitrogen deposition even further by 2020 then an even greater safety margin is provided. Additionally nitrogen inputs to the mudflats and saltmarsh of the SPA are likely to be much more influenced by marine and fluvial sources than the (in quantitative terms) relatively small inputs from atmospheric deposition.
- 6.23 It is therefore considered that air quality issues from traffic emissions regarding the Severn Estuary can be scoped out of further consideration within this HRA.

*Walmore Common SPA and Ramsar*

- 6.24 This site lies within 120m of A48. The Air Pollution Information System website identifies the open water element of the site is sensitive to nitrogen (however no critical load has been assigned to this habitat) the grassland elements of the designated SPA site are not sensitive to nitrogen. The additional SSSI habitats of neutral grassland, this element is sensitive to nitrogen. The average data set on the APIS website indicates the average deposition rate is 13.8 kg N/ha/yr over a 3 year period 2009-2011 for the SPA. This is well below the critical load for the SSSI element of the site (lowland grassland 20-30 kgN/ha/yr).
- 6.25 APIS also predicts that by 2020 deposition rates will have declined further essentially due to expected improvements in background air quality across the UK.

*River Wye SAC*

- 6.26 The only habitat features listed on the APIS website are transition mires (a habitat in wales only upstream of the District) and not within 200m of the A48 or M48, and water courses of plain to mountain levels. This habitat is listed as sensitive to nitrogen but has no established critical load. Nitrogen from diffuse agricultural pollution is likely to be more of an issue, as with the River Severn.

- 6.27 The Core Management Plans (CMP) for River Wye SAC (welsh document) identifies that favourable management is largely dependent on ensuring that sufficient depth, velocity and duration of flow and sufficiently low phosphate levels are maintained within the natural range of the vegetation. This demonstrates that maintaining the river flow is important to the integrity of the European sites and suggests that the principal inputs of nutrients into these rivers are from water sources rather than atmospheric.
- 6.28 The Site Improvement Plan for the River Wye only cites the SAC's transition mire habitat located in Wales as an issue with regards that nitrogen deposition.

*Wye Valley Woodlands SAC and the Wye Valley and Forest of Dean Bat SAC*

- 6.29 These sites are not within 200m of a significant road, they are however within 200m of A roads within the district. Wye Valley and Forest of Dean Bat SAC have no identified impact pathway that could adversely impact the qualifying features. The Wye Valley Woodlands contain qualifying habitats that are sensitive to deposition of nitrogen and exceeding critical loads, including broadleaved and coniferous woodland which is noted in APIS as the relevant broad habitat for the qualifying bat species. Approximately 7.6% of overall nitrogen deposition is from road transport. Unless there are significant increases in traffic predicted for these A roads then significant effects as a result of air pollution on the Wye Valley Woodlands and Forest of Dean Bat SACs are considered unlikely.

*Gloucestershire Local Transport Plan 3*

(Gloucestershire County Council (July 2010) Forest of Dean Transport Strategy <http://www.gloucestershire.gov.uk/extra/CHttpHandler.ashx?id=52633&p=0> )

- 6.30 The Strategic Environmental Assessment of Gloucestershire's Local Transport Plan (LTP3) recognises the quantum and general location of development for the district and is broadly consistent with allocations set out in the AP. LTP3 considered the background for transport emissions was one of greater engine efficiency reducing emissions balanced with increased vehicle use. The SEA for LTP 3 considers the effect of raised emissions from transport on SAC's across Gloucestershire. It considered that only those sites of particular sensitivity to air pollution were likely to be at risk.
- 6.31 Designated SACs that are sensitive to air pollution could be vulnerable to any increase in air pollution from transport. These sites are the Cotswolds Beechwoods SAC and Rodborough Common SACs which may be particularly at risk due to their proximity to roads and urban areas. The *Asperulo-Fagetum* beech forests, for which the Cotswolds Beechwoods SAC is partly designated, already have levels of nutrient nitrogen outside of the critical load necessary to maintain their condition; NOx deposition from traffic could exacerbate this problem. Both sites are at least 12km from the district and are not on a significant route for vehicle movements associated with Forest of Dean district.

Source: Gloucestershire County Council Strategic Environmental Assessment of Gloucestershire's Third Local Transport Plan 2011-2026 (8.9.2) <http://www.gloucestershire.gov.uk/extra/CHttpHandler.ashx?id=44148&p=0>

### Dust

- 6.32 Guidance produced by the Highways Agency, Transport Scotland, Welsh Assembly Government and the Department for Regional Development Northern Ireland for Design of Roads and Bridges – Air Quality (May 2007) (2), states that: beyond 200m, the contribution of dust emissions (from the roadside construction activities) to local pollution levels is not significant. The advice note required the locations of any designated species or habitats within 200 m of a construction site to be clearly identified and mitigation measures applied.
- 6.33 Dust is therefore only likely to have an adverse impact at a local level and in addition mitigation measures are likely to effectively minimise dust to an insignificant level. Mitigation measures include controlling construction dust through fine water sprays, screening the whole site to stop dust spreading, covering or dampening skips, trucks and piles of loose materials.
- 6.34 Allocated sites within 200m of designated sites:
- River Wye SAC: AP17 Stowfield, AP29 Wye Valley (cycle way), AP92 Sedbury (230m)
  - Wye Valley Woodlands SAC: AP29 Wye Valley (cycle way)
  - River Severn SAC, SPA, Ramsar: AP46, AP44, AP42, AP43 all at Lydney; AP29 Wye Valley (cycle way); AP90 Newnham
- 6.35 Dust is only likely to have an effect at a very local level and following the implementation of appropriate standard mitigation measures, the impact of dust is unlikely to have a potential significant effect on the designated sites. It is considered that any significant effect can be removed by standard dust suppression procedures as part of a Construction Environment Management Plan which must be in place to avoid significant effects at project level for sites identified at potential risk. Core Strategy Policies CSP1, CSP2 and CSP4 all provide mechanisms for ensuring air quality concerns are satisfactorily addressed at the project level.

### Air Quality Conclusion

- 6.36 Taking into consideration the sensitivity and features of designated sites and the analysis of LTP3; the mitigation contained within the Core Strategy Policies CSP1, CSP2 and CSP4 and the wording of the AP policies, it is considered that there would be no significant effects as a result of the AP through increased atmospheric pollution from increased traffic movements or from construction activities producing dust for these European Sites.

## Water Level and Quality

- 6.37 The screening assessment concluded that there is uncertainty with regard to the potential for likely significant effects on the Severn Estuary SAC/ SPA/ Ramsar and Walmore Common SPA/ Ramsar and the River Wye SAC through reduced water levels and quality (from waste water and run-off).
- 6.38 Development proposed in the AP has the potential to impact designated sites through increased levels of abstraction to provide water supply. There is also the potential for the AP to increase pressure on sewerage capacity and levels of surface water run-off.
- 6.39 Development could increase pressure on sewerage capacity and increase levels of surface water run-off, which can result in reduced water quality. Effluent discharges can contain contaminants which build up in the food chain and can have toxic effects on organisms. They can also contain non-toxic contaminants, such as oxygen-depleting substances and nutrients. Eutrophication of water based habitats can lead to the excessive growth of planktonic or benthic algae, which is caused by increased nutrient inputs originating from sewage or agricultural run-off. Water quality is an important factor in maintaining the plant and animal communities, which support the important bird populations by providing feeding, nesting and roosting areas.
- 6.40 All water courses within the AP area eventually flow into the River Wye and River Severn and therefore there are pathways for potential significant effects on water quality. The water levels at the wetland site Walmore Common SPA and Ramsar are maintained largely by rainfall, run-off and river levels (natural flooding events).
- 6.41 Increased abstraction in the Severn Water Resource Zone has the potential to lead to reduced water levels, which can have adverse effects on the integrity of water dependent European sites. Changes to water levels can impact river flow and water quality, which can adversely affect water dependent habitats and the species that rely upon them. Increased discharges (consented) and surface water run-off (which can transfer pollutants to water bodies) has the potential to result in reduced water quality
- 6.42 Increased abstraction has the potential to affect water levels at the site – it is noted that water is also transferred between resource zones by Welsh Water and Severn Trent Water.
- 6.43 Assessment of Severn Trent Waters Water Resources Management Plan, Site Improvement Plan for the River Wye SAC, CCW's Core Strategy for the River Wye, River Wye Nutrient Management Plan and River Severn River Basin Management Plan conclude that abstraction issues and consented discharges within the Wye/Severn catchment area have been thoroughly assessed. In relation to the River Wye abstraction at Elan reservoir in Wales are highlighted as a major issue but this is being addressed within the Environment Agency's (EA) review of consents. No significant issues appear to be highlighted in relation to the River Severn. Although some local issues are referred to such as the over abstraction of the Cinderford Brook and low flows on the Glynch Brook. The Site

Improvement Plan for Walmore Common indicates that the water levels are a priority issue at the site, a Water Level Management plan for the site should address this identified threat.

- 6.44 The Environment Agencies Review of Consents Action Plans for the River Wye SAC could not conclude no adverse effect upon site integrity due to the in combination effects of licensed abstraction on the quantity and variability of river flows and fish entrainment at abstraction intakes. The maintenance of river flows is important to support the life stages of designated features. The in combination effects of abstraction are particularly evident during low flows in the River. The EA has developed environmental outcomes that establish criteria to ensure adequate flows are maintained, which enables them to conclude that permissions have no adverse effect.

Source: Monmouthshire Local Development Plan Deposit Draft Habitats Regulations Assessment.

- 6.45 Any applications for new abstraction licences are assessed by the Environment Agency through the Habitats Directive led Review of Consents process. This should ensure that adverse impacts on internationally important nature conservation sites do not occur. CCW core Strategy for the River Wye refers to this process as conforming to its objectives. Any assessment of a new abstraction that could have an adverse impact on a European site the EA follows strict rules in setting a time limit for that license. This ensures that water levels at European sites do not fall below critical levels. The EA also has a duty to assess the effects of consented discharges to address the potential for impacts on internationally important nature conservation sites. This regulated process serves to protect European sites.
- 6.46 An internal draft of the district's Infrastructure Delivery Plan (IDP) has been accessed as part of this HRA. Comments received from Welsh Water to the AP and from Severn Trent Water (draft IDP) have indicated a number of allocated sites where capacity issues and treatment works may be an issue. However these are site specific considerations and Core Strategy Policies fully take account of the need to ensure water supply and waste water are resolved as part of any project.
- 6.47 The Forest of Deans Infrastructure Delivery Plan (draft) states:
- “Severn Trent water is responsible for water supply to the majority of the FOD District. Severn Trent Water's draft Strategic Water Resources Management Plan (2015 – 2040) advises that for the Forest and Stroud water resource zone, while the company faces pressures to reduce abstraction from unsustainable sources and climate change impacts, these are not expected to trigger the need for investment in new sources of supply. Instead, the company plans for the zone are to manage the supply / demand balance through ongoing leakage control and water efficiency measures.”
- 6.48 Wastewater services with the FOD District are provided by Welsh Water and Severn Trent Water. With respect to wastewater sewerage and treatment plant

capacity, the following issues in particular have been identified as requiring further investigation and consultation:

- At Cinderford, Drybrook, Lydney and Newent, the cumulative impact of developments connecting to small diameter sewage pipes may result in capacity issues and Severn Trent Water has strongly recommended that hydraulic modelling is undertaken to inform upgrade assessments.
- Welsh Water has advised that at Tutshill/Sedbury, both water supply and wastewater constraints arise. Although this was addressed in the planning application for AP92 and no problems were raised. Early consultation at the pre-application stage is recommended so that solutions can be found and is addressed in policy wording of AP91.

6.49 The IDP identifies sites where hydraulic modelling assessment would be needed to ensure water supply and/or waste are adequately addressed. This would be required within any planning application and water level and quality issues would therefore be addressed at the project level.

#### Responsibilities for delivery for Water Quality

6.50 Severn Trent Water (STW) – STW provides water supply services to the majority of the district, as well as wastewater services to large the FOD area. The company also provides wastewater services to large parts of the district, including the larger settlements of Cinderford, Lydney and Newent.

6.51 Welsh Water (WW) – WW provides a water supply service to Tutshill/Sedbury and wastewater services to some parts of the district, mainly Coleford and Tutshill/Sedbury, as well as some other smaller villages.

6.52 The Environment Agency – the Environment Agency has a role as regulator with respect to managing water resources under the Water Framework Directive. This includes the granting of Environmental Permits held by the water utility companies (these permits were previously known as Abstraction Licenses and Discharges Consents, but are now Environmental Permits under the Environmental Permitting Regulations 2010).

6.53 Even with the regulatory processes in place to protect European sites, the Council should seek to ensure that the AP policies address water quality and resource issues and put robust policy measures in place to provide mitigation. The IDP identifies sites with potential issues the Core Strategy contains policies that seek to avoid impacts of proposed development on the water environment.

6.54 There are some identified circumstances that an allocated site requires a specific reference to the requirement to implement measures (to address water supply and waste water). Additional policy wording is recommended to ensure works will not commence until such issues have been satisfactorily resolved to avoid all significant effects. Recommendations for such mitigation are within Appendix 4 of this HRA.

6.55 Development can also lead to polluted surface water run-off, a particular concern on previously developed land where soils may be contaminated. A number of

previously developed allocated sites are in very close proximity to the River Wye (AP17 Stowfield) and the developments of the Lydney Industrial sites. These are issues which are more appropriate dealt with at the project level. Core Strategy Policies CSP1 and CSP2 and CSP4 all provide mitigation for any potential significant impacts and would ensure Construction Environmental Management Plans will be requested where surface water run-off is an identified issue.

- 6.56 At a strategic level the Core Strategy seeks to maintain and enhance the quality and quantity of water resources only permitting development where the Council, in consultation with the Environment Agency, is satisfied that suitable measures have been undertaken to protect water resources. The Core Strategy seeks to ensure that proposed developments which may impact on the water environment will only be permitted where it would not pose unacceptable risk or harm to the quality and quantity of ground waters, surface waters, wetlands or coastal water systems.
- 6.57 Specific mitigation for water quality and levels is provided by Policy CSP1 which; requires proposals to take remedial action where land contamination is an issue; take any necessary mitigation measures to avoid pollution and to make environmental improvements; and it will consider water supply, impact on ground water watercourses and protected abstractions. The Policy CSP1 aims to ensure that the sewerage infrastructure needed to service development is in place or provided in phase with proposals. Where existing infrastructure is inadequate to serve the development, new or improved infrastructure and facilities to remedy deficiencies must be provided.
- 6.58 Policy CSP2 requires developments to ensure proposals are water efficient, manage run-off and flood risk. The Core Strategy encourages initiatives that result in an improvement in water resources, for example water conservation initiatives within development design. Development proposals are expected to incorporate water management measures, including Sustainable Drainage Systems (SUDS), to reduce surface water run-off and minimise its contribution to flood risk elsewhere
- 6.59 However, for reasons of certainty it is recommended that identified allocations in Appendix 4 should include, within their policy wording, under special requirements, additional text regard to the protection of the water environment (where this is not already covered by general policy caveats recommended elsewhere in this Appropriate Assessment). These policies are: AP18, AP20, AP24, AP25, AP33, AP39, AP40, AP41, AP48, AP49, AP50, AP51 and AP77. The additional wording adds a further degree of certainty in avoiding potential impacts to European Sites by specific proposals.

#### Water Levels and Quality Conclusion

- 6.60 Given the mitigation provided by Core Strategy and AP Policy wording, current regulatory processes and taking into account the recommendations above, it is assessed that the AP will not have adverse effects on the integrity of the identified European sites through reduced water levels or water quality on the River Wye SAC, Severn Estuary SAC, SPA & Ramsar or Walmore Common SPA & Ramsar.

## Habitat Loss and Fragmentation

- 6.61 The screening concluded that the AP would not lead to the direct loss of designated habitat as there is no development proposed within a European site. Screening identified no significant alone or in-combination effect on Walmore Common SPA & Ramsar. The following sections explore potential impacts on the Severn Estuary SAC, SPA & Ramsar, River Wye SAC, Wye Valley Woodlands SAC and the Wye Valley and Forest of Dean Bat sites SAC.
- 6.62 Development could, however, also lead to the loss and fragmentation of supporting habitats, i.e. those that lie outside the designated area but have an identified role to play in maintaining the overall integrity of the European sites. There are a number of allocations very close to sites or where fragmentation may be a concern. In addition the overall quantum of development is assessed with regard to any reduction in the connectivity of important or supporting habitat, which is necessary to maintain the integrity of mobile or migratory species.
- 6.63 Policy AP17 is in very close proximity to the River Wye SAC, direct habitat loss is unlikely but cannot be completely ruled out. Policy AP17 Stowfield has been identified as having potential significant impacts but policy caveats are already in place for this proposal which demonstrate foreseeable risks have been identified and the plan has established an enforceable framework with the aim of preventing the risks.
- 6.64 Policy AP42 Lydney Harbour shares a border with the Severn Estuary SAC, SPA & Ramsar. Direct habitat loss is considered unlikely to result from the policy however cannot be completely ruled out. Policy caveats are therefore appropriate to ensure there is no loss of habitat and habitats and qualifying features buffered. The section below on disturbance issues details the recommended approach to this policy and the whole of the Lydney area. Recommendations are set out in Appendix 4.
- 6.65 The overall quantum of development within the AP could potentially lead to habitat fragmentation and considering the location of proposed development and sensitivities of the designated features, the European site with the highest vulnerability to habitat fragmentation is the Wye Valley and Forest of Dean Bat Sites SAC.
- 6.66 Linear habitat features, including hedgerows, tree lines, streams and rivers can be particularly important for bat species, wooded links can be especially important. These linear features are used for foraging and movement between roosts.
- 6.67 As well as the designated roosts, the bats use many 'satellite' roosts in caves, buildings and structures scattered through the district, these are found across the landscape. The bats follow a network of 'traditional' flyways between roost sites and feeding areas and are susceptible to breaks in or severance of the features along which they commute. They are also extremely sensitive to increased light levels and will typically avoid areas where the lighting is brighter than moonlight. Thus house lights, road lights, car lights, security lighting and

floodlighting may all have an adverse effect. For instance, one poorly positioned light can stop bats using a crucial flyway or an area of feeding habitat. Unusual levels and pitches of noise also cause disturbance.

- 6.68 There is currently limited information regarding the foraging areas and bat fly-ways of the Greater and Lesser Horseshoe Bat populations present in the Forest of Dean. There are two published reports on the Greater Horseshoe bats in the Little Dean Bat SAC which recorded foraging within 2-4km of the SAC but with bats regularly travelled up to 10km from the roost site.
- 6.69 The report recorded foraging primarily around field systems with high hedges or along woodland edge/clearings in the forest. Key flight corridors linking Dean Hall with foraging areas: south down past Soudley Ponds and into the forest south of Soudley; along the route of the minor road southeast from the roost to Newnham and along a bridleway east of the roost.
- 6.70 Bats accessed some of the foraging areas by crossing the A48 road in two places, the area between Blakeney and Ministerworth a particular issue. Other known road crossing points were on the A40 near Huntley and on the A 4151 and A4163.
- 6.71 Considering the significant bat populations associated with designated SACs in the district there will undoubtedly be many other flight paths, road crossings and foraging areas that are currently unknown. At this strategic stage the HRA assesses the overall quantum of development against locations of the Bat SAC to analysis if any major conclusions can be drawn on potential fragmentation and severance impacts.
- 6.72 The Allocated Site AP90 Land north of Newnham on Severn in particular (based on known data) is a potentially concern. The radio tracking report identified one bat using the immediate area around the school and Unlawater lane (a tree line lane), foraging areas along high hedges bordering mainly grazed pasture (and also minor road), along the railway and along tree lined watercourses. Policy caveats are recommended for AP90 in Appendix 4.
- 6.73 Findings of the analysis of the distribution of allocations and bat sites highlighted no particular areas of major concern: the majority of development being expansion to settlements. However the area around Lydney could be a particular concern due to the scale of development around the town. A number of other roost sites for lesser horseshoe are known in the area on the western edge of Lydney, in Lydney and in the Harbour area. It would appear that unknown flight corridors and foraging areas may be around the outskirts of Lydney and are also likely to follow linear features such as the River Lyd towards the River Severn. Therefore additional wording is recommended for policies that have the potential to impact bat foraging areas and flight lines in the Lydney area: AP 42, AP43, AP44, AP46, AP47, AP51, AP52 and AP53. The section below on disturbance issues details the recommended approach and policy changes.
- 6.74 One allocation site at Lydney AP52 Holmes Farm is known to have potential issues, with bat known on site which may be connected with the SAC, which will need to be addressed at the project stage. The level of information and mitigation

that would be necessary should be further highlighted in the policy wording. Therefore additional wording is recommended for this Policy; see Appendix 4 for recommended policy caveats.

- 6.75 The AP promotes various new cycle ways throughout the district and there is an identified potential for habitat fragmentation (as well as noise, lighting and recreational impacts) to bat foraging areas and flight lines. It is recommended that policy caveats are added to the following policies: AP 26, AP 27, AP 29 and AP46. This recommended approach is detailed in the section, below, on disturbance.
- 6.76 Each proposed development must ensure the potential impacts of proposed development on linear habitat features and dark corridors are avoided or mitigated. This is most appropriately addressed at the project level. Project level HRA would provide a detailed site level analysis of the importance of the site to the bats, and provide suitable mitigation measures to reduce the adverse effects of the proposed allocation on bat populations. Key considerations are likely to involve avoiding or minimising loss/breaching of linear features (e.g. hedgerows, woodland belts) and appropriate design of site lighting to maintain 'dark corridors' as far as practicable. Where loss or interruption of linear features is unavoidable, mitigation must be provided as an integral part of the any development scheme.
- 6.77 Core Strategy CSP1 seeks to ensure habitats and species and protected sites are not affected. Policy AP7 Biodiversity further seeks to provide for biodiversity gain and safeguarding ecological networks.

#### Habitat Fragmentation and Loss Conclusion

- 6.78 If these amendments were made and embedded in the Allocations Plan it would be able to demonstrate that foreseeable risks have been identified and the plan has established an enforceable framework with the aim of preventing the risks.
- 6.79 Given the mitigation provided by Core Strategy and AP Policies, and taking into account the recommendations above, it is assessed that the AP will not have adverse effects on the integrity of the Severn Estuary SAC, SPA & Ramsar, the River Wye SAC, the Wye Valley Woodlands SAC and the Wye Valley and Forest of Dean Bat sites SAC through habitat loss or fragmentation.

#### **Disturbance**

- 6.80 Disturbance has been identified as a significant effect alone or in combination for a number of policies and site allocations.
- 6.81 All the European sites considered in this assessment are in some way vulnerable to the impacts of physical and non-physical disturbance, either as a result of recreational activity or of development itself (noise and lighting).
- 6.82 The significance of disturbance impacts is dependent on a variety of factors including the sensitivity of designated features and the level of their exposure to recreational activities, noise and lighting. The European sites considered in this assessment are popular areas for a range of recreational activities including walking, canoeing and fishing.

- 6.83 Development proposed in the AP and surrounding areas has the potential to increase the local population and therefore levels of recreational activity in the district. Proposed development also has the potential to result in increased levels of noise and light pollution.
- 6.84 Increased recreational activity at European sites has the potential to cause disturbance to designated habitats and species through a variety of different pathways. This could include physical disturbance through trampling of habitats or non-physical disturbance through noise and light pollution. Given the proximity of some of the proposed site allocations to the Severn Estuary SAC, SPA and Ramsar, the River Wye SAC and Wye Valley Woodlands SAC there is the potential for direct disturbance.
- 6.85 However, there is generally very limited information on the impact of recreational activity on European sites, including those assessed in this HRA. Therefore in many cases only generalised impact predictions are possible.
- 6.86 In many case the mitigation provided for in the Core Strategy were considered sufficient to address concerns for any potential adverse impacts. However the quantum of proposed development at Lydney, in particular, has been identified as likely to have a significant affect alone or in combination on the Severn Estuary.
- 6.87 Impacts from disturbance also have to be set in terms of the whole of the amenities in the district. The Forest of Dean and Wye Valley Area of Outstanding Natural Beauty are a significant tourist attraction with many formal and informal recreation sites attracting large number of visitors and locals.
- 6.89 In this section each of the European sites identified in the plan have been assessed n turn for ease of presentation:

Severn Estuary

- 6.90 Relevant Policies and Allocations: AP 42, AP43, AP44, AP46, AP47, AP51 and AP52.
- 6.91 The general area of concern is from the effects of disturbance on the qualifying species of birds on and adjacent to the designated Severn Estuary. Birds expend energy in response to disturbance and equally are not feeding during that disturbance period. This double impact or reduced feeding and increased energy expenditure can adversely affect the birds' condition and therefore survival. Displacement of birds from one feeding site to others can potential increase the pressure on the resources available within the remaining sites, as they have to support a greater number of birds. Disturbance can lead to reduction in breeding success due to time spent off the nest; indeed regular disturbance may deter breeding in otherwise suitable habitat. Disturbances in winter can cause particular issues as birds can be particularly vulnerable through food shortages.

- 6.92 The Severn Estuary is a very popular recreational destination there are a number of existing footpaths on the land adjacent to the docks connecting the docks to the town of Lydney.
- 6.93 The harbour docks themselves are own and managed by the Environment Agency. The only utilities for moored or visiting yachts are with the Lydney Yacht Club which offers sailing opportunities on the river Severn. The club already offers a varied programme of races and events. Existing facilities include a club house, boat storage and slip access to the Severn. The current capacity at the marina is for around 50 boats after a complete refurbishment of the docks which re-opened in 2005.
- 6.94 Larger recreational sites on the Estuary include Slimbridge Nature Reserve some 8.5km from the Lydney harbour and on the opposite bank. Other major sites are some distance downstream from Lydney.
- 6.95 It is reasonable to assume that an increase in the local Forest of Dean population will lead to an increase in visitor numbers to the harbour. The AP provides for approximately 4800 new dwellings throughout the district over the plan period a significant number of which (circa 1690) are either in the process of construction or sites allocated in and around Lydney.
- 6.96 Visitor survey data for the River Severn generally and the Lydney Harbour do not appear to have been collected or are available. Although land and water based activity are already identified as a pressure for the designated site. The Severn Estuary Partnership produced a Management Strategy for the River Severn in 2001 which identified the need to manage recreational activity and proposed a Recreational Forum.
- 6.97 Although visitor data is not available for the Severn Estuary some data is available for the Solent. Although not directly relevant the figures show that land based walking activity was most frequent (with and without dogs) with 90% of those arriving on foot living within 2km of a site. In total approximately 70% of all local visitors to the site (not holiday makers) lived within 4km of the site. Major changes within this zone are therefore most likely to result in changes to visitor numbers; these figures may give a broad indication to the likely increased pressure at Lydney.
- 6.98 New dwellings provided for by the AP equate to approximately 1700 within 4km of the docks. Using an average occupancy rate of 2.4 people per household this could theoretically lead to as much as an additional 4080 residents. Lydney currently has a population of almost 9000 thus the AP would give rise to an approximate 45% increase in the local population. It is unlikely that this would mean a 45% increase of visitors at the harbour especially when viewed within the context of the Forest of Dean with its many recreational sites and facilities within the forest. However it does provide an indication of the potential scale of recreational that could develop at the docks. Given that current visitor numbers are unknown the exact figures cannot currently be assessed.

- 6.99 It is therefore recommended that the Allocations Plan should include a commitment to working with neighbouring Severn authorities. Of particular relevance would be Stroud District Council due to the proposed development (in the Stroud Local Plan) essentially opposite Lydney docks at Sharpness. This should include a commitment to assist in monitoring visitor activities and disturbance in the Severn Estuary site in order to inform visitor management decisions. The Association of Severn Estuary Relevant Authorities (ASERA) and the Severn Estuary Partnership already exists and the District Council is a member of the group.
- 6.100 Given the potential for direct impact from disturbance from the site allocations within the Lydney Harbour area and with the housing allocations associated with the town of Lydney additional wording covering the whole of the Lydney area should be embedded within the AP. Additionally Policies of particular concern are recommended for changes to their “Special Requirements” in the policy wording. These changes should be embedded in the Allocations Plan to ensure the integrity of the site is not adversely affected.
- 6.101 The recommended approach for Lydney is to add the a additional text box to the Lydney chapter of the Allocations Plan and amend the policy wording AP 42, AP43, AP44, AP46 and AP47 as recommended in Appendix 4. The wording for the text box is recommended in Appendix 4 and repeated here:

#### **Lydney European Sites**

The Severn Estuary is one of the most dramatic such features in the country. It is also with some justification one of the most protected and is a designated SSSI, SAC, SPA and Ramsar site. It shapes the settlements along its banks and is the reason for the existence of many of them. In the case of Lydney the Plan seeks to take advantage of the setting but must do so in a manner that ensures the proper protection of the environment which includes the identified nature conservation interests.

One of the constituent sites of the Wye Valley and Forest of Dean Bat SACs is also within 2km of Lydney.

Appropriate consideration of the close proximity of European sites is a key element of proposals within the town and Lydney Harbour. The Policies for the town and harbour will provide for approximate 1700 new dwellings during the life of the plan as well as employment uses on existing sites and new sites. Potential adverse impacts are possible to the European sites from the scale of development proposed. Potential impacts from additional recreation, noise, lighting, and habitat fragmentation are possible as well as impacts to water quality. Given the potential for adverse effects there are special requirements for proposals which may affect the integrity of these sites. Policies in the Lydney area which are relevant particularly relevant include: AP 42, AP43, AP44, AP46 and AP47.

Development proposals will be required to demonstrate that it will not have an adverse effect on the integrity of European sites. All proposals must be

compatible with the Habitats Regulations and the conservation status of the estuary and bat sites.

Specific detailed studies are likely to be required to support the planning applications in the Lydney area and are set out below:

Development will need to be laid out and designed in order to avoid adverse effects on the European sites, their qualifying habitats and species. Any new residential units (particularly those associated with AP 43 Pine End Works and Land to the North) should ensure layout separates them from the SAC/SPA/Ramsar site thus avoiding urban pressures. Employment use such as that associated with AP43, AP 44 and AP47 and should also maximise its separation from the SAC/SPA/Ramsar site given the potential of this type of development to result in noise and other disturbance. Any new facilities associated with the docks and marina must be delivered in such a way as to ensure impacts are avoided. Recreation impacts to the Severn Estuary are a particular concern in relation to AP42 Lydney Harbour and in general terms from the increased population in Lydney.

To demonstrate no adverse effect, planning applications must therefore include:

- A visitor survey of the Severn Estuary SAC/SPA/Ramsar site within the vicinity of Lydney Docks in order to inform an evaluation of what increase in recreational activity in the SAC/SPA/Ramsar site would result (from the presence of new recreational facilities, cycle ways, new employment and housing), and define management interventions required to ensure no adverse effect and form a basis for future monitoring;
- A non-breeding bird survey of the Lydney Docks area in order to identify any parts of the site which currently constitute important habitat for the SPA/Ramsar site bird populations and set out any necessary mitigation;
- A management plan for protecting the natural environment (focussed on the interest features of the SAC/SPA/Ramsar site), particularly with regard to recreational pressure;
- An analysis of construction and operational noise within the SAC/SPA/Ramsar site due to developments in the Lydney Harbour area compared to the current noise baseline and details of any mitigation measures (such as seasonal restrictions on some activities, damping of pile-hammers, or use of close-board fencing during construction) that will be deployed to ensure that disturbance of SPA/Ramsar site birds does not occur;
- Careful lighting design, both with regard to security lighting during construction and permanent lighting during occupation, to ensure no increase in illumination of the SAC/SPA/Ramsar site or of important bat foraging areas of commuting routes. Lighting levels in the site should not exceed levels above the ILP classification E1 (Natural Lighting Zone that is intrinsically dark) for the Severn Estuary and its foreshore;
- Details of potential mitigation measures, such as: identifying and safeguarding foraging areas, flight lines and dark corridors for bats; identifying and securing bird refuge areas within or close to the development area; and of potential on-site management (to mitigate both

recreational pressure during the non-breeding period and incidences of fly tipping) that would be undertaken to ensure no adverse effect.

- A sediment contamination assessment as part of any future marina planning application; and
- Landscaping to create appropriate visual and noise buffers between the development and the Severn Estuary SAC SPA/Ramsar site or to bat flight lines and foraging areas.”

Whilst the above requirements arise through the implementation of policies outside the AP itself, the consequences of non-compliance could mean development is unable to take place. It is therefore essential that development fully assesses its impacts and that they are shown to not have adverse effects on the integrity of the sites concerned.

- 6.102 Given the unique recreational opportunities that the European sites provide and the level of development proposed around them, it is not likely that an individual authority alone could avoid, mitigate or compensate for adverse effects of increased disturbance on the integrity of the identified European sites if they should occur. However, at a strategic level, such as the AP, authorities should seek to ensure that policies recognise and address identified issues and put robust measures in place to provide mitigation.
- 6.103 Policy mitigation and joint working at a strategic level can help to mitigate the impacts of recreational activity to a certain extent, however; the direct impacts of recreational activity are most appropriately addressed at the site level through co-operative measures. Disturbance to European Sites should be tackled through site management schemes from the relevant body (Natural Resources Wales, Natural England and the Environment Agency). The collaborative approach to management advocated by the Severn Estuary Partnership will be an important mechanism for ensuring that the integrity of the SAC, SPA and Ramsar site is maintained whilst still ensuring public enjoyment of the Estuary.
- 6.104 If these amendments were made and embedded in the Allocations Plan it would be able to demonstrate that foreseeable risks have been identified and the plan has established an enforceable framework with the aim of preventing the risks.
- 6.105 Given the mitigation provided by Core Strategy and AP Policies, and taking into account the recommendations above, it is assessed that the AP will not have adverse effects on the integrity of the identified European sites through habitat loss or fragmentation.

#### Wye Valley Woodlands

- 6.106 Impacts from disturbance also have to be set in terms of the whole of the amenities in the district. The Forest of Dean and Wye Valley Area of Outstanding Natural Beauty are a significant tourist attraction with many formal and informal recreation sites attracting large number of visitors and locals. There are extensive rights of way throughout the woodlands including parts of the Offa's Dyke Trail.

- 6.107 Significant increases in the numbers of visitors to designated sites can have the potential to damage habitats and disturb wildlife. Visitors are also a mechanism for the introduction of invasive species to sites which could be introduced accidentally and can subsequently detrimentally alter species composition.
- 6.108 Increased recreational activity at European sites has the potential to cause disturbance to designated habitats and species through a variety of different pathways. This could include physical disturbance through trampling of habitats as a result of increased recreation (horse riding, cycling, and walkers).
- 6.109 The Site Improvement Plan for the woodlands identifies a number of actions design to ensure sensitive parts of the site are not impacted by recreation use such as replacing grills on shafts and caves and restricting climbing. There is also an action for monitoring visitor use.
- 6.110 Given the current level of public access and disturbance it is considered that the quantum of development promoted in the AP may increase to recreational disturbance to the Wye Valley Woodlands SAC. In many case the mitigation provided for in the Core Strategy were considered sufficient to address concerns for any potential adverse impacts. However two policies were identified where site specific issues raise concerns, these are AP 26, AP29 and AP17.
- 6.111 AP26 is a general policy that promotes cycle ways throughout the district and therefore a policy caveat is recommended in Appendix 4.
- 6.112 Policy AP29 Wye Valley promotes a new cycle way through the Wye Valley Woodland SAC. The proposal has been the subject of a previous planning application with an Environmental Statement and project based HRA. Permission has now lapsed but it was previously found that with various mitigation measures there was no impact on site integrity for the Wye Valley Woodlands or other SACs affected. It is recommended the wording for this proposal includes a Policy caveat as recommended in Appendix 4 to ensure any future proposals also provide for adequate impact avoidance and mitigation.
- 6.113 Policy AP17 Stowfield has been identified as having potential significant impacts but policy caveats are already in place for this proposal which demonstrate foreseeable risks have been identified and the plan has established an enforceable framework with the aim of preventing the risks.
- 6.114 Policy mitigation and joint working at a strategic level can help to mitigate the impacts of recreational activity to a certain extent, however; the direct impacts of recreational activity are most appropriately addressed at the site level through co-operative measures. Disturbance to European Sites should be tackled through site management schemes from the relevant body (Natural Resources Wales, Natural England and the Environment Agency).
- 6.115 It is therefore recommended that the identified allocations AP26 and AP29 should include caveats in the policy wording to ensure project level proposals demonstrate that impacts can be avoided or mitigated. The additional wording

adds a further degree of certainty in avoiding potential impacts to European Sites by specific proposals.

*“Development will only be permitted where it can be demonstrated that it will not have an adverse effect on the integrity of and designated SAC, SPA or Ramsar site.*

*The project level HRA (which may be required for some schemes) must satisfactorily demonstrate that appropriate mitigation can be taken to avoid adverse effects (either direct or indirect) on the integrity of designated European Sites.”*

- 6.116 If these amendments were made and embedded in the Allocations Plan it would be able to demonstrate that foreseeable risks have been identified and the plan has established an enforceable framework with the aim of preventing the risks.
- 6.117 Given the mitigation provided by Core Strategy and AP Policies, and taking into account the recommendations above, it is assessed that the AP will not have adverse effects on the integrity of the identified European sites through habitat loss or fragmentation.

#### Walmore Common SPA & Ramsar

- 6.118 There are no public footpaths that cross the site. There are public rights of way adjacent to the site but are short routes that provide no access to a wider footpath network. There is no other public access to that part of the site designated as an SAC. It is therefore unlikely that there is an impact pathway for increased recreational disturbance. The site is close to the A48 and increased traffic may result in a small increase in noise levels at the site but this would appear negligible and unlikely to cause significant adverse impacts. Additionally the nearest allocated site is in Newnham over 5km away, there would appear to be no noise or lighting issues as a result of site allocations.
- 6.119 To conclude given the lack of public access, the distance of the site from any allocated site, and mitigation provided by Core Strategy Policies. It is considered unlikely there will be significant effects through increased disturbance to Walmore Common.

#### Wye Valley and Forest of Dean Bat Sites

- 6.120 Lesser horseshoe bats are very sensitive to disturbance, such as light and noise pollution and even the presence of a single person in close proximity can cause problems.
- 6.121 The designated Bat SACs in the district comprise abandoned mine shafts, tunnels, barn and houses, these either have no public access or in the cases of some mines are a tourist attraction which would possibly attract some local visitors but tourists are likely to be their primary source of visitors. Most of the sites are secure, ensuring controlled access only. There are no sites allocations close enough to bat SACs to cause direct issues relating to noise and lighting impacts.

- 6.122 Therefore direct disturbance as a result of the AP is considered unlikely. Possible impacts could arise from disturbance issues related to flight paths, foraging areas and to other (undesignated) bat sites where the bats themselves are possible a qualifying feature and the site would therefore be integral to the designated SAC. These likely significant effects are also highlighted in the section on habitat fragmentation above. Relevant policies are AP17, AP26, AP27, AP29, AP 42, AP43, AP44, AP46, AP47, AP51, AP52 and AP53.
- 6.123 It is therefore recommended that the identified allocations above should include caveats in the policy wording to ensure project level proposals demonstrate that impacts can be avoided or mitigated. The additional wording adds a further degree of certainty in avoiding potential impacts to European Sites by specific proposals. These recommendations are detailed in Appendix 4.
- 6.124 If these amendments were made and embedded in the Allocations Plan it would be able to demonstrate that foreseeable risks have been identified and the plan has established an enforceable framework with the aim of preventing the risks.
- 6.125 Given the mitigation provided by Core Strategy and AP Policies, and taking into account the recommendations above, it is assessed that the AP will not have adverse effects on the integrity of the identified European sites through habitat loss or increased disturbance.

#### River Wye

- 6.126 The River Wye is one of Britain's most scenic and unspoilt rivers. The river provides a wealth of waterborne activities such as canoeing, rafting and cruising as well as angling. Walkers can use the Wye Valley Walk which follows the route of the Wye from Hye-on-Wye to Chepstow.
- 6.127 Impacts from disturbance also have to be set in terms of the whole of the amenities in the district. The Forest of Dean and Wye Valley Area of Outstanding Natural Beauty are a significant tourist attraction with many formal and informal recreation sites attracting large number of visitors and locals.
- 6.128 The high usage of the river by canoeists and anglers has the potential to cause disturbance to SAC species and habitats as well as the supporting or dependant flora and fauna. Examples range from the cutting of water crowfoot *Ranunculus* beds for navigation, dogs disturbing otters and the disturbance of gravel bars and beds by canoeists.
- 6.129 The Council will encourage and support, where possible, cooperative agreements between recreational users and regulators to minimise the impacts of recreational disturbance at European sites through the implementation of Core Strategy policies.
- 6.130 Given the current level of public access and disturbance it is considered that the quantum of development promoted in the AP may increase to recreational disturbance to the River Wye SAC. In many cases the mitigation provided for in the Core Strategy were considered sufficient to address concerns for any potential

adverse impacts. However two policies were identified where site specific issues raise concerns, these are AP 26, AP29 and AP17.

- 6.131 AP26 is a general policy that promotes cycle ways throughout the district and therefore a policy caveat is recommended in Appendix 4.
- 6.132 Policy AP29 Wye Valley promotes a new cycle way alongside the River Wye and includes a crossing point. The proposal has been the subject of a previous planning application with an Environmental Statement and project based HRA. Permission has now lapsed but it was previously found that with various mitigation measures there was no impact on site integrity for the River Wye or other SACs affected. It is recommended the wording for this proposal includes a Policy caveat as recommended in Appendix 4 to ensure any future proposals also provide for adequate impact avoidance and mitigation.
- 6.133 Policy AP17 Stowfield has been identified as having potential significant impacts but policy caveats are already in place for this proposal which demonstrate foreseeable risks have been identified and the plan has established an enforceable framework with the aim of preventing the risks.
- 6.134 It is therefore recommended that the identified allocations AP 26 and AP29 should include caveats in the policy wording to ensure project level proposals demonstrate that impacts can be avoided or mitigated. The additional wording adds a further degree of certainty in avoiding potential impacts to European Sites by specific proposals. These recommendations are detailed in Appendix 4.
- 6.135 If these amendments were made and embedded in the Allocations Plan it would be able to demonstrate that foreseeable risks have been identified and the plan has established an enforceable framework with the aim of preventing the risks.
- 6.136 Given the mitigation provided by Core Strategy and AP Policies, and taking into account the recommendations above, it is assessed that the AP will not have adverse effects on the integrity of the identified European sites through habitat loss or increased disturbance.

Disturbance: Conclusion

- 6.137 If these amendments were made and embedded in the Allocations Plan it would be able to demonstrate that foreseeable risks have been identified and the plan has established an enforceable framework with the aim of preventing the risks.
- 6.138 Given the mitigation provided by Core Strategy and AP Policies, and taking into account the recommendations above, it is assessed that the AP will not have adverse effects on the integrity of the any European sites through disturbance.

## 7. HRA Conclusions

- 7.1 This report outlines the methods and findings of the HRA for the Allocation Plan for Forest of Dean District Council. This HRA has been undertaken in accordance with good practice and available guidance and has been informed by previous HRA screening work for earlier iterations of the Allocations Plan.

### HRA Screening

- 7.2 This first stage of the HRA process considered the likely significant effects on five European sites within the influence of the Allocations Plan (AP). This initial screening considered potential impacts from policies and allocations for any potential likely significant effects. The re-screening screened out the majority of the policies. The re-screening also identified 3 AP policies for which the impacts could potentially lead to significant effects alone. The re-screening identified a further 27 policies where there was uncertainty as to impacts either alone or in combination. This is set out in Appendix 1 Table 1.

- 7.3 Further detailed screening (Appendix 1 Table 2) screen these policies and their potential impacts against each of the European sites scoped into the HRA. This included consideration of the environmental pathways and sensitivities of the sites, as well as mitigation provided by Policies. Uncertainty remained with many of these screened in policies both alone and in combination with regard to identified impacts: air quality, water levels and quality, habitat loss and fragmentation and disturbance. Based on the precautionary approach these uncertain issues were considered in more detail through Appropriate Assessment.

### HRA Appropriate Assessment

- 7.4 The Appropriate Assessment (AA) considered the potential for the Allocations Plan to have adverse effects on the integrity of identified European sites alone and in combination through changes to air quality, increased disturbance (mainly recreational activity), habitat loss and fragmentation and reduced water levels and quality.

#### Air Quality

- 7.5 The AA found that it is unlikely that there would be significant effects on any of the European sites as a result of increased atmospheric pollution (both alone and in-combination) given the mitigation provided through Core Strategy and AP Policies. It was therefore concluded that the mitigation provided through Core Strategy Policies and Allocations Plan policies and if required actions at the project level would address the potential for adverse effects both alone and in-combination on the European Sites as a result of increased atmospheric pollution.

#### Water Levels and Quality

- 7.6 The AA assessed that the mitigation provided by the Core Strategy and Allocations Plan Policies and current regulatory processes would ensure that the potential impacts of proposed development on the water environment would be minimised. In a number of specific cases where issues have been previously raised by the Environment Agency or Severn Trent Water specific recommendations have been made to add wording to "Special Requirements" section of policies.

7.7 Given this mitigation and taking into account the recommendations above, it is assessed that the Allocations Plan will not have adverse effects either alone or in combination on the integrity of the identified European sites through changes to water levels or water quality.

Habitat Loss and Fragmentation

7.8 The AA assessed that the mitigation provided by the Core Strategy and Allocations Plan Policies would ensure that in most circumstance the potential impacts of proposed development on habitat loss or fragmentation would be minimised. A number of specific site allocations had identified impacts either alone or where there was uncertainty or in-combination.

7.9 It is concluded that, given existing policy caveats and additional policy changes recommended in mitigation, it is assessed that the Allocations Plan will not have adverse effects either alone or in combination on the integrity of the identified European sites through changes to water levels or water quality.

Disturbance

7.10 The AA found that a number of significant changes should be made to the Allocations Plan to ensure there were no potential significant adverse impacts of the Severn Estuary European site. These included additional text in the section on Lydney, policy caveats and measures to ensure how adverse effects on site integrity will be avoided by mitigation measures in a lower tier plan, to be confirmed by a more detailed Habitats Regulations Appraisal at that level potential requiring additional information gathering and bespoke management plans or contributing to a large-scale mitigation strategy.

7.11 If these amendments were made and embedded in the Allocations Plan it would be able to demonstrate that foreseeable risks have been identified and the plan has established an enforceable framework with the aim of preventing the risks. It is therefore assessed that the AP will not have adverse effects on the integrity of the identified European sites through disturbance.