Vale of Glamorgan Council

Deposit Local Development Plan

Habitats Regulations Assessment (Appropriate Assessment) Report

December 2011

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HABITATS REGULATIONS ASSESSMENT (APPROPRIATE ASSESSMENT) REPORT

VALE OF GLAMORGAN COUNCIL

DEPOSIT LOCAL DEVELOPMENT PLAN

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Deposit Local Development Plan

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EXECUTIVE SUMMARY

0.1 Habitats Regulations Assessment (HRA) of spatial, development plans is a requirement of the Habitats Directive (92/43/EEC) as set out in the Conservation of Habitats and Species Regulations 2010 (as amended 2011). This report details the HRA Appropriate Assessment (AA) stage for the Vale of Glamorgan Deposit Local Development Plan (LDP). It sets out the methods, findings and the conclusions of the AA.

0.2 The first stage of the HRA process (screening, December 2007) considered the likely significant effects of the Draft Preferred Strategy on European sites. The screening identified that two European sites may be potentially affected by activities/ impacts arising from Plan. In addition, it also concluded that a precautionary approach be undertaken in respect of 4 other European sites and that further investigations be undertaken.

0.3 Following the HRA Screening of Draft Preferred Strategy, the Vale of Glamorgan Council has progressed with the development of the LDP. In line with current guidance and the recommendations of the initial screening stage, the AA revisited the screening assessment to determine whether the changes and additions made to the LDP have the potential to lead to likely significant effects, beyond those considered in the screening stage.

0.4 The screening of Deposit LDP Policies and site allocations assessed that there was the potential for likely significant effects alone on European sites as a result of the quantum and/ or location of proposed development. To address these issues the screening assessment recommended a number of policy safeguards in relation to specific Deposit LDP Policies and site allocations. The further screening concluded that the Deposit LDP (including site allocations) would not have likely significant effects alone on European sites, if the recommended policy safeguards are incorporated into the Plan.

0.5 The further screening work identified four main areas of impact arising that may have the potential for significant in combination effects - with development proposed in surrounding areas - on the integrity of the identified European sites: water resources, water quality, disturbance and air quality. These issues were taken forward into the AA and considered in further detail.

0.6 The AA concluded that the Deposit LDP **would not** have adverse in combination effects on the integrity of the identified European sites as a result of increased disturbance, reduced air quality and reduced water levels and quality. This was based on the mitigation contained within the Deposit LDP Policies and the incorporation of recommendations made by the AA.

0.7 Welsh Government guidance notes that it is good practice to make information on HRA available to the public at each formal development plan consultation stage. Therefore, in addition to the statutory consultation undertaken with CCW, this report is being made available for consultation to the wider public.

1.0 INTRODUCTION

1.1 The Vale of Glamorgan (VoG) Council is currently developing its Local Development Plan (LDP) and is undertaking Habitats Regulations Assessment (HRA) in line with the requirements set by the Conservation of Habitats and Species Regulations 2010 (as amended 2011).

1.2 VoG Council produced a HRA Screening Report for the LDP Draft Preferred Strategy in December 2007. Enfusion Ltd, sustainability and environmental consultants, have been commissioned to further progress the HRA work. Enfusion undertook a review of the screening report (March 2009) and its findings helped to inform the development of this Appropriate Assessment (AA).

1.3 This HRA report addresses the AA stage of HRA which considers how the likely significant effects on designated European Sites identified through the first screening stage of the HRA may affect European site integrity. HRA is also commonly referred to as Appropriate Assessment although the requirement for AA is first determined by an initial 'screening' stage undertaken as part of the full HRA. This report addresses the AA stage of the HRA; it outlines the key tasks undertaken and the key findings/ recommendations emerging from the assessment.

Requirement for Habitats Regulations Assessment

1.4 The European Directive (92/43/EEC) on the Conservation of Natural Habitats and Wild Flora and Fauna (the Habitats Directive) protects habitats and species of European nature conservation importance. The Habitats Directive establishes a network of internationally important sites designated for their ecological status. These are referred to as Natura 2000 (N2K) sites or European Sites, and comprise Special Areas of Conservation (SACs) and Special Protection Areas (SPAs) [which are classified under the Council Directive 79/409/EEC on the conservation of wild birds, the 'Birds Directive'].

1.5 Articles 6 (3) and 6 (4) of the Habitats Directive require AA to be undertaken on proposed plans or projects which are not necessary for the management of the site but which are likely to have a significant effect on one or more European sites either individually, or in combination with other plans and projects[1]. This requirement is set out in the Conservation of Habitats and Species Regulations 2010 (as amended 2011) which require the application of HRA to all land use plans. Welsh Government (WG) 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 1971) are included within HRA/AA

[1] Determining whether an effect is 'significant' is undertaken in relation to the designated interest features and conservation objectives of the Natura 2000 sites. If an impact on any conservation objective is assessed as being adverse then it should be treated as significant. Where information is limited the precautionary principle applies and significant effects should be assumed until evidence exists to the contrary.

and that candidate SACs and proposed SPAs are treated as 'designated' sites in the context of HRA.

1.6 The purpose of HRA/AA is to assess the impacts of a land-use plan, in combination with the effects of other plans and projects, against the conservation objectives of a European Site and to ascertain whether it would adversely affect the integrity[2] of that site. Where significant negative effects are identified, avoidance/ mitigation measures or alternative options should be examined to avoid any potential damaging effects. The scope of the HRA/AA is dependent on the location, size and significance of the proposed plan or project and the sensitivities and nature of the interest features of the European sites under consideration.

Guidance for Habitats Regulations Assessment/Appropriate Assessment

1.7 Guidance for HRA 'The Appraisal of Development Plans in Wales under the Provisions of the Habitats Regulations', is provided in Technical Advice Note 5: Nature Conservation and Planning (WAG, September 2009). CCW has also produced draft guidance 'The Appraisal of Plans under the Habitats Directive' (D Tyldesley and Associates, November 2009) which takes account of developments in HRA practice.

1.8 The methods and approach used for this AA are based on the formal Welsh guidance currently available and emergent practice, which recommends that HRA is approached in three main stages - outlined in **Table 1**. This report outlines the method and findings for stage 2 of the HRA process - the Appropriate Assessment.

[2] Integrity is described as the sites' coherence, ecological structure and function across the whole area that enables it to sustain the habitat, complex of habitats and/or levels of populations of species for which it was classified, (ODPM, 2005).

Table 1 **Habitats Regulations Assessment: Key Stages**	
Stage 1	
Screening for likely significant effect	▪ Identify international sites in and around the plan/ strategy area in search area agreed with the Statutory Body the Countryside Council for Wales ▪ Examine conservation objectives of the interest feature(s)(where available) ▪ Review plan policies and proposals and consider potential pathways and effects on European sites (magnitude, duration, location, extent) ▪ Examine other plans and programmes that could contribute to 'in combination' effects
	▪ *If no effects likely – report no significant effect (taking advice from CCW as necessary).* ▪ *If effects are judged likely or uncertainty exists – the precautionary principle applies proceed to* ***stage 2***
Stage 2	
Appropriate Assessment	▪ Complete additional scoping work including the collation of further information on sites as necessary to evaluate impact in light of conservation objectives ▪ Agree scope and method of AA with CCW ▪ Consider how plan 'in combination' with other plans and programmes will interact when implemented (the Appropriate Assessment) ▪ Consider how effect on integrity of site could be avoided by changes to plan and the consideration of alternatives ▪ Develop mitigation measures (including timescale and mechanisms) ▪ Report outcomes of AA including mitigation measures, consult with CCW and wider [public] stakeholders as necessary ▪ If plan will not significantly effect European site proceed without further reference to Habitats Regs
	▪ *If effects or uncertainty remain following the consideration of alternatives and development of mitigations proceed to* ***stage 3***
Stage 3	
Procedures where significant effect on integrity of international site remains	▪ Consider alternative solutions, delete from plan or modify ▪ Consider if priority species/ habitats affected ▪ Identify 'imperative reasons of overriding public interest' (IROPI) economic, social, environmental, human health, public safety ▪ Notify Welsh Government ▪ Develop and secure compensatory measures

Consultation

1.9 The Habitats Regulations require the plan making/competent authority to consult the appropriate nature conservation statutory body [Countryside Council for Wales (CCW)].

1.10 Consultation with CCW has been undertaken at key stages of the HRA of VoG's LDP development. CCW commented on the HRA Screening Report (Dec 2007) in February 2008 and on proposed site allocations in March and October 2010. These comments and advice have been taken forward in the iterative HRA work documented in this report.

1.11 The Habitats Regulations leave consultation with other bodies and the public to the discretion of the plan making authority. WG guidance notes that it is good practice to make information on HRA available to the public at each formal development plan consultation stage. Therefore, in addition to the statutory consultation undertaken with CCW, this AA report is available for wider public consultation.

Purpose & Structure of Report

1.12 This report documents the process and the findings from the screening work as they informed the AA and then the findings and recommendations of the main AA Stage. Following this introductory section the document is organised into a further four sections:

- **Section 2** - outlines the method used for the re-evaluation of screening findings and AA as well as including reference to the key information sources used and the consultation comments received to date.
- **Section 3** - outlines the process and summary findings of the re-evaluation of screening findings.
- **Section 4** - outlines the process and summary findings of the Appropriate Assessment.
- **Section 5** - outlines the conclusions and recommendations, including how the LDP should now proceed with reference to the Habitats Regulations.

2.0 METHOD

HRA Screening (December 2007)

2.1 The first Screening Stage Report of the HRA of VoG's LDP Draft Preferred Strategy identified which European sites within and around the plan area should be considered in further detail by the HRA process. Specifically, the screening identified that the following European sites may be potentially affected by activities/ impacts arising from Draft Preferred Strategy Proposals:

- Kenfig SAC; and
- Severn Estuary SAC, SPA & Ramsar.

2.2 The key potential impacts identified by the screening of Pre-Deposit policies were:

- atmospheric pollution;
- disturbance;
- water pollution; and
- water abstraction.

2.3 The Screening report concluded that an AA be undertaken to fully ascertain the effect of the LDP on the integrity of the identified European sites. In addition, whilst the screening considered it highly unlikely that the Draft Preferred Strategy will result in significant detrimental effects to the integrity of the other 4 sites identified, it recommended that a precautionary approach be adopted and that the potential for impacts to the designated sites be re-assessed when candidate sites have been considered.

Deposit LDP Policy Screening

2.4 Following the HRA Screening (Stage 1 - December 2007) of the Draft Preferred Strategy, VoG has progressed with the development of the LDP. In line with current guidance and the recommendations of the Screening Report (Dec 2007), the HRA revisited the policy screening to determine whether the changes and additions made to the LDP have the potential to lead to likely significant effects, beyond those considered in the Stage 1 Screening. The screening of the Deposit LDP policies is presented in **Appendix 3** and summarised in **Section 3**.

Site Allocations Screening

2.5 Stage 1 of the HRA Screening concluded that the emerging LDP has the potential for likely significant effects on two European sites and also recommended that when candidate sites have been considered the potential impacts on other European sites should be re-considered. In line with this, a screening of site allocations was undertaken to consider the potential for the level of development proposed at these locations

to have likely significant effects on European sites. The site allocations screening is presented in **Appendix 4** and a summary of the findings and recommendations are presented in **Section 3** of this report.

Appropriate Assessment

2.6 Assessing the impacts of plans, policies and proposals against the European site conservation objectives is required by Regulation 102 of the Conservation of Habitats and Species Regulations 2010 (as amended 2011). This 'Appropriate Assessment' is the core part of the HRA process and involves the key tasks set in **Table 2**.

2.7 The findings of the Screening identified that there was the potential for likely significant effects and therefore the possibility for adverse effects on site integrity should be considered further through the AA process for the following European sites:

- Cardiff Beech Woods SAC;
- Kenfig SAC; and
- Severn Estuary SAC, SPA & Ramsar.

Table 2 **Appropriate Assessment Stage: Key Tasks**	
Task 1 **Scoping and Additional Information Gathering**	▪ Gathering additional information on European sites ▪ Gathering additional data on background environmental conditions ▪ Further analysis of plans/ projects that have the potential to generate 'in combination' effects
Task 2 **Assessing the Impacts (in-combination) Appropriate Assessment**	▪ Examination of the policies and proposals identified during the screening phase and their likely significant effects on European sites ▪ Consideration of whether effects are direct/ indirect/ cumulative ▪ Consideration of whether other plans and programmes are likely to generate effects that have the potential to act cumulatively with those arising from the plan
Task 3 **Developing Mitigation Measures (including initial avoidance)**	▪ If effects identified – either arising from the plan alone and/or 'in combination' with other plans – consider initial opportunities to avoid (e.g. delete/ remove or amend policy from plan) ▪ Develop mitigation measures – must be deliverable by the plan and have clear delivery/ monitoring responsibilities
Task 4 **Findings & Recommendations**	▪ Conclude the assessment, explain key findings and analysis informing conclusions.
Task 5 **Consultation**	▪ Undertake further consultation with CCW (assumes that consultation has also been an iterative process throughout the HRA/AA).

2.8 The full range of plans and projects [and their potential impacts] considered by the assessment in relation to possible in combination effects, are detailed in **Appendix 2**. This in combination analysis is integral to the assessment process as detailed in **Section 4**. As part of the AA process consideration was also given to related HRA work undertaken at a strategic level (the HRA of the Wales Spatial Plan Update and HRA of Welsh Water's Revised Draft Water Resource Management Plan) and neighbouring authorities' HRAs, where available.

3.0 RE-EVALUATION OF SCREENING FINDINGS (2011)

3.1 In line with current guidance and good practice, the HRA revisited the screening assessment to determine whether the changes and additions made to the LDP have the potential to lead to likely significant effects, beyond those considered in the Stage 1 Screening of the emerging Vale of Glamorgan Draft Preferred Strategy (Dec 2007) and the 2009 HRA Screening Review (2009). This Section outlines the findings of this further screening assessment.

Deposit LDP Policy Screening

3.2 Screening of the Deposit LDP involved identifying the policies that may lead to significant effects on European sites both alone and in combination. The approach taken was in accordance with CCW draft guidance for plan making authorities in Wales, 'the Appraisal of Plans under the Habitats Directive' (Tyldesley, D. 2009). In order to complete the policy screening each policy was categorised as to its likely effects on the European sites identified in **Appendix 3**. There are four categories of potential effects:

- **Category A**: elements of the plan/options that would have no negative effect on a European site at all;
- **Category B**: elements of the plan/options that could have an effect, but the likelihood is there would be no significant negative effect on a European site either alone or in combination with other elements of the same plan, or other plans or projects;
- **Category C**: elements of the plan/options that could or would be likely to have a significant effect alone and will require the plan to be subject to an appropriate assessment before the plan may be adopted;
- **Category D**: elements of the plan/options that would be likely to have a significant effect in combination with other elements of the same plan, or other plans or projects and will require the plan to be subject to an appropriate assessment before the plan may be adopted.

3.3 Categories A, C and D are subdivided so that the specific reason why a policy has been allocated to a particular category is clear. The detail of the screening assessment which considers each of the Deposit LDP policies against the categories is provided in **Appendix 3** and policies which were considered to potentially lead to likely significant effects are listed in **Table 3.**

Table 3	
Deposit LDP policies screened in to the assessment process	**Assessment Category**
Strategic Policies	
SP 1 – The Strategy	**C2 & D2**
SP 2 – Strategic Sites	**C2 & D2**
SP 3 – Residential Requirement	**C2 & D2**
SP 4 – Affordable Housing Provision	**D2**
SP 5 – Employment Requirements	**D2**
SP 6 – Retail	**D2**
SP 7 – Transportation	**D2**
SP 8 – Sustainable Waste Management	**C2 & D2**
SP 9 – Minerals	**C4**
SP 11 – Tourism and Leisure	**D2**
Managing Development Policies	
MD 7: Affordable Housing in Rural Areas	**D2**
MD 10 Tourism and Leisure	**D2**
MD 11 – Employment Land and Premises	**D2**
MD 13 – Low Carbon and Renewable Energy Generation	**D2**
Managing Growth Policies	
MG 1 – Housing Supply in the Vale of Glamorgan	**D2**
MG 2 – Housing Allocations	**D2**
MG 3 – Strategic Site at Barry Waterfront	**C2 & D2**
MG 4 – Strategic Site at St. Athan Strategic Opportunity Area	**D2**
MG 6 – Residential Development in Key, Service Centre and Primary Settlements	**D2**
MG 7 – Residential Development within Minor Rural Settlements	**D2**
MG 10 – Provision of Educational Facilities	**D2**
MG 12 – Employment Allocations	**D2**
MG 13 – Strategic Site adjacent to Cardiff Airport and Port Road, Rhoose	**D2**
MG 16 – Retail Allocations	**D2**
MG 20 – Transport Proposals	**D2**
MG 24 – Development in Minerals' Safeguarding Areas	**C2**
MG 27 – Glamorgan Heritage Coast	**C2**
MG 29 – Tourism and Leisure Facilities in Barry	**C2 & D2**
Site Allocation Policies[3]	
SP 2 [1] MG 2 [1] - Land at West Pond and South Quay, Barry Waterfront, Barry	**C2 & D2**
SP 5 [2] MG 12 [1]. Land to the South of Junction 34, M4 (former Bosch site, Miskin)	**C2 & D2**
MG 2 [16]. Land at Fort Road, Lavernock	**C2 & D2**
MG 2 [18]. Headlands School, St Augustine's Road, Penarth	**C2 & D2**
MG 2 [25]. Land West of Swanbridge Road, Sully	**C2 & D2**
MG 2 [30]. Ogmore Residential Centre, Ogmore by Sea.	**C2 & D2**
MG 2 [31]. Caravan Park, Ogmore-by-Sea	**C2 & D2**

[3] The majority of Site Allocations would fall under the D2 category in terms of consideration for cumulative impact – see Section 4 below.

3.4 The HRA Screening Report (2007), subsequent Review (2009), consultation with CCW and screening of Deposit LDP Policies identified a number of impacts that have the potential to result in likely significant effects on European sites. The significance of these impacts is dependent to some extent on the location of proposed development. Certain policies (SP1, SP2, SP3, MG3 and MG29) were identified as having the potential for a significant effect alone given the quantum and/ or location of the proposed development. The screening of site allocations (**Appendix 4**) considered the capacity and location of proposed sites in further detail. The findings and recommendations of the site allocations screening are presented later in this Section.

3.5 Policies SP8, SP9, MG24 and MG27 were identified by the screening as having the potential for significant effects alone on European sites. Policies SP8, SP9 and MG24 concern mineral working. The key issue in relation to European Sites relates to any activity that could impact the underlying limestone aquifer supplying the Kenfig SAC. Quarrying activities and subsequent after use of quarries (e.g. open air waste facilities or landfill) could therefore have an impact, even from a considerable distance away. Further research/evidence is required about the use of mineral working sites, any implications on the aquifer and the likelihood of any impact on Kenfig. This could be examined as part of recommendations made through the AA in Section 4 under Water Resources for a Water Cycle Study.

3.6 Policy MG27, Glamorgan Heritage Coast restricts any new development unless it is necessary for coastal defence (as identified within the Lavernock Point to St Ann's Head Shoreline Management Plan 2) or required for agriculture, nature conservation, informal recreation, appropriate tourism or coastal access, and other development for which a coastal location is essential. Whilst Policy SP10 requires development proposals to protect and where appropriate enhance sites designated for their European nature conservation importance, Policy MG27 should clarify that any development should not impact negatively on European Sites.

3.7 If the recommendations outlined above are incorporated into the LDP, the HRA would be able to conclude that Deposit LDP Policies would not have likely significant effects alone on European sites.

3.8 The majority of Deposit LDP Policies were identified as having the potential for in combination effects with other plans, programmes and projects. These impacts can be broadly characterised against the following 'pathways of impact':

- **Water Quality** - resulting from increased discharge requirements arising from new residential and employment developments and the potential for increased point source pollution, changes to surface water/ run-off.

- **Water Resources** - resulting from increased demand for water consumption arising from new residential and employment developments.
- **Atmospheric Pollution** - arising from a growth in airborne and surface transport as well as general development (emissions from construction/ building stock).
- **Disturbance** - predominantly as a result increased recreational activity arising from new residential and employment developments.

3.9 The potential for the Deposit LDP to act in combination with other plans, programmes and projects to have significant effects on European sites through the pathways of impact identified above is considered in **Section 4**.

Site Allocations Screening

3.10 The site allocations screening (**Appendix 4**) considered the potential for site allocations identified in the Deposit LDP to have likely significant effects on European sites. A range of information sources were used to carry out the screening, including information from the European site characterisations and strategic site studies. The capacity and location of the sites was taken into consideration alongside the potential pathways for impact and known sensitivities of European sites.

3.11 The screening found that for the majority of site allocations there were no pathways for development to have direct impacts on European sites, given the distance of the allocations from designated habitats and species, and the lack of connectivity between the development and the potential receptors. 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 avoided or mitigated through the Deposit LDP Policies, which seek to protect biodiversity and minimise the impact of development on the environment. This includes the following policy mitigation/ safeguards in the Draft Deposit LDP:

- SP1 Strategy
- SP10 Built & Natural Environment
- SP11 Tourism & Leisure
- MD2 Place Making
- MD3 Design of New Development
- MD5 Environmental Protection
- MD6 Promoting Biodiversity
- MD10 Tourism & Leisure
- MG22 Green Wedges
- MG23 Sites of Importance for Nature Conservation

3.12 Policy SP10 in particular requires development proposals to protect and where appropriate enhance sites designated for their European

nature conservation importance. 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.

3.13 The findings of the site allocations screening are summarised below.

3.14 **Barry Waterfront, Barry** (SP 2 [1] MG 2 [1]), comprising a large mixed use development including 2000 homes, was considered to potentially have indirect impacts through increased recreation, increased atmospheric pollution and increased pressure on sewerage capacity. However, given its distance from the Severn Estuary (around 7km), the mitigation policies contained in the Plan, plus the infrastructure and implementation requirements of the development (e.g. transport contributions, public open spaces) would make any significant impacts unlikely.

3.15 **Land to the South of Junction 34, M4, Hensol** (former Bosch site, Miskin, SP 5 [2] MG 12 [1]) lies over 5km from the nearest European site, Cardiff Beech Woods SAC. Policy SP5 states that this site (along with the other SP5 employment locations) is intended to meet the needs of the following key economic sectors: Aerospace Industry; High Tech Manufacturing and Logistics and Distribution. Impacts could therefore occur from increased pollution associated with the development, either from increased road use (from distribution and logistics) or from specific industrial purposes. The Council's 2007 HRA Screening Report advised that 'a detailed evaluation of air pollution impacts to the Cardiff Beech Woods SAC will be required before the potential risks to the habitats and species can be properly assessed' - this was in relation to development contained in the Plan as a whole (not any particular development). The 2007 Report also stated that 'the woodlands' location in industrialised South Wales, together with the presence of nearby quarrying and associated activities, means that there is the potential for localised atmospheric pollution. There is no evidence to date that this has had an adverse impact on the features but this may need to be addressed in more detail in the future.

3.16 In the regional and national context critical loads may have been exceeded in recent years and this will need to be addressed when assessing air emissions of future developments. Development proposed in the Plan and at this site allocation is likely to result in increased vehicular movements and therefore produce a resultant increase in air pollution. However, the location of the designated site within industrial South Wales means that it is already subject to high levels of pollution. Given that the uses are unknown, any air pollution impacts are difficult to assess. However, it is unlikely that this development in isolation would lead to any direct or indirect impacts. To effectively address the issue of air quality across SE Wales, and in particular, the effects on European designated sites, a strategic regional approach to air quality management is required.

3.17 **Land at Fort Road, Lavernock** (MG 2 [16]) proposes 400 homes and lies adjacent to Severn Estuary SAC, SPA & Ramsar on Lavernock headland. There is the potential for a range of direct and indirect impacts, including land-take, recreational disturbance, disturbance through noise and vibration and pollution through ground and surface water run-off. Given that the site is raised on a headland above the Severn Estuary, direct impacts from land take are unlikely. There is however, the potential for indirect impacts on the Severn Estuary SAC, SPA and Ramsar through increased recreation, increased atmospheric pollution and increased pressure on sewerage capacity. The 400 dwellings proposed for the site will be phased over the life of the plan (2016 to 2026) and the mitigation provided by Deposit LDP policies will seek to protect biodiversity and minimise the impact of development on the environment. A coastal buffer zone will help to protect the estuary, prevent visual intrusion and provide recreational open space. Developer contributions will also be made to the cycle network. Given the above, and the application of other policies in the Plan, it is assessed that development at this location will not have likely significant effects on the Severn Estuary SAC, SPA and Ramsar alone. However, we note and support the Plan's requirement for a 'project level HRA given the sites location in relation to the Severn Estuary SAC, SPA & Ramsar.

3.18 **Headlands School, St Augustine's Road, Penarth** (MG 2 [18]) lies around 100m from part of the Severn Estuary SAC, SPA & Ramsar. There are a range of direct and indirect impacts possible, including land-take, recreational disturbance, disturbance through noise and vibration and pollution through ground and surface water run-off. There is no phasing of the development - all 80 units planed between now and 2016. The mitigation provided by Deposit LDP policies will seek to protect biodiversity and minimise the impact of development on the environment. Given the above, the small nature of the development in relation to the Severn Estuary site and the application of other policies in the Plan, it is assessed that development at this location will not have likely significant effects on the Severn Estuary SAC, SPA and Ramsar alone. However, we note and support the Plan's requirement for a project level HRA given the sites location in relation to the Severn Estuary SAC, SPA & Ramsar.

3.19 **Land West of Swanbridge Road, Sully (reserve site)** (MG 2 [25]), lies 2.5km from the Severn Estuary European Site and whilst it is a sizeable development of 720 units direct impacts are unlikely. The 720 dwellings proposed for the site will be phased over the life of the plan (2016 to 2026) and the mitigation provided by Deposit LDP policies will seek to protect biodiversity and minimise the impact of development on the environment. There could be indirect impacts from this proposal in terms of recreational disturbance but the mitigation contained in the Plan policies should make any significant impact unlikely.

3.20 **Ogmore Residential Centre** (MG 2 [31]) **and Caravan Park, Ogmore-by-Sea** (MG 2 [32]) both these two sites lie around 2km from both

Kenfig and Dunraven Bay European Sites. Dunraven Bay SAC is primarily designated for the population of shore dock which is located on an inaccessible cliff face. Therefore, development is unlikely to have direct or indirect impacts on this site. Kenfig SAC is a largely intact dune system in South Wales with extensive areas of fixed dune vegetation; part of which is in direct proximity to Ogmore. Development in this vicinity has the potential for likely significant effect on the Kenfig SAC through changes to the groundwater which feeds the site. Development in smaller settlements may also have an impact on the Kenfig and Ogwr Rivers and potential cumulative impacts will need to be considered. The Kenfig SAC is designated for its internationally significant coastal dune systems. Annex I habitats of the EC Habitats Directive that are the primary reasons for designating the site include fixed dunes with herbaceous vegetation, dunes with *Salex repens spp. Argentea*, humid dune slacks and Hard *oligo-mesotrophic* waters with benthic vegetation of *Chara spp*. Annex II species that are the primary reason for designating the site include Petalwort and Fen Orchid. The particular vulnerabilities of the site include:

- falling water tables from local extraction of water and/or drainage of adjacent land used for agriculture or housing.
- water quality the major water quality concerns are related to elevated nutrient levels. Elevated levels of nitrogen have been found at Burrows Well on Merthyr Mawr and there is also some indication that dune slacks are becoming increasingly eutrophic. The nature of the underlying limestone aquifer means that off-site activities a considerable distance away can potentially have an impact on the SAC.
- petalwort is vulnerable to impacts of drainage.

3.21 Water pollution could cause nutrient enrichment resulting in changes to the types and abundance of vegetation, with an impact on species that are integral to the combined site designation. These impacts can be from poor water quality from insufficient treatment of waste water and therefore can in part be addressed through the LDP, although this would need to be in combination with the implementation of other measures to control pollution.

3.22 There could also be impacts on water quantity, with the pools and dune slacks on the combined site requiring high ground water levels. Therefore, water demand from new built development could have an impact on this. The EAW Review of Consents process will ensure that any new abstractions will not have adverse effects on the integrity of Kenfig SAC through reduced water levels. Even with this regulatory process in place the Council should ensure that suitable policies are in place to require the efficient use of water in new development.

3.23 To address the identified issues with regard to water levels and quality it is recommended that:

- the Deposit LDP (within the delivery and implementation table) requires that any proposals for the Ogmore Residential Centre and Caravan Park, Ogmore-by-Sea sites are accompanied by a sustainable water strategy, which not only considers surface water drainage but also includes an assessment of groundwater pollution risk and management.
- the Deposit LDP includes a policy that requires the efficient use of water in new developments. Policy MD3 (Design of new development) could include wording that requires new residential development to achieve Level 5 for the water aspect of the Code for Sustainable Homes from adoption of the LDP.
- the Deposit LDP includes policy wording to ensure there is capacity in waste water treatment facilities prior to occupation of any new development throughout the lifetime of the plan.

3.24 The screening assessment concluded that the site allocations would not have likely significant effects on European sites alone if the recommended policy safeguards are incorporated into the Plan.

4.0 APPROPRIATE ASSESSMENT

AA Scope

4.1 The HRA Screening found that there is potential for likely significant effects on European sites as a result of development proposed in the Deposit LDP and surrounding areas. This AA takes forward the findings of the screening assessment to determine if there is the potential for the Deposit LDP to have adverse in combination effects on the integrity of the identified European sites.

4.2 The policy screening (**Appendix 3**), site allocation screening (**Appendix 4**) and review of plans and programmes in combination (**Appendix 2**) identified four main areas of impact arising that may have the potential for significant effects 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. This potential for in combination effects is explained in more detail through the AA analysis below. **Table 4** shows (shaded red) the European sites against the potential issues that will be investigated further below.

Table 4: AA Scope

European sites	Pathways of Impact			
	Disturbance	Water resources	Water Quality	Air Quality
Cardiff Beech Woods SAC				
Kenfig SAC				
Severn Estuary SAC, SPA/Ramsar				

Air Quality

4.3 The screening assessment concluded that there is uncertainty with regard to the potential for likely significant effects at the following European sites through increased atmospheric pollution:

- Cardiff Beech Woods SAC;
- Kenfig SAC; and
- Severn Estuary SAC, SPA & Ramsar;

What are the issues arising from the plan?

4.4 Development proposed in the Deposit LDP and surrounding areas has the potential to increase atmospheric pollution, which will predominantly arise from an increase in traffic associated with the projected population growth over the life of the plan.

How might the European sites be affected?

4.5 Atmospheric pollution from traffic is most likely to affect the habitats which comprise the qualifying features of the identified European sites, although there is the potential for designated species to also be affected, as in most cases they rely upon the designated habitats. **Table 4** below, identifies the potential impacts of atmospheric pollution on the designated habitats of the European sites considered in this AA.

Table 4: Impacts of Atmospheric Pollution on Annex I Habitats[4]

Annex I Habitats[5]	Impacts of Atmospheric Pollution[6]
Marine, Coastal and Halophytic[7] Habitats (Severn Estuary SAC)	
▪ Sandbanks which are slightly covered by sea water all the time (1110) ▪ Estuaries (1130) ▪ Mudflats and sandflats not covered by seawater at low tide (1140) ▪ Reefs (1170) ▪ Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*) (1330)	The air pollutant threats to coastal and marine habitats may differ compared with other environments, either because of different air pollution stresses or ecosystem sensitivity. **Eutrophication** - Many coastal habitats are potentially sensitive to nitrogen deposition. Similarly, salt water ecosystems, such as estuarine habitats may be under the dual threat of nutrient inputs from river inputs and atmospheric deposition. Some coastal environments can be highly eutrophic (highly productive ecosystems, which are rich in plant nutrients) as a result of droppings from sea bird colonies. **Ozone** - As with other semi-natural ecosystems, coastal habitats are expected to be sensitive to ozone concentrations. The effects are expected to parallel those for example grassland ecosystems. It should be noted, however, that the structure of the coastal atmospheric boundary layer permits a greater mixing down of ozone concentrations, so that the ozone exposure of coastal ecosystems is larger than for inland areas. This additional stress will encourage the development of ozone tolerant ecotypes. As these are expected to have different competitive abilities, the community species composition may gradually change. Impacts of ozone on marine ecosystems are not expected, since the ozone is rapidly destroyed following contact with the sea surface.
Coastal sand dunes and continental dunes (Kenfig SAC)	

[4] Adapted from the South East Wales Strategic Planning Group HRA Toolkit (2011)
[5] JNCC - Annex I Habitat Accounts: http://www.jncc.gov.uk/ProtectedSites/SACselection/SAC_habitats.asp
[6] APIS - Impacts by Ecosystem: http://www.apis.ac.uk/
[7] Halophytic plants are plants that can tolerate salty conditions.

Annex I Habitats[5]	Impacts of Atmospheric Pollution[6]
▪ Fixed dunes with herbaceous vegetation (`grey dunes`) (2130) ▪ Dunes with Salix repens ssp. argentea (Salicion arenariae (2170) ▪ Humid dune slacks (2190)	**Atmospheric nutrient deposition** is considered to be a factor adversely affecting sand dunes. It is also suspected that nutrient deposition on many sand dunes is already above their critical threshold for impacts on vegetation. For dune slacks, this could lead to a speeded up succession away from dune slack vegetation. **Nitrogen (N) deposition** is thought to be a major contributor to over-stabilisation and species decline in UK dune systems.
Freshwater habitats (Kenfig SAC)	
▪ Hard oligo-mesotrophic waters with benthic vegetation of Chara spp. (3140)	There are five pollutant groups that could affect the quality of freshwaters: nutrients; acid deposition; heavy metals; POPs and radioactive particles. **Eutrophication** - nutrients, specifically phosphorus and nitrogen, are responsible for the eutrophication of rivers and lakes. The response of lakes to increased phosphorus concentrations is quite well understood and, in general, there is increased growth and change of species of phytoplankton, zooplankton, sediment-dwelling invertebrates, fish and macrophytes and lower oxygen concentrations, especially in the deeper parts of lakes. **Acid Deposition** - onto freshwaters (and catchments) can lead to acidification. The management and regulation of the acidification of freshwater is well developed in the United Kingdom. The biological groups affected by freshwater acidification are fish (mainly brown trout), invertebrates (mayfly and caddis larvae), macrophytes and the dipper. **Deposition of heavy metals and Persistent Organic Pollutants (POPs)** - onto lakes occurs, even in rural and remote areas, but the ecological effects of this are not known. If any biological group are affected, they are likely to be fish (and fish-eating birds) and sediment-dwelling organisms.
Forests (Cardiff Beech Woods SAC)	
▪ *Asperulo-Fagetum* beech forests (9130)	**Nitrogen Deposition** - Woodlands and forests scavenge air pollutants effectively, with the result that inputs of nitrogen deposition to woodlands are generally larger than for other habitat types. There has been a long-running debate regarding the extent to which actual "forest decline" occurs as a result of nitrogen deposition. What is clear is that the most sensitive elements are actually the woodland ground flora and epiphyte communities, which are particularly relevant in defining conservation status. Changes in forest ground flora have been clearly documented as a result of enhanced N deposition near farms and are also expected to occur in regions with high wet deposition of ammonium and nitrate. **Acid Deposition** - Deposition of acidifying air pollutants is primarily seen as affecting the soils of woodland habitats, where effective inputs of sulphuric and nitric acids lead to leaching of the soil. The resulting soil acidification can lead to mobilisation of naturally occurring aluminium in the soil, which may have toxic effects on plant roots, leading to problems of tree health. Acidification also has the potential to reduce tree growth. **Ozone** - The impacts of ozone on forests are predicted to be widespread in the UK, due to the exceedance of the critical level for forests. The expected impacts include reduction in growth, as well as possibly changes in ground flora and epiphyte species

Annex I Habitats[5]	Impacts of Atmospheric Pollution[6]
	composition. The latter is an area where there is a serious gap in information. **Heavy Metals** - Heavy metals (especially lead, cadmium, copper, mercury and zinc) can, at high concentrations, have toxic effects on plants. Symptoms include reduced root growth, and inhibition of various physiological processes including transpiration, respiration and photosynthesis. However large variations in inter-species sensitivity and bioavailability heavy metals must be taken into account when assessing possible effects. Heavy metals can accumulate over a long period in the organic layer and top soil leading to contamination of soil organisms, especially those that play a role in the formation of the soil. Furthermore, acidification of soils cause the mobilisation of these accumulations in the soil where they can be taken up by plant and animal species of the forest ecosystems.

Which other plans/ projects could lead to in-combination effects?

4.6 The following plans and programmes have the potential to act in-combination with the Deposit LDP as they propose development that will lead to cumulative increases in road based traffic over the life of the plan:

- People, Places, Futures: The Wales Spatial Plan
- Property Strategy for Employment in Wales
- One Wales: Connecting the Nation. The Wales Transport Strategy.
- National Transport Plan Wales
- The Trunk Road Forward Programme
- Minerals Planning Policy Wales
- The South East Wales Regional Waste Plan
- South East Wales Transport Alliance: Regional Transport Plan
- SEWTA Rail Strategy Study
- Turning Heads... A Strategy for the Heads of the Valleys
- Bridgend County Borough Council Local Development Plan
- Cardiff Council Local Development Plan
- Rhondda Cynon Taff County Borough Council Local Development Plan
- Bridgend County Borough Council Municipal Waste Strategy
- Cardiff Council Local Development Municipal Waste Management Strategy
- Vale of Glamorgan Council Municipal Waste Strategy
- Cardiff International Airport Master Plan

Air Quality - What is the current situation?

4.7 At a national level, the seventh annual report on air quality in Wales[8] identified that there is a 'clear improvement' in the following Environment Strategy for Wales (2006) indicators:

- Level of emissions from Wales of sulphur dioxide;
- Level of emissions from Wales of nitrogen oxides;
- Level of emissions from Wales of fine particulates;
- Level of emissions from Wales of Non Methane Volatile Organic Compounds (NMVOC);
- Level of emissions from Wales of carbon monoxide;
- Level of emissions from Wales of ammonia; and
- Area of natural and semi-natural habitat where deposition of acid exceeds critical loads.

4.8 It also identified that the following Environment Strategy for Wales (2006) indicators were rated 'stable' or they showed no clear trend:

- Number of days when air pollution is moderate or higher in rural zones and urban agglomerations;
- Air concentrations of Heavy Metals; and
- Area of natural and semi-natural habitat where deposition of nitrogen compounds exceeds critical loads.

4.9 The concentrations of the key pollutants in Vale of Glamorgan are all below their respective objectives. However, concentrations of Nitrogen dioxide (NO2) as determined by diffusion tube at locations along Windsor Road (Penarth), Andrew Road (Llandough) and Railway Terrace (Dinas Powys) are at or close to the relevant annual mean objective. Concentrations of nitrogen dioxide increased at all but eight of the 44 nitrogen dioxide diffusion tube monitoring locations compared to the last two years. Of the remaining eight locations, concentration remained the same at four and reduced at the others. No Air Quality Management Areas were identified or Action Plans required. A dedicated Local Air Quality Strategy was not considered necessary[9].

Is there potential for adverse effects on the integrity of European sites?

4.10 Levels of primary pollutants, those emitted directly into the atmosphere, tend to be highest around their sources; these are usually located in urban and industrial areas. Motor vehicles are a major source of primary pollution throughout the UK, in particular, traffic is an important source of carbon monoxide, nitrogen dioxide and volatile hydrocarbons (VOCs) such as benzene and 1,3-butadiene and primary

[8] Welsh Air Quality Forum (2009) Air Pollution in Wales 2009.
[9] 2011 Air Quality Progress Report for the Vale of Glamorgan.

particles (PM10). Concentrations of all these pollutants are therefore usually highest in built-up urban areas[10].

4.11 Currently the pollutant of most concern in the Vale is NOx, the impacts of which are most relevant close to source. Therefore, the contribution of NOx beyond the specific areas where development and related infrastructure is located is likely to be negligible. The most acute impacts of NOx take place close to where they are emitted (generally within 200m of the roadside[11]) but these gases also have the potential to contribute to background pollution levels.

4.12 There are no European sites in the Vale in close proximity (200m) to a major road that is likely to see a significant increase in traffic as a result of development proposed in the Deposit LDP and surrounding areas. In neighbouring areas, Cardiff Beech Woodlands SAC is close to the M4. Given that the most acute impacts of NOx take place within 200m of the roadside only a very small proportion of the European sites have the potential to be acutely impacted by atmospheric pollution from increased levels of traffic.

4.13 Several features at Kenfig are potentially sensitive to air quality impacts. These effects can be direct; such as damage to sensitive plant species by high levels of ethylene/ethene; or indirect such as changes to water chemistry due to input of atmospheric nitrogen. Acidity is unlikely to be an issue at Kenfig due to the underlying carbonate geology. Atmospheric nitrogen oxide (NOx) levels may be exceeded on the site with several nearby sources including industrial (such as Margam steel works and Baglan Bay), agricultural (chicken farms - mainly ammonia), old landfill sites, transport (M4) and wind blown particulates (from adjacent tips) being potential sources. Inputs of atmospheric nitrogen from increased levels of traffic can contribute to the increase of nutrients in the water and therefore eutrophication. Prevailing winds would generally take air pollution, especially from transport, away from Kenfig.

4.14 The Core Management Plan for the Severn Estuary European Marine Site identifies that whilst nutrient levels and loadings within the Estuary are considered significant in UK terms, the high natural turbidity of the system negates these high levels, with algal productivity being generally low except in localised hotspots.

What existing mitigations are provided in the LDP?

4.15 The Deposit LDP (Policy MD5) seeks to ensure that development proposals do not cause or result in unacceptable impact to a range of interests, including the natural environment, as a result of air pollution. Other policies such as SP1 and MD3 aim to reduce or limit traffic

[10] Air Quality in Wales: Trends - Air Quality Indicators.
[11] Highways Agency (2007) Design Manual for Roads and Bridges: Volume 11, Section 3, Part 1.

congestion. Pollution management is a benefit that can be sought from new development under policy MD4.

Future recommendations for avoidance and mitigation

4.16 At a strategic level the Vale of Glamorgan Council has sought to ensure that LDP policies address identified issues - in relation to potential adverse impacts on air quality - and put robust policy measures in place to provide mitigation.

4.17 Given the scale and nature of the proposed development and the mitigation provided in the Deposit LDP, **it is assessed that the Deposit LDP will not have adverse effects on the integrity of European sites through increased atmospheric pollution either alone or in combination.**

Disturbance

4.18 The screening assessment identified that there was the potential for likely significant effects at the following European sites due to disturbance:

- Cardiff Beech Woods SAC; and
- Severn Estuary SAC, SPA & Ramsar.

What are the issues arising from the plan?

4.19 Development proposed in the LDP and surrounding areas has the potential to increase the population and therefore levels of recreational activity. Proposed development also has the potential to result in increased levels of noise and light pollution.

How might the European sites be affected?

4.20 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 water-based recreation, or non-physical disturbance through noise and light pollution.

Which other plans/ projects could lead to in-combination effects?

4.21 The following plans and programmes have the potential to act in-combination with the Deposit LDP through increased disturbance:

- People, Places, Futures: The Wales Spatial Plan
- Property Strategy for Employment in Wales
- One Wales: Connecting the Nation. The Wales Transport Strategy.
- National Transport Plan Wales
- The Trunk Road Forward Programme

- Minerals Planning Policy Wales
- Welsh Coastal Tourism Strategy
- 'Catching the Wave' - A watersports tourism strategy for Wales
- The South East Wales Regional Waste Plan
- South East Wales Transport Alliance: Regional Transport Plan
- SEWTA Rail Strategy Study
- Turning Heads... A Strategy for the Heads of the Valleys
- Lavernock Point to St Ann's Head Shoreline Management Plan 2
- Bridgend County Borough Council Local Development Plan
- Cardiff Council Local Development Plan
- Rhondda Cynon Taff County Borough Council Local Development Plan
- Bridgend County Borough Council Municipal Waste Strategy
- Cardiff Council Local Development Municipal Waste Management Strategy
- Vale of Glamorgan Council Municipal Waste Strategy
- Cardiff International Airport Master Plan

Disturbance - What is the current situation?

4.22 Limited evidence/ information to determine the impact of recreational activity on European sites. A South East Wales Visitors survey undertaken in 2005 identified that the main influence for people to visit the area is the scenery, landscape and countryside. There is a correlation between European sites and these factors.

Is there potential for adverse effects on the integrity of European sites?

4.23 All the European sites considered in this assessment are in some way vulnerable to the impacts of physical and non-physical disturbance, e.g. as a result of recreational activity.

4.24 The significance of recreational impacts is dependent on a variety of factors including the sensitivity of designated features and the level of their exposure to recreational activities. The European sites considered in this assessment are popular areas for a range of recreational activities especially water-based recreation and walking.

4.25 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 LDP, authorities should seek to ensure that policies recognise and address identified issues and put robust measures in place to provide mitigation.

4.26 To address recreational impacts at European sites it is appropriate to impose voluntary restrictions for particular recreational activities, such

as for the use of personal water craft. These restrict particular areas of European sites for recreational use, often at certain times of the year, to minimise the level of disturbance on designated features. Co-operative measures such as voluntary agreements have been shown to be highly effective in the management of recreation and tourism impacts on European sites[12]. These measures have been most successful when affected stakeholders have been invited to participate and contribute in the design of the management measures.

4.27 CCW plays a key role in the collation of information to monitor the identified European sites and is responsible for assessing the condition of each feature within the sites. If monitoring carried out by CCW on the European sites were to find that voluntary agreements and restrictions in place are not protecting the designated features then they should be re-evaluated and possibly replaced by stricter regulations. This should be done in co-operation with key stakeholders including the various sport associations and land owners. The development of co-operative measures should already be going on through the management plans for European sites. The fundamental purpose of the management plans is to ensure the sustainable use of the European sites. It provides the basis for site-specific monitoring and the goal is to either maintain the favourable condition of the site it is protecting, or to define the ideal desired condition and the required actions for achieving them.

What existing mitigations are provided in the LDP?

4.28 The Deposit LDP can only mitigate adverse effects arising as a result of recreational activity through policies that provide alternative recreational spaces and by contributions to strategic management approaches in collaboration with CCW and other Local Authorities. 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 designated species and habitats by recreational activities should be tackled through management schemes for the European sites produced by CCW.

4.29 The Deposit LDP seeks to provide, protect and enhance open spaces in the Plan area that are important for recreation and biodiversity. The provision of new areas of open space and /or contributions towards improving existing areas of open space will be sought in connection with new residential developments in order to enable the provision of an accessible network of open space for all. Policy MD3 requires new development to provide public and private amenity space whilst Policy MD2 seeks to conserve and enhance existing open spaces. Policies SP11 and MD10 seek to enhance tourism and leisure facilities

[12] Proebstl, U. & Prutsch, A. (2010) Natura 2000 - Outdoor Recreation and Tourism; A guideline for the Application of the Habitats Directive and the Birds Directive. Bundesamt fuer Natuschutz, Bonn, Germany.

and the 'offer' to residents and visitors. MD4 includes open space as a community benefit in terms of planning obligations.

Future recommendations for avoidance and mitigation

4.30 Policy MG27, Glamorgan Heritage Coast restricts any new development unless it is necessary for coastal defence (as identified within the Lavernock Point to St Ann's Head Shoreline Management Plan 2) or is required for agriculture, nature conservation, informal recreation, appropriate tourism or coastal access, and other development for which a coastal location is essential. Whilst Policy SP10 requires development proposals to protect and where appropriate enhance sites designated for their European nature conservation importance, Policy MG27 should clarify that any development required for recreational or leisure purposes should not have significant effects on European Sites.

4.31 Given the mitigation provided by Deposit Policies and the incorporation of the recommendation above, **it is assessed that the Deposit LDP will not have adverse effects on the integrity of European sites through increased recreational activity either alone or in combination.**

Water Resources

4.32 The screening assessment identified that there was the potential for likely significant effects at the following European sites through reduced water levels:

- Kenfig SAC; and
- Severn Estuary SAC, SPA & Ramsar.

What are the issues arising from the plan?

4.33 The level of development proposed in the Deposit LDP has the potential to act in combination with development proposed in surrounding areas through increased levels of abstraction to provide water supply.

How might the European sites be affected?

4.34 Increased abstraction 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.

Which other plans/ projects could lead to in-combination effects?

4.35 The following plans and programmes have the potential to act in-combination with the Deposit LDP as they propose development that will lead to the cumulative increase in water abstraction:

- People, Places, Futures: The Wales Spatial Plan
- Property Strategy for Employment in Wales
- Welsh Water's Revised Draft Water Resource Management Plan
- The Thaw & Cadoxton Catchment Abstraction Management Strategy
- The Taff and Ely Catchment Abstraction Management Strategy
- The Neath, Afan and Ogmore Catchment Abstraction Management Strategy
- Bridgend County Borough Council Local Development Plan
- Cardiff Council Local Development Plan
- Rhondda Cynon Taff County Borough Council Local Development Plan

Water Resources - What is the current situation?

4.36 Welsh Water (WW) has produced a Revised Draft Water Resource Management Plan (dWRMP), which identifies twenty-four water resource zones[13] (WRZs) within the supply area for which it is responsible. The South East Wales Conjunctive Use System (SEWCUS) WRZ and Tywi Conjunctive Use System (TCUS) jointly include the Vale of Glamorgan. The level of development proposed in the Deposit LDP in combination with development proposed in the surrounding area is likely to increase abstraction levels within the SEWCUS and TCUS WRZs. Water is not only transferred between water bodies within WRZs but also between the WRZs themselves, therefore the SEWCUS and TCUS WRZs have not been considered in isolation.

4.37 Welsh Water assesses that there are sufficient resources in the SEWCUS until 2028/29 (when it becomes in deficit). TCUS is in surplus for the whole 2010 - 2035 planning period. WW envisages that the increase in housing demand during the life of the plan will be offset by customers switching to a measured water supply. This is based on a number of uncertainties, including the level of development that will occur up to 2035 and the amount of water that will be saved through metering and other potential measures, such as reducing leakage. The Revised dWRMP accounts for the Sustainability Reductions required by the RoC process, and so explicitly accounts for effects on European sites that are occurring (or predicted to occur) as a result of existing water-resource permissions. It concludes that the post-RoC abstraction regimes will not have an adverse effect on any water-resource

[13] Welsh Water defines Water Resource Zones as, "the largest area in which all resources can be shared".

sensitive European sites. Together, the RoC and WRMP processes also ensure (as far as is achievable) that future changes in demand will not affect any European sites (this is aided by the WRMP's five-year review cycle, which monitors the performance of the Revised dWRMP and allows for adjusted demand forecasts).

Is there potential for adverse effects on the integrity of European sites?

4.38 Considering the sensitivities of the designated features, the European sites with the highest vulnerability to reduced water levels are the Severn Estuary SAC/ SPA/ Ramsar and Kenfig SAC. The work undertaken by EAW for the Severn Estuary SAC and SPA through the RoC process[14] concluded that there are no other actions to be taken by another competent authority to achieve no adverse in combination effects on site integrity as a result of abstractions.

4.39 Any applications for new licences will be assessed by the EAW to make sure that they do not have adverse impacts on internationally important nature conservation sites. If the assessment of a new application shows that it could have an impact on a European site the EA will have to follow strict rules in setting a time limit for that license. This ensures that water levels at European sites do not fall below critical levels.

What existing mitigations are provided in the LDP?

4.40 MD1 seeks to safeguard water resources, but there are currently no policy requiring the efficient use of water in new development.

Future recommendations for avoidance and mitigation

4.41 It is recommended that the Deposit Plan includes a policy that requires the efficient use of water in new developments. Policy MD3 (Design of new development) could include wording that requires new residential development to achieve Level 5 for the water aspect of the Code for Sustainable Homes from adoption of the LDP.

4.42 In acknowledgement of the pressures on water resources and the uncertainties arising from new development it is recommended that the Council take a practical approach to understanding future water requirements in the context of planning development. It is recommended that the Council undertake a Water Cycle Study (in collaboration with neighbouring authorities across South East Wales) during the first 4 years of the LDP after its adoption. This is consistent with CCW advice for other HRAs of LDPs in SE Wales.

4.43 Given the mitigation provided in the Deposit LDP, further evidence provided in the Revised Draft WRMP and incorporation of the recommendations above, **it is assessed that the Deposit LDP will not**

[14] EA (Jan 2010) Severn Estuary SAC and SPA Stage 4 Proforma & Action Plan: Final Version

have adverse effects on the integrity of European sites through reduced water levels either alone or in combination.

Water Quality

4. 44 The screening assessment identified that there was the potential for likely significant effects at the following European sites through reduced water quality:

- Kenfig SAC; and
- Severn Estuary SAC, SPA & Ramsar.

What are the issues arising from the plan?

4.45 Development proposed in the Deposit LDP has and surrounding areas has the potential to increase pressure on sewerage capacity and increase surface water run-off.

How might the European sites be affected?

4.46 Increased discharges (consented) and surface water run-off (which can transfer pollutants to water bodies) has the potential to reduce water quality, which can have adverse effects on designated habitats and species.

Which other plans/ projects could lead to in-combination effects?

4.47 The following plans and programmes have the potential to act in-combination with the LDP as they propose development that will lead to the cumulative increase in discharges and surface water run-off:

- People, Places, Futures: The Wales Spatial Plan
- Property Strategy for Employment in Wales
- One Wales: Connecting the Nation. The Wales Transport Strategy.
- National Transport Plan Wales
- The Trunk Road Forward Programme
- Minerals Planning Policy Wales
- Welsh Coastal Tourism Strategy
- 'Catching the Wave' - A watersports tourism strategy for Wales
- The South East Wales Regional Waste Plan
- South East Wales Transport Alliance: Regional Transport Plan
- SEWTA Rail Strategy Study
- Turning Heads... A Strategy for the Heads of the Valleys
- Welsh Water's Revised Draft Water Resource Management Plan
- The Thaw & Cadoxton Catchment Abstraction Management Strategy
- The Taff and Ely Catchment Abstraction Management Strategy

- The Neath, Afan and Ogmore Catchment Abstraction Management Strategy
- Bridgend County Borough Council Local Development Plan
- Cardiff Council Local Development Plan
- Rhondda Cynon Taff County Borough Council Local Development Plan
- Bridgend County Borough Council Municipal Waste Strategy
- Cardiff Council Local Development Municipal Waste Management Strategy
- Vale of Glamorgan Council Municipal Waste Strategy
- Cardiff International Airport Master Plan

Water Quality - What is the current situation?

4.48 The biological and chemical quality of river waters in Wales has been steadily improving for the past 10 years. The percentage of river lengths in Wales of good or fair chemical quality has been consistently higher than 98 per cent since 1994 and the percentage of river lengths in Wales of good or fair biological quality has consistently been 99 per cent or higher since 2002[15].

4.49 Stretches of the Rivers Kenfig and Ogwr (affecting the Kenfig SAC) were at risk in of failing targets under the Water Framework Directive[16]. The Severn Estuary is currently assessed by the EA as having moderate biological quality and good chemical quality[17].

4.50 Five Ground Water Source Protection Zones have been designated within the Vale of Glamorgan. These are centred upon: Ogmore, Dinas Powys, Llansannor, Llangan and Treoes.

Is there potential for adverse effects on the integrity of European sites?

4.51 Considering the sensitivities of the designated features, the European sites with the highest vulnerability to reduced water quality are the Severn Estuary SAC/ SPA/ Ramsar and Kenfig SAC. The work undertaken by EAW for the Severn Estuary SAC and SPA through the RoC process [18] concluded that there are no other actions to be taken by another competent authority to achieve no adverse in combination effects on site integrity as a result of discharges.

4.52 Maintenance of the Kenfig SAC is directly dependent upon the hydrological and hydro chemical regime. Kenfig is unusual in that it is predominantly rain and groundwater fed although, the Rivers Kenfig and Ogwr do border the sites and may have localised impacts the major water quality concerns are related to elevated nutrient levels. Elevated levels of nitrogen have been found at Burrows Well on

[15] WAG (July 2010) State of the Environment.
[16] Bridgend LDP SA Scoping Report July 2006.
[17] Ibid.
[18] EA (Jan 2010) Severn Estuary SAC and SPA Stage 4 Proforma & Action Plan: Final Version

Merthyr Mawr and there is also some indication that dune slacks are becoming increasingly eutrophic. The nature of the underlying limestone aquifer means that off-site activities a considerable distance away can potentially have an impact on the SAC. Impacts related to quarrying activities and disused and existing landfill operations in the surrounding catchment could impact on the SAC. Other possible sources could include farming activities close or adjacent to the site e.g. muck spreading/fertiliser application. Uncertainties with regard to the exact sources of the groundwater means that to identify detailed relationships of development and their potential impacts is not possible.

What existing mitigations are provided in the LDP?

4.53 Policy MD5, Environmental Protection states that development proposals will be required to demonstrate that they will not result in an unacceptable impact on the natural environment from pollution of land, surface water or ground water.

4.54 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. Whilst sewerage infrastructure upgrades are referred to frequently in the delivery and implementation table there is currently no policy addressing waste water sewage capacity issues.

Future recommendations for avoidance and mitigation

4.55 It is recommended that the LDP includes policy wording to ensure that there is capacity in waste water treatment facilities prior to occupation of any new development throughout the lifetime of the plan.

4.56 Given the mitigation provided in the Deposit LDP, regulatory processes already in place (Review of Consents) and the incorporation of the recommendations made above, **it is assessed that the Deposit LDP will not have adverse effects on the integrity of European sites through reduced water quality either alone or in combination.**

5.0 CONCLUSIONS/ FUTURE WORK

5.1 This report outlines the methods used and the findings for the AA stage of the HRA for the VoG's Deposit LDP. The first stage of the HRA process (screening, December 2007) considered the likely significant effects of the Draft Preferred Strategy on European sites. The initial screening identified that nine European sites may be potentially affected by activities/ impacts arising from Pre-Deposit LDP Proposals. It concluded that the emerging LDP has the potential for likely significant effects on Kenfig SAC and the Severn Estuary SAC/SPA/Ramsar. In addition, it also concluded that a precautionary approach be undertaken in respect of 4 other European sites and that further investigations be undertaken.

5.2 Following the HRA Screening of Draft Preferred Strategy, VoG Council has progressed with the development of the LDP. In line with current guidance and the recommendations of the initial screening stage, the AA revisited the screening assessment to determine whether the changes and additions made to the LDP have the potential to lead to likely significant effects, beyond those considered in the initial screening of the Draft Preferred Strategy in December 2007.

Effects of the Plan Alone

5.3 The screening of Deposit LDP Policies and site allocations assessed that there was the potential for likely significant effects alone on European sites as a result of the quantum and/ or location of proposed development. To address these identified issues the re-evaluation of screening findings recommends a number of policy safeguards in relation to specific Deposit LDP Policies and site allocations. The further screening concluded that the Deposit LDP (including site allocations) would not have likely significant effects alone on European sites, if the recommended policy safeguards are incorporated into the Plan.

Effects of the Plan In combination

5.4 The further screening work identified four main areas of impact arising that may have the potential for significant in combination effects - with development proposed in surrounding areas - on the integrity of the identified European sites: water resources, water quality, disturbance and air quality. These issues were taken forward into the AA and considered in further detail in relation to the Cardiff Beech Woods SAC (air quality & disturbance) Kenfig SAC (air quality, water levels & water quality) and Severn Estuary SAC/SPA/Ramsar (considered against all the identified areas of impact).

Air Quality (in combination)

5.5 The AA assessed that the Deposit LDP contains suitable mitigation measures to address the potential in combination effects on European sites that could occur through changes to air quality. Specifically, the Deposit LDP ensures that development proposals do not cause or result in unacceptable impact to a range of interests, including the natural environment, as a result of air pollution. Other Policies aim to reduce or

limit traffic congestion through: promoting sustainable transport modes; reducing the need to travel by providing local facilities within or close by development and improving walking and cycling networks.

Disturbance (in combination)

5.6 The AA considered that determining the significance of increased disturbance on European sites is complex and dependent on a variety of factors including the sensitivity of designated features and the level of their exposure to recreational activities. 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. At a strategic level the Deposit LDP seeks to address this issue through policies that provide important alternative spaces for recreation as well as the protection and enhancement of existing open space. The assessment noted that the direct impacts of recreational activity are most appropriately addressed at the site level through co-operative measures. The AA concluded that the Deposit Plan would not have adverse in combination effects on the integrity of European sites through increased disturbance given the mitigation provided by Deposit LDP Policies. This finding is subject to the incorporation of additional wording within the supporting text of Policy MG27 (Glamorgan Heritage Coast) to ensure that development has no adverse effects on European sites.

Water Resources and Quality (in combination)

5.7 The AA concluded that the Deposit Plan would not have adverse in combination effects on the integrity of European sites through reduced water levels and quality. This was based on the mitigation provided by Deposit LDP Policies - which includes the requirement for development to demonstrate that it will not result in an unacceptable impact on the natural environment from pollution of land, surface water or ground water - and the incorporation of further mitigation measures. These further measures include the recommendation for the Deposit Plan to incorporate policy wording that requires the efficient use of water in new developments and ensure that there is sufficient capacity in waste water treatment facilities prior to occupation of any new development throughout the lifetime of the plan. In acknowledgement of the pressures on water resources and the uncertainties arising from new development in SE Wales the AA also recommends that the Council undertake a Water Cycle Study (in collaboration with neighbouring authorities across South East Wales) during the first 4 years of the LDP after its adoption. This is consistent with CCW advice for other HRAs of LDPs in SE Wales.

Consultation and Further Work

5.8 This AA is subject to consultation with CCW, and the Vale of Glamorgan Council will take advice from the Statutory Body and other relevant stakeholders, in taking forward the HRA and recommended

inputs to the development plan process. Accordingly, this AA may be revised should further relevant comments be received or if there are significant changes to the Plan.

5.9 The findings of this plan level HRA do not obviate the need to undertake HRA for lower level, project scale/ implementation plans where there is potential for significant effect on one or more European sites. The findings of this HRA should be used to inform any future assessment work.

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Appendix 1: European Site Characterisations

Special Areas of Conservation

1. Cardiff Beech Woods SAC
2. Dunraven Bay SAC
3. Kenfig SAC
4. Severn Estuary

Special Protection Areas

5. Severn Estuary

Ramsar Sites

6. Severn Estuary

All core site specific information unless otherwise stated has been referenced from the Countryside Council for Wales website and the Joint Nature Conservation Committee website.

Special Areas of Conservation

Site Name: Cardiff Beech Woods **Location Grid Ref: ST118824** **JNCC Site Code: UK0030109** **Size: 115.62** **Designation: SAC**	**Habitats Regulations Assessment: Data Proforma**
Site Description	Cardiff Beech Woods lies to the north east of Cardiff and is intersected by the A4054 and the A470. The site contains one of the largest concentrations of *Asperulo-Fagetum* beech forests in Wales, and represents the habitat close to the western limit of its past native range in both the UK and Europe. The woods show mosaics and transitions to other types, including more acidic beech woodland and oak Quercus and ash *Fraxinus excelsior* woodland. Characteristic and notable species in the ground flora include ramsons *Allium ursinum*, *sanicle Sanicula europaea*, bird's-nest orchid *Neottia nidus-avis* and yellow bird's-nest *Monotropa hypopitys*.
Qualifying Features	Annex I Habitats primary reason for selection: ▪ *Asperulo-Fagetum* beech forests Annex I Habitats qualifying feature: ▪ *Tilio-Acerion* forests of slopes, screes and ravines* Priority feature
Conservation Objectives	**Conservation Objective for Feature 1:** **Aperulo-Fagetum beech forest** Vision for feature 1 The vision for this feature is for it to be in a favourable conservation status, where all of the following conditions are satisfied: ▪ The existing *Asperulo-fagetum* beech forest will be maintained.

Site Name: Cardiff Beech Woods Location Grid Ref: ST118824 JNCC Site Code: UK0030109 Size: 115.62 Designation: SAC	Habitats Regulations Assessment: Data Proforma
	▪ At least 95% of canopy forming trees will be locally native species such as beech, ash and oak, with some areas dominated by beech. ▪ The tree canopy will not be completely closed; approximately 10% of the canopy will include a dynamic shifting pattern of gaps encouraging natural regeneration of tree species of all ages. ▪ Dead wood, standing and fallen, will be maintained where possible to provide habitat for invertebrates, fungi and other woodland species. ▪ There are pockets of ground flora across the site, comprising species typical of lime-rich beech wood, including indicators of ancient woodland such as wood anemone, ramsons and sanicle. ▪ There is little evidence of browsing or squirrel damage to trees. ▪ Recreational use of the site will continue to be managed so it does not damage the wildlife interest of the site. ▪ All factors affecting the achievement of these conditions are under control. Performance indicators for feature 1 The performance indicators are part of the conservation objective, not a substitute for it. Assessment of plans and projects must be based on the entire conservation objective, not just the performance indicators. The performance indicators can be found within the Cardiff Beech Woods SAC Management Plan. **Conservation Objective for Feature 2:** ***Tilio-Acerion* forest of slopes, screes and ravines** Vision for feature 2 The vision for this feature is for it to be in a favourable conservation status, where all of the following conditions are satisfied:

Site Name: Cardiff Beech Woods Location Grid Ref: ST118824 JNCC Site Code: UK0030109 Size: 115.62 Designation: SAC	Habitats Regulations Assessment: Data Proforma
	▪ The existing *Tilio-acerion* forest will be maintained. ▪ At least 95% of canopy forming trees will be locally native species (sycamore included). ▪ The tree canopy will not be completely closed; approximately 10% of the canopy will include a dynamic shifting pattern of gaps encouraging natural regeneration of tree species of all ages. ▪ Dead wood, standing and fallen, will be maintained where possible to provide habitat for invertebrates, fungi and other woodland species. ▪ There are pockets of ground flora across the site, comprising species typical of lime-rich beech wood, including indicators of ancient woodland such as wood anemone, ramsons and sanicle. ▪ There is little evidence of browsing or squirrel damage to trees. ▪ Recreational use of the site will continue to be managed so it does not damage the wildlife interest of the site. ▪ All factors affecting the achievement of these conditions are under control. Performance indicators for feature 2 (see performance indicators for feature 1)
Component SSSIs	▪ Fforestganol, Tongwynlais a Cwm Nofydd (units 1-5) ▪ Castell Coch Woodlands and Road Section (units 6-9) ▪ Garth Wood (units 10-12) There are 12 management units of which numbers 1, 2, 3, 4, 8, 9 and 10 comprise to form the Cardiff Beech Woods SAC. A map showing the management units can be viewed on the CCW website.
Key Environmental Conditions (factors that maintain site	▪ **Maintain/manage the surrounding woodland** - Commercial forestry in the vicinity of Castell Coch may have implications for surface water supply and quality. There are also a number of active and disused limestone

Site Name: Cardiff Beech Woods Location Grid Ref: ST118824 JNCC Site Code: UK0030109 Size: 115.62 Designation: SAC	Habitats Regulations Assessment: Data Proforma
integrity	quarries in the area. Garth Wood surrounds Taff's Well Quarry but there are other, smaller quarries in and around all component SSSIs. Quarrying can lead to direct loss of the feature together with indirect impacts from issues such as access. There are also a number of impacts arising from restoration at the end of a quarry's working life. ▪ **Manage public access** - Management of the recreational use of the woodlands should focus on maintaining the network of public footpaths and access routes. Regular maintenance of the footpaths and bridleways is essential to stop them spreading onto the adjacent woodland habitat. By restricting recreational use of the woodlands to certain areas and paths, natural woodland processes can be left to occur away from these areas of recreational use and without the need for intervention from a public health and safety perspective.
SAC Condition Assessment	**Conservation Status of Feature 1** **Aperulo-Fagetum beech forest** The sites were monitored in March 2004 to gather the extent or condition of the habitat. The current feature status for the Asperulo-fagetum beech forest is **Unfavourable** - Unclassified (March 2004). The justification for the above feature status (March 2004) is as follows: CCW view is that the site is still recovering from undesirable effects of past management. Although most if not all aspects of the component sites are heading in the right direction the status is still short of favourable. Implementation of appropriate management will be addressed but in our view there is no urgent or immediate need for action. The Garth Wood component is thought to be 'unfavourable recovering' although a management plan has not been prepared to date so its status has not been fully assessed. The management is mostly limited

Site Name: Cardiff Beech Woods Location Grid Ref: ST118824 JNCC Site Code: UK0030109 Size: 115.62 Designation: SAC	Habitats Regulations Assessment: Data Proforma
	intervention and for most of the site there is good age structure and gap regeneration. Natural processes could be enhanced by localised intervention and this will be addressed through management recommendations. Fforestganol a Chwm Nofydd is thought to be 'unfavourable recovering', although a management plan has not been prepared to date so its status has not been fully assessed. Although there are small areas of even age structure there is generally a diverse age structure. This, together with concerns at the percentage of beech at some locations, will be addressed through management recommendations. Castell Coch Woodlands and Road Section is thought to be 'unfavourable recovering'. A full management plan has not been prepared to date so its status has not been fully assessed. There is generally an even age structure with low canopy cover. However, there is evidence of natural woodland processes, with good regeneration within the pattern of gaps. Recovery is expected over time and this could be hastened with increased localised intervention. This, together with concerns over the species composition (particularly ash and sycamore) at some locations will be addressed through management recommendations. **Conservation Status of Feature 2** **Tilio-Acerion forest of slopes, screes and ravines** The sites were monitored in February 2004 to gather the extent or condition of the habitats and the species. The current feature status for the Tilio-Acerion forest of slopes, screes and ravines is **Unfavourable - Recovering** (February 2004). The justification for the above feature status (February 2004) is as follows: CCW view is that the site is still recovering from undesirable effects of past management. Although most if not all aspects of the component sites are heading in the right direction the status is still short of favourable.

Site Name: Cardiff Beech Woods Location Grid Ref: ST118824 JNCC Site Code: UK0030109 Size: 115.62 Designation: SAC	Habitats Regulations Assessment: Data Proforma
	Implementation of appropriate management will be addressed but in our view there is no urgent or immediate need for action. The Garth Wood component is thought to be 'unfavourable recovering' although a management plan has not been prepared to date so its status has not been fully assessed. The management is mostly limited intervention and for most of the site there is good age structure and gap regeneration. Natural processes could be enhanced by localised intervention and this will be addressed through management recommendations. Fforestganol a Chwm Nofydd is thought to be 'unfavourable recovering', although a management plan has not been prepared to date so its status has not been fully assessed. Although there are small areas of even age structure there is generally a diverse age structure. This, together with concerns at the percentage of beech at some locations, will be addressed through management recommendations.
Vulnerabilities (includes existing pressures and trends)	▪ **Atmospheric Pollution** - its location in industrialised South Wales, together with the presence of nearby quarrying and associated activities, means that there is the potential for localised atmospheric pollution. Quarry dust deposition is an issue that occasionally comes up. o Nitrogen deposition. o Photochemical oxidants (ozone). o Acidification. ▪ **Recreational pressure** - All component SSSIs are used to a greater or lesser extent for recreation purposes. Castell Coch Woodlands and Fforestganol a Chwm Nofydd experience the most recreation pressure, and are popular for walking, climbing and mountain biking. The Taff train runs through part of the Castell Coch Woodlands site and the historic building of Castell Coch attracts many visitors, which increases the access pressure on the woodlands. The road section is becoming increasingly popular for climbing, and this is unlikely to be a problem for the geological interest of the site. However, climbing could be potentially

Site Name: Cardiff Beech Woods Location Grid Ref: ST118824 JNCC Site Code: UK0030109 Size: 115.62 Designation: SAC	Habitats Regulations Assessment: Data Proforma
	damaging to trees at the top of the crag and needs to be kept under review. Management of access is nominally through the individual site owners but there are potential conflicts between different users which to date have been addressed through the Local Authority Access Forum. Recreation within the areas supporting this habitat feature is restricted due to the steep and rocky nature of the terrain. Therefore the recreational pressure on areas of Tilio-acerion is less than on areas of Asperulo-fagetum habitat. Nonetheless, given the high recreation pressure experienced by Fforestganol a Chwm Nofydd, which supports areas of Tilio-acerion habitat, aspects of recreational management still apply to this feature. ▪ **Mineral extraction and related activities** - There are a number of active and disused limestone quarries in the area. Garth Wood surrounds Taff's Well Quarry but there are other, smaller quarries in and around all component SSSIs. Quarrying can lead to direct loss of the feature together with indirect impacts from issues such as access. There are also a number of impacts arising from restoration at the end of a quarry's working life. ▪ **Development** - Its location in the populated South Wales area means that there is considerable development pressure in the vicinity including associated infrastructure on land adjacent to the site. There is the potential for a range of impacts arising from increasing urbanisation. ▪ **Commercial Forestry** - Commercial forestry in the vicinity of Castell Coch may have implications for surface water supply and quality. ▪ **Non-native species** - The presence of a number of species considered to be non-native e.g. sycamore and Japanese knotweed, is currently under review to determine any detrimental effects on the woodland communities of special interest.
Landowner/ Management	The majority of the woodlands are owned, or in the guardianship of government agencies, with most of the

Site Name: Cardiff Beech Woods Location Grid Ref: ST118824 JNCC Site Code: UK0030109 Size: 115.62 Designation: SAC	Habitats Regulations Assessment: Data Proforma
Responsibility	remainder of the woodland covered by a Section 106 agreement. Cardiff County Council, Cadw and Forestry Commission carry out woodland management for conservation purposes and occasionally health and safety purposes.

Site Name: Dunraven Bay **Location Grid Ref: SS886727** **JNCC Site Code: UK0030139** **Size: 6.47** **Designation: SAC**	**Habitats Regulations Assessment: Data Proforma**
Site Description	Dunraven Bay SAC is situated on a southwest facing cliff about 1km south east of the village of Southerndown in the Vale of Glamorgan. The coastline is generally eroding and the 20 or so plants of shore dock growing here on damp coastal limestone are the only remnant of the species former Bristol Channel range. This has now declined to six individuals due to cliff falls removing plants. The Dunraven Bay population is a significant seed-source for recolonisation of Bristol Channel dunes and beachheads when future management restores these habitats to favourable condition.
Qualifying Features	Annex II Species primary reason for selection: ▪ Shore dock *Rumex rupestris*
Conservation Objectives	**Conservation Objective for Feature 1:** ***Rumex rupestris* (shore dock)** Vision for feature 1 The vision for this feature is for it to be in a favourable conservation status, where all of the following conditions are satisfied: ▪ There are at least 10 mature plants at the site ▪ The plant present are flowering and setting seed ▪ The population is stable and viable in the long term. Performance indicators for Feature 1 The performance indicators are part of the conservation objective, not a substitute for it. Assessment of plans and projects must be based on the entire conservation objective, not just the performance indicators. The

Site Name: Dunraven Bay Location Grid Ref: SS886727 JNCC Site Code: UK0030139 Size: 6.47 Designation: SAC	Habitats Regulations Assessment: Data Proforma
	performance indicators can be found within the Dunraven Bay SAC Management Plan.
Component SSSIs	▪ Southerndown Coast SSSI The site is divided into 3 management units that form the Dunraven Bay SAC. A map of the site can be viewed on the CCW website.
Key Environmental Conditions (factors that maintain site integrity	▪ **Manage Scrub** - no increase in area of scrub from 2003 area. ▪ **Hydrological regime** - Availability of water seeping down the cliff face, Shore dock appears to prefer slightly damp ground.
SAC Condition Assessment	**Conservation Status of Feature 1:** ***Rumex rupestris* (shore dock)** In September 2003, 14 plants with flowering spikes greater than 10cm were identified (10 of which were confirmed as being shore dock). There was at least one plant found in each of the two areas, A and B. Therefore these two attributes were considered to be favourable. In October 2004, 10 plants were identified again with at least one plant in Area A and one in Area B. Therefore these attributes are again considered to be favourable. It is noted however that due to lateness in the season it was extremely difficult to locate the plants, even with binoculars and it is likely that more plants were present. In 2006 a cliff fall swept away 4 of the plants, leaving 6 remaining. The feature is therefore considered to be **unfavourable**.
Vulnerabilities (includes existing pressures and trends)	The Rumex rupestris colony has a naturally very restricted distribution within the site, being limited to a small area of groundwater seepage. It is accessible only with difficulty and this gives it natural protection from

Site Name: Dunraven Bay Location Grid Ref: SS886727 JNCC Site Code: UK0030139 Size: 6.47 Designation: SAC	Habitats Regulations Assessment: Data Proforma
	grazing animals and accidental damage by people. It is important that the hydrological regime is maintained but there are no known threats to it at present. Research will be undertaken to ascertain the source of the groundwater. In the very long term, the current site of the R. rupestris colony will be lost as a result of coastal erosion. Nothing can be done to prevent this, but the natural processes of erosion may be expected to simultaneously create replacement habitat for this plant in the immediate vicinity.
Landowner/ Management Responsibility	▪ N/A

Site Name: Kenfig **Location Grid Ref: SS790813** **JNCC Site Code: UK0012566** **Size: 1191.67** **Designation: SAC**	**Habitats Regulations Assessment: Data Proforma**
Site Description	Kenfig is a largely intact dune system in south Wales with extensive areas of fixed dune vegetation with red fescue *Festuca rubra* and lady's bedstraw *Galium verum* and semi-fixed dune grassland with marram *Ammophila arenaria* and red fescue. The site also contains one of the largest series of dune slacks in Wales. The dune slacks are species-rich and there are extensive areas of dunes with *Salix repens* ssp. *argentea*, which represent a mature phase in dune slack development. This site is in the central part of the range of this community on the west coast and is a highly representative example of this habitat type. Kenfig Pool is a shallow lake system within the extensive sand dune system of Kenfig, alongside Swansea Bay in south Wales. The water chemistry is indicative of a coastal, alkaline lake with a moderate nutrient status. High alkalinity, conductivity, sodium and chloride values reflect this marine influence. Elevated calcium values are probably derived from marine shell remains in the sandy substrate. Large stands of common reed *Phragmites australis* are found on the pool's seaward side. Grey club-rush Scirpus *lacustris* ssp. *tabernaemontani*, sea club-rush *Scirpus maritimus*, branched bur-reed *Sparganium erectum* and yellow iris *Iris pseudacorus* are also present. The site is also designated as it is one of two sites selected for petalwort *Petalophyllum ralfsii* in south Wales and supports a large population of the species, numbering thousands of thalli. The calcareous dune system has many dune slacks that include the early successional, open slack vegetation this species requires. It also holds the largest populations of fen orchid *Liparis loeselii* in the UK, comprising about 50% of the UK resource. Management of the site is directed towards the maintenance and enhancement of the populations of fen orchid. The variety that occurs here, as at Whiteford Burrows, is var. *ovata*, which is currently known to occur only in Wales and on the coast of Brittany, as well as in the past at Braunton Burrows, Devon, England.
Qualifying Features	Annex I Habitats primary reason for selection: ▪ Fixed dunes with herbaceous vegetation (`grey dunes`)* Priority feature ▪ *Dunes with Salix repens ssp. argentea (Salicion arenariae)*

Site Name: Kenfig **Location Grid Ref: SS790813** **JNCC Site Code: UK0012566** **Size: 1191.67** **Designation: SAC**	**Habitats Regulations Assessment: Data Proforma**
	▪ Humid dune slacks ▪ Hard oligo-mesotrophic waters with benthic vegetation of *Chara spp.* Annex I Habitats qualifying feature: ▪ Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*) Annex II Species primary reason for selection: ▪ Petalwort Petalophyllum ralfsii ▪ Fen orchid Liparis loeselii
Conservation Objectives	**Conservation Objective for Feature 1 and 2:** **Humid dune slacks and Dunes with Salix *repens* ssp. argentea (*Salicion arenariae*)** NB The division between 'humid dunes' and 'dunes with *Salix repens* ssp. *argentea* is unclear and difficult to define. The humid dune slack habitat includes both successionally young and mature slacks, which equate to NVC communities SD13-16. The dunes with *Salix repens* spp. *argentea* equate to drier areas of mature dune slack, and the low hummocks found around dune slacks which support *Salix repens*. These are sometimes known as hedgehog dunes. Because of the difficulties in separating these two habitats, for the purposes of monitoring these features are considered together. Vision for feature 1 The vision for this feature is for it to be in a favourable conservation status, where all of the following conditions are satisfied: ▪ Dunes with *Salix repens* and humid dune slacks will occur as part of the dune system, their location will be determined by natural processes and appropriate grazing management

Site Name: Kenfig Location Grid Ref: SS790813 JNCC Site Code: UK0012566 Size: 1191.67 Designation: SAC	Habitats Regulations Assessment: Data Proforma
	▪ A range of successional stages will be found in both features ▪ Factors affecting the features will be under control Performance indicators for Feature 1 & 2 The performance indicators are part of the conservation objective, not a substitute for it. Assessment of plans and projects must be based on the entire conservation objective, not just the performance indicators. The performance indicators can be found within the Kenfig SAC Management Plan. **Conservation Objective for Feature 3:** **Fixed dunes with herbaceous vegetation (`grey dunes`)** Vision for feature 3 The vision for this feature is for it to be in a favourable conservation status, where all of the following conditions are satisfied: ▪ Fixed dunes with herbaceous vegetation (grey dunes) will occur where older, shifting dunes become more stabilised and in early successional stages become colonised by lichens and other species indicative of the transition from less mobile habitat. ▪ The habitat will encompass a range of successional stages throughout the area, determined by patterns of natural factors and grazing. ▪ Grey dunes will comprise a significant part of the dune system but will increase and decrease in extent and location as natural processes determine the landscape of the dune systems ▪ All factors are under management control Performance indicators for Feature 3 (see performance indicators for feature 1)

Site Name: Kenfig Location Grid Ref: SS790813 JNCC Site Code: UK0012566 Size: 1191.67 Designation: SAC	Habitats Regulations Assessment: Data Proforma

Conservation Objective for Feature 4:
Hard oligo-mesotrophic waters with benthic vegetation of *Chara* spp.

Vision for feature 4

The vision for this feature is for it to be in a favourable conservation status, where all of the following conditions are satisfied:

- Submerged *Chara* beds (mainly *Chara aspera* and *C. virgata*) growing in relatively shallow water form the predominant submerged macrophyte vegetation throughout most of the lake.
- *Chara* occur at more than 50% frequency along regular surveillance transects within the Western and Central arms.
- Charophyte species and uncommon pondweeds such as *Potamogeton gramineus* and *P. x nitens* are present in other embayments and pools, including *Tolypella glomerata* in dune pools.
- The lake is spring-fed so nutrient levels remain low. One of the main nutrients (phosphorus) reaches no more than 25 micrograms per litre in regular sampling areas. Nitrogen levels in the water are low (less than 1 milligram per litre) and declining or stable.
- The lake water is clear, but well vegetated with dense beds of submerged and marginal plants. A Secchi disc is visible on the lake bed in the deepest part of the lake (2.6m).
- Water depth is relatively stable, fluctuating naturally with groundwater.
- Reed, swamp and fringing bur-reed are restricted to shallow zones – covering not more than 10 % of the site.
- All factors affecting the achievement of these conditions are under control.

Performance indicators for Feature 4 (see performance indicators for feature 1)

Site Name: Kenfig Location Grid Ref: SS790813 JNCC Site Code: UK0012566 Size: 1191.67 Designation: SAC	Habitats Regulations Assessment: Data Proforma
	Conservation Objective for Feature 5: **Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*)** Vision for feature 5 The vision for this feature is for it to be in a favourable conservation status, where all of the following conditions are satisfied: ▪ The quality of the saltmarsh is within specified limits ▪ There is no increase in erosion along the length of the transition from salt marsh to sand dune ▪ The saltmarsh flora will continue to include the following scarce species; *Limonium binervosum*, and *Frankenia laevis* ▪ Light grazing by rabbits and /or stock will continue to be tolerated within limits ▪ The damaging effects of pony riding will have been reduced or eliminated Performance indicators for Feature 5 (see performance indicators for feature 1) **Conservation Objective for Feature 6:** **Petalwort *Petalophyllum ralfsii*** Vision for feature 6 *Petalophyllum ralfsii* will continue to be found at its current locations in each of the two SSSI within the SAC. The vision for this feature is for it to be in a favourable conservation status, where all of the following conditions are satisfied:

Site Name: Kenfig Location Grid Ref: SS790813 JNCC Site Code: UK0012566 Size: 1191.67 Designation: SAC	Habitats Regulations Assessment: Data Proforma
	▪ The species will be found where conditions are suitable in sufficient numbers to form a viable and sustainable population ▪ The population will vary from year to year depending on conditions, especially in drier years, but the long term population will remain steady and sustainable ▪ Suitable dune slacks will have patches of bare ground that is being colonised by jelly lichens (*Collema* spp.) and *Barbula* mosses. ▪ The factors affecting the feature are under control Performance indicators for Feature 6 (see performance indicators for feature 1) **Conservation Objective for Feature 7:** **Fen orchid *Liparis loeselii*** Vision for feature 7 The vision for this feature is for it to be in a favourable conservation status, where all of the following conditions are satisfied: ▪ Sufficient suitable habitat is present to support the populations ▪ The factors affecting the feature are under control Performance indicators for Feature 7 (see performance indicators for feature 1)
Component SSSIs	▪ Cynffig/ Kenfig (units 1 to 9) ▪ Merthyr Mawr Warren (10 to 16) The two SSSIs above are divided into 16 management units of which numbers 1, 2, 5 to 9 and 10 to 15 comprise

Site Name: Kenfig Location Grid Ref: SS790813 JNCC Site Code: UK0012566 Size: 1191.67 Designation: SAC	Habitats Regulations Assessment: Data Proforma
	to form the Kenfig SAC. The management units can be viewed on maps available on the CCW website.
Key Environmental Conditions (factors that maintain site integrity	▪ **Hydrological regime** - It is thought that the dune slacks at Kenfig and Merthyr Mawr as well as Kenfig Pool are mainly fed by groundwater, and possibly a deep Carboniferous Limestone aquifer. There are also three small ephemeral streams that enter Kenfig Pool. Maintenance of the natural hydrological regime of both dune systems is critical for the maintenance of the character, composition and condition of the features. ▪ **Water quality** - management should aim to protect and maintain the required water quality. The major water quality concerns are related to elevated macro-nutrient levels. Elevated levels of nitrogen have been found at Burrows Well (a karstic spring) on the Merthyr Mawr component and there is also some indication that dune slacks are becoming increasingly eutrophic. The nature of the underlying limestone aquifer means that off-site activities a considerable distance away can potentially have an impact on the SAC. This effect may occur both spatially and temporally. ▪ **Air quality** - management should aim to protect and maintain the required air quality. Critical level or exposure (over the averaging/summing period): o Acid - 4 keq ha^{-1} yr^{-1} (calendar year) o NO_X as NO_2 - 30 µg m^{-3} (calendar year) o SO_2 - 20 µg m^{-3} (calendar year and winter Oct 1 to Mar 31) o Nitrogen - 10-20 kg ha^{-1} yr^{-1} (calendar year) o Ammonia - 3 µg m^{-3} (calendar year) o Ozone - 3000 ppb h (3 months) ▪ **Manage/Restrict recreation and access** - People and vehicle access should be managed so that it does not adversely affect the dune slack SAC features. Dune stabilisation works should only be considered in exceptional cases where severe erosion has been caused by vehicle or visitor pressure. The first action should be to manage the source of the problem. Vehicle restrictions to the dunes need to be continued,

Site Name: Kenfig Location Grid Ref: SS790813 JNCC Site Code: UK0012566 Size: 1191.67 Designation: SAC	Habitats Regulations Assessment: Data Proforma
	and be reviewed as problems arise. Wardening and surveillance of access for horse riders among certain areas of the dune slacks at Merthyr Mawr where it is impacting on *P. ralfsii* habitat should be continued, with access to sensitive habitats discouraged via deviation onto other less sensitive habitat. ▪ **Maintain natural coastal processes** - management should be aimed at minimising any constraints to the natural movement of sand. This should allow the continued process of slack formation, maintaining a presence of embryo and successionally young slacks on site. ▪ **Management of Grazing/ Scrub** - Humid dune slacks and dunes with *Salix repens* are maintained by the seasonally high water table, grazing and scrub control. Grazing by domestic stock facilitates rabbit and hare grazing since rabbits tend to graze where the sward is already short. Grazing levels should be set to allow the maintenance of a low, species rich sward throughout the majority of the dune slacks and to reduce the spread of scrub. Continued scrub clearance is necessary at Merthyr Mawr and Kenfig since scrub encroachment has been considerable over the last 30 years and grazing alone cannot keep scrub in check. Where natural processes such as mobility, erosion, and wind scour are significant, scrub invasion is not an issue. Dune slacks should be lightly grazed, preferably by cattle during the summer. Grazing by cattle in winter is acceptable provided supplementary feeding and poaching do not take place. Management aimed at encouraging the return of rabbits and hares at Kenfig, such as mowing and burrow creation, should be continued, and rabbit grazing should be maintained at Merthyr Mawr. Mowing has taken place within certain dune slacks at Kenfig on a regular basis over the past few years, to facilitate the spread of grazing and to some extent to control dense low willow scrub growth and re-growth following initial clearance management. Mowing has achieved good results by reducing the competitive advantage of coarse and woody growth thereby favouring desirable species such as marsh helleborine *Epipactis palustris*. ▪ **Fishery** (Hard oligo-mesotrophic waters with benthic vegetation of *Chara* spp) - No further fish species introduction. Removal of the few remaining carp is an essential prerequisite to the site achieving favourable status.

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SAC Condition Assessment	**Conservation Status and Management Requirements of Feature 1 & 2:** **Dunes with *Salix repens* ssp. *argentea* (*Salicion arenariae*) and Humid dune slacks** These two features have been considered together as the issues and management of both are intimately linked. Conservation Status of Feature 1 & 2 No distinction has been made between the Humid dune slacks and Dunes with *Salix repens* ssp. *argentea* as outlined in the conservation objectives, and this monitoring data will be used to determine the condition of both features. Results show that the proportion of early successional stages in Areas Y and Z is below that required. Therefore, vegetation in both areas is considered to be unfavourable. Areas Y and Z contained the largest blocks of embryo and successionally young habitat in 1997. As the system is stabilising and no new natural areas of habitat have been created, we can assume that the slack habitats outside of the sample plots are also unfavourable, despite mowing and scraping has artificially created areas of habitat (see comments below). Therefore, the Humid dune slacks and Dunes with *Salix repens* ssp. *argentea* at Kenfig SAC are considered to be in **unfavourable declining** condition (August 2006 SAC Monitoring Report). **Conservation Status and Management Requirements of Feature 3:** **Fixed dunes with herbaceous vegetation (`grey dunes`)** Conservation Status of Feature 3 The fixed dune with herbaceous vegetation feature of Kenfig/Cynffig SAC is considered to be in **Unfavourable declining** conservation status (August 2006 SAC Monitoring Report). This is due primarily to over-stabilisation, undergrazing and scrub development. **Conservation Status and Management Requirements of Feature 4:** **Hard oligo-mesotrophic waters with benthic vegetation of *Chara* spp.**

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	Conservation Status of Feature 4 The Hard oligo-mesotrophic waters with benthic vegetation of *Chara* spp. feature of Kenfig/Cynffig SAC is considered to be in **unfavourable recovering** conservation status (2006). The main reason for the unfavourable condition is the presence of introduced fish (carp). If carp removal can be carried out favourable condition should follow. (Burgess et al., 2006) **Conservation Status and Management Requirements of Feature 5:** **Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*)** Conservation Status of Feature 5 The condition of the Atlantic salt meadows at Merthyr Mawr were assessed as **favourable** condition on the basis of SAC monitoring carried out in December, 2004. In addition the SSSI salt marsh feature was assessed as being in favourable condition (December, 2004). **Conservation Status and Management Requirements of Feature 6: Petalwort *Petalophyllum ralfsii*** Conservation status of Feature 6 The *Petalophyllum ralfsii* of Kenfig/Cynffig SAC is considered to be in **unfavourable declining** conservation status (November 2007). This analysis is based on the most recent SAC monitoring report for the feature, which shows that the performance indicators for the habitat and the extent, distribution and numbers of thalli were not met. Long-term surveillance indicates that *P. ralfsii* used to have a much wider distribution and that it was regularly found with greater than 50 thalli per m² in more than two discrete locations within more than two dune slacks. **Conservation Status and Management Requirements of Feature 6:**

Site Name: Kenfig **Location Grid Ref: SS790813** **JNCC Site Code: UK0012566** **Size: 1191.67** **Designation: SAC**	**Habitats Regulations Assessment: Data Proforma**
	Fen Orchid *Liparis loeselii* Conservation status of Feature 6 The *Liparis loeselii* of Kenfig/Cynffig SAC is considered to be in **unfavourable declining** conservation status (July 2007). This analysis is based on the most recent SAC monitoring report for the feature, which shows that the number of plants and the number of slacks within which it occurs have decreased dramatically. Long-term surveillance indicates that *L. loeselii* used to have a much wider distribution and that on any occasion it was regularly found in six or more discrete dune slacks with numbers of flowering spikes greater than 200.
Vulnerabilities (includes existing pressures and trends)	▪ **Erosion and progradation** - Unless artificially constrained, the seaward edges of sand dunes can be a highly mobile feature, though there is a natural trend to greater stability further inland. Very few dune systems are in overall equilibrium, and a majority of those in the UK demonstrate net erosion rather than net progradation; insufficient sand supply is frequently the underlying cause. ▪ **Falling water tables** - As a result of local extraction of water and/or drainage of adjacent land used for agriculture or housing. ▪ **Grazing** - In the absence of human interference, most stable dunes, with the exception of those experiencing severe exposure, would develop into scrub and woodland. The preponderance of grassland and heath vegetation on British dunes is due to a long history of grazing by livestock. Continued grazing is normally necessary to maintain the typical fixed dune communities, but over-grazing, particularly when combined with the provision of imported feedstuffs, can have damaging effects. A more widespread problem is under-grazing, leading to invasion by coarse grasses and scrub, though rabbits are locally effective in maintaining a short turf. Kenfig National Nature Reserve (NNR) has been grazed by sheep in recent years, and grazing is currently under review. Selected dune slacks are mown in order to provide appropriate conditions for the maintenance of these species and the vegetation.

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	▪ **Scrub** - scrub encroachment has been considerable over the last 30 years and grazing alone cannot keep scrub in check. Where natural processes such as mobility, erosion, and wind scour are significant, scrub invasion is not an issue. Where slacks are more mature, scrub can become a problem especially when grazing ceases or is reduced for a period and early scrub encroachment is not controlled. As scrub becomes established shelter and seeding increases and the problem is then exacerbated as stock cannot gain easy access to graze. ▪ **Recreation and access** - people and vehicle access should be managed so that it does not adversely affect the dune slack SAC features. Dune stabilisation works should only be considered in exceptional cases where severe erosion has been caused by vehicle or visitor pressure. The first action should be to manage the source of the problem. Vehicle restrictions to the dunes need to be continued, and be reviewed as problems arise. Wardening and surveillance of access for horse riders among certain areas of the dune slacks at Merthyr Mawr where it is impacting on *P. ralfsii* habitat should be continued, with access to sensitive habitats discouraged via deviation onto other less sensitive habitat. ▪ **Natural successional changes** - within the dune systems are detrimental to the plant communities of the dune grassland and humid dune slacks as well as to *Liparis loeselii* and *Petalophyllum ralfsii*, which are species of early successional changes. ▪ **Air quality*:** o Eutrophication. o Photochemical oxidants. o Particulate matter.

* Air Pollution Information System (APIS). Sand Dunes. Available from: http://www.apis.ac.uk/cgi_bin/habitat_result.pl?habResult=Sand+dunes&choice=allHabs&haborspec=habitat&submit.x=17&submit.y=7

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- **Water quality** - The major water quality concerns are related to elevated macro-nutrient levels. Elevated levels of nitrogen have been found at Burrows Well (a karstic spring) on the Merthyr Mawr component and there is also some indication that dune slacks are becoming increasingly eutrophic. The nature of the underlying limestone aquifer means that off-site activities a considerable distance away can potentially have an impact on the SAC. This effect may occur both spatially and temporally.

- **Non-native species** - Large populations of coarse fish (such as introduced carp for example) can distort the balance between the plant community, nutrient levels and the coarse fish population by eating small microscopic animals (zooplankton) that feed on tiny algae (phytoplankton).There should be no new non-native invasive species on the UKTAG Red List present. No increase in *Elodea canadensis*. This species is currently rare.

- The **Fen Orchid** is also under threat from:
  - Natural processes of succession in dune slacks.
  - Work undertaken to stabilise sand dunes.

- The **Pealwort** is also under threat from:
  - Loss of habitat due to development, dune stabilisation and natural succession.
  - Drainage.
  - Recreation.
  - Botanical collection.

Indirect effects on dunes include atmospheric nutrient deposition, and coastal squeeze due to rising sea levels and increased storminess. The potential for dredging and marine aggregate extraction, through the disruption of coastal processes, to have cumulative and long-term effects on sand dunes is an area for further investigation.

Site Name: Kenfig **Location Grid Ref: SS790813** **JNCC Site Code: UK0012566** **Size: 1191.67** **Designation: SAC**	**Habitats Regulations Assessment: Data Proforma**
Landowner/ Management Responsibility	All parts of the Kenfig Dunes SSSI are owned by a charitable organisation, the Kenfig Corporation Trust, dedicated to holding the site in trust for the benefit and enjoyment of the community of Kenfig, allowing unrestricted access in time and space. Bridgend County Borough Council manages the site, in consultation with other parties through the Kenfig NNR management committee. Their aim is to maintain and enhance its value for nature conservation, including the provision of educational and public interpretation resources, run from the visitor centre. CCW manage the grazing licences. Fishing is a traditional activity and is dealt with through a separate lease with The Kenfig Hill and District Angling Association.

Site Name: Severn Estuary **Location Grid Ref: ST321748** **JNCC Site Code: UK0013030** **Size: 73715.4** **Designation: SAC**	**Habitats Regulations Assessment: Data Proforma**
Site Description	The Severn Estuary 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. Glassworts and annual sea-blite colonise the open mud, with beds of all three species of eelgrass *Zostera* occurring on more sheltered mud and sandbanks. Large expanses of common cord-grass also occur on the outer marshes. Heavily grazed saltmarsh fringes the estuary with a range of saltmarsh types present. The middle marsh sward is dominated by common saltmarsh-grass with typical associated species. In the upper marsh, red fescue and saltmarsh rush become more prominent. Areas of saltmarsh fringe the estuary, mostly grazed with a range of vegetation communities. There are gradual and stepped transitions between bare mudflat to upper marsh and grassland. Main vegetation types are: upper saltmarsh with *Festuca rubra* and *Juncus gerardii*; middle marsh dominated by *Puccinellia maritima* with *Glaux maritima* and *Triglochin maritima*; dense monocultures of *Spartina anglica* at the edge of the mudflats-brackish pools and depressions with *Phragmites australis* and *Bolboschoenus maritimus*.
Qualifying Features	Annex I Habitats primary reason for selection: ▪ Estuaries ▪ Mudflats and sandflats not covered by seawater at low tide

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	▪ Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*) Annex I Habitats qualifying feature: ▪ Sandbanks which are slightly covered by sea water all the time ▪ Reefs Annex II Species primary reason for selection: ▪ Sea lamprey *Petromyzon marinus* ▪ River lamprey *Lampetra fluviatilis* ▪ Twaite shad *Alosa fallax*
Conservation Objectives	**SAC interest feature 1: Estuaries** The conservation objective for the "estuaries" feature of the Severn Estuary SAC is to maintain the feature in favourable condition, as defined below: The feature will be considered to be in favourable condition when, subject to natural processes, each of the following conditions are met: i. the total extent of the estuary is maintained; ii. the characteristic physical form (tidal prism/cross sectional area) and flow (tidal regime) of the estuary is maintained; iii. the characteristic range and relative proportions of sediment sizes and sediment budget within the site is maintained; iv. the extent, variety and spatial distribution of estuarine habitat communities5 within the site is maintained; v. the extent, variety, spatial distribution and community composition of hard substrate habitats and their

Site Name: Severn Estuary Location Grid Ref: ST321748 JNCC Site Code: UK0013030 Size: 73715.4 Designation: SAC	Habitats Regulations Assessment: Data Proforma
	notable communities is maintained; vi. the abundance of the notable estuarine species assemblages7 is maintained or increased; vii. the physico-chemical characteristics of the water column9 support the ecological objectives described above; viii. Toxic contaminants in water column and sediment are below levels which would pose a risk to the ecological objectives described above. ix. Airborne nutrient and contaminant loads are below levels which would pose a risk to the ecological objectives described above **SAC interest feature 2: Subtidal sandbanks which are covered by sea water all the time (subtidal sandbanks)** The conservation objective for the "subtidal sandbanks" feature of the Severn Estuary SAC is to maintain the feature in favourable condition, as defined below: The feature will be considered to be in favourable condition when, subject to natural processes, each of the following conditions are met: i. the total extent of the subtidal sandbanks within the site is maintained; ii. the extent and distribution of the individual subtidal sandbank communities within the site is maintained; iii. the community composition of the subtidal sandbank feature within the site is maintained; iv. the variety and distribution of sediment types across the subtidal sandbank feature is maintained; v. the gross morphology (depth, distribution and profile) of the subtidal sandbank feature within the site is maintained. **SAC interest feature 3: Mudflats and sandflats not covered by seawater at low tide (mudflats and sandflats)** The conservation objective for "mudflats and sandflats" feature of the Severn Estuary SAC is to maintain the

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	feature in favourable condition, as defined below: The feature will be considered to be in favourable condition when, subject to natural processes, each of the following conditions are met: i. The total extent of the mudflats and sandflats feature is maintained; ii. the variety and extent of individual mudflats and sandflats communities within the site is maintained; iii. the distribution of individual mudflats and sandflats communities3 within the site is maintained; iv. the community composition of the mudflats and sandflats feature within the site is maintained; v. the topography of the intertidal flats and the morphology (dynamic processes of sediment movement and channel migration across the flats) are maintained. **SAC interest feature 4: Atlantic salt meadow** The conservation objective for the "Atlantic salt meadow" feature of the Severn Estuary SAC is to maintain the feature in favourable condition, as defined below: The feature will be considered to be in favourable condition when, subject to natural processes, each of the following conditions are met: i. the total extent of Atlantic salt meadow and associated transitional vegetation communities within the site is maintained; ii. the extent and distribution of the individual Atlantic salt meadow and associated transitional vegetation communities within the site is maintained; iii. the zonation of Atlantic salt meadow vegetation communities and their associated transitions to other estuary habitats is maintained; iv. the relative abundance of the typical species of the Atlantic salt meadow and associated transitional vegetation communities is maintained;

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	v. the abundance of the notable species of the Atlantic salt meadow and associated transitional vegetation communities is maintained. vi. the structural variation of the salt marsh sward (resulting from grazing) is maintained within limits sufficient to satisfy the requirements of conditions iv and v above and the requirements of the Ramsar and SPA features vii. the characteristic stepped morphology of the salt marshes and associated creeks, pills, drainage ditches and pans, and the estuarine processes that enable their development, is maintained. viii. Any areas of *Spartina anglica* salt marsh (SM6) are capable of developing naturally into other saltmarsh communities. **SAC interest feature 5: Reefs** The conservation objective for the "reefs" feature of the Severn Estuary SAC is to maintain the feature in a favourable condition, as defined below: The feature will be considered to be in favourable condition when, subject to natural processes, each of the following conditions are met: i. the total extent and distribution of *Sabellaria* reef is maintained; ii. the community composition of the *Sabellaria* reef is maintained; iii. the full range of different age structures of *Sabellaria* reef are present; iv. the physical5and ecological processes necessary to support *Sabellaria* reef are maintained. **SAC interest feature 6: River lamprey *Lampetra fluviatilis*** The conservation objective for the river lamprey *Lampetra fluviatilis* feature of the Severn Estuary SAC is to maintain the feature in a favourable condition, as defined below:

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	The feature will be considered to be in favourable condition when, subject to natural processes, each of the following conditions are met: i. the migratory passage of both adult and juvenile river lamprey through the Severn Estuary between the Bristol Channel and any of their spawning rivers is not obstructed or impeded by physical barriers, changes in flows, or poor water quality; ii. the size of the river lamprey population in the Severn Estuary and the rivers which drain into it, is at least maintained and is at a level that is sustainable in the long term; iii. the abundance of prey species forming the river lamprey's food resource within the estuary, is maintained. iv. Toxic contaminants in the water column and sediment are below levels which would pose a risk to the ecological objectives described above. **SAC interest feature 7: The conservation objective for sea lamprey *Petromyzon marinus*** The conservation objective for the sea lamprey *Petromyzon marinus* feature of the Severn Estuary SAC is to maintain the feature in a favourable condition, as defined below: The feature will be considered to be in favourable condition when, subject to natural processes, each of the following conditions are met: i. the migratory passage of both adult and juvenile sea lamprey through the Severn Estuary between the Bristol Channel and any of their spawning rivers is not obstructed or impeded by physical barriers, changes in flows, or poor water quality; ii. the size of the sea lamprey population in the Severn Estuary and the rivers which drain into it, is at least maintained as is at a level that is sustainable in the long term; iii. the abundance of prey species forming the sea lamprey's food resource within the estuary, is maintained.

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	vi. Toxic contaminants in the water column and sediment are below levels which would pose a risk to the ecological objectives described above. **SAC interest feature 8: The conservation objective for twaite shad *Alosa fallax*** The conservation objective for the twaite Shad *Alosa fallax* feature of the Severn Estuary SAC is to maintain the feature in a favourable condition, as defined below: The feature will be considered to be in favourable condition when, subject to natural processes, each of the following conditions are met: i. the migratory passage of both adult and juvenile twaite shad through the Severn Estuary between the Bristol Channel and their spawning rivers is not obstructed or impeded by physical barriers, changes in flows or poor water quality; ii. the size of the twaite shad population within the Severn Estuary and the rivers draining into it is at least maintained and is at a level that is sustainable in the long term. iii. the abundance of prey species forming the twaite shad's food resource within the estuary, in particular at the salt wedge, is maintained. iv. Toxic contaminants in the water column and sediment are below levels which would pose a risk to the ecological objectives described above.
Component SSSIs	▪ N/A
Key Environmental Conditions (factors that maintain site integrity	▪ **Hydrodynamic and sedimentary regime** - The conservation of the site features is dependent on the tidal regime. The tidal range in the Severn Estuary is the second-highest in the world and the scouring of the seabed and strong tidal streams result in natural erosion of the habitats and the presence of high sediment loads.

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	▪ **Maintain suitable distance between the site and development** - to allow for managed retreat of intertidal habitats and avoid coastal squeeze. ▪ **Manage public access and activities**.
SAC Condition Assessment	▪ N/A
Vulnerabilities (includes existing pressures and trends)	▪ **Physical loss of supporting habitats through removal** - The physical loss of areas of intertidal habitats may be caused directly through change of land use or indirectly as a consequence of changes to sedimentation processes (e.g. coastal defences) as well as via the effects of smothering by artificial structures (e.g. jetties) or the disposal of spoils. The intertidal mudflats and sandflats and the saltmarsh are highly sensitive to removal by land reclamation and barrage construction. Information provided by NE and CCW states that large areas of the European marine site are not currently under threat, however when combined with a high level of sensitivity this leads to a moderate vulnerability. ▪ **Contamination by synthetic and/or non-synthetic toxic compounds** - At the moment there is no evidence to show that this is the case on the Severn Estuary, but the estuary is vulnerable to oil spills and there is a continuous discharge of toxins into the estuary, some of which bind to the sediments. NE and CCW identify this is an area which requires further assessment. The intertidal mudflats and sandflats and the saltmarsh are currently highly vulnerable to the introduction of synthetic and non-synthetic compounds. ▪ **Damage by abrasion or selective extraction** - Saltmarsh may be physically damaged from overgrazing or eroded when boats are moored on it and when paths are worn through it to reach moored boats on foot or via vehicles. Currently all supporting habitats are considered to be moderately vulnerable to abrasion. Intertidal habitats are highly sensitive to damage by direct and indirect effects of aggregate dredging. The intertidal mudflats and sandflats and the shingle and rocky shore are therefore considered by NE and CCW to be highly vulnerable to selective extraction.

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	▪ **Changes in nutrient and/or organic loading** - Changes in organic or nutrient loading can change the species composition of the plants on the saltmarsh and thus the structure of the sward. Increases in nutrients can also cause excessive algal growth on the mudflats, denying the birds access to their invertebrate prey and changing the invertebrate species composition in the sediment. Though the water quality has been improved in recent years there are still local areas of concern and any increase in nutrient loading should be avoided. At present the intertidal mudflats and sandflats are moderately vulnerable to this category of operation. ▪ **Inappropriate grazing** - Much of the saltmarsh is managed by grazing and changes in management can alter the availability of prey and suitability of roosting sites. The saltmarsh is currently highly vulnerable to the selective extraction of species.
Landowner/ Management Responsibility	▪ N/A
HRA/AA Studies undertaken that address this site	HRA Screening of the County Council of the City and County of Cardiff Local Development Plan Preferred Strategy Sept 2007. www.cardiff.gov.uk/ObjView.asp?Object_ID=9788 ▪ The Screening states that the significance of the potential impacts of the Eastern Bay Link (Pg. 50, Paragraph 6.23) in the Preferred Strategy (either alone or in-combination with other plans and projects) will be considered when a more detailed scheme is available. An appropriate assessment may be required for the scheme. HRA Screening of the Torfaen Local Development Plan (2006-2021) January 2008. http://www.torfaen.gov.uk/Environm]entAndPlanning/Planning/ForwardPlanning/Publications/HabitatsRegulationAssessment.pdf ▪ It is likely that an increase of 7000 dwellings in Torfaen and associated development will in some way

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	impact upon the site. It is likely however that the potential impact will be as a result of in-combination effects with other implemented plans and programmes in close proximity to the Severn Estuary. AA Screening of the Vale of Glamorgan Local Development Plan Preferred Strategy Dec 07. http://www.valeofglamorgan.gov.uk/files/Living/Planning/Policy/LDP/Appropriate_Assessment_Screening_Report.pdf ▪ Given the extent of the Severn Estuary and the diverse range of activities and operations that could result in adverse impact to the European Site, it is considered inevitable that the Draft Preferred Strategy will in some way, impact upon the designated site. While much of the development arising from the draft preferred strategy is likely to be located well away from the Severn Estuary, the south-eastern zone has been identified as a growth area and abuts the boundary of the designated site. Therefore, it is recommended that a more detailed assessment of the LDP be undertaken following consultation on the Draft Preferred Strategy to ascertain and mitigate against any likely significant effects to the SPA, cSAC, RAMSAR. HRA & AA of the Wales Spatial Plan Update June 2008. http://wales.gov.uk/about/strategy/spatial/hra/download/?lang=en ▪ The HRA Screening concludes that the WSPU and other plans have the potential to give rise to adverse effects at this site. ▪ The AA states that it is not possible to predict in specific terms whether the WSPU would or would not give rise to significant adverse effects either alone or in combination with other plans/ strategies and projects upon specific European sites. However, it does identify that this site is likely to come under increasing risk of adverse in combination effects from transport infrastructure, urban and economic development and recreation and tourism as a result of the WSPU and English RSSs. The AA also identifies that in combination with the English RSSs the WSPU has the potential to have negative effects on water levels, flood protection and water quality issues, which could affect this site.

Site Name: Sugar Loaf Woodlands **Location Grid Ref: SO295166** **JNCC Site Code: UK0030072** **Size: 173.84** **Designation: SAC**	**Habitats Regulations Assessment: Data Proforma**
Site Description	Sugar Loaf Woodlands are the largest example of old sessile oak woods near the south-eastern fringe of the habitat's range in the UK and Europe. The relatively dry situation restricts the development of the Atlantic flora associated with the habitat, but the main floristic components of sessile oak *Quercus petraea* canopy, acidic ground flora (typically of bilberry *Vaccinium myrtillus* and wavy hair-grass *Deschampsia flexuosa*) and extensive fern and bryophyte cover are in place. The woodland is grazed, but regenerates within gaps and at the fringes, where transitions to upland grassland and heath communities occur. The woodland also supports a smaller area of beech woodland and a large colony of red wood ants, which are more commonly found in southern and eastern Britain.
Qualifying Features	Annex I Habitats qualifying feature: ▪ Old sessile oak woods with *Ilex* and *Blechnum* in the British Isles
Conservation Objectives	**Conservation Objective for Feature:** **Old sessile oak woods with *Ilex* and *Blechnum* in the British Isles** Vision for feature: The vision for this feature is for it to be in favourable conservation status within the site, as a functioning and regenerating* oak wood, where all of the following conditions are satisfied: ▪ The wooded area is no less than 122 ha; ▪ The remainder of the site is semi-natural acid grassland, heathland, bracken and scrub, often forming a transition zone at the woodland edge; ▪ Saplings of birch betula spp, oak Quercus petraea, alder Alnus glutinosa or holly Ilex aquifolium dominate the tree regeneration; ▪ Young beech Fagus sylvatica and sycamore Acer pseudoplatanus trees are rare;

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	▪ The woodland ground flora is composed of a range of typical native plants including bilberry Vaccinium myrtillus, wavy-hair grass Deschampsia flexuosa and the mosses Plagiothecium undulatum, Rhytidiadelphus loreus, Dicranum majus. ▪ The liverwort Bazzania trilobata to continue to be present in its core area of Unit 1. ▪ All factors affecting the achievement of these conditions will under control. *A "functioning and regenerating oak woodland" would include all the positive attributes described in the performance indicators. Performance indicators for Feature The performance indicators are part of the conservation objective, not a substitute for it. Assessment of plans and projects must be based on the entire conservation objective, not just the performance indicators. The performance indicators can be found within the Sugar Loaf Woodlands Management Plan.
Component SSSIs	▪ Sugar Loaf Woodlands SSSI The site has been divided into 4 management units. A map of these units can be viewed on the CCW website.
Key Environmental Conditions (factors that maintain site integrity	Canopy regeneration is a key attribute for signifying the functioning, habitat quality and sustainability of most woodland types, including sessile oak woods. ▪ **Grazing regime** - The grazing within all 4 units has suppressed the regeneration of native woody species and in combination with past coppicing has resulted in a uniform age structure. The areas of Sugarloaf woodlands not subjected to continuous grazing appear to become densely populated with saplings of all species. This may demonstrate that the main factor restricting natural regeneration of woody species in

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	Sugar Loaf Woodlands is grazing and that current grazing levels are incompatible with sustainable semi-natural woodland at this site. Liaison between owners/commoners is needed to discuss possible means of managing grazing to encourage natural regeneration in the woodland areas, including possible agreements to fence all new and some existing canopy gaps. Most of Unit 4 is already fenced and stock free and regeneration is now taking place, though some periodic grazing may be required to control bramble. ▪ **Manage non-native species** (Tree/shrub) - if necessary control the spread of non-native species (principally beech) through a programme of selective removal of saplings to ensure no further trees get into the canopy. Non-native beech trees can be accepted as part of the canopy in the short to medium term. Consequently, the limits need only be met in 75% of existing woodland. The upper limits are 5% cover of non-native trees in the canopy and no beech (or other invasive non-native shrubs) in the understorey or shrub layer. The conservation objectives state that the canopy should be composed of locally native trees and, apart from a beech woodland area within Unit 1, the canopy of Sugar Loaf Woodlands is currently dominated by oak throughout. Where beech is present its seedlings tend to dominate the regeneration and without management to control these locally non-native seedlings further parts of the SAC feature will become unfavourable. ▪ **Manage woodland by thinning/small group felling** - Much of the woodland lacks structure due to past woodland management to remove timber. It is likely to be decades before a more natural woodland structure can develop. Trees could be thinned to create a more uneven age structure or open gaps in the canopy when an appropriate means of controlling grazing levels have been identified and all dead/felled timber to be left in situ. This is already taking place in Unit 4 but elsewhere the grazing regime may be unsuitable. ▪ **Increase amounts of deadwood** - Deadwood is present on the site, but much has been removed in the past. In future, the owners should be encouraged to leave as much dead wood as possible.

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	▪ **Veteran trees** - Retain all veteran trees. ▪ **Manage bracken** - Bracken may require management where it is thought to be hindering successful regeneration, largely in the open areas and gaps. However, this needs to be balanced against the protection bracken offers for young saplings against browsing and its place as a key natural component of acidic woodlands. Together bracken and bramble should cover less than 75% of the woodland floor.
SAC Condition Assessment	**Conservation Status of Feature 1:** **Old sessile oak woods with *Ilex* and *Blechnum* in the British Isles** Unfavourable (2007), due to: ▪ Grazing having a strong role in preventing some of the canopy regeneration and in creating a sparser ground flora; ▪ Some areas within the SAC/SSSI remain as open areas, especially on the fringe of the site. Whilst having some open areas is beneficial for a range of species, not all these open areas are of benefit to either the SAC or SSSI features; ▪ The even-aged and dense canopy in much of the wooded area. This is creating very densely shaded ground, field and shrub layers and is one of the barriers to regeneration of saplings and ground flora. However, more canopy gaps would be expected in the long term as the canopy trees die, or through storm damage in the more exposed parts of the site;
Vulnerabilities (includes existing pressures and trends)	▪ **Inappropriate grazing regime** - The grazing within all 4 units has suppressed the regeneration of native woody species and in combination with past coppicing has resulted in a uniform age structure. The areas of Sugarloaf woodlands not subjected to continuous grazing appear to become densely populated with

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	saplings of all species. This may demonstrate that the main factor restricting natural regeneration of woody species in Sugar Loaf Woodlands is grazing and that current grazing levels are incompatible with sustainable semi-natural woodland at this site. ▪ **Non-native species** - Where beech is present its seedlings tend to dominate the regeneration and without management to control these locally non-native seedlings further parts of the SAC feature will become unfavourable. ▪ **Bracken encroachment** - can hinder successful regeneration in the open areas and gaps. However the bracken also offers protection for young saplings against browsing and its place as a key natural component of acidic woodlands. The accumulation of bracken litter on the common poses a fire risk in dry weather. Restrictions on public access could be considered, but it would be very difficult to control most incidents as they appear to be the result of children deliberately setting fires. Control of bracken in a buffer strip at the wood edges may be a more sensible consideration. ▪ **Air pollution*** - Airborne acid and nutrient deposition could be a particular problem for epiphytic lichens on the oak trees. o Acidification. o Eutrophication. o Photochemical oxidants. o Particulate matter.
Landowner/ Management Responsibility	▪ Unit 1 - National Trust (common) ▪ Unit 3 - National Trust (common)

* Air Pollution Information System (APIS). Oak Woodland. Available from: http://www.apis.ac.uk/cgi_bin/habitat_result.pl?habResult=Oak+woodland&choice=allHabs&haborspec=habitat&submit.x=23&submit.y=8

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	▪ Unit 4 - National Trust (tenanted) The management units have been largely based on the three woodland blocks that make up the SAC and SSSI. The SAC feature is the same for each block of woodland and units 1& 3 are on the same common and so are under broadly the same management, but their geographical isolation from each other gives them the status of separate units. Unit 2 is a small privately owned and enclosed area within Unit 1. Unit 4 is on a farm in the Tir Gofal agri-environment scheme and so is easily separated from the other two units. Unit 3 includes one isolated area of woodland joined to the enclosed Unit 4, but on the common and so potentially under the same management regime as the rest of Unit 3.
HRA/AA Studies undertaken that address this site	HRA Screening of the Torfaen Local Development Plan (2006-2021) January 2008. http://www.torfaen.gov.uk/EnvironmentAndPlanning/Planning/ForwardPlanning/Publications/HabitatsRegulationAssessment.pdf ▪ The screening states that the LDP will not have a direct impact on the site; however, it is identified that airborne acid and nutrient deposition may be a problem for this site. It concludes that given the distance of the site from the Torfaen boundary the effect that the LDP could have on the site is negligible.

Site Name: Usk Bat Sites **Location Grid Ref: SO190145** **JNCC Site Code: UK0014784** **Size: 1686.4** **Designation: SAC**	**Habitats Regulations Assessment: Data Proforma**
Site Description	The site encompasses a series of lesser horseshoe bat roosts, upland habitats, woodlands and cave systems located around the valley of the River Usk near to Abergavenny. Mynydd Llangatwg is an area of open moorland and bog, with an impressive limestone escarpment along the northeastern edge, and is one of the largest exposures of upland limestone crag in south Wales. The Craig y Cilau National Nature Reserve (NNR) covers a large proportion of this escarpment area, including most of the unquarried scarp, with areas of limestone grassland, scree and quarry spoil, woodland and scrub. A small raised bog (Waun Ddu) bordered by two small streams has developed below the escarpment. An extensive system of caves lies beneath Mynydd Llangatwg and the plateau is peppered with sinkholes. The main reason for the presence of the NNR is to help control and manage access to the cave system to protect the bat roosts and the underground geology and also the surface habitats, which support an outstanding assemblage of plants. Species include large and small-leaved lime, several species of whitebeam (including least whitebeam (*Sorbus minima*) which is unique to this area of Brecknock), limestone fern, endemic hawkweeds and alpine enchanter's-nightshade. The chasmophytic vegetation encompasses the various crevices, nooks and crannies on the cliffs, boulders and partially vegetated unstable slopes of the limestone escarpment. It supports a typical range of ferns, bryophytes and calcareous lichens; these include ferns such as maidenhair spleenwort, mosses like *Tortella tortuosa*, and liverworts like *Scapania aspera*. This site is known to support a number of notable lichen species and provides some of the best examples in the area of calcicolous lichen communities, which include the jelly lichen Collema cristatum and examples of lichen communities like the *Leproplacetum chrysodetae* and *Aspicilion calcarea*. Patches of Tileo-Acerion forest are also scattered along the length of the cliffs on Mynydd Llangatwg and intermixed with beechwood in the Clydach gorge. These areas also support a number of rare whitebeams (*Sorbus* spp.).

Site Name: Usk Bat Sites **Location Grid Ref: SO190145** **JNCC Site Code: UK0014784** **Size: 1686.4** **Designation: SAC**	**Habitats Regulations Assessment: Data Proforma**
Qualifying Features	Annex I Habitats qualifying feature: ▪ European dry heaths ▪ Degraded raised bogs still capable of natural regeneration ▪ Blanket bogs* Priority feature ▪ Calcareous rocky slopes with chasmophytic vegetation ▪ Caves not open to the public ▪ Tilio-Acerion forests of slopes, screes and ravines* Priority feature Annex II Species primary reason for selection: ▪ Lesser horseshoe bat *Rhinolophus hipposideros*
Conservation Objectives	**Conservation Objective for Feature 1:** **Lesser Horseshoe Bat *Rhinolophus hipposideros*** Vision for Feature 1 The vision for this feature is for it to be in a favourable conservation status, where all of the following conditions are satisfied: ▪ The site will support a sustainable population of lesser horseshoe bats in the River Usk area. ▪ The population will viable in the long term, acknowledging the population fluctuations of the species. ▪ Buildings, structures and habitats on the site will be in optimal condition to support the populations. ▪ Sufficient foraging habitat is available, in which factors such as disturbance, interruption to flight lines, and mortality from predation or vehicle collision, changes in habitat management that would reduce the available food source are not at levels which could cause any decline in population size or range ▪ Management of the surrounding habitats is of the appropriate type and sufficiently secure to ensure there is likely to be no reduction in population size or range, nor any decline in the extent or quality of breeding, foraging or hibernating habitat.

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	▪ There will be no loss or decline in quality of linear features (such as hedgerows and tree lines) which the bats use as flight lines - there will be no loss of foraging habitat use by the bats or decline in its quality, such as due to over-intensive woodland management ▪ All factors affecting the achievement of the above conditions are under control. Performance indicators for Feature 1 The performance indicators are part of the conservation objective, not a substitute for it. Assessment of plans and projects must be based on the entire conservation objective, not just the performance indicators. The performance indicators can be found within the Usk Bat Sites Management Plan. **Conservation Objective for Feature 2:** **Blanket bog** Vision for Feature 2 ▪ The extent, quality and species richness of the blanket bog vegetation is maintained and, where possible, degraded bog is restored to good condition so that this habitat occupies its full potential range within the site. ▪ The bog vegetation is largely a mixture of dwarf shrubs, hare's-tail cottongrass and mosses, including bog-mosses. ▪ Extensive areas of purple moor-grass or hare's-tail cottongrass show signs of recovery towards a more mixed dwarf shrub sward. ▪ The natural hydrological regime is maintained and there is continued peat formation and thus carbon storage. ▪ Areas of bare peat are not extensive and most areas show signs of recovery. ▪ Peat profiles containing important pollen records are maintained. ▪ All factors affecting the achievement of the above conditions are under control.

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	Performance indicators for Feature 2 The performance indicators are part of the conservation objective, not a substitute for it. Assessment of plans and projects must be based on the entire conservation objective, not just the performance indicators. The performance indicators can be found within the Usk Bat Sites Management Plan. **Conservation Objective for Feature 3:** **Tilio-Acerion forests of slopes, screes and ravines** Vision for Feature 3 The vision for this feature is for it to be in favourable conservation status within the site, as a functioning and regenerating ash woodland, where all of the following conditions are satisfied: ▪ There are extensive patches of semi-natural woodland on the cliffs of the Llangatwg escarpment and hillsides in the Clydach gorge. ▪ The woodland canopy is dominated by locally native species, including lime ash Fraxinus excelsior, Tilia spp., pedunculate oak Quercus robur, hazel Corylus avellana, birch Betula spp., whitebeams Sorbus spp. and, in the Clydach gorge, beech Fagus sylvatica. Rare whitebeams are a significant component of the canopy. ▪ Saplings of locally native species dominate the tree regeneration and there is evidence of sufficient regeneration to maintain the canopy in the long term. ▪ There is an accumulation of standing and fallen deadwood as the woodland develops. ▪ The woodland ground flora is composed of a range of typical native plants including enchanters-nightshade Circaea lutetiana, dog's-mercury Mercurialis perennis, wood-sorrel Oxalis acetosella, hart's-tongue Phyllitis scolopendrium and wood sage Teucrium scorodonia. ▪ The populations of rare whitebeams are stable or increasing. ▪ Young sycamore Acer pseudoplatanus trees are rare, as are beech Fagus sylvatica in areas away from the Clydach gorge.

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	▪ Plants indicating disturbance and nutrient enrichment, such as nettles, cleavers and weeds, are not dominant in the ground flora of the woodland. ▪ All factors affecting the achievement of the above conditions are under control. Performance indicators for Feature 3 The performance indicators are part of the conservation objective, not a substitute for it. Assessment of plans and projects must be based on the entire conservation objective, not just the performance indicators. The performance indicators can be found within the Usk Bat Sites Management Plan. **Conservation Objective for Feature 4:** **Calcareous rocky slopes with chasmophytic vegetation** Vision for Feature 4 ▪ Sufficient vegetation within crevices remains free from disturbance to support typical plants, including mosses, ferns and rare hawkweeds (Hieracium spp.) and allow them to sustain their populations into the future. ▪ Areas accessible to grazing animals should free from being smothered by ivy or heavily shaded by trees. ▪ All factors affecting the achievement of the above conditions are under control. Performance indicators for Feature 4 The performance indicators are part of the conservation objective, not a substitute for it. Assessment of plans and projects must be based on the entire conservation objective, not just the performance indicators. The performance indicators can be found within the Usk Bat Sites Management Plan. **Conservation Objective for Feature 5:** **Caves not open to the public**

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	Vision for Feature 5 ▪ The cave system provides a winter hibernation site for large numbers of lesser horseshoe bats and other bat species, including Brandt's, whiskered, Daubenton's, Natterer's, brown long-eared and, occasionally, greater horseshoe bats. ▪ Numbers of roosting bats are stable or increasing in the system as a whole. ▪ All factors affecting the achievement of the above conditions are under control. Also see the vision for lesser horseshoe bats. As outlined in the JNCC description of this feature, the cavernicolous fauna is considered to be impoverished throughout the UK and this feature is not a primary reason for selection of any SAC in the UK (www.jncc.gov.uk). There is however significant bat interest associated with many of the caves within this SAC, particularly Lesser Horseshoe Bat. Great Horseshoe Bat has also been recorded in very small numbers. Several other bat species are recorded, particularly from the genus Myotis, but their habit of hibernating deep within crevices in the caves (rather than hanging freely from the cave roof, like horseshoe species) makes them extremely difficult to record. Performance indicators for Feature 5 The performance indicators are part of the conservation objective, not a substitute for it. Assessment of plans and projects must be based on the entire conservation objective, not just the performance indicators. The performance indicators can be found within the Usk Bat Sites Management Plan. **Conservation Objective for Feature 6:** **Degraded raised bogs still capable of natural regeneration**

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	Vision for Feature 6 ▪ The extent, quality and diversity of raised bog vegetation is maintained and, where possible, restored to good condition, with active moss and peat growth across the raised bog surface. ▪ The vegetation consists of a mixture of dwarf shrubs, hare's-tail cottongrass, deergrass and bog mosses, grading at the edges into acid and alkaline flushes influenced by acidic water draining from the bog and springs rising in the limestone catchment. ▪ All factors affecting the achievement of the above conditions are under control. Performance indicators for Feature 6 The performance indicators are part of the conservation objective, not a substitute for it. Assessment of plans and projects must be based on the entire conservation objective, not just the performance indicators. The performance indicators can be found within the Usk Bat Sites Management Plan. **Conservation Objective for Feature 7:** **European dry heaths** Vision for Feature 7 ▪ The extent, quality and diversity of heath vegetation within the constituent sites is maintained and, where possible, degraded heath is restored to good condition. ▪ The main heathland areas have a varied age structure with a mosaic of young heath, mature heath and degenerate heath. ▪ All factors affecting the achievement of these conditions are under control. Performance indicators for Feature 7 The performance indicators are part of the conservation objective, not a substitute for it. Assessment of plans

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	and projects must be based on the entire conservation objective, not just the performance indicators. The performance indicators can be found within the Usk Bat Sites Management Plan.
Component SSSIs	▪ Mynydd Llangatwg/ Mynydd Llangattock SSSI (units 1 to 15) ▪ Siambre Ddu SSSI (unit 19) ▪ Buckland Coach House & Ice House SSSI (unit 20) ▪ Foxwood SSSI (unit 21) The site has been divided into 21 management units of which units 1 to 15, 19, 20 and 21 comprise to form the Usk Bat Sites SAC. A map of the management units can be viewed on the CCW website.
Key Environmental Conditions (factors that maintain site integrity	**Key environmental conditions for the Lesser Horseshoe Bat:** **Buckland House Maternity Roost** ▪ Site security - Access to the site should be secured against unauthorized access ensuring doors, gates and security fences are in sound condition. ▪ External condition of building - Fabric of building sufficient to maintain roost conditions internally with: o Weatherproof roof. The roof covering materials (slates, tiles etc.) in weatherproof condition with no significant gaps, slippage or damage. o No holes large enough to allow soaking of roof timbers, excessive heat loss or high light levels in the roost area o Walls sound, rainwater goods in adequate condition. o The building is structurally stable. No significant deterioration in overall condition of the building. ▪ Roost entrance -buildings and underground sites: o Unobstructed roost entrance large enough for bats to fly through unimpeded. Normal minima: 300 x 200 mm. o No artificial lights shining on access or associated flight paths. ▪ External Disturbance - Disturbance levels acceptable to bats with:

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	○ No increase since previous visit. ○ Human access to roost controlled and limited. ▪ Internal condition of building/ underground site in roost area: ○ A vital element of the bats' behaviour involves extensive flight within a roost prior to emergence, which occurs shortly after dusk. Therefore the bats require fairly large open areas within the coach house roof and first floor voids to fly before they emerge. It is important that these areas are unobstructed and that the flying space (volume) is not significantly reduced. Areas used for pre-emergence flight should not be used for storage. ○ Low light levels with no through draught. ○ No toxic substances present, which would adversely affect the health of the bats (e.g. chemical timber treatment within inappropriate substances). ▪ Temperature of roost area: ○ Range of temperatures available to bats with mean temperature in July greater than 20°C ▪ Internal disturbance: ○ Human access to roost area controlled and limited. ○ Disturbance is kept to a minimum. **Hibernation Sites** ▪ Site entrance: ○ Existing entrances should be unobstructed. ○ No human-influenced new entrances causing a change to ventilation. ○ No change in size sufficient to affect airflow and internal temperature. ▪ External conditions of site: ○ Vegetation present close to entrance(s) but not obstructing it (them). ○ No artificial lights shinning on entrance(s). ▪ Internal conditions: ○ The temperature should remain constantly cool (8-12°C) and dark, once beyond the entrance zone. ○ No significant man-induced changes to ventilation or temperature regime.

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	○ No toxic substances present (dumping of oil or other substances). ▪ Internal disturbance: ○ Human access to roost area controlled and limited (at Agen Allwedd the number of visitors is already controlled). Lesser horseshoe bats are very sensitive to disturbance and even the presence of a single person in close proximity can cause problems. Cavers and geologists should avoid areas where bats are likely to be disturbed during the winter months. Where there is a risk of disturbance by unauthorised persons, grilling the cave entrances should be considered. Any structures placed at cave entrances to prevent unauthorized access should not hinder the passage of bats. ○ Disturbance is kept to a minimum. **Foraging areas and links to roosts** ▪ Habitat Quality: ○ There should be no net loss of suitable woodland, scrub and hedgerows within the SAC or adjoining areas used by the bats. Lesser horseshoe bats feed on flies (mainly midges), small moths, caddis flies, lacewings, beetles, small wasps and spiders. Suitable foraging habitat includes open broadleaved woodland, scrub, parkland, scrubby wetland and permanent pasture. Lesser horseshoe bats do not normally fly across open land and when foraging, remain close to wooded canopy. The insects they eat, though, may be derived from other unimproved insect rich habitat nearby. Management of foraging habitat should aim to maximise the amount of insect food as well as provide sufficient canopy cover to maximise opportunities for the bats to find their prey. ▪ Connectivity: ○ Connectivity of woodland, hedgerows, linear habitat and field boundary features should be maintained as lesser horseshoe bats tend to feed in wooded areas and use linear features to navigate their way between roosts and foraging habitat. Some management of woodlands and hedgerows and trees will be necessary to preserve these features in the landscape but such work should be carried out in a sensitive manner, particularly within the SAC itself, so as not to disrupt habitat continuity. Disturbance - Lesser horseshoe bats are very sensitive to disturbance and even the presence of a single person

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	in close proximity can cause problems. Light and noise pollution Habitat fragmentation **Key Environmental Conditions for the Blanket Bog:** ▪ **Drainage** - No new drainage ditches should be dug, and wherever possible old drainage ditches should be allowed to infill naturally. o There should be no evidence of new drains or major clearance of old drains or deepening of bog outlet streams. ▪ **Burning** - blanket bog should not normally be burnt, as burning is likely to damage important plant and animal species, especially bog mosses and invertebrates, and encourage the growth of rank species, like hare's-tail cottongrass; it can also result in erosion of the peat which can then cause water quality problems in cave system and adjacent reservoirs. Past unplanned or uncontrolled burning is likely to be at least partly responsible for the scarcity of bog-mosses in some areas. o No evidence of significant burning (patches larger than 1ha) in any areas of blanket bog. ▪ **Peat Erosion** - There is a natural cycle of peat erosion and deposition but the balance can be upset by burning, heavy grazing, pollution and vehicle damage. o The total extent of active erosion over a 5-year period should not exceed the total extent of areas showing signs of peat accumulation and re-vegetation. ▪ **Air quality** - No exceedence of critical loads for: o Sulphur dioxide – 20µg/m³ o Nitrous Oxides – 30µg/m³ o Ozone – 3000 ppb o ammonia – 1µg/m³ o N – 5-10 kg/ha/yr

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	o acid – 0.35keq/ha/yr Monitoring stations located at grid location: 319097.79 214637.88 **Key Environmental Conditions for the Tilio-Acerion forests of slopes, screes and ravines:** ▪ **Grazing** - The greatest influence on the woodland, and its continued regeneration, is grazing. The present structure and species composition of the northern escarpment woodland, excluding the cliff ledges, is a result of natural regeneration. The cliff ledges are inaccessible to stock, have developed naturally and are not actively managed. In units 1 & 2, the woodland has developed on common land and parts are subject to high grazing levels by sheep. The woodland in units 5, 12 & 13 is now largely un-grazed and the ground flora is noticeably more luxuriant in these areas. o Grazing levels should be sufficient to allow regeneration in the long term. o On the common (units 1 & 2), maintain grazing at or below the current (2007) levels. o Un-grazed areas (unit 5, 12, 13) should remain un-grazed. ▪ **Woodland Management** - Natural ecological processes should be allowed to operate as far as possible. In many areas, these are gradually creating greater structural diversity. Most of the woodland on the site is not actively managed as the woodland occupies cliffs and steeply sloping ground, such that active woodland management is not a practical or desirable option o There should be no evidence of tree felling or coppicing within the past five years. (Tree surgery for safety reasons excluded). o Dead wood should ideally be left where it falls and standing dead trees should be allowed to fall naturally. Movement and cutting/tidying of dead wood should be avoided and/or limited, unless essential for public safety. ▪ **Non-native species** - Beech is at the edge of its range in this part of Wales. In units 5, 12 and 13 the beech wood appears to be natural, but the spread of beech over much of Units 1 & 2 may not be desirable, as it

Site Name: Usk Bat Sites Location Grid Ref: SO190145 JNCC Site Code: UK0014784 Size: 1686.4 Designation: SAC	Habitats Regulations Assessment: Data Proforma
	would replace the ash woodland. Limits should be met in 70% of the woodland. o 5% cover of non-native trees in the canopy. o No cotoneaster (or other invasive non-native shrubs) in the understorey or shrub layer. **Key Environmental Conditions for the Calcareous rocky slopes with chasmophytic vegetation:** ▪ **Grazing** - Low grazing levels on the more accessible rocky areas in units 1 & 2 in are important in controlling the growth of ground-smothering species such as ivy, which have the potential to smother boulders and cliff faces that are important for their lower plant communities. Tree growth at the base of the cliffs may shade out important calcareous chasmophytic habitat, so should be controlled within limits outside the areas of agreed woodland. Surveillance of grazing levels and type should be maintained so that changes that may influence the features on the site are identified and recorded. o Sufficient grazing to prevent the development of scrub or spread of ivy and tall vegetation in units 1 & 2. ▪ **Rock Climbing** - Intensive rock climbing can dislodge plants and disturb breeding birds. These impacts may be avoided if climbing is subject to specific agreements, which include a code of conduct. o No rock climbing in the key areas of units 1 & 2 without agreement. ▪ **Quarrying** - any quarrying in the key areas of units 1 & 2 would lead to habitat loss. **Key Environmental Conditions for the Degraded raised bogs still capable of natural regeneration:** ▪ **Drainage** - See blanket bog above. ▪ **Grazing** - A way of reducing the grazing to acceptable levels must be found. A period without grazing will promote recovery, although some light grazing, ideally by cattle or ponies, will be required in the longer term to prevent the development of scrub or the dominating growth of dwarf shrubs or purple moor-grass. o Upper limits: Overall grazing pressure of 0.05 livestock units/ha/year on the bog area.

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	AND: o Minimal winter grazing. AND: o No stock feeding o Lower limit: Sufficient to prevent the establishment of trees and shrubs in the long term. ▪ **Burning** - will damage the feature and could encourage dominance by purple-moor grass if grazing is significantly reduced and result in a decline in the cover of bog mosses. At present there is generally insufficient vegetation to be burnt here. ▪ **Air quality** - See blanket bog above. **Key Environmental Conditions for the European dry heaths:** ▪ **Burning** - can be a useful management tool on the heathlands, provided that it forms part of an appropriate and controlled cycle of management. It is important to ensure that such management does not encourage the spread of bracken. o In areas subject to any burning plan, only a maximum of up to 15% of the total heathland area should be burnt in any one year. ▪ **Erosion/Bare Ground** - Is generally caused by uncontrolled fires (see above) or heavy trampling. o Upper Limit - 10% bare ground ▪ **Air Quality** - Increased cover of grasses and de-generate heather may be symptomatic of air pollution, as there is evidence that pollution makes heather plants more susceptible to damage by frost and heather beetles. The Environment Agency has set critical levels for these pollutants in relation to various types of vegetation. No critical loads are exceeded: o Sulphur dioxide - 20µg/m³

Site Name: Usk Bat Sites Location Grid Ref: SO190145 JNCC Site Code: UK0014784 Size: 1686.4 Designation: SAC	Habitats Regulations Assessment: Data Proforma
	o Nitrous Oxides - 30µg/m³ o Ozone - 3000 ppb o Ammonia - 1µg/m³ o N - 10-20 kg/ha/yr o Acid - 0.35keq/ha/yr Monitoring station located at grid location: 319097.79 214637.88
SAC Condition Assessment	**Conservation Status of Feature 1:** **Lesser horseshoe bat *Rhinolophus hipposideros*** The conservation status of this feature within the site is considered to be **Favourable** (2006). Based on annual counts made at all locations between 2000 and 2006, the lesser horseshoe bat feature is considered to be in favourable condition. **Conservation Status of Feature 2:** **Blanket bog** The conservation status of this feature within the site is considered to be **Unfavourable** (2006). Assessment carried out in April 2002 indicated that feature condition was: Unfavourable, no change. In many areas there was little or no bog mosses and the cover of dwarf shrubs exceeded the upper limits defined. In other areas the vegetation was dominated by hare's-tail cottongrass and the cover of bog mosses was limited. Past grazing, burning and drainage activity means that some stands of blanket bog have been damaged by deep drainage. There is also concern that the vegetation is being damaged by atmospheric pollution, due to

Site Name: Usk Bat Sites Location Grid Ref: SO190145 JNCC Site Code: UK0014784 Size: 1686.4 Designation: SAC	Habitats Regulations Assessment: Data Proforma
	exceedence of many of the critical loads identified for this feature. **Conservation Status of Feature 3:** **Tilio-Acerion forests of slopes, screes and ravines** The conservation status of this feature within the site is considered to be **Favourable** (2006). Assessment carried out in August 2004 indicated that feature condition was: Favourable, maintained. All the factors affecting the features appear to be under control. **Conservation Status of Feature 4:** **Calcareous rocky slopes with chasmophytic vegetation** The conservation status of this feature within the site is considered to be **Favourable** (2006). Assessment carried out in August 2004 indicated that feature condition was: Favourable, maintained. All the factors affecting the features appear to be under control. **Conservation Status of Feature 5:** **Caves not open to the public** The conservation status of this feature within the site is considered to be **Favourable** (2006). Based on records of made at all locations between 2000 and 2006, the feature condition is considered to be: Favourable, maintained. All the factors affecting the features appear to be under control. **Conservation Status of Feature 6:** **Degraded raised bogs still capable of natural regeneration**

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	The conservation status of this feature within the site is considered to be **Unfavourable** (2006). Assessment carried out in July 2002 indicated that feature condition was: Unfavourable, declining. The feature is currently (2007) too heavily grazed because the most of it is common land and because it is on the sheltered side of the hill, is subject to high levels of grazing, particularly by sheep. There is also concern that the vegetation is being damaged by atmospheric pollution, due to exceedence of many of the critical loads identified for this feature. **Conservation Status of Feature 7:** **European dry heaths** The conservation status of this feature within the site is considered to be **Unfavourable** (2006). Assessment carried out in April 2002 indicated that feature condition was: Unfavourable, no change. Past grazing and burning activity means that some stands of dry heath have insufficient cover of dwarf shrubs. There is also concern that the vegetation is being damaged by atmospheric pollution, due to exceedence of many of the critical loads identified for this feature.
Vulnerabilities (includes existing pressures and trends)	**Lesser Horseshoe bat:** ▪ **Deterioration of buildings used to roost** - Alterations/neglect to the structure of the buildings could result in the site becoming unsuitable as a nursery roost by causing changes to the internal conditions of the roost. ▪ **Disturbance** - It is important that access to the cave systems and roosts is managed to protect the bats. 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. Where there is a risk of disturbance by unauthorised persons, grilling the cave entrances should be considered. Any structures placed at cave

Site Name: Usk Bat Sites Location Grid Ref: SO190145 JNCC Site Code: UK0014784 Size: 1686.4 Designation: SAC	Habitats Regulations Assessment: Data Proforma
	entrances to prevent unauthorised access should not hinder the passage of bats. ▪ **Temperature change** - Underground hibernation roosts should be dark, cool and humid with stable temperature (8 -120C) beyond the entrance zone. However, the boulder roof of the Foxwood cave is gappy and internal temperatures are dependant on external temperatures, unlike the situation in many true caves. The consequence is that declining winter ambient temperature leads to a decline in roost temperature and in the colder winter months roost temperature falls below the required temperature range, triggering departures of bats to other unknown roosts. ▪ **Habitat fragmentation** - Development allocations pressures and transport development could lead to the loss or decline in quality of linear features (such as hedgerows and tree lines) which the bats use as flight lines. Connectivity of woodland, hedgerows, linear habitat and field boundary features are important as lesser horseshoe bats tend to feed in wooded areas and use linear features to navigate their way between roosts and foraging habitat. **Blanket bog**: ▪ **Air pollution** - High levels of air pollution are believed to be damaging and there may be combined effects. Increased cover of hare's-tail cottongrass and flat-topped bog-moss may be symptoms, as could increased levels of peat erosion. Blanket bogs are at risk from*: o Acidification; o Photochemical oxidants; o Direct toxicity; and o Eutrophication.

* Pollution Information System (APIS). Raised bog and blanket bog. Available from: http://www.apis.ac.uk/cgi_bin/habitat_result.pl?habResult=Raised+bog+and+blanket+bog&choice=allHabs&haborspec=habitat&submit.x=27&submit.y=9

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	▪ **Hydrological change** - the blanket bog has been subject to hydrological change as a result of past ditch construction to supply water to reservoirs. ▪ **Recreational activities** - Unauthorised vehicle use is a threat to the moorland areas. Bog vegetation is easily damaged and may take a long time to recover. Ground nesting birds may be disturbed during the breeding season. Although the common land within the site is subject to a right of public access on foot, such use does not appear to be so intensive as to cause habitat damage or significant disturbance to birdlife. ▪ **Development** - The ground along the existing pipeline routes, which cross the Llangatwg hill, has been disturbed during the engineering phase. Some habitats naturally recover better than others, whilst some will require specific management to restore it to its natural state. Generally, further pipeline construction or other engineering works affecting sensitive habitats within the site should be avoided. Any future engineering or pipeline works would need to show that the SAC features would not be adversely affected and if any licence was approved then there would be a requirement to restore the vegetation to its original character and quality. **Tilio-Acerion forests of slopes, screes and ravines:** ▪ **Grazing** - In the cliff and woodland areas any more than light grazing may prevent tree regeneration and damage the populations of rare and scarce plants that may be accessible to grazing stock. ▪ **Non-native species** - The ash woodland in units 1 & 2 is vulnerable to the introduction of beech. **Calcareous rocky slopes with chasmophytic vegetation:** ▪ **Invasive plants** - Introduced and invasive species such as cotoneaster can smother large areas of grassland and cliff habitats, displacing native species and would need to be controlled. Cotoneaster has spread on

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	the south side of Mynydd Llangatwg above the Clydach gorge and some control is desirable to stop it spreading into feature habitats. ▪ **Recreational activities** - Rare plants, and plants in general, on the cliffs and ledges, may be dislodged by climbers and some breeding birds are particularly sensitive to disturbance during the nesting season. Rock climbing at this site should be restricted to suitable areas and be subject to a suitable code of conduct in order to minimise such damage and disturbance. **Degraded raised bogs still capable of natural regeneration:** ▪ **Air Pollution** - See blanket bog above. ▪ **Hydrological Change** - No new drainage ditches should be dug within the bog and outlet and inflow channels must not be deepened or altered in any way. ▪ **Grazing** - This area of bog has been damaged by heavy grazing in the past and current (2008) grazing levels are still too high to enable the re-generation of the bog habitats. Most of the bog is on commonland and therefore it is difficult to control grazing without agreement and fencing. Supplementary stock feeding can lead to damage of the sward and cause poaching and gradual nutrient enrichment. Feeding should not occur on this habitat. **European dry heaths:** ▪ **Grazing** - levels are believed to be lower than they have been historically but they may still be too high in some parts of the common to enable the heathland to regenerate. It may not be possible to address this problem in unit 1 because the adjoining limestone grassland and rocky habitats require a relatively high stocking rate to maintain their interest. Supplementary stock feeding can lead to localised damage of the sward and cause poaching and gradual nutrient enrichment. Feeding should be confined to acceptable

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	areas off the common, such as agriculturally improved land. ▪ **Bracken and scrub encroachment** - Scrub invasion in the open moorland areas can be controlled by the correct combination of grazing and burning. Bracken however can be more problematical. Grazing may not prevent bracken invasion particularly if sheep rather than heavier animals are the main stock-type and burning can encourage the spread of bracken. Bracken control will be considered if there is significant spread within the drier heathy areas. ▪ **Burning in combination with intense grazing** - can result in the loss of those heathland shrub species that give this habitat its characteristic appearance, and which are so important to the value of these moorland habitats. ▪ **Dumping** - The plateau areas at Mynydd Llangatwg are easily accessible from nearby population centres, so the illegal dumping of domestic and commercial waste and abandoned vehicles is a problem. ▪ **Development** - See blanket bog above.
Landowner/ Management Responsibility	▪ N/A
HRA/AA Studies undertaken that address this site	HRA Screening of the Torfaen Local Development Plan (2006-2021) January 2008. http://www.torfaen.gov.uk/EnvironmentAndPlanning/Planning/ForwardPlanning/Publications/HabitatsRegulationAssessment.pdf ▪ The Screening concludes that whilst the LDP will not have a direct impact on this SAC in terms of land take, there is the potential however for development of residential and employment uses to increase airborne pollution in Torfaen which could have an impact on this SAC. The Strategic Ecological Corridor of the Afon Llywd is present in Torfaen, which is an important river riparian habitat. This corridor could potentially be used by lesser horseshoe bats although details of the foraging areas from the Usk Valley sites are not known.

Site Name: Wye Valley and Forest of Dean Bat Sites **Location Grid Ref: SO605044** **JNCC Site Code: UK0014794** **Size: 142.7** **Designation: SAC**	**Habitats Regulations Assessment: Data Proforma**
Site Description	The Wye Valley and Forest of Dean Bats 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 *Rhinolophus hipposideros* 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 *Rhinolophus ferrumequinum* 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.
Qualifying Features	Annex II Species primary reason for selection: ▪ Lesser horseshoe bat *Rhinolophus hipposideros* ▪ Greater horseshoe bat *Rhinolophus ferrumequinum*
Conservation Objectives	**Conservation Objective for Feature 1:** **Greater Horseshoe Bat *Rhinolophus ferrumequinum*** Vision for feature 1 The vision for this feature is for it to be in a favourable conservation status, where all of the following conditions are satisfied: ▪ The site will support a sustainable population of greater horseshoe bats in the Wye Valley area. ▪ The population will viable in the long term, acknowledging the population fluctuations of the species. ▪ Buildings, structures and habitats on the site will be in optimal condition to support the populations. ▪ Sufficient foraging habitat is available, in which factors such as disturbance, interruption to flight lines, and mortality from predation or vehicle collision, changes in habitat management that would reduce the available food source are not at levels which could cause any decline in population size or range

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	▪ Management of the surrounding habitats is of the appropriate type and sufficiently secure to ensure there is likely to be no reduction in population size or range, nor any decline in the extent or quality of breeding, foraging or hibernating habitat. ▪ There will be no loss or decline in quality of linear features (such as hedgerows and tree lines) which the bats use as flight lines - there will be no loss of foraging habitat use by the bats or decline in its quality, such as due to over-intensive woodland management ▪ All factors affecting the achievement of the foregoing conditions are under control. Performance indicators for Feature 1 The performance indicators are part of the conservation objective, not a substitute for it. Assessment of plans and projects must be based on the entire conservation objective, not just the performance indicators. The performance indicators can be found within the Wye Valley and Forest of Dean Bat Sites SAC Management Plan. **Conservation Objective for Feature 2:** **Lesser Horseshoe Bat *Rhinolophus hipposideros*** Vision for feature 2 The vision for this feature is for it to be in a favourable conservation status, where all of the following conditions are satisfied: ▪ The site will support a sustainable population of lesser horseshoe bats in the Wye Valley area. ▪ The population will viable in the long term, acknowledging the population fluctuations of the species. ▪ Buildings, structures and habitats on the site will be in optimal condition to support the populations. ▪ Sufficient foraging habitat is available, in which factors such as disturbance, interruption to flight lines, and

Site Name: Wye Valley and Forest of Dean Bat Sites Location Grid Ref: SO605044 JNCC Site Code: UK0014794 Size: 142.7 Designation: SAC	Habitats Regulations Assessment: Data Proforma
	mortality from predation or vehicle collision, changes in habitat management that would reduce the available food source are not at levels which could cause any decline in population size or range. ▪ Management of the surrounding habitats is of the appropriate type and sufficiently secure to ensure there is likely to be no reduction in population size or range, nor any decline in the extent or quality of breeding, foraging or hibernating habitat. ▪ There will be no loss or decline in quality of linear features (such as hedgerows and tree lines) which the bats use as flight lines – there will be no loss of foraging habitat use by the bats or decline in its quality, such as due to over-intensive woodland management. ▪ All factors affecting the achievement of the foregoing conditions are under control. Performance indicators for Feature 2 (see performance indicators for feature 1)
Component SSSIs	▪ Component SSSIs in Wales o Llangovan Church o Mwyngloddfa Mynydd-bach o Newton Court Stable Block o Wye Valley Lesser Horseshoe Bat Sites ▪ Component SSSIs in England o Blaisdon Hall o Buckshraft Mine and Bradley Hill Railway Tunnel o Caerwood and Ashberry Goose House o Dean Hall Coach House and Cellar o Devil's Chapel Scowles o Old Bow and Old Ham Mines o Sylvan House Barn

Site Name: Wye Valley and Forest of Dean Bat Sites Location Grid Ref: SO605044 JNCC Site Code: UK0014794 Size: 142.7 Designation: SAC	Habitats Regulations Assessment: Data Proforma
	○ Westbury Brook Ironstone Mine ○ Wigpool Ironstone Mine A map of the component SSSIs is available on the CCW website.
Key Environmental Conditions (factors that maintain site integrity	▪ **Site security** - of buildings/structures that bat use should be maintained. ▪ **External condition of the building** - Fabric of building sufficient to maintain roost conditions internally with: ○ Weatherproof roof. ○ No holes allowing excessive heat loss or high light levels in the roost area. ○ Walls sound, rainwater goods in adequate condition. ○ Solar heating sufficient to maintain adequate roost temperature, with no significant shading of the roost. ○ The building is structurally stable. ▪ **Internal condition of building** - The internal fabric of the building is sufficient to maintain the roost location with: ○ No significant water penetration. ○ Low light levels with no through draught. ○ No toxic substances present which would adversely affect the health of the bats. ▪ **Roost access** -The roost access is in a suitable condition to allow emergence by bats with: ○ A greater horseshoe bat entrance a minimum of 400mm x 300mm. ○ An entrance that is unobstructed and allows the bats to fly through unimpeded. ○ No artificial lights shining on access or associated flight paths. ▪ **Minimal disturbance** - Human access to roost controlled and limited. Lesser horseshoe bats are very

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	sensitive to disturbance and even the presence of a single person in close proximity can cause problems. ▪ **Temperature of roost area** - Site specific requirements based on site monitoring. ▪ **Flight Lines** - Bats require connectivity of habitat features for commuting and foraging. Active management of the habitats used by bats for these activities may be required. The importance of linear habitat features off site for bat flight lines should be recognised. ▪ **Management of surrounding habitat** - The loss of flight lines in the form of walls, hedges or woodland rides within 1km around the roost should be prevented, as this is where juvenile bats learn to forage and navigate. There should be a similar aim to maintain or improve the quality of woodland and grazed pasture around and between areas identified as being used by the bats. Management of river habitats in the area is also critical due to the diversity of insect life that sustains the bats. The River Wye has also been shown to be an important flight line/feeding habitat for greater horseshoe bats. Increases in the amount of land that is cattle grazed, development of 'less managed' bushier hedgerows and conversion of improved grassland to semi-improved grassland, particularly close to the notified nursery roost, would improve the extent and quality of available greater horseshoe bat feeding habitat. Surrounding habitat management important for all units. ▪ **Hibernaculum access** - These limits cover only the Mwyngloddfa Mynydd-Bach SSSI. Horseshoe bats prefer to fly through an entrance. The site entrance is in suitable condition to allow continued use by bats with: o Existing access unobstructed. o No unplanned new access causing a change to the ventilation. o No change in the size sufficient to affect the airflow and internal temperature. o The access used by the bats is stable. o No recent falls or signs of geological instability.

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	o Vegetation present close to the access but not obstructing it. o No artificial lights shining on access or associated flight paths.
SAC Condition Assessment	**The following condition assessments only account for the component SSSIs that are situated in Wales:** **Conservation Status of Feature 1: Greater Horseshoe Bat *Rhinolophus ferrumequinum*** The greater horseshoe bat numbers of Newton Court Stable Block SSSI are monitored annually in June. The assessment found the SSSI to be in **Favourable** condition. But Favourable Condition Status is **Unfavourable declining**. Newton Court Stable Block SSSI Current assessments are: MU1 Unfavourable declining **Conservation Status of Feature 2: Lesser Horseshoe Bat *Rhinolophus hipposideros*** The lesser horseshoe bat numbers for all component SSSIs are annually monitored. The assessment of all 3 component SSSIs showed lesser horseshoe bats to be favourable in two of the three areas. As all of the three SSSIs units have to be in good condition for the Lesser Horseshoe Bat overall to be favourable the feature is in **unfavourable** condition, and in this case we can give condition information at the unit level. Llangovan Church SSSI Current assessments are: MU1 Favourable maintained Mwyngloddfa Mynydd Bach SSSI Current assessments are: MU1 Favourable maintained Wye Valley Lesser Horseshoe Bats SSSI Current assessments are: MU1 Favourable maintained

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MU2 Unfavourable declining
MU3 Unfavourable maintained
MU4 Unfavourable declining

The following table containing condition assessments only accounts for the component SSSIs that are situated in England:

% Area meeting PSA[1] target	% Area favourable	% Area unfavourable recovering	% Area unfavourable no change	% Area unfavourable declining	% Area destroyed / part destroyed
Blaisdon Hall SSSI condition summary[2] (compiled 01 August 2008).					
100.00%	100.00%	0.00%	0.00%	0.00%	0.00%
Buckshraft Mine and Bradley Hill Railway Tunnel SSSI condition summary[3] (compiled 01 August 2008).					
100.00%	100.00%	0.00%	0.00%	0.00%	0.00%
Caerwood and Ashberry Goose House SSSI condition summary[4] (compiled 01 August 2008).					
100.00%	100.00%	0.00%	0.00%	0.00%	0.00%
Dean Hall Coach House and Cellar SSSI condition summary[5] (compiled 01 August 2008).					

[1] PSA target - The Government's Public Service Agreement (PSA) target to have 95% of the SSSI area in favourable or recovering condition by 2010.
[2] Natural England SSSI condition summary. Available [online]: http://www.english-nature.org.uk/special/sssi/reportAction.cfm?report=sdrt18&category=S&reference=1007183
[3] Natural England SSSI condition summary. Available [online]: http://www.english-nature.org.uk/special/sssi/reportAction.cfm?report=sdrt18&category=S&reference=2000192
[4] Natural England SSSI condition summary. Available [online]: http://www.english-nature.org.uk/special/sssi/reportAction.cfm?report=sdrt18&category=S&reference=1005562

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	100.00%	100.00%	0.00%	0.00%	0.00%	0.00%
	Devil's Chapel Scowles SSSI condition summary[6] (compiled 01 August 2008).					
	100.00%	100.00%	0.00%	0.00%	0.00%	0.00%
	Old Bow and Old Ham Mines SSSI condition summary[7] (compiled 01 August 2008).					
	100.00%	100.00%	0.00%	0.00%	0.00%	0.00%
	Sylvan House Barn SSSI condition of units[8] (compiled 31 January 2006). **Favourable** Condition summary data for this area is currently unavailable.					
	Westbury Brook Ironstone Mine SSSI condition summary[9] (compiled 01 August 2008).					
	100.00%	100.00%	0.00%	0.00%	0.00%	0.00%
	Wigpool Ironstone Mine SSSI condition summary[10] (compiled 01 August 2008).					

[5] Natural England SSSI condition summary. Available [online]: http://www.english-nature.org.uk/special/sssi/reportAction.cfm?report=sdrt18&category=S&reference=1001562
[6] Natural England SSSI condition summary. Available [online]: http://www.english-nature.org.uk/special/sssi/reportAction.cfm?report=sdrt18&category=S&reference=2000189
[7] Natural England SSSI condition summary. Available [online]: http://www.english-nature.org.uk/special/sssi/reportAction.cfm?report=sdrt18&category=S&reference=2000187
[8] Natural England SSSI condition summary. Available [online]: http://www.english-nature.org.uk/special/sssi/reportAction.cfm?report=sdrt13&category=S&reference=1007184
[9] Natural England SSSI condition summary. Available [online]: http://www.english-nature.org.uk/special/sssi/reportAction.cfm?report=sdrt18&category=S&reference=2000188

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	100.00%	100.00%	0.00%	0.00%	0.00%	0.00%
Vulnerabilities (includes existing pressures and trends)	▪ **Deterioration of buildings used to roost** - Alterations/neglect to the structure of the buildings could result in the site becoming unsuitable as a nursery roost by causing changes to the internal conditions of the roost. ▪ **Disturbance** - It is important that access to the mine systems and roosts is managed to protect the bats. 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. Where there is a risk of disturbance by unauthorised persons, grilling the cave entrances should be considered. Any structures placed at cave entrances to prevent unauthorised access should not hinder the passage of bats. ▪ **Temperature change** - Underground hibernation roosts should be dark, cool and humid with stable temperature (8 -120C) beyond the entrance zone. ▪ **Habitat fragmentation** - Development allocations pressures and transport development could lead to the loss or decline in quality of linear features (such as hedgerows and tree lines) which the bats use as flight lines. Connectivity of woodland, hedgerows, linear habitat and field boundary features are important as lesser horseshoe bats tend to feed in wooded areas and use linear features to navigate their way between roosts and foraging habitat.					
Landowner/ Management Responsibility	▪ N/A					
HRA/AA Studies undertaken	HRA Screening of the Torfaen Local Development Plan (2006-2021) January 2008.					

[10] Natural England SSSI condition summary. Available [online]: http://www.english-nature.org.uk/special/sssi/reportAction.cfm?report=sdrt18&category=S&reference=2000191

Site Name: Wye Valley and Forest of Dean Bat Sites Location Grid Ref: SO605044 JNCC Site Code: UK0014794 Size: 142.7 Designation: SAC	Habitats Regulations Assessment: Data Proforma
that address this site	http://www.torfaen.gov.uk/Environm]entAndPlanning/Planning/ForwardPlanning/Publications/HabitatsRegulationAssessment.pdf ▪ Due to the distance between this SAC and Torfaen it is concluded that the LDP is unlikely to have any significant effects on this SAC. HRA of the Draft South West Regional Spatial Strategy Proposed Changs (Land Use Consultants) July 2008. http://gosw.limehouse.co.uk/portal/regional_strategies/drss ▪ There are a number of N2K sites in the South West where development of housing, employment and transport infrastructure has the potential to adversely affect bat foraging and commuting habitat, as it is proposed in close proximity to such areas. Due to the proximity of proposed development to bat foraging and commuting habitats, it is recommended that the supporting text to ENV1 also makes specific reference to the need for bat foraging and commuting habitats to be considered when carrying out development. To ensure that adverse effects to the Wye Valley and Forest of Dean Bat Sites SAC does not occur the site should be specifically identified in the supporting text. HRA & AA of the Wales Spatial Plan Update June 2008. http://wales.gov.uk/about/strategy/spatial/hra/download/?lang=en ▪ The HRA Screening concludes that the WSPU and other plans have the potential to give rise to adverse effects at this site. ▪ The AA states that it is not possible to predict in specific terms whether the WSPU would or would not give rise to significant adverse effects either alone or in combination with other plans/ strategies and projects upon specific European sites. However, it does identify that this site is likely to come under increasing risk of adverse in combination effects from recreation and tourism as a result of the WSPU and English RSSs.

Site Name: Wye Valley Woodlands **Location Grid Ref: ST530957** **JNCC Site Code: UK0012727** **Size: 916.24** **Designation: SAC**	**Habitats Regulations Assessment: Data Proforma**
Site Description	The Wye Valley Woodlands SAC is a large woodland SAC that straddles the Wales–England border. The site covers an area of 914ha and is underpinned by 9 SSSIs in Wales and 7 in England, all of which lie entirely within the SAC. The Wye Valley contains abundant and near-continuous semi-natural woodland along the gorge. Beech stands occur as part of a mosaic with a wide range of other woodland types, and represent the western range of *Asperulo-Fagetum* beech forests. Such a variety of woodland types is rare within the UK. In places lime *Tilia* sp., elm *Ulmus* sp. and oak *Quercus* sp. share dominance with the beech. Structurally the woods include old coppice, pollards and high forest types. Lady Park Wood, one of the component sites, is an outstanding example of near-natural old-growth structure in mixed broad-leaved woodland, and has been the subject of detailed long-term monitoring studies. The woods of the lower Wye Valley on the border of south Wales and England form one of the most important areas for woodland conservation in the UK and provide the most extensive examples of *Tilio-Acerion* forest in the west of its range. A wide range of ecological variation is associated with slope, aspect and landform. The woodland occurs here as a mosaic with other types, including beech *Fagus sylvatica* and pedunculate oak *Quercus robur* stands. Uncommon trees, including large-leaved lime *Tilia platyphyllos* and rare whitebeams such as *Sorbus porrigentiformis* and *S. rupicola* are found here, as well as locally uncommon herbs, including wood barley *Hordelymus europaeus*, stinking hellebore *Helleborus foetidus*, narrow-leaved bitter-cress *Cardamine impatiens* and wood fescue *Festuca altissima*. Wye Valley is representative of yew *Taxus baccata* woods in the south-west of the habitat's range. It lies on the southern Carboniferous limestone, and yew occurs both as an understorey to other woodland trees and as major yew-dominated groves, particularly on the more stony slopes and crags.
Qualifying Features	Annex I habitats primary reason for selection:

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	▪ *Asperulo-Fagetum* beech forests ▪ *Tilio-Acerion* forests of slopes, screes and ravines* Priority feature ▪ *Taxus baccata* woods of the British Isles* Priority feature Annex II species qualifying feature: ▪ Lesser horseshoe bat *Rhinolophus hipposideros*
Conservation Objectives	**Conservation Objective for Feature 1:** ***Tilio–Acerion* forests of slopes, screes and ravines** Vision for feature 1 The vision for this feature is for it to be in a favourable conservation status, where all of the following conditions are satisfied: ▪ Tilio–Acerion woodland is found in all eight of the Welsh SSSIs that contribute to the Wye Valley Woodlands SAC. ▪ The woodland area covers the entire site. ▪ The woodland is maintained as far as possible by natural processes. ▪ The location of open glades varies over time. ▪ Trees and shrubs are mainly locally native broadleaved species. ▪ The abundance and density of individual native species varies across the site. ▪ Trees and shrubs of a wide range of ages and sizes are present. ▪ Tree seedlings are plentiful throughout the site. ▪ Tree seedlings develop into saplings in the open glades.

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	▪ There are abundant dead and dying trees with holes and hollows, rot columns, torn off limbs and rotten branches. ▪ Some dead and dying trees will be partially or completely hollow. ▪ Fallen dead wood is dense enough to obstruct progress by foot across the entire site, except on established maintained paths. ▪ Dead wood dependent species of moss, liverwort, fungi and specialised invertebrates are present, in spatially and temporally variable abundance, throughout the site. ▪ Field and ground layers are well developed with a patchwork of vegetation communities characteristic of local soil and humidity conditions. ▪ All factors affecting the achievement of these conditions are under control. Performance indicators for Feature 1 The performance indicators are part of the conservation objective, not a substitute for it. Assessment of plans and projects must be based on the entire conservation objective, not just the performance indicators. The performance indicators can be found within the Wye Valley Woodlands SAC Management Plan. **Conservation Objective for Feature 2:** ***Asperulo–Fagetum* beech forests** Vision for feature 2 The vision for this feature is for it to be in a favourable conservation status, where all of the following conditions are satisfied: ▪ Asperulo–Fagetum woodland continues to be present in Fiddler's Elbow, Harper's Grove-Lord's Grove, Lower Hael, Cleddon Shoots and Blackcliff Wyndcliff, woods that contribute to the Wye Valley Woodlands

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	SAC. ▪ The woodland area covers the entire site. ▪ The woodland is maintained as far as possible by natural processes. ▪ One quarter of the woodland canopy is open at any time. ▪ The location of open glades varies over time. ▪ Trees and shrubs are mainly locally native broadleaved species. ▪ The abundance and density of individual native species varies across the site. ▪ Trees and shrubs of a wide range of ages and sizes are present. ▪ Tree seedlings are plentiful throughout the site. ▪ Tree seedlings develop into saplings in the open glades. ▪ There are abundant dead and dying trees with holes and hollows, rot columns, torn off limbs and rotten branches. ▪ Some dead and dying trees will be partially or completely hollow. ▪ Fallen dead wood is dense enough to obstruct progress by foot across the entire site, except on established maintained paths. ▪ Field and ground layers are a patchwork of vegetation communities characteristic of local soil and humidity conditions. ▪ The woodland supports populations of birds (including pied flycatchers, redstarts, wood warblers) and mammals (including several bat species, otters and badgers). ▪ All factors affecting the achievement of these conditions are under control. Performance indicators for Feature 2 (see performance indicators for feature 1) **Conservation Objective for Feature 3:**

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	***Taxus Baccata* woods of the British Isles** Vision for feature 3 ▪ Taxus Baccata woodland continues to be present in Blackcliff Wyndcliff Woods that contribute to the Wye Valley Woodlands SAC. ▪ The woodland area covers the entire site. ▪ The woodland is maintained as far as possible by natural processes. ▪ The location of open glades varies over time. ▪ Trees and shrubs are mainly locally native broadleaved species. ▪ The abundance and density of individual native species varies across the site. ▪ Trees and shrubs of a wide range of ages and sizes are present. ▪ Tree seedlings are plentiful throughout the site. ▪ Tree seedlings develop into saplings in the open glades. ▪ There are abundant dead and dying trees with holes and hollows, rot columns, torn off limbs and rotten branches. ▪ Some dead and dying trees will be partially or completely hollow. ▪ Fallen dead wood is dense enough to obstruct progress by foot across the entire site, except on established maintained paths. ▪ Dead wood dependent species of moss, liverwort, fungi and specialised invertebrates are present, in spatially and temporally variable abundance, throughout the site. ▪ Field and ground layers are a patchwork of vegetation communities characteristic of local soil and humidity conditions. ▪ The woodland supports populations of birds (including pied flycatchers, redstarts, wood warblers) and mammals (including several bat species, otters and badgers).

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	▪ All factors affecting the achievement of these conditions are under control. Performance indicators for Feature 3 (see performance indicators for feature 1) **Conservation Objective for Feature 4:** **Lesser horseshoe bat *Rhinolophus hipposideros*** Vision for feature 4 ▪ The woodlands continue to support populations of lesser horseshoe bat. ▪ Sufficient foraging habitat is available, in which factors such as disturbance, interruption to flight lines, mortality from predation or vehicle collision, and changes in habitat management that would reduce the available food source are not at levels, which could cause any decline in population size. ▪ Management of the woodland SAC is of the appropriate type and sufficiently secure to ensure there is likely to be no reduction in population size or range, nor any decline in the extent or quality of breeding, foraging or hibernating habitat, for example due to over-intensive woodland management. ▪ There will be no loss or decline in quality of linear features (such as hedgerows and tree lines), which the bats use as flight lines. ▪ Disturbance to roost sites both within the site and in the surrounding area, especially from human physical presence, noise and lighting, is minimized. ▪ All factors affecting the achievement of these conditions are under control. Performance indicators for Feature 4 (see performance indicators for feature 1)
Component SSSIs	▪ Component SSSIs in Wales o Blackcliff-Wyndcliff o Cleddon Shoots Woodland

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	○ Fiddlers Elbow ○ Graig Wood ○ Harper's Grove-Lord's Grove ○ Livox Wood ○ Lower Hael Wood ○ Pierce, Alcove and Piercefield Woods ○ Upper Wye Gorge (In Wales but managed by NE) ▪ Component SSSIs in England ○ Astridge Wood ○ Bigsweir Wood ○ Highbury Wood ○ Lower Wye Gorge ○ Shorn Cliff and Caswell Woods ○ Swanpool Wood and Furnace Grove ○ The Hudnalls A map of the component SSSIs is available on the CCW website.
Key Environmental Conditions (factors that maintain site integrity	▪ **Habitat management** - The *Tilio–Acerion* woodland should be maintained through traditional woodland management, a combination of minimum intervention, coppice with standards and managed high forest. The *Asperulo–Fagetum* woodlands should be maintained through minimum intervention, with some areas also using traditional management practices of coppice with standards and managed high forest. The *Taxus baccata* woods should be maintained through minimum intervention. All the habitat management requirements for the lesser horseshoe bat will be met through the appropriate management of the features above.

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	▪ **Grazing management** - Deer management and protection from rabbits or livestock is necessary.
SAC Condition Assessment	**The following condition assessments only account for the component SSSIs that are situated in Wales:** **Conservation Status of Feature 1: *Tilio–Acerion* forests of slopes, screes and ravines** The *Tilio-Acerion* forests and associated non-SAC semi natural broadleaved woodland features were monitored in detail in the summer 2005-6. In this case CCW can give condition information at the unit level. As all of the five areas have to be in good condition for the *Tilio-Acerion* overall to be favourable the feature is in **unfavourable** condition. **Conservation Status of Feature 2: *Asperulo–Fagetum* beech forests** The *Asperulo-Fagetum* forests and associated non-SAC semi natural broadleaved woodland features were monitored in detail in the 2005-6. The assessment on all 5 component SSSIs showed *Asperulo-Fagetum* to be unfavourable in one of the three key areas. As all of the three areas have to be in good condition for the *Asperulo-Fagetum* overall to be favourable the feature is in **unfavourable** condition. **Conservation Status of Feature 3: *Taxus baccata* woods of the British Isles** The *Taxus baccata* woods were monitored in detail in the Winter 2005. The assessment of Blackcliff- Wyndcliff component SSSI was that the feature was in **favourable** condition. **Conservation Status of Feature 4: *Rhinolophus hipposideros* lesser horse shoe bat** CCW need to speak with Natural England to get monitoring results of this feature.

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The following table containing condition assessments only accounts for the component SSSIs that are situated in England:

% Area meeting PSA[11] target	% Area favourable	% Area unfavourable recovering	% Area unfavourable no change	% Area unfavourable declining	% Area destroyed / part destroyed
Astridge Wood SSSI condition summary[12] (compiled 01 July 2008).					
100.00%	100.00%	0.00%	0.00%	0.00%	0.00%
Bigsweir Wood SSSI condition summary[13] (compiled 01 July 2008).					
100.00%	11.90%	88.10%	0.00%	0.00%	0.00%
Highbury Wood SSSI condition summary[14] (compiled 01 July 2008).					
40.20%	40.20%	0.00%	0.00%	59.80%	0.00%
Lower Wye Gorge Wood SSSI condition summary[15] (compiled 01 July 2008).					

[11] PSA target - The Government's Public Service Agreement (PSA) target to have 95% of the SSSI area in favourable or recovering condition by 2010.
[12] Natural England SSSI condition summary. Available [online]: http://www.english-nature.org.uk/special/sssi/reportAction.cfm?report=sdrt18&category=S&reference=1003696
[13] Natural England SSSI condition summary. Available [online]: http://www.english-nature.org.uk/special/sssi/reportAction.cfm?report=sdrt18&category=S&reference=1003764
[14] Natural England SSSI condition summary. Available [online]: http://www.english-nature.org.uk/special/sssi/reportAction.cfm?report=sdrt18&category=S&reference=1000049
[15] Natural England SSSI condition summary. Available [online]: http://www.english-nature.org.uk/special/sssi/reportAction.cfm?report=sdrt18&category=S&reference=1003607

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100.00%	100.00%	0.00%	0.00%	0.00%	0.00%

Shorn Cliff and Caswell Woods SSSI condition summary[16] (compiled 01 July 2008).

100.00%	100.00%	0.00%	0.00%	0.00%	0.00%

Swanpool Wood and Furnace Grove SSSI condition summary[17] (compiled 01 July 2008).

0.00%	0.00%	0.00%	100.00%	0.00%	0.00%

The Hudnalls SSSI condition summary[18] (compiled 01 July 2008).

100.00%	100.00%	0.00%	0.00%	0.00%	0.00%

Vulnerabilities (includes existing pressures and trends)

- **Inappropriate management** - Principal pressures are from lack of management (particularly traditional management, e.g. coppice) and inappropriate management proposals which would alter the recognised woodland stand types.

- **Grazing** - When woodland is grazed for many years it can prevent the natural regeneration of the woodland, since seedlings and coppice stools are given no opportunity to grow into viable trees. There is a serious problem with deer grazing in these woodlands. It is necessary to control the number of animals grazing in the wood using appropriate measures. Fences and gates should be erected and maintained around areas of regeneration in order to prevent damage. In the future, light grazing by stock may be

[16] Natural England SSSI condition summary. Available [online]: http://www.english-nature.org.uk/special/sssi/reportAction.cfm?report=sdrt18&category=S&reference=1002428
[17] Natural England SSSI condition summary. Available [online]: http://www.english-nature.org.uk/special/sssi/reportAction.cfm?report=sdrt18&category=S&reference=1000840
[18] Natural England SSSI condition summary. Available [online]: http://www.english-nature.org.uk/special/sssi/reportAction.cfm?report=sdrt18&category=S&reference=1001654

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	considered to help reduce the competition from other species allowing seedling regeneration to replace older stools. ▪ **Off-site pollution** - The effects of the releases of quarry dust into the atmosphere from the works adjacent to the Blackcliff -Wyndcliff SSSI are not known; these emissions are subject to the authorisation of other competent authorities, particularly the Environment Agency.
Landowner/ Management Responsibility	▪ N/A
HRA/AA Studies undertaken that address this site	HRA Screening of the Torfaen Local Development Plan (2006-2021) January 2008. http://www.torfaen.gov.uk/EnvironmJentAndPlanning/Planning/ForwardPlanning/Publications/HabitatsRegulationAssessment.pdf ▪ Due to the distance between this SAC and Torfaen it is concluded that the LDP is unlikely to have any significant effects on this SAC. HRA of the Draft South West Regional Spatial Strategy Proposed Changes (Land Use Consultants) July 2008. http://gosw.limehouse.co.uk/portal/regional_strategies/drss ▪ There are a number of N2K sites in the South West where development of housing, employment and transport infrastructure has the potential to adversely affect bat foraging and commuting habitat, as it is proposed in close proximity to such areas. Due to the proximity of proposed development to bat foraging and commuting habitats, it is recommended that the supporting text to ENV1 also makes specific reference to the need for bat foraging and commuting habitats to be considered when carrying out development. To ensure that adverse effects to the Wye Valley Woodlands SAC does not occur the site should be specifically identified in the supporting text. HRA & AA of the Wales Spatial Plan Update June 2008. http://wales.gov.uk/about/strategy/spatial/hra/download/?lang=en

Site Name: Wye Valley Woodlands Location Grid Ref: ST530957 JNCC Site Code: UK0012727 Size: 916.24 Designation: SAC	Habitats Regulations Assessment: Data Proforma
	▪ The HRA Screening concludes that the WSPU and other plans have the potential to give rise to adverse effects at this site. ▪ The AA states that it is not possible to predict in specific terms whether the WSPU would or would not give rise to significant adverse effects either alone or in combination with other plans/ strategies and projects upon specific European sites.

Special Protection Areas

Site Name: Severn Estuary **Location (Lat & Long):** **51 13 29 N** **03 02 57 W** **JNCC Site Code: UK9015022** **Size: 24662.98** **Designation: SPA**	**Habitats Regulations Assessment: Data Proforma**
Site Description	The Severn Estuary 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. Glassworts and annual sea-blite colonise the open mud, with beds of all three species of eelgrass *Zostera* occurring on more sheltered mud and sandbanks. Large expanses of common cord-grass also occur on the outer marshes. Heavily grazed saltmarsh fringes the estuary with a range of saltmarsh types present. The middle marsh sward is dominated by common saltmarsh-grass with typical associated species. In the upper marsh, red fescue and saltmarsh rush become more prominent. Areas of saltmarsh fringe the estuary, mostly grazed with a range of vegetation communities. There are gradual and stepped transitions between bare mudflat to upper marsh and grassland. Main vegetation types are: upper saltmarsh with *Festuca rubra* and *Juncus gerardii*; middle marsh dominated by *Puccinellia maritima* with *Glaux maritima* and *Triglochin maritima*; dense monocultures of *Spartina anglica* at the edge of the mudflats-brackish pools and depressions with *Phragmites australis* and *Bolboschoenus maritimus*.

Site Name: Severn Estuary **Location (Lat & Long):** **51 13 29 N** **03 02 57 W** **JNCC Site Code: UK9015022** **Size: 24662.98** **Designation: SPA**	**Habitats Regulations Assessment: Data Proforma**
Qualifying Features	Article 4.1 Qualification Over winter the area regularly supports: ▪ Bewick's Swan *Cygnus columbianus bewickii* 3.9% of the GB population Article 4.2 Qualification Over winter the area regularly supports: ▪ Gadwall *Anas strepera* 0.9% of the population ▪ White-fronted Goose *Anser albifrons albifrons* 0.4% of the population ▪ Dunlin *Calidris alpina alpine* 3.3% of the population ▪ Shelduck *Tadorna tadorna* 1.1% of the population ▪ Redshank *Tringa totanus* 1.3% of the population Article 4.2 Qualification: Internationally Important Assemblage of Birds Over winter the area regularly supports: ▪ 84317 waterfowl
Conservation Objectives	**SPA Interest feature 1: Internationally important population of regularly occurring Annex 1 species: Bewick's swan** The conservation objective is to maintain the Bewick's swan population and its supporting habitats in **favourable condition**, as defined below.

Site Name: Severn Estuary Location (Lat & Long): 51 13 29 N 03 02 57 W JNCC Site Code: UK9015022 Size: 24662.98 Designation: SPA	Habitats Regulations Assessment: Data Proforma
	The interest feature Bewick's swan will be considered to be in favourable condition when, subject to natural processes, each of the following conditions are met: i. the 5 year peak mean population size for the Bewick's swan population is no less than 289 individuals (ie the 5 year peak mean between 1988/9 - 1992/3); ii. the extent of saltmarsh at the Dumbles is maintained; iii. the extent of intertidal mudflats and sandflats at Frampton Sands, Waveridge Sands and the Noose is maintained; iv. the extent of vegetation with an effective field size of >6 ha and with unrestricted bird sightlines > 500m at feeding, roosting and refuge sites are maintained; v. greater than 25% cover of suitable soft leaved herbs and grasses in winter season throughout the transitional saltmarsh at the Dumbles is maintained; vi. aggregations of Bewick's swan at feeding, roosting and refuge sites are not subject to significant disturbance. **SPA Interest feature 2: Internationally important population of regularly occurring migratory species: wintering European white-fronted goose** The conservation objective is to maintain the European white-fronted goose population and its supporting habitats in **favourable condition**, as defined below. The interest feature European white-fronted goose will be considered to be in favourable condition when, subject to natural processes, each of the following conditions are met: i. the 5 year peak mean population size for the wintering European white fronted goose population is no

Site Name: Severn Estuary Location (Lat & Long): 51 13 29 N 03 02 57 W JNCC Site Code: UK9015022 Size: 24662.98 Designation: SPA	Habitats Regulations Assessment: Data Proforma
	less than 3,002 individuals (ie the 5 year peak mean between 1988/9- ii. 1992/3); iii. the extent of saltmarsh at the Dumbles is maintained; iv. the extent of intertidal mudflats and sandflats at Frampton Sands, Waveridge Sands and the Noose is maintained; v. greater than 25% cover of suitable soft-leaved herbs and grasses is maintained during the winter on saltmarsh areas; vi. unrestricted bird sightlines of >200m at feeding and roosting sites are maintained; vii. aggregations of European white-fronted goose at feeding or roosting sites are not subject to significant disturbance. **SPA Interest feature 3: Internationally important population of regularly occurring migratory species: wintering dunlin** The conservation objective is to maintain the dunlin population and its supporting habitats in **favourable condition**, as defined below. The interest feature dunlin will be considered to be in favourable condition when, subject to natural processes, each of the following conditions are met: i. the 5 year peak mean population size for the wintering dunlin population is no less than 41,683 individuals (ie the 5 year peak mean between 1988/9 - 1992/3); ii. the extent of saltmarsh and associated strandlines is maintained; iii. the extent of intertidal mudflats and sandflats is maintained; iv. the extent of hard substrate habitats is maintained; v. the extent of vegetation with a sward height of <10cm is maintained throughout the saltmarsh;

Site Name: Severn Estuary Location (Lat & Long): 51 13 29 N 03 02 57 W JNCC Site Code: UK9015022 Size: 24662.98 Designation: SPA	Habitats Regulations Assessment: Data Proforma
	vi. the abundance and macro-distribution of suitable invertebrates in intertidal mudflats and sandflats is maintained; vii. the abundance and macro-distribution of suitable invertebrates in hard substrate habitats is maintained; viii. unrestricted bird sightlines of >200m at feeding and roosting sites are maintained; ix. aggregations of dunlin at feeding or roosting sites are not subject to significant disturbance. **SPA Interest feature 4: Internationally important population of regularly occurring migratory species: wintering redshank** The conservation objective is to maintain the redshank population and its supporting habitats in **favourable condition**, as defined below. The interest feature redshank will be considered to be in favourable condition when, subject to natural processes, each of the following conditions are met: i. the 5 year peak mean population size for the wintering redshank population is no less than 2,013 individuals (ie the 5 year peak mean between 1988/9 - 1992/3); ii. the extent of saltmarsh and associated strandlines is maintained; iii. the extent of intertidal mudflats and sandflats is maintained; iv. the extent of hard substrate habitats is maintained; v. the extent of vegetation with a sward height of <10cm throughout the saltmarsh is maintained; vi. the abundance and macro-distribution of suitable invertebrates in intertidal mudflats and sandflats is maintained; vii. the abundance and macro-distribution of suitable invertebrates in hard substrate habitats is maintained;

Site Name: Severn Estuary Location (Lat & Long): 51 13 29 N 03 02 57 W JNCC Site Code: UK9015022 Size: 24662.98 Designation: SPA	Habitats Regulations Assessment: Data Proforma
	viii. unrestricted bird sightlines of >200m at feeding and roosting sites are maintained; ix. aggregations of redshank at feeding or roosting sites are not subject to significant disturbance. **SPA Interest feature 5: Internationally important population of regularly occurring migratory species: wintering shelduck** The conservation objective is to maintain the shelduck population and its supporting habitats in **favourable condition**, as defined below. The interest feature shelduck will be considered to be in favourable condition when, subject to natural processes, each of the following conditions are met: i. the 5 year peak mean population size for the wintering shelduck population is no less than 2,892 individuals (ie the 5 year peak mean between 1988/9 - 1992/3); ii. the extent of saltmarsh is maintained; iii. the extent of intertidal mudflats and sandflats is maintained; iv. the extent of hard substrate habitats is maintained; v. the abundance and macro-distribution of suitable invertebrates in intertidal mudflats and sandflats is maintained; vi. unrestricted bird sightlines of >200m at feeding and roosting sites are maintained; vii. aggregations of shelduck at feeding or roosting sites are not subject to significant disturbance. **SPA interest feature 6: Internationally important population of regularly occurring migratory species: wintering gadwall** The conservation objective is to maintain the gadwall population and its supporting habitats in favourable

Site Name: Severn Estuary Location (Lat & Long): 51 13 29 N 03 02 57 W JNCC Site Code: UK9015022 Size: 24662.98 Designation: SPA	Habitats Regulations Assessment: Data Proforma
	condition, as defined below: The interest feature gadwall will be considered to be in favourable condition when, subject to natural processes, each of the following conditions are met: i. the 5 year peak mean population size for the wintering gadwall population is no less than 330 (ie the 5 year peak mean between 1988/9 - 1992/3); ii. the extent of intertidal mudflats and sandflats (Appendix 8) is maintained; iii. unrestricted bird sightlines of >200m at feeding and roosting sites are maintained; iv. aggregations of gadwall at feeding or roosting sites are not subject to significant disturbance. **SPA Interest feature 7: Internationally important assemblage of waterfowl** The conservation objective is to maintain the waterfowl assemblage and its supporting habitats in **favourable condition**, as defined below. The interest feature waterfowl assemblage will be considered to be in favourable condition when, subject to natural processes, each of the following conditions are met: i. the 5 year peak mean population size for the waterfowl assemblage is no less than 68,026 individuals (ie the 5 year peak mean between 1988/9 - 1992/3); ii. the extent of saltmarsh and their associated strandlines is maintained; iii. the extent of intertidal mudflats and sandflats is maintained; iv. the extent of hard substrate habitats is maintained; v. extent of vegetation of <10cm throughout the saltmarsh is maintained; vi. the abundance and macro-distribution of suitable invertebrates in intertidal mudflats and sandflats is

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	maintained; vii. the abundance and macro-distribution of suitable invertebrates in hard substrate habitats is maintained; viii. greater than 25% cover of suitable soft leaved herbs and grasses during the winter on saltmarsh areas is maintained; ix. unrestricted bird sightlines of >500m at feeding and roosting sites are maintained; x. waterfowl aggregations at feeding or roosting sites are not subject to significant disturbance.
Component SSSIs	▪ Severn Estuary SSSI ▪ Flat Holm SSSI ▪ Bridgwater Bay SSSI ▪ Penarth Coast SSSI ▪ Steep Holm SSSI ▪ Sully Island SSSI ▪ Upper Severn Estuary SSSI Maps of the site can be viewed on the CCW website.
Key Environmental Conditions (factors that maintain site integrity	**Key supporting habitats for the Annex I species:** ▪ **Intertidal mudflats and sandflats**: o Habitat extent - The focal area for the Bewick's swans is the upper Severn Estuary in the vicinity of the New Grounds, Slimbridge area. The mudflats and sandflats exposed as the tide falls where the estuary widens in the upper reaches of the site at Waveridge Sands, Frampton Sands and The Noose are used as safe refuge areas when the birds are disturbed.

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- Unimpeded sightlines at feeding and roosting sites - Bewick's swan require unrestricted views >500m to allow early detection of predators when feeding and roosting.

- **Saltmarsh communities**:
  - Habitat extent - The birds feed on the saltmarsh and the transition from saltmarsh to coastal grazing marsh in front of the sea defences in the upper estuary at The Dumbles, where areas of the high marsh are mainly affected only by brackish water during tidal inundation.
  - Vegetation characteristics - Bewick's swan graze on a range of 'soft' meadow grasses such as *Agrostis stolonifera* and *Alopecurus geniculatus* found in wet meadows which are outwith the European marine site boundary.
  - Unimpeded sightlines at feeding and roosting sites - Bewick's swan require unrestricted views >500m to allow early detection of predators when feeding and roosting.

Key supporting habitats for populations of regularly occurring migratory species and assemblage of waterfowl:

- **Intertidal mudflats and sandflats:**
  - Habitat extent - Intertidal mudflats and sandflats and their communities are important habitats as they provide both roosting and feeding areas. The European white-fronted geese roost at night on estuarine sandbanks and usually fly less than 10km to the daytime feeding grounds. Therefore conservation of traditional roosting sites is necessary to enable the population to exploit potential feeding habitats.
  - Food availability - Most of the waders and waterfowl within the assemblage including the internationally important regularly occurring migratory birds feed on invertebrates within and on the sediments.
  - Unimpeded sightlines at feeding and roosting sites - Waterfowl require unrestricted views >500m to allow early detection of predators when feeding and roosting.

- **Saltmarsh**:

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	○ Habitat extent - Saltmarsh and their communities are important habitats as they provide both roosting and feeding areas. Upper and lower saltmarsh provide important feeding and roosting areas for the internationally important migratory birds throughout the estuary. ○ Food availability - The saltmarshes provide a rich feeding habitat for redshank and shelduck, which feed on invertebrate species in the sediments, such as the mudsnail Hydrobia. The European white-fronted geese graze on a range of saltmarsh grasses and herbs such as common saltmarsh grass Puccinellia maritime and sea barley Hordeum marinum. The birds feed on the saltmarsh and the transition to coastal grazing marsh in front of the sea defences in the upper estuary and particularly at the The Dumbles. ○ Vegetation characteristics - Vegetation of <10 cm is required throughout areas used by roosting waders. This is managed by grazing. ○ Unimpeded sightlines at feeding and roosting sites - Waterfowl require unrestricted views >500m to allow early detection of predators when feeding and roosting. The saltmarshes also have an important function providing a safe haven from the tides that flood the mudflats twice a day. The low-growing dense vegetation provides a suitable roosting habitat for redshank and dunlin, which prefer to roost on areas of short vegetation ensuring good visibility. ▪ **Shingle and rocky shore:** ○ Habitat extent - the shingle and rocks in the estuary provide feeding areas for dunlin and redshank and some limited foraging at high tide. It is also provides important roost sites at high tide particularly for the dunlin and redshank. Many of the rocks are off shore and are therefore generally free from human disturbance. These include Guscar Rocks in the upper reaches, Blackstone Rocks at Clevedon and Stert Island in Bridgwater Bay. ○ Food availability - see above. ○ Unimpeded sightlines at feeding and roosting sites - Waterfowl require unrestricted views >500m to allow early detection of predators when feeding and roosting.

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	▪ **Wet coastal grazing marsh, improved grassland and open standing waters** - these supporting habitats lie outside the European marine site boundary but within the SPA. They provide key areas for feeding and roosting for all the migratory species particularly at high tide. **Key environmental conditions for the supporting habitats:** ▪ **Hydrodynamic and sedimentary regime** - the tidal range in the Severn Estuary is the second-highest in the world and the scouring of the seabed and strong tidal streams result in natural erosion of the habitats and the presence of high sediment loads. ▪ **Maintain suitable distance between the site and development** - to allow for managed retreat of intertidal habitats and avoid coastal squeeze. **Other key conditions:** ▪ **Manage/restrict public access** - at certain times of the year. Significant disturbance attributable to human activities can result in reduced food intake and/or increased energy expenditure. ▪ **Maintain levels of prey.** Maps showing supporting habitats of the Severn Estuary SPA can be found on the CCW Website.

<table>
<tr><td>Site Name: Severn Estuary
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51 13 29 N
03 02 57 W
JNCC Site Code: UK9015022
Size: 24662.98
Designation: SPA</td><td>Habitats Regulations Assessment: Data Proforma</td></tr>
<tr><td>SPA Condition Assessment</td><td>Severn Estuary SSSI condition summary[19] (compiled 09 April 2008).
<table>
<tr><th>% Area meeting PSA* target</th><th>% Area favourable</th><th>% Area unfavourable recovering</th><th>% Area unfavourable no change</th><th>% Area unfavourable declining</th><th>% Area destroyed / part destroyed</th></tr>
<tr><td>95.71%</td><td>95.71%</td><td>0.00%</td><td>2.44%</td><td>1.85%</td><td>0.00%</td></tr>
</table>
*PSA target - The Government's Public Service Agreement (PSA) target to have 95% of the SSSI area in favourable or recovering condition by 2010.</td></tr>
<tr><td>Vulnerabilities (includes existing pressures and trends)</td><td>Internationally important populations of regularly occurring Annex 1 species:

■ Physical loss of supporting habitats through removal - The physical loss of areas of intertidal habitats may be caused directly through change of land use or indirectly as a consequence of changes to sedimentation processes (e.g. coastal defences) as well as via the effects of smothering by artificial structures (e.g. jetties) or the disposal of spoils. Activities or developments resulting in physical loss of the intertidal supporting habitats are likely to reduce the availability of feeding and roosting habitat and thus be detrimental to the favourable condition of the SPA interest features including the Annex 1 species, Bewick's swan. The intertidal mudflats and sandflats and the saltmarsh are highly sensitive to removal by land reclamation and barrage construction. Information provided by NE and CCW states that large areas of the European marine site are not currently under threat, however when combined with a high level of sensitivity this leads to a moderate vulnerability.</td></tr>
</table>

[19] Natural England SSSI condition summary. Available [online]: http://www.english-nature.org.uk/special/sssi/reportAction.cfm?report=sdrt18&category=S&reference=1002284

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	▪ **Noise or visual disturbance** - Overwintering birds are disturbed by sudden movements and sudden noises. This can displace the birds from their feeding grounds. Disturbance can prevent the birds from feeding and in response they either a) decrease their energy intake at their present (disturbed) feeding site through displacement activity, or b) move to an alternative less favoured feeding site. Such a response affects energy budgets and thus survival. There is intermittent disturbance from both the landward and seaward side of the site. Bewick's swans are mainly affected by disturbance from the landward side and any increase in disturbance should be avoided. At present NE and CCW assess that the Annex 1 species are moderately vulnerable to noise and visual disturbance on the intertidal mudflats and sandflats and highly vulnerable to this category of operation on the saltmarsh. ▪ **Contamination by synthetic and/or non-synthetic toxic compounds** - Waterfowl are subject to the accumulation of toxins through the food chain or through direct contact with toxic substances when roosting or feeding. Their ability to feed can also be affected by the abundance or change in palatability of their prey caused by toxic contamination. At the moment there is no evidence to show that this is the case, but the estuary is vulnerable to oil spills and there is a continuous discharge of toxins into the estuary, some of which bind to the sediments. NE and CCW identify this is an area which requires further assessment. They also identify Bewick's swans as currently moderately vulnerable to toxic contamination. **Internationally important waterfowl assemblage including populations of regularly occurring migratory species:** ▪ **Physical loss through removal** - The physical loss of areas of intertidal habitats may be caused directly through change of land use or indirectly as a consequence of changes to sedimentation processes (e.g. coastal defences) as well as via the effects of smothering by artificial structures (e.g. jetties) or the disposal of spoils. Eelgrass beds are being affected by siltation due to changes in sediment movement after construction of the Second Severn Crossing which has resulted in smothering. Activities or developments

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	resulting in physical loss of the intertidal supporting habitats are likely to reduce the availability of food and roosting habitat and thus be detrimental to the favourable condition of the SPA interest features including all the migratory species and waterfowl assemblage. All three supporting habitats are highly sensitive to removal by land reclamation and barrage construction. Information provided by NE and CCW states that large areas of the European marine site are not currently under threat, however when combined with a high level of sensitivity this leads to a moderate vulnerability. ▪ **Damage by abrasion or selective extraction** - Saltmarsh may be physically damaged from overgrazing or eroded when boats are moored on it and when paths are worn through it to reach moored boats on foot or via vehicles. Currently all supporting habitats are considered to be moderately vulnerable to abrasion. Intertidal habitats are highly sensitive to damage by direct and indirect effects of aggregate dredging. The intertidal mudflats and sandflats and the shingle and rocky shore are therefore considered by NE and CCW to be highly vulnerable to selective extraction. ▪ **Noise or visual disturbance** - Overwintering birds are disturbed by sudden movements and sudden noises. This can have the effect of displacing the birds from their feeding grounds. Disturbance can prevent the birds from feeding and in response they either a) decrease their energy intake at their present (disturbed) feeding site through displacement activity, or b) move to an alternative less favoured feeding site. Such a response affects energy budgets and thus survival. There is intermittent disturbance to the internationally important migratory species and the waterfowl assemblage from both the landward and seaward side of the site which has increased in recent years, due to the estuary becoming more populated and the development of all weather recreational pursuits. All supporting habitats are currently highly vulnerable to noise and visual disturbance. ▪ **Contamination by synthetic and/or non-synthetic toxic compounds** - Waterfowl are subject to the accumulation of toxins through the food chain or through direct contact with toxic substances when

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	roosting or feeding. Their ability to feed can also be affected by the abundance or change in palatability of their prey caused by toxic contamination. At the moment there is no evidence to show that this is the case on the Severn Estuary, but the estuary is vulnerable to oil spills and there is a continuous discharge of toxins into the estuary, some of which bind to the sediments. NE and CCW identify this is an area which requires further assessment. The intertidal mudflats and sandflats and the saltmarsh are currently highly vulnerable to the introduction of synthetic and non-synthetic compounds. ▪ **Changes in nutrient and/or organic loading** - Changes in organic or nutrient loading can change the species composition of the plants on the saltmarsh and thus the structure of the sward. Increases in nutrients can also cause excessive algal growth on the mudflats, denying the birds access to their invertebrate prey and changing the invertebrate species composition in the sediment. Though the water quality has been improved in recent years there are still local areas of concern and any increase in nutrient loading should be avoided. At present the intertidal mudflats and sandflats are moderately vulnerable to this category of operation. ▪ **Biological disturbance through the selective extraction of species** - Wildfowling is carried out all around the estuary. NE and CCW have not established that it has a detrimental effect on the overall bird populations but state that wildfowling needs to be exercised in a managed and sustainable manner preferably by a British Association of Shooting and Conservation (BASC) affiliated association, applying the BASC wildfowlers code of conduct. Bait digging is also carried out around the estuary. If too large an area is regularly dug over, it can change the availability of prey in the sediment as the area needs a period of recovery and recolonisation. The removal of strandline vegetation by beach cleaning removes an important habitat for invertebrates, as well as many of the invertebrates themselves, reducing the quantity and variety of prey available to the birds. Much of the saltmarsh is managed by grazing and changes in management can alter the availability of prey and suitability of roosting sites. The saltmarsh is currently highly vulnerable to the selective extraction of species.

Site Name: Severn Estuary **Location (Lat & Long):** **51 13 29 N** **03 02 57 W** **JNCC Site Code: UK9015022** **Size: 24662.98** **Designation: SPA**	**Habitats Regulations Assessment: Data Proforma**
Landowner/ Management Responsibility	▪ N/A
HRA/AA Studies undertaken that address this site	HRA Screening of the County Council of the City and County of Cardiff Local Development Plan Preferred Strategy Sept 2007. www.cardiff.gov.uk/ObjView.asp?Object_ID=9788 ▪ The Screening states that the significance of the potential impacts of the indicative route in the Preferred Strategy (either alone or in-combination with other plans and projects) will be considered when a more detailed scheme is available. An appropriate assessment may be required for the scheme. HRA Screening of the Torfaen Local Development Plan (2006-2021) January 2008. http://www.torfaen.gov.uk/EnvironmJentAndPlanning/Planning/ForwardPlanning/Publications/HabitatsRegulationAssessment.pdf ▪ It is likely that an increase of 7000 dwellings in Torfaen and associated development will in some way impact upon the site. It is likely however that the potential impact will be as a result of in-combination effects with other implemented plans and programmes in close proximity to the Severn Estuary. AA Screening of the Vale of Glamorgan Local Development Plan Preferred Strategy Dec 07. http://www.valeofglamorgan.gov.uk/files/Living/Planning/Policy/LDP/Appropriate_Assessment_Screening_Report.pdf ▪ Given the extent of the Severn Estuary and the diverse range of activities and operations that could result in adverse impact to the European Site, it is considered inevitable that the Draft Preferred Strategy will in some way, impact upon the designated site. While much of the development arising from the draft preferred strategy is likely to be located well away from the Severn Estuary, the south-eastern zone has been identified as a growth area and abuts the boundary of the designated site. Therefore, it is recommended that a more detailed assessment of the LDP be undertaken following consultation on the Draft Preferred

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	Strategy to ascertain and mitigate against any likely significant effects to the SPA, cSAC, RAMSAR. HRA & AA of the Wales Spatial Plan Update June 2008. http://wales.gov.uk/about/strategy/spatial/hra/download/?lang=en ▪ The HRA Screening concludes that the WSPU and other plans have the potential to give rise to adverse effects at this site. ▪ The AA states that it is not possible to predict in specific terms whether the WSPU would or would not give rise to significant adverse effects either alone or in combination with other plans/ strategies and projects upon specific European sites. However, it does identify that this site is likely to come under increasing risk of adverse in combination effects from transport infrastructure, urban and economic development and recreation and tourism as a result of the WSPU and English RSSs. The AA also identifies that in combination with the English RSSs the WSPU has the potential to have negative effects on water levels, flood protection and water quality issues, which could affect this site.

Ramsar Sites

Site Name: Severn Estuary Location (Lat & Long): 51 13 29 N 03 02 57 W JNCC Site Code: UK11081 Size: 24662.98 Designation: Ramsar	Habitats Regulations Assessment: Data Proforma
Site Description	The Severn Estuary 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. Glassworts and annual sea-blite colonise the open mud, with beds of all three species of eelgrass *Zostera* occurring on more sheltered mud and sandbanks. Large expanses of common cord-grass also occur on the outer marshes. Heavily grazed saltmarsh fringes the estuary with a range of saltmarsh types present. The middle marsh sward is dominated by common saltmarsh-grass with typical associated species. In the upper marsh, red fescue and saltmarsh rush become more prominent. Areas of saltmarsh fringe the estuary, mostly grazed with a range of vegetation communities. There are gradual and stepped transitions between bare mudflat to upper marsh and grassland. Main vegetation types are: upper saltmarsh with *Festuca rubra* and *Juncus gerardii*; middle marsh dominated by *Puccinellia maritima* with *Glaux maritima* and *Triglochin maritima*; dense monocultures of *Spartina anglica* at the edge of the mudflats-brackish pools and depressions with *Phragmites australis* and *Bolboschoenus maritimus*.

Site Name: Severn Estuary **Location (Lat & Long):** **51 13 29 N** **03 02 57 W** **JNCC Site Code: UK11081** **Size: 24662.98** **Designation: Ramsar**	**Habitats Regulations Assessment: Data Proforma**
Qualifying Features	Ramsar criterion 1 ▪ Immense tidal range (second-largest in world) creating diversity of physical environment and biological communities. Ramsar criterion 3 ▪ Due to unusual estuarine communities, reduced diversity and high productivity. Ramsar criterion 4 ▪ This site is important for the run of migratory fish between sea and river via estuary. Species include Salmon *Salmo salar*, sea trout *S. trutta*, sea lamprey *Petromyzon marinus*, river lamprey *Lampetra fluviatilis*, allis shad *Alosa alosa*, twaite shad *A. fallax*, and eel *Anguilla anguilla*. It is also of particular importance for migratory birds during spring and autumn. Ramsar criterion 5 Species with peak counts in winter: ▪ 70919 waterfowl Ramsar criterion 6 Species with peak counts in winter: ▪ Bewick's swan ▪ Greater white-fronted goose ▪ Common shelduck ▪ Gadwall

Site Name: Severn Estuary Location (Lat & Long): 51 13 29 N 03 02 57 W JNCC Site Code: UK11081 Size: 24662.98 Designation: Ramsar	Habitats Regulations Assessment: Data Proforma
	▪ Dunlin ▪ Common redshank Ramsar criterion 8 ▪ The fish of the whole estuarine and river system is one of the most diverse in Britain, with over 110 species recorded. Salmon *Salmo salar*, sea trout *S. trutta*, sea lamprey *Petromyzon marinus*, river lamprey *Lampetra fluviatilis*, allis shad *Alosa alosa*, twaite shad *A. fallax*, and eel *Anguilla Anguilla* use the Severn Estuary as a key migration route to their spawning grounds in the many tributaries that flow into the estuary. The site is important as a feeding and nursery ground for many fish species particularly allis shad Alosa alosa and twaite shad *A. fallax* which feed on mysid shrimps in the salt wedge.
Conservation Objectives	**Ramsar interest feature 1: Estuaries** The conservation objective for the "estuaries" feature of the Severn Estuary Ramsar Site is to maintain the feature in favourable condition, as defined by the conservation objective for the SAC "estuaries" feature", in so far as these objectives are applicable to the area designated as Ramsar Site. **Ramsar interest feature 2: Assemblage of migratory fish species** The conservation objective for the "assemblage of migratory fish species" feature of the Severn Estuary Ramsar Site is to maintain the feature in favourable condition, as defined below: The feature will be considered to be in favourable condition when, subject to natural processes, each of the following conditions are met: i. the migratory passage of both adults and juveniles of the assemblage of migratory fish species through

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	the Severn Estuary between the Bristol Channel and any of their spawning rivers is not obstructed or impeded by physical barriers, changes in flows, or poor water quality; ii. the size of the populations of the assemblage species in the Severn Estuary and the rivers which drain into it, is at least maintained and is at a level that is sustainable in the long term; iii. the abundance of prey species forming the principle food resources for the assemblage species within the estuary, is maintained. iv. Toxic contaminants in the water column and sediment are below levels which would pose a risk to the ecological objectives described above. **Ramsar interest feature 3: Internationally important populations of waterfowl : Bewick's swan** The conservation objective for the "Bewick's swan" feature of the Severn Estuary Ramsar Site is to maintain the feature in favourable condition, as defined by the conservation objective for the SPA "Bewick's swan " feature. **Ramsar interest feature 4: Internationally important populations of waterfowl: European white-fronted goose** The conservation objective for the "European white-fronted goose" feature of the Severn Estuary Ramsar Site is to maintain the feature in favourable condition, as defined by the conservation objective for the SPA "wintering European white-fronted goose" feature. **Ramsar interest feature 5: Internationally important populations of waterfowl: dunlin** The conservation objective for the "dunlin" feature of the Severn Estuary Ramsar Site is to maintain the feature in favourable condition, as defined by the conservation objective for the SPA "wintering dunlin" feature.

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	Ramsar interest feature 6: Internationally important populations of waterfowl: redshank The conservation objective for the "redshank" feature of the Severn Estuary Ramsar Site is to maintain the feature in favourable condition, as defined by the conservation objective for the SPA "wintering redshank" feature. **Ramsar interest feature 7: Internationally important populations of waterfowl: shelduck** The conservation objective for the "shelduck" feature of the Severn Estuary Ramsar Site is to maintain the feature in favourable condition, as defined by the conservation objective for the SPA "wintering shelduck" feature. **Ramsar interest feature 8: Internationally important populations of waterfowl: gadwall** The conservation objective for the "gadwall" feature of the Severn Estuary Ramsar Site is to maintain the feature in favourable condition, as defined by the conservation objective for the SPA "wintering gadwall" feature. **Ramsar interest feature 9: Internationally important assemblage of waterfowl** The conservation objective for the "internationally important assemblage of waterfowl" feature of the Severn Estuary Ramsar Site is to maintain the feature in favourable condition, as defined by the conservation objective for the SPA "internationally important assemblage of waterfowl" feature - with special reference to the individual species listed and their population figures.
Component SSSIs	▪ Sully Island SSSI

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	▪ Steep Holm SSSI ▪ Bridgwater Bay SSSI ▪ Flat Holm SSSI ▪ Severn Estuary SSSI ▪ Severn Estuary SSSI ▪ Flat Holm SSSI ▪ Upper Severn Estuary SSSI ▪ Bridgwater Bay SSSI ▪ Penarth Coast SSSI ▪ Steep Holm SSSI ▪ Sully Island SSSI ▪ Upper Severn Estuary SSSI
Key Environmental Conditions (factors that maintain site integrity	**Key supporting habitats for the Berwick's swan:** ▪ **Intertidal mudflats and sandflats**: o Habitat extent - The focal area for the Bewick's swans is the upper Severn Estuary in the vicinity of the New Grounds, Slimbridge area. The mudflats and sandflats exposed as the tide falls where the estuary widens in the upper reaches of the site at Waveridge Sands, Frampton Sands and The Noose are used as safe refuge areas when the birds are disturbed. o Unimpeded sightlines at feeding and roosting sites - Bewick's swan require unrestricted views >500m to allow early detection of predators when feeding and roosting.

Site Name: Severn Estuary Location (Lat & Long): 51 13 29 N 03 02 57 W JNCC Site Code: UK11081 Size: 24662.98 Designation: Ramsar	Habitats Regulations Assessment: Data Proforma
	▪ **Saltmarsh communities**: o Habitat extent - The birds feed on the saltmarsh and the transition from saltmarsh to coastal grazing marsh in front of the sea defences in the upper estuary at The Dumbles, where areas of the high marsh are mainly affected only by brackish water during tidal inundation. o Vegetation characteristics - Bewick's swan graze on a range of 'soft' meadow grasses such as *Agrostis stolonifera* and *Alopecurus geniculatus* found in wet meadows which are outwith the European marine site boundary. o Unimpeded sightlines at feeding and roosting sites - Bewick's swan require unrestricted views >500m to allow early detection of predators when feeding and roosting. **Key supporting habitats for populations of regularly occurring migratory species and assemblage of waterfowl** ▪ **Intertidal mudflats and sandflats:** o Habitat extent - Intertidal mudflats and sandflats and their communities are important habitats as they provide both roosting and feeding areas. The European white-fronted geese roost at night on estuarine sandbanks and usually fly less than 10km to the daytime feeding grounds. Therefore conservation of traditional roosting sites is necessary to enable the population to exploit potential feeding habitats. o Food availability - Most of the waders and waterfowl within the assemblage including the internationally important regularly occurring migratory birds feed on invertebrates within and on the sediments. o Unimpeded sightlines at feeding and roosting sites - Waterfowl require unrestricted views >500m to allow early detection of predators when feeding and roosting. ▪ **Saltmarsh**: o Habitat extent - Saltmarsh and their communities are important habitats as they provide both roosting and feeding areas. Upper and lower saltmarsh provide important feeding and roosting areas for the internationally important migratory birds throughout the estuary.

Site Name: Severn Estuary Location (Lat & Long): 51 13 29 N 03 02 57 W JNCC Site Code: UK11081 Size: 24662.98 Designation: Ramsar	Habitats Regulations Assessment: Data Proforma
	○ Food availability - The saltmarshes provide a rich feeding habitat for redshank and shelduck, which feed on invertebrate species in the sediments, such as the mudsnail Hydrobia. The European white-fronted geese graze on a range of saltmarsh grasses and herbs such as common saltmarsh grass Puccinellia maritime and sea barley Hordeum marinum. The birds feed on the saltmarsh and the transition to coastal grazing marsh in front of the sea defences in the upper estuary and particularly at the The Dumbles. ○ Vegetation characteristics - Vegetation of <10 cm is required throughout areas used by roosting waders. This is managed by grazing. ○ Unimpeded sightlines at feeding and roosting sites - Waterfowl require unrestricted views >500m to allow early detection of predators when feeding and roosting. The saltmarshes also have an important function providing a safe haven from the tides that flood the mudflats twice a day. The low-growing dense vegetation provides a suitable roosting habitat for redshank and dunlin, which prefer to roost on areas of short vegetation ensuring good visibility. ▪ **Shingle and rocky shore:** ○ Habitat extent - the shingle and rocks in the estuary provide feeding areas for dunlin and redshank and some limited foraging at high tide. It is also provides important roost sites at high tide particularly for the dunlin and redshank. Many of the rocks are off shore and are therefore generally free from human disturbance. These include Guscar Rocks in the upper reaches, Blackstone Rocks at Clevedon and Stert Island in Bridgwater Bay. ○ Food availability - see above. ○ Unimpeded sightlines at feeding and roosting sites - Waterfowl require unrestricted views >500m to allow early detection of predators when feeding and roosting. ▪ **Wet coastal grazing marsh, improved grassland and open standing waters** - these supporting habitats lie outside the European marine site boundary but within the SPA. They provide key areas for feeding and roosting for all the migratory species particularly at high tide.

Site Name: Severn Estuary **Location (Lat & Long):** **51 13 29 N** **03 02 57 W** **JNCC Site Code: UK11081** **Size: 24662.98** **Designation: Ramsar**	**Habitats Regulations Assessment: Data Proforma**
	Key environmental conditions for the supporting habitats: ▪ **Hydrodynamic and sedimentary regime** - the tidal range in the Severn Estuary is the second-highest in the world and the scouring of the seabed and strong tidal streams result in natural erosion of the habitats and the presence of high sediment loads. ▪ **Maintain suitable distance between the site and development** - to allow for managed retreat of intertidal habitats and avoid coastal squeeze. **Other key conditions:** ▪ **Manage/restrict public access** - at certain times of the year. Significant disturbance attributable to human activities can result in reduced food intake and/or increased energy expenditure. ▪ **Maintain levels of prey.**
Ramsar Condition Assessment	▪ N/A
Vulnerabilities (includes existing pressures and trends)	▪ **Physical loss of supporting habitats through removal** - The physical loss of areas of intertidal habitats may be caused directly through change of land use or indirectly as a consequence of changes to sedimentation processes (e.g. coastal defences) as well as via the effects of smothering by artificial structures (e.g. jetties) or the disposal of spoils. Activities or developments resulting in physical loss of the intertidal supporting habitats are likely to reduce the availability of feeding and roosting habitats. The intertidal mudflats and sandflats and the saltmarsh are highly sensitive to removal by land reclamation and barrage construction.

Site Name: Severn Estuary Location (Lat & Long): 51 13 29 N 03 02 57 W JNCC Site Code: UK11081 Size: 24662.98 Designation: Ramsar	Habitats Regulations Assessment: Data Proforma
	Information provided by NE and CCW states that large areas of the European marine site are not currently under threat, however when combined with a high level of sensitivity this leads to a moderate vulnerability. ▪ **Noise or visual disturbance** - Overwintering birds are disturbed by sudden movements and sudden noises. This can displace the birds from their feeding grounds. Disturbance can prevent the birds from feeding and in response they either a) decrease their energy intake at their present (disturbed) feeding site through displacement activity, or b) move to an alternative less favoured feeding site. Such a response affects energy budgets and thus survival. There is intermittent disturbance to the internationally important migratory species and the waterfowl assemblage from both the landward and seaward side of the site which has increased in recent years, due to the estuary becoming more populated and the development of all weather recreational pursuits. Bewick's swans are mainly affected by disturbance from the landward side and any increase in disturbance should be avoided. All supporting habitats are currently highly vulnerable to noise and visual disturbance. ▪ **Contamination by synthetic and/or non-synthetic toxic compounds** - Waterfowl are subject to the accumulation of toxins through the food chain or through direct contact with toxic substances when roosting or feeding. Their ability to feed can also be affected by the abundance or change in palatability of their prey caused by toxic contamination. At the moment there is no evidence to show that this is the case, but the estuary is vulnerable to oil spills and there is a continuous discharge of toxins into the estuary, some of which bind to the sediments. NE and CCW identify this is an area which requires further assessment. The intertidal mudflats and sandflats and the saltmarsh are currently highly vulnerable to the introduction of synthetic and non-synthetic compounds. ▪ **Damage by abrasion or selective extraction** - Saltmarsh may be physically damaged from overgrazing or eroded when boats are moored on it and when paths are worn through it to reach moored boats on foot or via vehicles. Currently all supporting habitats are considered to be moderately vulnerable to abrasion.

Site Name: Severn Estuary Location (Lat & Long): 51 13 29 N 03 02 57 W JNCC Site Code: UK11081 Size: 24662.98 Designation: Ramsar	Habitats Regulations Assessment: Data Proforma
	Intertidal habitats are highly sensitive to damage by direct and indirect effects of aggregate dredging. The intertidal mudflats and sandflats and the shingle and rocky shore are therefore considered by NE and CCW to be highly vulnerable to selective extraction. ▪ **Changes in nutrient and/or organic loading** - Changes in organic or nutrient loading can change the species composition of the plants on the saltmarsh and thus the structure of the sward. Increases in nutrients can also cause excessive algal growth on the mudflats, denying the birds access to their invertebrate prey and changing the invertebrate species composition in the sediment. Though the water quality has been improved in recent years there are still local areas of concern and any increase in nutrient loading should be avoided. At present the intertidal mudflats and sandflats are moderately vulnerable to this category of operation. ▪ **Biological disturbance through the selective extraction of species** - Wildfowling is carried out all around the estuary. NE and CCW have not established that it has a detrimental effect on the overall bird populations but state that wildfowling needs to be exercised in a managed and sustainable manner preferably by a British Association of Shooting and Conservation (BASC) affiliated association, applying the BASC wildfowlers code of conduct. Bait digging is also carried out around the estuary. If too large an area is regularly dug over, it can change the availability of prey in the sediment as the area needs a period of recovery and recolonisation. The removal of strandline vegetation by beach cleaning removes an important habitat for invertebrates, as well as many of the invertebrates themselves, reducing the quantity and variety of prey available to the birds. Much of the saltmarsh is managed by grazing and changes in management can alter the availability of prey and suitability of roosting sites. The saltmarsh is currently highly vulnerable to the selective extraction of species.
Landowner/ Management Responsibility	▪ N/A

Site Name: Severn Estuary **Location (Lat & Long):** **51 13 29 N** **03 02 57 W** **JNCC Site Code: UK11081** **Size: 24662.98** **Designation: Ramsar**	**Habitats Regulations Assessment: Data Proforma**
HRA/AA Studies undertaken that address this site	HRA Screening of the County Council of the City and County of Cardiff Local Development Plan Preferred Strategy Sept 2007. www.cardiff.gov.uk/ObjView.asp?Object_ID=9788 ▪ The Screening states that the significance of the potential impacts of the indicative route in the Preferred Strategy (either alone or in-combination with other plans and projects) will be considered when a more detailed scheme is available. An appropriate assessment may be required for the scheme. HRA Screening of the Torfaen Local Development Plan (2006-2021) January 2008. http://www.torfaen.gov.uk/Environm]entAndPlanning/Planning/ForwardPlanning/Publications/HabitatsRegulationAssessment.pdf ▪ It is likely that an increase of 7000 dwellings in Torfaen and associated development will in some way impact upon the site. It is likely however that the potential impact will be as a result of in-combination effects with other implemented plans and programmes in close proximity to the Severn Estuary. AA Screening of the Vale of Glamorgan Local Development Plan Preferred Strategy Dec 07. http://www.valeofglamorgan.gov.uk/files/Living/Planning/Policy/LDP/Appropriate_Assessment_Screening_Report.pdf ▪ Given the extent of the Severn Estuary and the diverse range of activities and operations that could result in adverse impact to the European Site, it is considered inevitable that the Draft Preferred Strategy will in some way, impact upon the designated site. While much of the development arising from the draft preferred strategy is likely to be located well away from the Severn Estuary, the south-eastern zone has been identified as a growth area and abuts the boundary of the designated site. Therefore, it is recommended that a more detailed assessment of the LDP be undertaken following consultation on the Draft Preferred Strategy to ascertain and mitigate against any likely significant effects to the SPA, cSAC, RAMSAR. HRA & AA of the Wales Spatial Plan Update June 2008.

Site Name: Severn Estuary **Location (Lat & Long):** **51 13 29 N** **03 02 57 W** **JNCC Site Code: UK11081** **Size: 24662.98** **Designation: Ramsar**	**Habitats Regulations Assessment: Data Proforma**
	http://wales.gov.uk/about/strategy/spatial/hra/download/?lang=en ▪ The HRA Screening concludes that the WSPU and other plans have the potential to give rise to adverse effects at this site. ▪ The AA states that it is not possible to predict in specific terms whether the WSPU would or would not give rise to significant adverse effects either alone or in combination with other plans/ strategies and projects upon specific European sites. However, it does identify that this site is likely to come under increasing risk of adverse in combination effects from transport infrastructure, urban and economic development and recreation and tourism as a result of the WSPU and English RSSs. The AA also identifies that in combination with the English RSSs the WSPU has the potential to have negative effects on water levels, flood protection and water quality issues, which could affect this site.

Appendix 2: Plans, Programmes & Projects Review

National

National	
People, Places, Futures: The Wales Spatial Plan (update) 2008	
Plan Type	**Regional Spatial Strategy**
Plan Owner/ Competent Authority	**Welsh Assembly**
Currency	**Adopted 2004**
Region/Geographic Coverage	**Wales**
Sector	**Planning**
Related work HRA/AA	**HRA and AA of the Wales Spatial Plan Update (June 2008)**
Document Details	**Potential impacts that could cause 'in-combination' effects**
The Wales Spatial Plan sets out an agenda for the sustainable development of Wales over the next 20 years. The purpose of the update is to reflect new drivers of change and to give status to the Area work which has developed over the past two years. The plan aims to make South East Wales a networked city-region able to provide quality of life for the population and to be able to compete with comparable areas in the UK and the EU for investment and growth. The pattern of housing development across South East Wales is seen as developing a greater mix and balance of housing in the Heads of the Valleys and Connections Corridor whilst ensuring that development in the Coastal Belt of South East	▪ Direct loss of habitat through development - One of the three Strategic Opportunity Areas identified is 'the area around Llantrisant and North West Cardiff'; Cardiff Beech Woods SAC is in close proximity to this. ▪ Housing and employment growth may lead to increased transport movements - the potential for in-combination effect is greater where housing sites are in close proximity to Natura 2000 sites. ▪ New communities require increased infrastructure – potential for land take, pollution increase, disturbance/ severance of habitats and species. ▪ Growth in the requirement for waste management/ transport disposal from new communities and businesses has the potential to increase pollution, and introduce land take issues. ▪ Recreation pressures may result from housing developments near/

National	
People, Places, Futures: The Wales Spatial Plan (update) 2008	
Wales does not undermine this housing market. There should also be a targeted action to secure a supply of affordable housing. Three Strategic Opportunity Areas (SOA) were identified as offering potential regional benefits from their sustainable development. These areas are: developments linked to the dualling of the Heads of the Valleys road (A465); the area around Llantrisant and North West Cardiff which has seen major growth over the past 30 years; and development in the Vale of Glamorgan linked to the proposed St Athan military training academy. The Plan states that improvements to transport are essential to making the city-region work, and to the regeneration of Valleys communities, highlighting the importance of external transport links, such as the M4, east/west rail links and Cardiff International Airport.	adjacent to Natura 2000 sites. ▪ Atmospheric pollution generated as a result of housing, employment and transport growth.

National	
Property Strategy for Employment in Wales 2004-2008	
Plan Type	**Employment Strategy**
Plan Owner/ Competent Authority	**Welsh Development Agency**
Currency	**2004-2008**
Region/Geographic Coverage	**Wales**
Sector	**Planning**
Related work HRA/AA	**N/A**
Document Details	**Potential impacts that could cause 'in-combination' effects**

National	
Property Strategy for Employment in Wales 2004-2008	
The Property Strategy for Employment in Wales 2004-2008 sets out the Welsh Assembly Government's approach for employment sites and buildings across Wales. The document aims to provide a framework to ensure that Wales can provide high quality employment sites and premises in the right locations for inward investors and indigenous businesses. **Premier Business Park** (1) - focused on M4/capital of Wales One park is needed for Wales as a whole, with a land requirement of some 100-300 acres (40-121 hectares). The current lack of such a premier business park is a major weakness in Wales' current property armoury and investor offer. Only the "Greater Cardiff" area can in principle meet the criteria set out in the strategy. **Business Parks** (6) - 2/3 on M4 Corridor. **Strategic Sites** (15/20) -concentrated on large centres of population with proximity to the primary road network. **Strategic Mixed Use Sites** (5-10) - to complement the business parks and strategic sites network. **Special Category Sites** (1) - but with other sites having 'key' sector roles **City/Town Centre Office Sites**	▪ Direct loss of habitat through development - There are 4 SACs in close proximity to the M4, these are: o River Usk SAC; o Cardiff Beech Woods SAC; o Cefn Cribwr Grasslands SAC; and o Kenfig SAC. ▪ Employment growth may lead to increased transport movements. ▪ New development requires increased infrastructure - potential for land take, pollution increase, disturbance/ severance of habitats and species. ▪ Growth in the requirement for waste management/ transport disposal from new businesses has the potential to increase pollution, and introduce land take issues. ▪ Recreation pressures may result from developments near/ adjacent to Natura 2000 sites. ▪ Atmospheric pollution generated as a result of employment and transport growth.

National	
Property Strategy for Employment in Wales 2004-2008	
Extensive network based on the main centres of population and existing critical mass, supplemented by smaller scale opportunities The following areas are recommended for early consideration: - major settlements ▪ Cardiff/Cardiff Bay ▪ Swansea ▪ Newport ▪ Wrexham - other settlements ▪ Caerphilly ▪ Cwmbran ▪ Merthyr Tydfil ▪ Carmarthen ▪ Newtown ▪ Bangor ▪ Colwyn Bay **Industrial Estates/Local Sites** 50-70 – to serve essentially sub-regional and local markets.	

National	
One Wales: Connecting the Nation. The Wales Transport Strategy 2008	
Plan Type	**Transport**
Plan Owner/ Competent Authority	**Welsh Assembly Government - Transport Wales**
Currency	**2008**
Region/Geographic Coverage	**Wales**
Sector	**Transport**
Related work HRA/AA	**N/A**
Document Details	**Potential impacts that could cause 'in-combination' effects**
The goal of One Wales: Connecting the nation is to promote sustainable transport= networks that safeguard the environment while strengthening our country's economic and social life. Our transport strategy identifies a series of high-level outcomes and sets out the steps to their delivery. One Wales: Connecting the nation long-term outcomes: **Social** ▪ Improve access to healthcare ▪ Improve access to education, training and lifelong learning ▪ Improve access to shopping and leisure facilities ▪ Encourage healthy lifestyles ▪ Improve the actual and perceived safety of travel **Economic** ▪ Improve access to employment opportunities ▪ Improve connectivity within Wales and internationally ▪ Improve the efficient, reliable and sustainable movement of people ▪ Improve the efficient, reliable and sustainable movement of freight	▪ Improving the efficient, reliable and sustainable movement of people and freight as well as reducing the contribution of transport to greenhouse gas emissions will help to mitigate or offset any increase in diffuse air pollution as a result of this Strategy.

National	
One Wales: Connecting the Nation. The Wales Transport Strategy 2008	
▪ Improve access to visitor attractions **Environmental** ▪ Increase the use of more sustainable materials ▪ Reduce the contribution of transport to greenhouse gas emissions ▪ Adapt to the impacts of climate change ▪ Reduce the contribution of transport to air pollution and other harmful emissions ▪ Improve the impact of transport on the local environment ▪ Improve the impact of transport on our heritage ▪ Improve the impact of transport on biodiversity The strategic priorities to focus work cover: ▪ Reducing greenhouse gas emissions and other environmental impacts; ▪ Integrating local transport; ▪ Improving access between key settlements and sites; ▪ Enhancing international connectivity; and ▪ Increasing safety and security.	

National	
National Transport Plan Wales, 2009	
Plan Type	**Regional Spatial Strategy**
Plan Owner/ Competent Authority	**Welsh Assembly**
Currency	**2009**
Region/Geographic Coverage	**Wales**

National	
National Transport Plan Wales, 2009	
Sector	**Planning**
Related work HRA/AA	**Habitats Regulations Assessment Statement to Inform an Appropriate Assessment, 2009**
Document Details	**Potential impacts that could cause 'in-combination' effects**
The plan sets out the detail of how the Wales Transport Strategy One Wales: Connecting the Nation will be delivered over the next five years. Aim is to maximise the positive benefits of all plans and programmes across the One Wales agenda and strengthen the development of our sustainable transport system. **Interventions that will require action at an all-Wales level.** **Sustainable travel towns** Aim - To continue to establish sustainable travel towns across Wales. **Integrating the impact of travel into wider decision making** Aim - To improve the planning and policy development processes to ensure stronger integration between transport and key services/facilities. **Increasing healthy and sustainable travel choices** Aim - To make it easier for people to be less reliant on the private car and to use public transport, walking and cycling more frequently. **Improving local bus services** Aim - To improve the quality and integration of local bus services.	**Overarching Development Pressures** ▪ Potential for habitat fragmentation and disturbance issues. ▪ Potential to impact surface and groundwater. ▪ Potential for an adverse impact on air quality **Policy Q1: Sites of European Importance** Proposals for development which may have an unacceptable impact on a European Site or potential European Site will not be permitted unless: i. the proposed development is directly connected with or necessary for the protection, enhancement and positive management of the site for conservation purposes; ii. the proposed development will not have an unacceptable impact on the conservation objectives associated with the site or the integrity of the site; iii. where the site supports priority habitats and/or species, there are reasons of public health or safety why the development should proceed; iv. where the site supports interests not identified as a priority, there are imperative reasons of overriding public interest why the development should proceed; and v. there is no alternative solution.

National	
National Transport Plan Wales, 2009	
Improving rail services Aim - To improve the provision of, and access to, rail services, including improvements for disabled people and vulnerable users, by 2014. **Improving access to key sites and services** Aim - To enable people to access key sites and services more sustainably, particularly where access is currently difficult. **Managing our road infrastructure** Aim - To operate, improve and maintain the trunk road network to meet our statutory obligations and deliver our strategic objectives. **Improving the safety of the road network** Aim - To continue to improve the safety of the road network, with special emphasis on reducing casualty rates of vulnerable users. **Improving the sustainability of freight transport** Aim - To improve the sustainability of freight movements, including supporting the modal shift of freight from road to rail where environmental, economic and social benefits can be achieved. **Improving the sustainability of transport infrastructure and reducing environmental effects** Aim - Use sustainable construction and maintenance methods to reduce the environmental effects of the transport infrastructure for which we are responsible	

National	
The Trunk Road Forward Programme, November 2009	
Plan Type	**Transport**
Plan Owner/ Competent Authority	**Welsh Assembly Government - Transport Wales**
Currency	**2009**
Region/Geographic Coverage	**Wales**
Sector	**Transport**
Related work HRA/AA	**N/A**
Document Details	**Potential impacts that could cause 'in-combination' effects**
Works identified in the 2008 reprioritisation of the Trunk Road Forward Programme which are brought forward into the 2009 document. **Phase 1 - High ranking and programmed to be ready to start between now and April 2011** ▪ A483 Four Crosses ▪ A470 Penloyn to Tan Lan, Llanrwst ▪ A487 Porthmadog, Minffordd, and Tremadog ▪ A470 Cwmbach to Newbridge ▪ A470 Alltmawr ▪ A470 Gelligemlyn ▪ A470 Maes yr Helmau to Cross Foxes ▪ A470 Pentrefelin to Bodnant West Lodge ▪ A40 Penblewin to Slebech ▪ A40 The Kell **Phase 2 - High ranking and programmed to be ready to start between April 2011 and April 2014** ▪ A470 Plas Maenan and Bodhyfryd ▪ A487 Caernarfon to Bontnewydd ▪ A470 Builth Wells	▪ A465 Abergavenny to Gilwern - Runs in close proximity and across the River Usk SAC. Potential for disturbance at point which the A465 crosses the River Usk and for pollution as a result of construction activities. ▪ A465 Gilwern to Brynmawr - This section of the A465 runs directly through Cwm Clydach Woodlands SAC and Usk Bat Sites SAC. Potential for direct land take, increased disturbance for bat population and possible pollution as a result of construction activities. ▪ New M4 Magor to Castleton - This development would involve the building of a bridge across the River Usk SAC. Potential for disturbance at point which the bridge crosses the River Usk and for pollution as a result of construction activities. There is potential for the bridge to have significant effects on migratory fish populations. ▪ All the development proposed has the potential to increase levels of traffic and therefore contribute to an increase in diffuse air pollution.

National	
The Trunk Road Forward Programme, November 2009	
▪ A483 Newtown ▪ A470 Rhayader ▪ A477 St Clears to Red Roses ▪ A465 Brynmawr to Tredegar ▪ A465 Gilwern to Brynmawr ▪ Cardiff International Airport Access ▪ New M4 - Magor to Castleton* * (Awaiting Business Case) **Phase 3 - High ranking but studies needed to identify best solutions to problems but unlikely to be ready to start before April 2014** ▪ A483 Llandeilo ▪ A470 Llanrwst ▪ A40 Llanddewi Velfrey to Penblewin ▪ A4042 Llanellen ▪ A465:A470 to Hirwaun ▪ A465 Dowlais Top to A470 ▪ A494 Drome Corner to Ewloe ▪ A55/A494 Ewloe Interchange ▪ A55 Ewloe to Northop ▪ A55 Abergwyngregyn to Tai'r Meibion ▪ A458 Buttington Cross to Wollaston Cross **On Hold - Problem identified but no ranking applied** ▪ A40 Abergavenny ▪ A470 Llandinam ▪ A470 Commins Coch ▪ A470 Llangurig to Wern Villa ▪ A483 Brynsadwrn ▪ A4042 Penperlleni ▪ A55 Climbing Lane Northop to Coed-y-Cra ▪ A458 Sylfaen to Cyfronydd	

National	
The Trunk Road Forward Programme, November 2009	
▪ A44 Llanbadarn Fawr ▪ A494 Ffynnon-y-Berth	

National	
Minerals Planning Policy Wales 2001	
Plan Type	**Minerals & Waste**
Plan Owner/ Competent Authority	**Welsh Assembly Government**
Currency	**2001**
Region/Geographic Coverage	**Wales**
Sector	**Minerals**
Related work HRA/AA	**N/A**
Document Details	**Potential impacts that could cause 'in-combination' effects**
Special Protection Areas (SPAs), Special Areas of Conservation (SACs) and Ramsar Sites 23. Minerals proposals within or likely to significantly affect potential and classified SPAs, designated, candidate or proposed SACs or Ramsar sites must be carefully examined in relation to the site's conservation objectives in order to ascertain whether or not they are likely to be significant in terms of the ecological objectives of the site. For the purpose of considering development proposals affecting them, potential SPAs and candidate SACs should be given the same protection and treated as classified SPAs and designated SACs. As a matter of policy, the Assembly has chosen to apply the same considerations to Ramsar sites. If a proposal	No locations are specified. The document contains strong policies in regard to the protection of Natura 2000 and Ramsar sites.

National	
Minerals Planning Policy Wales 2001	
individually or in combination with other proposals and sites with extant planning permission is likely have a significant effect on such a site, an appropriate assessment of the implications for the site must be made by the planning authority. If the proposal would adversely affect the integrity of the site (taking into account advice from the Countryside Council for Wales) and conditions would not remove this effect, planning permission will not be granted unless there are: ▪ no alternative solutions (i.e. alternative supplies cannot be made available at reasonable cost; and there is no scope for meeting the need in some other way); and, ▪ imperative reasons of overriding public interest – including those of a social and economic nature. In determining this, authorities should have regard to considerations such as the need for the development in terms of UK mineral supply; and, the impact of permitting the development or refusing it on the local economy. The Assembly would consider the question of whether there are imperative reasons of overriding public interest for the development, taking account of advice from the Countryside Council for Wales, and bearing in mind the views of any other competent authority. **Sites of Special Scientific Interest (SSSIs) and National Nature Reserves (NNRs)** 25. Minerals proposals within SSSIs or likely to affect them should be very carefully considered, and where the impact is likely to be significant they should be subject to the most rigorous examination, and the need for the mineral must be balanced	

National	
Minerals Planning Policy Wales 2001	
against environmental and other relevant considerations. Particular care should be taken in assessing proposals that are likely to affect an SSSI which has been designated an NNR24. Consideration must always include an assessment of: ▪ the need for the development in terms of UK considerations of mineral supply; ▪ the impact of permitting the development or refusing it on the local economy; ▪ whether alternative supplies can be made available at reasonable cost; and the scope for meeting the need in some other way; ▪ any detrimental effect of the proposals on the nature conservation interest of the site in terms of habitat, protected species, bio-diversity, environment and landscape, and the extent to which that should be moderated; and, ▪ in the case of extensions to existing quarries and other mineral extraction sites, the extent to which the proposal would achieve an enhancement to the nature conservation and biodiversity interest of the site. **Proposals for opencast or deep-mine development or colliery spoil disposal will be expected to meet the following requirements otherwise they should not be approved:** ▪ within or likely to affect Sites of Special Scientific Interest (SSSIs), National Nature Reserves (NNRs), Special Protection Areas (SPAs), Special Areas of Conservation (SACs) and Ramsar Sites must meet the additional tests set out in paragraphs 23 and 25 above;	

National	
Minerals Planning Policy Wales 2001	

National	
Welsh Coastal Tourism Strategy 2008	
Plan Type	**Coastal Strategy**
Plan Owner/ Competent Authority	**Welsh Assembly Government**
Currency	**2008**
Region/Geographic Coverage	**Wales**
Sector	**Planning**
Related work HRA/AA	**N/A**
Document Details	**Potential impacts that could cause 'in-combination' effects**
South East – The Capital Network South East Wales is the most populous area of Wales with the coast zone being a main economic driver. Cardiff and Newport are both coastal located cities and the former has an important tourism role as a capital city, regional shopping and cultural centre, a major sporting venue and increasingly as a conference centre and the Ryder Cup at Newport in 2010. The regeneration of Cardiff Waterfront has created an important arc of leisure and recreation facilities around an impounded area of water. The area also has the more traditional seaside resorts of Barry and Penarth and in the Vale of Glamorgan an extensive length of Heritage Coast. In the east of the area the Gwent Levels are important for its wildlife particularly migrating birds. Elements to consider in the South East Spatial Plan Area ▪ To continue to support the waterfront regeneration initiatives ▪ To consider the potential of additional or new berths at	▪ Direct loss of habitat through development - Severn Estuary SPA, Ramsar and SAC is present all along the Cardiff coastline. ▪ Increased levels of tourism and employment may lead to increased transport movements. ▪ Atmospheric pollution generated as a result of employment and transport growth. ▪ Increased recreational pressure through water sports. ▪ An increased level of waterborne transport and development along the coast has the potential to increase diffuse levels of water pollution.

National	
Welsh Coastal Tourism Strategy 2008	
Cardiff and Newport and the provision of visiting berths at existing marinas ▪ To consider the improvement of facilities for cruise liners and for passengers in Cardiff.	

National	
'Catching the Wave' - A watersports tourism strategy for Wales 2004	
Plan Type	**Tourism Strategy**
Plan Owner/ Competent Authority	**Welsh Assembly Government**
Currency	**2004 - 2010**
Region/Geographic Coverage	**Wales**
Sector	**Planning**
Related work HRA/AA	**N/A**
Document Details	**Potential impacts that could cause 'in-combination' effects**
The strategy is underpinned by a number of targets for 2010 including: ▪ to grow the number of domestic watersports trips and nights by 20% to just over one million trips representing around 5 million bed nights ▪ to grow the value of domestic watersports tourist spending by 40% to over £200 million ▪ to grow the numbers of trips taken by the higher spend overseas market by 50% and to increase overseas visitor spend by 40% to £15 million.	▪ Increased recreational pressure on the Severn Estuary, Ramsar and SAC. ▪ An increased level of watersports has the potential to increase diffuse levels of water pollution. ▪ There is also the potential of increased levels of disturbance on nesting birds.

Regional

Regional	
The South East Wales Regional Waste Plan 1st Revision September 2008	
Plan Type	**Waste & Minerals**
Plan Owner/ Competent Authority	**South East Wales Regional Waste Group**
Currency	**Consultation document (ended Dec 2007) Final document due 2008**
Region/Geographic Coverage	**Wales**
Sector	**Waste**
Related work HRA/AA	**N/A**
Document Details	**Potential impacts that could cause 'in-combination' effects**
The **estimated total land area required** in South East Wales for new in-building facilities by 2013 for the seven Preferred Options ranges from between 48 hectares to 108 hectares. The analysis of the potentially available land area on existing B2 (and similar) or major industry sites and B2 sites that have already been allocated in development plans has shown that in each Unitary Authority area for which data is available there is, at the current time, a clear surplus of developable land with a B2 (and similar) planning permission or proposed use to accommodate the highest estimate of the total land area required for new in-building waste management facilities. In South East Wales there is a total of 729 developable hectares of land with a B2 (and similar) planning permission or proposed use. **Biodiversity** - The footprint of statutory designated sites, including Special Areas of Conservation, Ramsar sites, Sites of Special Scientific Interest, National Nature Reserves and Special Protection Areas have all been **designated as absolute**	Natura 2000 sites have designated as absolute areas of constraint, constituting areas that are unsuitable for waste management facilities. In addition, impacts on designated sites as a result of placing waste management facilities nearby have been considered.

Regional	
The South East Wales Regional Waste Plan 1st Revision September 2008	
areas of constraint, constituting areas that are unsuitable for waste management facilities. These have subsequently been omitted from the search. In addition, impacts on designated sites as a result of placing waste management facilities nearby have been considered. This has been undertaken by applying buffer areas around the footprint of designated sites, which present areas of some constraint. As the distance from the designated sites increases, the level of constraint decreases as reflected by the lowering weighting. The buffer zones vary depending on the importance of the designated site; buffers have been derived from information held within current planning policy regarding siting development near such sites, the weightings are appropriate to this and reflect the distance from the designated site, as well as the type of waste facility. For biodiversity issues, the Areas of Search subsequently reflect areas that are considered to be constrained by virtue of planning policy, reflected at the broad, national level. By excluding sites of nature conservation importance and applying buffers around them representing constraints, the permanent negative effects on biodiversity, including flora and fauna, are minimised.	

Regional	
South East Wales Transport Alliance: Regional Transport Plan 2009	
Plan Type	**Regional Transport Plan**
Plan Owner/ Competent Authority	**South East Wales Transport Alliance**
Currency	**2009**
Region/Geographic Coverage	**South East Wales Transport Alliance (SEWTA) region**
Sector	**Transport**
Related work HRA/AA	**N/A**
Document Details	**Potential impacts that could cause 'in-combination' effects**
The aim of this RTP is to improve regional transport in South East Wales and help deliver the social, economic and environmental objectives of the Wales Spatial Plan and the Wales Transport Strategy. The RTP vision is: A modern, accessible, integrated and sustainable transport system for South East Wales which increases opportunity, promotes prosperity for all and protects the environment; where walking, cycling, public transport, and sustainable freight provide real travel alternatives Sewta's priorities build on the RTP's vision. They tackle Sewta's main problems and they set the general direction of the RTP, as follows: 1. To improve access for all to services, facilities and employment, particularly by walking, cycling and public transport; 2. To increase the proportions of trips undertaken by walking, cycling and public transport;	▪ The key focus of the regional transport plan is to rebalance capital investment away from road building towards public transport, walking and cycling, this includes investment in travel planning measures. ▪ The overarching aim of this plan is to seek long term sustainable transport solutions. Key objectives include seeking a modal shift for private and freight transports onto more sustainable modes, reducing the impact of the transport system on the natural environment, reducing greenhouse gas emissions from transport, and reducing traffic growth and congestion. ▪ The in-combination effects of the Regional Transport Plan with Local Development Plans are likely to be positive in the long-term. ▪ The shared approach of these plans to deliver more sustainable transport and travel solutions for commercial and private traffic provides strong support for overarching aims to reduce air pollution which can contribute to the reduction of damaging effects to habitats and species.

Regional	
South East Wales Transport Alliance: Regional Transport Plan 2009	
3. Minimising demand on the transport system; 4. To develop an efficient, safe and reliable transport system with improved transport links between the 14 key settlements in South-East Wales and between South-East Wales and to the rest of Wales, the UK and Europe. 5. To provide a transport system that encourages healthy and active lifestyles. 6. To reduce significantly the emission of greenhouse gases and the impact of the transport system on local communities. 7. To ensure developments are accessible by sustainable transport and make sustainable transport and travel planning an integral component of regeneration schemes. 8. To make better use of the existing transport system The document identifies a number of specific core activities and interventions that according to SEWTA are absolutely critical to achieving its vision. 1. Developing innovative walking, cycling and Smarter Choices programmes 2. Continuing investment in the regional rail system 3. Improving the quality of bus services across the region. 4. Developing better public transport integration 5. Making better use of the regional road system “Three ‘Strategic Opportunity Areas” (SOAs) have been identified. These areas are: ▪ Development linked to the dualling of the Heads of the Valleys Road (A465); ▪ The area around Llantrisant and North West Cardiff; and ▪ The development in the Vale of Glamorgan linked to the	

Regional	
South East Wales Transport Alliance: Regional Transport Plan 2009	
proposed St Athan military training academy. The RTP objectives are: Safety and security ▪ To reduce the number and severity of road traffic casualties. ▪ To improve actual and perceived levels of personal security when travelling. Connectivity and accessibility ▪ To improve access for all to employment opportunities, services, healthcare, education, tourism and leisure facilities ▪ To improve connectivity by sustainable transport between ▪ South-East Wales and the rest of Wales, the UK and Europe. Quality and efficiency ▪ To improve interchange within and between modes of transport. ▪ To improve the quality, efficiency and reliability of the transport system. ▪ To reduce traffic growth, traffic congestion and to make better use of the existing road system. Environment ▪ To achieve a modal shift towards more sustainable forms of transport for moving both people and freight. ▪ To reduce significantly the emission of greenhouse gases from transport. ▪ To reduce the impact of the transport system on the local street scene and the natural, built and historic environment.	

Regional	
South East Wales Transport Alliance: Regional Transport Plan 2009	
▪ To promote sustainable travel and to make the public more aware of the consequences of their travel choices on climate, the environment and health. Land use and regeneration ▪ To ensure developments in South East Wales are accessible by sustainable transport ▪ To make sustainable transport and travel planning an integral component of regeneration schemes.	

Regional	
SEWTA Rail Strategy Study Jan 2006	
Plan Type	**Rail Strategy**
Plan Owner/ Competent Authority	**South East Wales Transport Alliance**
Currency	**2009 - 2018**
Region/Geographic Coverage	**Wales – with regional sections Including South East Wales Transport Alliance (SEWTA) region**
Sector	**Transport**
Related work HRA/AA	**N/A**
Document Details	**Potential impacts that could cause 'in-combination' effects**
In summary the strategy includes: ▪ Additional rolling stock to strengthen peak trains to provide for passenger growth and to avoid overcrowding and rolling stock renewal; ▪ Station improvements including improved station facilities, information, security and access - including additional	▪ Improvements to the rail network could lead to a reduction in car use and improvements to air quality in the region.

Regional	
SEWTA Rail Strategy Study Jan 2006	
parking; ▪ Reliability and capacity improvements; changes to the network to reduce delays and improve the ability to cope with performance problems; specifically at Cardiff Central, Cardiff Queen Street, Barry, Cogan Junction and Llandaff; ▪ Frequency enhancements on existing lines; improving the levels of service on selected routes to meet passengers' expectations and increase the transfer of car trips to rail; specifically new services on the Abergavenny, Chepstow, Ebbw Vale, Rhymney Valley, Taff Vale and Vale of Glamorgan Lines. Additional services to the north of Cardiff are required to cope with the growth in passenger demand and will require a significant investment in the capacity of the network at and between Cardiff Queen Street and Cardiff Central stations; ▪ New stations on existing lines; improving access to the rail network and integrated with the development of improved services; specifically at Caerleon, Magor with Undy, Llanwern, Coedkernew and St Mellons. With those on the main line between Cardiff and Severn Tunnel sited on the Relief Lines; ▪ Network extensions and new stations; to investigate further improving access to the rail network through extending to Ebbw Vale Town and from Pontyclun to Beddau (with stations at Talbot Green, Llantrisant, Gwaun Meisgyn & Beddau); and ▪ Rail - Link Bus Services; to extend the reach of the rail services to communities remote from the network, specifically providing access to the Valleys to the north of Cardiff and Newport.	

Regional	
Turning Heads... A Strategy for the Heads of the Valleys 2020	
Plan Type	**Regional Spatial Planning and Regeneration Strategy**
Plan Owner/ Competent Authority	**Welsh Assembly Government**
Currency	**June 2006**
Region/Geographic Coverage	**Heads of the Valleys covering parts of the administrative areas of (Rhondda Cynon Taf, Merthyr Tydfil, Caerphilly, Blaenau Gwent)**
Sector	**Planning/ Regeneration**
Related work HRA/AA	**N/A**
Document Details	**Potential impacts that could cause 'in-combination' effects**
Strategy set within context of Wales Spatial Plan - sets a shared vision for planning for the Heads of the Valleys. **Preferred Approach - Option A 'Developing Balanced Communities'** ▪ Mix strong employment opportunities with distinctive communities. ▪ Provide mix of housing, retail, leisure/ tourism. ▪ Exploit internal and external employment opportunities including along M4 corridor. Public Sector Investment for 2006-09 includes: ▪ Environment c£300m, including improvements to Merthyr Tydfil, Ebbw Vale, Bargoed, Abertillery, Blaenavon and Mountain Ash Town Centres. ▪ Economy c£500m incuding the next phase of the A465(T) dualling. ▪ Tourism and leisure - c£50m, including local authority investment in community facilities. ▪ Continued major public investment in the area, including	▪ Direct loss of habitat through development - One of the three Strategic Opportunity Areas identified is 'the area around Llantrisant and North West Cardiff'; Cardiff Beech Woods SAC is in close proximity to this. ▪ Housing and employment growth may lead to increased transport movements - the potential for in-combination effect is greater where housing sites are in close proximity to Natura 2000 sites. ▪ Atmospheric pollution generated as a result of housing, employment and transport growth. ▪ The A465 runs in close proximity and across the River Usk SAC and runs directly through Cwm Clydach Woodlands SAC and Usk Bat Sites SAC. There is the potential for direct land take, increased disturbance and increased levels of diffuse air pollution. ▪ A465 dualling, the Brynmawr to Gilwern section – potential for effects relating to Air Quality and Habitat Fragmentation. Project HRA would however be required and should be sufficient to address any potential impacts. ▪ Employment development along the M4 could have implications for Cardiff Beech Woods SAC, River Usk SAC, Kenfig SAC and Cefn Cribwr Grasslands SAC. There is the potential for direct land take, increased disturbance and increased levels of diffuse air pollution.

Regional	
Turning Heads... A Strategy for the Heads of the Valleys 2020	
the regeneration of the former Ebbw Vale Steelworks site. ▪ Housing renewal £0.6billion investment n social housing stock between now and 2012. **Key Strategic Goals include:** **SP2: A Perception Changing Landscape** With stakeholders, we will develop and implement a number of key strategic landscape-scale environmental enhancements, concentrating on key corridors and gateways such as the A465(T) Heads of the Valleys Road, and approaches to the former Ebbw Vale Steelworks and Hirwaun. **SP5: Joined-Up Solutions for Business** Informed by market demand, we will actively encourage developers to improve and expand the range of business premises in the area, including within town centres, to help the Heads of the Valleys become a realistic investment option alongside centres such as Newport and Cardiff. This will be supported by good community and public transport links connecting people with jobs and services - integrated into the wider South East Wales Transport Plan.	

Regional	
Welsh Water's Revised Draft Water Resource Management Plan (dWRMP) 2011	
Plan Type	**Water Resource Management Plan**
Plan Owner/ Competent Authority	**Welsh Water**
Currency	**2006/07 to 2034/35**
Region/Geographic Coverage	**Welsh Water's boundary**
Sector	**Water**
Related work HRA/AA	**HRA of the dWRMP, Oct 2011**
Document Details	**Potential impacts that could cause 'in-combination' effects**
This Plan details the strategy for managing water resources across Welsh Water's supply area over the next 2 years. The WRMP describes the following areas: ▪ Welsh Water's water resource zones (WRZ's) and the Level of Service we provide our customers ▪ Our resources, their yield and the future uncertainties which may impact upon them ▪ The forecast change in demand over the next 25 years and the drivers for change ▪ How we plan and manage our resources for the potential impact of climate change ▪ Our leakage strategy and our targets over the next five-year period ▪ The areas in Wales where we envisage the potential for current and future supply issues and how this compares against our position five years ago ▪ An analysis of water resource options across Wales, the	The HRA notes that the Revised dWRMP accounts for the Sustainability Reductions required by the RoC, and so explicitly accounts for effects on European sites that are occurring (or predicted to occur) as a result of existing water-resource permissions. The post-RoC abstraction regimes will not, therefore, have an adverse effect on any water-resource sensitive European sites. Together, the RoC and WRMP processes also ensure (as far as is achievable) that future changes in demand will not affect any European sites (this is aided by the WRMP's five-year review cycle, which monitors the performance of the Revised dWRMP and allows for adjusted demand forecasts). The Preferred Options proposed by the Revised dWRMP aim to either utilise 'new water'15 in a WRZ, or enhance the use of existing licensed resources through infrastructure improvements. They could therefore affect European sites through their construction (most schemes will require some construction works, which will inevitably take place within the catchment of a riparian or marine European site), or operation. The HRA determined that most of the Preferred Options are unlikely to have adverse effects (alone or in combination) on any European sites, either due to an absence of impact pathways; a sufficiently low risk of effects occurring where pathways are present; or because suitable environmental measures can be identified and

types of options we have considered and the environmental impact or benefit associated with them ▪ Our investment plan to meet water resource requirements over the next five years and beyond	relied on to avoid any significant or adverse effects. For the schemes where assessment cannot be meaningfully completed at this level (Brecon-Portis: Additional releases from Usk Reservoir; Pembrokeshire: Re-instate Milton source for industrial use) the Revised dWRMP has included potential mitigation measures and identified 'preferred alternatives' which have also been assessed through the HRA process and was considered unlikely to result in adverse effects. Critically, however, the Revised dWRMP will retain flexibility - it is not a rigid set of proposals that cannot be deviated from - and this (together with the safeguards provided by the five-year review cycle and the normal project-level HRA requirements) can be relied on to ensure that adverse effects will not occur on any European site as a result of the implementation of the Revised dWRMP.

Sub-Regional	
The Thaw & Cadoxton Catchment Abstraction Management Strategy 2006	
Plan Type	**Catchment Abstraction Management Strategy**
Plan Owner/ Competent Authority	**Environment Agency Wales**
Currency	**2006-2011**
Region/Geographic Coverage	**Thaw and Cadoxton Catchment**
Sector	**Water**
Related work HRA/AA	**N/A**
Document Details	**Potential impacts that could cause 'in-combination' effects**
The document sets out how the Environment Agency Wales will manage water abstraction from the Thaw and Cadoxton catchment until 2011. The strategy provides the framework for any decision on an abstraction license application.	Under the Habitats Regulations the Environment Agency Wales has a duty to assess the effects of existing abstraction licences and any new applications to make sure they are not impacting on internationally important nature conservation sites. Water efficiency is also tested by the EA before a new license is granted. If the assessment of a new application shows that it could

The Thaw & Cadoxton CAMS area encompasses approximately 159km2 of the distinctive lowland landscape of the Vale of Glamorgan. The principal town in the catchment is Barry, with the market town of Cowbridge to the west and Penarth to the east. Although some parts of the catchment are heavily industrialised the catchment as a whole is predominantly rural with much of the land area used for agriculture.	have an impact on a SAC/SPA the EA will have to follow strict rules in setting a time limit for that license. The catchment has been split into 5 Water Resource Management Units (WRMU) and 5 Groundwater Management Units (GWMU). The document states that WRMU 1 and all 5 of the GWMUs have 'water available'. WRMUs 2 to 4 are considered to have 'no water available', while WRMU 10 is assessed to be 'over abstracted'. Both the River Thaw and the River Cadoxton ultimately flow into the Severn Estuary. Therefore any impact to the Severn Estuary caused by changes to the water resource management of the catchment needs is considered as part of the CAMS process.

Sub-Regional	
The Taff and Ely Catchment Abstraction Management Strategy 2006 and July 2007 update	
Plan Type	**Catchment Abstraction Management Strategy**
Plan Owner/ Competent Authority	**Environment Agency Wales**
Currency	**2006-2010**
Region/Geographic Coverage	**Taff and Ely Catchment**
Sector	**Water**
Related work HRA/AA	**N/A**
Document Details	**Potential impacts that could cause 'in-combination' effects**
The document sets out how the Environment Agency Wales will manage water abstraction from the Taff and Ely catchment until 2010. The strategy provides the framework for any decision on an abstraction license application.	Under the Habitats Regulations the Environment Agency Wales has a duty to assess the effects of existing abstraction licences and any new applications to make sure they are not impacting on internationally important nature conservation sites. Water efficiency is also tested by the EA before a new

The Taff and Ely have a total catchment area of approximately 576 km^2, which encompasses the River Taff, the River Ely and their respective tributaries. A large groundwater abstraction occurs at Ely Wells (in the lower Ely catchment) providing water for operations at Aberthaw Power Station. In the upper areas of the catchment there are carboniferous limestone and sandstone units (capable of supporting significant yields), which are currently not being used to their full potential.	license is granted. If the assessment of a new application shows that it could have an impact on a SAC/SPA the EA will have to follow strict rules in setting a time limit for that license. The catchment has been split into 3 Water Resource Management Units (WRMU) and 1 Groundwater Management Unit (GWMU). The document states that two of the WRMUs and the GWMU are over licensed. The WRMU that contains the River Ely has water available for abstraction. Blaen Cynon SAC falls within WRMU 6 which according to the CAMS is over licensed. The Resource availability status of WRMU 6 is that there will be no water available by 2016. A reduction in the water table could affect the devil's-bit scabious, which prefers moist soils. The Marsh Fritillary Butterfly requires this plant species as it is their larval food.

Sub-Regional	
The Neath, Afan and Ogmore Catchment Abstraction Management Strategy 2005 and Dec 2009 update	
Plan Type	**Catchment Abstraction Management Strategy**
Plan Owner/ Competent Authority	**Environment Agency Wales**
Currency	**2006-2010**
Region/Geographic Coverage	**Neath, Afan and Ogmore Catchment**
Sector	**Water**
Related work HRA/AA	**N/A**
Document Details	**Potential impacts that could cause 'in-combination' effects**
The document sets out how the Environment Agency Wales will manage water abstraction from the Neath, Afan and Ogmore catchment until 2010. The strategy provides the	Under the Habitats Regulations the Environment Agency Wales has a duty to assess the effects of existing abstraction licences and any new applications to make sure they are not impacting on internationally important nature

framework for any decision on an abstraction license application. The Neath, Afan and Ogmore CAMS is a surface water dominated catchment that covers the whole length of the rivers Neath, Afan, Ogmore and Kenfig. The CAMS area ranges from Crymlyn Bog in the west, to east of Bridgend, and up to the Brecon Beacons in the north. Within the CAMS area there are 28 licensed surface water abstractions and 20 licensed groundwater abstractions. There are also two abstractions for navigation purposes, which are exempt from licensing, namely the supply of water to Neath Canal and Port Talbot Docks.	conservation sites. Water efficiency is also tested by the EA before a new license is granted. If the assessment of a new application shows that it could have an impact on a SAC/SPA the EA will have to follow strict rules in setting a time limit for that license. The catchment has been split into 9 Water Resource Management Units (WRMU). The document states that two of the WRMUs have no water available and three are over abstracted.

Sub-Regional	
Shoreline Management Plan 2 Lavernock Point to St Ann's Head (2010).	
Plan Type	**Shoreline Management Plan**
Plan Owner/ Competent Authority	**The Swansea and Carmarthen Bay Coastal Engineering Group**
Currency	**2010**
Region/Geographic Coverage	**The South Wales coast between Lavernock Point (Vale of Glamorgan) and St Ann's Head (Pembrokeshire)**
Sector	**Planning**

Related work HRA/AA	Appendix H: Habitats Regulations Assessment July 2010
Document Details	**Potential impacts that could cause 'in-combination' effects**
The SMP uses four generic policies, as defined by Shoreline Management Plan guidance. Each section of coast has been assigned a policy for each of the three time periods (0 to 20 years; 20 to 50 years; and 50 to 100 years). If required a different policy has been defined for each of the three time periods. **Hold the line** - This policy means that existing defences are maintained and replaced (if required) along their current alignment. **Advance the line** - New defences are built seaward of the original defences, in order to create new land. **Managed realignment** - This policy allows the shoreline to move backwards with management to control or limit movement (such as reducing erosion or building new defences on the landward side of the original defences). **No active intervention** - This policy means that there is no investment in coastal defences or operations. The areas of relevance to this HRA are: **Area 1: Lavernock Point to Barry Island** - Allow natural erosion of undefended coastline to continue, maintain existing defences for as long as possible at Swanbridge (up to to 20 years) but do not improve or replace structures once they have failed. **Area 2: Barry Island and Docks** - Hold the existing line	The HRA concluded that SMP2 policies may lead to adverse effects on the following sites: ▪ Pembrokeshire Marine SAC; ▪ Limestone Coast of South West Wales SAC; ▪ Carmarthen Bay and Estuaries SAC; ▪ Carmarthen Bay Dunes SAC; ▪ Burry Inlet SPA; and ▪ Burry Inlet Ramsar Site. In respect of these effects, a Statement of Case will be prepared, showing that there are no less damaging, appropriate alternative policies for the frontages concerned and that there are Imperative Reasons of Overriding Public Interest (IROPI) for pursuing the preferred policies. The Statement of Case will also outline the compensatory measures that will be delivered to offset the adverse effects of implementing the strategy. This includes compensatory habitat to be delivered under the Environment Agency Wales' Wales Habitat Creation Programme.

through maintenance (and upgrading, if justified) of existing defences to reduce the risk of coastal erosion and flooding to key assets. Potential managed realignment at Whitmore Bay in the long term (50 to 100 years) to maintain the amenity beach, subject to further detailed studies. Allow natural erosion of undeveloped areas of coastline. **Area 3: The Knap to Watch House Bay** - Allow natural erosion of the undefended coastline to continue. At the Knap maintain existing defences for as long as possible (up to 20 years) followed by managed realignment, subject to further detailed studies. **Area 4: Aberthaw** - Hold the existing line through maintenance and upgrading of existing defences to reduce risk of coastal erosion and flooding to the power station. **Area 5: Limpert Bay to Nash Point -** Allow natural erosion of the undefended coastline to continue. Maintain and upgrade localised defences at Llantwit Major, consider managed realignment in the long term (50 to 100 years), subject to further detailed studies. **Area 6: Nash Point to Porthcawl** - Allow natural erosion of the undeveloped coastline and management of the existing dune systems.	

Local Development Plans

Local Development Plans	
Bridgend County Borough Council Deposit Plan 2011	
Plan Type	**Local Development Plan**
Plan Owner/ Competent Authority	**Bridgend County Borough Council**
Currency	**2006-2021**
Region/Geographic Coverage	**Bridgend County Borough Council administrative boundaries**
Sector	**Planning**
Related work HRA/AA	**HRA of the Deposit Plan, June 2011.**
Document Details	**Potential impacts that could cause 'in-combination' effects**
Theme one: to produce high quality sustainable places. The LDP: ▪ Focuses development within four strategic regeneration growth areas. ▪ Defines 'settlement boundaries' around 32 towns and villages in Bridgend County Borough. ▪ Allocates 20 regeneration and mixed use sites for development. ▪ Sets out the design and place making principles upon which every planning application will be assessed. ▪ Outlines how climate change and peak oil issues will be addressed. ▪ Sets out transport planning principles to encourage use of public transport, reduce congestion and improve road safety. ▪ Highlights 27 specific transport schemes including walking and cycling routes and rail, bus and road proposals.	The HRA concluded that the Deposit Plan will have no significant impacts on Natura 2000 sites, alone or in-combination. The HRA included recommendations to mitigate against potential adverse impacts of development that could adversely effect the following European sites: ▪ Blackmill Woodlands SAC ▪ Kenfig SAC ▪ Cefn Cribwr SAC

Local Development Plans	
Bridgend County Borough Council Deposit Plan 2011	
Theme three: to spread prosperity and opportunity through regeneration. The LDP: ▪ Allocates four strategic employment sites for high-quality development at Brocastle Bridgend, Island Farm Bridgend, Pencoed Technology Park and Ty Draw Farm, North Cornelly. ▪ Identifies and protects 164 hectares of land for employment purposes. ▪ Outlines the 27 retail and commercial centres in the county borough with policies to protect retail uses. ▪ Allocates land for new retail development in town centres. ▪ Promotes new tourism ventures, particularly in Porthcawl and the valleys. **Key proposals for Maesteg and the Llynfi Valley** ▪ Maesteg Washery – including housing and recreation. ▪ Ewenny Road, Maesteg - including employment, commercial centre, housing and community facilities. ▪ Coegnant Reclamation Site – including leisure park, tourism, housing and local employment. ▪ Maesteg Transport Hub and half-hourly rail service. ▪ Improved Walking and Cycling routes – linking to the Afan Forest Park. **Key proposals for Porthcawl, Pyle, North Cornelly and Kenfig Hill** ▪ Porthcawl Waterfront Regeneration Area – including retail, leisure, tourism, residential and community facilities. ▪ Pwll-Y-Waun – including residential, B1 business and recreation.	

Local Development Plans	
Bridgend County Borough Council Deposit Plan 2011	
▪ Mixed-use development at Gibbons Way for health, local business and housing. ▪ Improved walking and cycling routes. ▪ Strategic employment site at Ty Draw Farm, North Cornelly. **Key proposals for the Valleys Gateway and the Ogmore and Garw valleys** ▪ 'Gateway to the Valleys' site at Sarn – including a new comprehensive school, community facilities and housing. ▪ Ogmore Comprehensive, Bryncethin – including the retention of the school for education, recreation and housing. ▪ Christie Tyler site Brynmenyn – including employment and housing. ▪ Sarn Park Services employment site. ▪ Improved walking and cycling routes. ▪ Promotion of tourism hubs in the Ogmore and Garw Valleys, and at Bryngarw Country Park. ▪ Improved recreation facilities. ▪ A new school in Blaengarw. **Key proposals for Bridgend and Pencoed** ▪ Parc Derwen – including housing, a new primary school, commercial centre and community facilities. ▪ North East Brackla – including employment, housing, commercial centre and recreation. ▪ Parc Afon Ewenni - including housing, employment, commercial centre and community facilities. ▪ Bridgend town centre key retail re-development sites. ▪ Regeneration projects in Pencoed – including park and	

Local Development Plans	
Bridgend County Borough Council Deposit Plan 2011	
ride, a new school and recreation. New railway station and park and ride at Brackla. ▪ Improved walking and cycling routes. ▪ Strategic employment sites at Brocastle and Island Farm, Bridgend and at Pencoed Technology Park.	

Local Development Plan	
Cardiff Deposit Local Development Plan 2006-2021 WITHDRAWN	
Plan Type	**Local Development Plan (withdrawn April 2010)**
Plan Owner/ Competent Authority	**Cardiff Council**
Currency	**Withdrawn and new LDP being completed**
Region/Geographic Coverage	**Cardiff Council administrative boundary**
Sector	**Planning**
Related work HRA/AA	**HRA Screening Report 2007 (of LDP withdrawn April 2010)**
Document Details	**Potential impacts that could cause 'in-combination' effects**
LDP withdrawn April 2010. New delivery agreement agreed Oct 2010, http://www.cardiff.gov.uk/content.asp?nav=2870,3139,3154,5845&parent_directory_id=2865 Consultation on options for growth and possible development sites consultation took place between 9th May and 10th June 2011. Three growth options were proposed:	**Overarching Development Pressures** ▪ Housing and employment growth may lead to increased transport movements - the potential for in-combination effect is greater where housing sites are in proximity to Natura 2000 sites. ▪ Atmospheric pollution is likely to be the main impact of the Preferred Strategy on sites outside of Cardiff. **SAC Specific Issues – likely to arise from LDP led developments**

Local Development Plan	
Cardiff Deposit Local Development Plan 2006-2021 WITHDRAWN	
Option A About 54,400 new homes in total About 55,000 new jobs in total Option B About 45,400 new homes in total About 40,000 new jobs in total Option C About 36,000 new homes in total About 26,000 new jobs in total **Consultation on Preferred Strategy set for end 2011.**	▪ Increased transport movements and therefore increased emissions have the potential for in combination effects on Cardiff Beech Woods SAC and Severn Estuary SAC/SPA/Ramsar as the site is sensitive to atmospheric pollution. ▪ Increased recreational pressure on Cardiff Beech Woods SAC and Severn Estuary SAC/SPA/Ramsar. The woodland is easily accessible to the public and some places are subject to significant visitor pressure.

Local Development Plans	
Rhondda Cynon Taff County Borough Council Local Development Plan (adopted) 2011	
Plan Type	**Local Development Plan**
Plan Owner/ Competent Authority	**Rhondda Cynon Taf County Borough Council**
Currency	**2009**
Region/Geographic Coverage	**Rhondda Cynon Taf County Borough Council administrative boundaries**
Sector	**Planning**
Related work HRA/AA	**HRA (AA) Report on Deposit January 2010.**
Document Details	**Potential impacts that could cause 'in-combination' effects**

Local Development Plans	
Rhondda Cynon Taff County Borough Council Local Development Plan (adopted) 2011	
Policy CS 3 – Strategic Sites In order to promote sustainable growth within Rhondda Cynon Taf the following sites are allocated for the development of a mixture of largescale residential, employment, retail and recreational purposes: 1. Former Maerdy Colliery Site, Rhondda Fach (Policy NSA4); 2. Former Fernhill Colliery Site, Blaenrhondda (Policy NSA5); 3. Former Phurnacite Plant, Abercwmboi (Policy NSA6); 4. Land at Robertstown / Abernant, Aberdare (Policy NSA7); 5. Land South of Hirwaun (Policy NSA8); 6. Cwm Colliery and Coking Works / Tyn-y-Nant (Policy SSA7); 7. Mwyndy / Talbot Green Area (Policy SSA8), and 8. Former OCC Site Llanilid, Llanharan (Policy SSA9). **Policy CS 4 – Housing Requirements** In order to meet housing requirements land will be made available for the construction of 14,385 new dwellings in sustainable locations during the plan period. Provision will be met in accordance with Policy AW 1 – Supply of New Housing. Land for the construction of between 5,000 – 5,450 new dwellings is allocated on the following Strategic Sites:- 1 Former Fernhill Colliery Site, Blaenrhondda 350 – 400 2 Former Phurnacite Plant Site, Abercwmboi 500 3 Land at Robertstown / Abernant Strategic Site, Aberdare 500 – 600 4 Land South of Hirwaun 400 5 Former Cwm Colliery and Coking Works, Tyn-y-Nant, Pontypridd 800-950 6 Mwyndy / Talbot Green Area 500	The HRA concluded that the Deposit Plan will not have adverse effects on the integrity of European sites. The risk of a significant effect on the integrity of the Blaen Cynon SAC was considered unlikely, when the proposed avoidance and mitigation measures have been taken into account and the additional policy recommendations provided by the HRA for the LDP are in place.

Local Development Plans	
Rhondda Cynon Taff County Borough Council Local Development Plan (adopted) 2011	
7 Former OCC Site Llanilid, Llanharan 1950- 2100 Land for 4,025 new dwellings to meet local need is allocated in accordance with policies NSA 9 and SSA 10. **Policy CS 6 – Employment Requirements** In order to maximise the opportunities presented by the Capital Region and to ensure that Rhondda Cynon Taf achieves its economic potential, land will be allocated to meet strategic and local employment needs. Land for the provision of 51 hectares of new B1, B2 and B8 strategic employment development is allocated at the following locations:- 1 Strategic Site 5: Land South of Hirwaun (B1, B2 & B8 36) 36 ha 2 Strategic Site 7: Land at Mwyndy / Talbot Green (B1) 15 ha Land for the provision of 47 hectares of new B1, B2 and B8 local employment development is allocated in accordance with policies NSA 4, NSA 6, NSA 7, NSA 14, SSA 7 and SSA 14. Proposals relating to policy CS 6.1 will require an assessment of Likely Significant Effect on the Blaen Cynon SAC and the features for which the site is of European importance. Proposals at CS 6.1 will be required to incorporate landscape and habitat improvements and enhancements and build on the strong public right of way network within the site. ▪	

Minerals and Waste Strategies

Minerals & Waste	
Bridgend County Borough Council Municipal Waste Draft Strategy 2009	
Plan Type	**Municipal Waste Strategy**
Plan Owner/ Competent Authority	**Bridgend County Borough Council**
Currency	**2009**
Region/Geographic Coverage	**Bridgend County Borough Council administrative boundaries**
Sector	**Waste**
Related work HRA/AA	**N/A**
Document Details	**Potential impacts that could cause 'in-combination' effects**
The strategic objectives underpinning the Municipal Waste Management Strategy are: a) To set standards and targets and to monitor performance in implementing the Council's Municipal Waste Management Strategy and to review and update the Strategy on a regular basis. b) To promote waste minimisation to householders and local business through the provision of information, advice, education and awareness raising campaigns and, where appropriate, to provide support for local schemes to reduce waste through such measures as home composting, re-use of waste and reduction of waste at source. c) To promote the principles of sustainable waste management and waste minimisation, re-use and recycling by adopting and developing 'good practice' in the management and delivery of the Council's services and purchasing systems.	**Overarching Development Pressures** **Recycling** Air Pollution/ Disturbance ▪ Transport and energy emissions generated by collection, sorting and processing ▪ Dust, noise and odour associated with industrial process **Composting** Air/ Water Pollution, Introduced/Invasive Species ▪ Odour, litter, possible vermin generation ▪ Release of spores [non-native], requirement for buffer zones (at least 250 metres between composting operations and sensitive receptors) ▪ Production of liquid pollutant ▪ Potential for combustion **Mechanical Biological Treatment (MBT)** Air Pollution, Land Take, Hydrology ▪ Emissions, traffic impacts, land take and wider environmental impacts analogous with industrial process ▪ Processes produce residue

Minerals & Waste	
Bridgend County Borough Council Municipal Waste Draft Strategy 2009	
d) To increase the amount of municipal waste that is recovered for re-use, particularly where such re-use creates employment and training opportunities locally. e) To increase the segregation at source of municipal waste for recycling and composting, with due regards to the benefits and costs and to ensure that further value is recovered from residual waste either for recycling, mixed waste composting or energy recovery. f) To ensure that contractors carry out the treatment or disposal of waste in a manner that minimises risks to the environment or health. g) To take measures to prevent the illegal disposal of waste through litter, fly-tipping or abandoned vehicles, and that to ensure that where it does occur, that due consideration is given to taking appropriate enforcement action against identified offenders.	**Refuse Derived Fuel (energy from waste)** Air Pollution ▪ Emission concerns, particulates and potentially dioxins **Anaerobic Digestion (energy from Waste)** Air/Water Pollution ▪ Emissions to air – odour (during collection, transport and pre-treatment) ▪ Wastewater – potential for high concentrations of metals, dissolved nitrogen and organic material **Incineration with Energy Recovery** Air/ Water Pollution ▪ Noise, dust, traffic, visual amenity, potential to impact fauna and flora ▪ Deposition of substances on surface water ▪ Solid, liquid emissions ▪ Gaseous emissions include odour, acid gas, heavy metals, particulates, organic compounds ▪ Ash residues comprising fine particles, [need to landfill ash/ scrap] dioxins, heavy metals salts, unreacted lime and carbon ▪ Contamination, accumulation of toxic substance (food chain)] **Landfill & Landraise** Air/ Water Pollution, Invasive Species, Land Take ▪ Methane and carbon monoxide emissions ▪ Leachate, salts, heavy metals, biodegradable and persistent organics ▪ Accumulation of hazardous substances in soil ▪ Topography alteration, visual intrusion ▪ Soil occupancy, prevention of other land uses ▪ Attraction of vermin ▪ Contamination, accumulation of toxic substances ▪ Potential exposure to hazardous substances ▪ Impact on surface water runoff, flood risk

Minerals & Waste	
Bridgend County Borough Council Municipal Waste Draft Strategy 2009	
	SAC Specific Issues ▪ Specific potential in-combination impacts cannot be explored in absence of specific waste locations.

Minerals & Waste	
Cardiff Council Local Development Municipal Waste Management Strategy 2005	
Plan Type	**Municipal Waste Strategy**
Plan Owner/ Competent Authority	**Cardiff Council**
Currency	**2005 - 2010**
Region/Geographic Coverage	**Cardiff Council administrative boundaries**
Sector	**Waste**
Related work HRA/AA	**N/A**
Document Details	**Potential impacts that could cause 'in-combination' effects**
This strategy provides a detailed plan for managing Cardiff's municipal waste to 2010, although consideration is also given to the requirements to 2020. Changes in legislation, taxation and attitudes to waste, dictate that a regular review of detail will be necessary every 3 years, with the first review to be undertaken in 2007. The strategy for Cardiff is as follows: Expansion of recycling, composting and reuse schemes for municipal waste such that the Welsh Assembly Government	**Overarching Development Pressures** **Recycling** Air Pollution/ Disturbance ▪ Transport and energy emissions generated by collection, sorting and processing ▪ Dust, noise and odour associated with industrial process **Composting** Air/ Water Pollution, Introduced/Invasive Species ▪ Odour, litter, possible vermin generation ▪ Release of spores [non-native], requirement for buffer zones (at least

Minerals & Waste	
Cardiff Council Local Development Municipal Waste Management Strategy 2005	
targets for each of the target years of 2006/07 and 2009/10 are met. Recycling and composting levels will increase to 50% by the year 2013, with significant recovery of value from energy from waste. Continued landfill of final residues will be required. Energy from Waste can be a standalone dedicated process itself, or part of other residual treatment technologies such as Mechanical Biological Treatment leading to the production of a refuse derived fuel. Predicted Land Requirements and Timescales for Delivery of the Municipal Waste Management Infrastructure The Strategy provides an indication of the likely land requirements for the principal elements of waste management infrastructure that will be required to deliver this strategy for Cardiff. These should be seen as being indicative only at this stage since there will be a number of site specific design issues that influence the actual requirements for each element. Indicative Land Requirements for Waste Infrastructure Technology: ▪ Replacement Landfill o Approx. 25 hectares over a life of (say) 10 year ▪ Mechanical Biological Treatment Plant o 2ha ▪ Energy from Waste Plant o 2ha ▪ Materials Reclamation Facility extension	250 metres between composting operations and sensitive receptors) ▪ Production of liquid pollutant ▪ Potential for combustion **Mechanical Biological Treatment (MBT)** Air Pollution, Land Take, Hydrology ▪ Emissions, traffic impacts, land take and wider environmental impacts analogous with industrial process ▪ Processes produce residue **Refuse Derived Fuel (energy from waste)** Air Pollution ▪ Emission concerns, particulates and potentially dioxins **Anaerobic Digestion (energy from Waste)** Air/Water Pollution ▪ Emissions to air – odour (during collection, transport and pre-treatment) ▪ Wastewater – potential for high concentrations of metals, dissolved nitrogen and organic material **Incineration with Energy Recovery** Air/ Water Pollution ▪ Noise, dust, traffic, visual amenity, potential to impact fauna and flora ▪ Deposition of substances on surface water ▪ Solid, liquid emissions ▪ Gaseous emissions include odour, acid gas, heavy metals, particulates, organic compounds ▪ Ash residues comprising fine particles, [need to landfill ash/ scrap] dioxins, heavy metals salts, unreacted lime and carbon ▪ Contamination, accumulation of toxic substance (food chain)] **Landfill & Landraise** Air/ Water Pollution, Invasive Species, Land Take ▪ Methane and carbon monoxide emissions ▪ Leachate, salts, heavy metals, biodegradable and persistent organics

Minerals & Waste	
Cardiff Council Local Development Municipal Waste Management Strategy 2005	
○ Sufficient land available at existing site at Lamby Way ▪ Household Waste Recycling Centre (2 No. required) ○ 1 each site ▪ Compost processing, in-vessel (including maturation area) ○ 2ha ▪ Additional compost processing, open windrow ○ 2ha ▪ 'Bring' points (approximately 35 required) ○ 0.15-0.25ha each site (nominal area only)	▪ Accumulation of hazardous substances in soil ▪ Topography alteration, visual intrusion ▪ Soil occupancy, prevention of other land uses ▪ Attraction of vermin ▪ Contamination, accumulation of toxic substances ▪ Potential exposure to hazardous substances ▪ Impact on surface water runoff, flood risk **SAC Specific Issues** Specific potential in-combination impacts cannot be explored in absence of specific waste locations.

Minerals & Waste	
Vale of Glamorgan Council Municipal Waste Strategy 2004	
Plan Type	**Municipal Waste Strategy**
Plan Owner/ Competent Authority	**Vale of Glamorgan Council**
Currency	**2004 - 2010**
Region/Geographic Coverage	**Vale of Glamorgan Council administrative boundaries**
Sector	**Waste**
Related work HRA/AA	**N/A**
Document Details	**Potential impacts that could cause 'in-combination' effects**
The preferred strategy is as follows: Expansion of recycling and reuse schemes for municipal waste such that the waste strategy targets for each of the	**Overarching Development Pressures** **Recycling** Air Pollution/ Disturbance

Minerals & Waste	
Vale of Glamorgan Council Municipal Waste Strategy 2004	
target years of 2006/07 and 2009/10 are met and in fact exceeded. All residual waste would be sent to a Mechanical Biological Treatment plant. Continued landfill of waste residues will be required. The strategy for the Vale of Glamorgan will comprise a number of key elements, as follows: ▪ Waste minimisation is central to reducing the amount of waste produced in the Vale, and this will be a priority for the Council over the next few years. ▪ Continued development of the kerbside collection scheme for dry recyclable and organic (compostable) materials. It will be necessary to develop the scheme over the period up to 2009/10 in order to achieve the level of diversion required to meet the targets. ▪ Enhancement of the Household Waste Recycling Centre (HWRC) provision across the Authority to facilitate improved access to the principal population centres and increased diversion of materials for recycling and reuse. This will include replacement of the two existing civic amenity sites in Sully and Llandow. ▪ Enhancement of the existing network of 'Bring Sites', to include the provision of a number of strategically located community based recycling centres. ▪ Development of waste handling and treatment facilities within the context of a 'Waste Resource Park', to include the following: o Provision of a Materials Recycling Facility (MRF) to deal with recyclable materials diverted at the kerbside and at HWRCs and 'Bring Sites'.	▪ Transport and energy emissions generated by collection, sorting and processing ▪ Dust, noise and odour associated with industrial process **Composting** Air/ Water Pollution, Introduced/Invasive Species ▪ Odour, litter, possible vermin generation ▪ Release of spores [non-native], requirement for buffer zones (at least 250 metres between composting operations and sensitive receptors) ▪ Production of liquid pollutant ▪ Potential for combustion **Mechanical Biological Treatment (MBT)** Air Pollution, Land Take, Hydrology ▪ Emissions, traffic impacts, land take and wider environmental impacts analogous with industrial process ▪ Processes produce residue **Refuse Derived Fuel (energy from waste)** Air Pollution ▪ Emission concerns, particulates and potentially dioxins **Anaerobic Digestion (energy from Waste)** Air/Water Pollution ▪ Emissions to air – odour (during collection, transport and pre-treatment) ▪ Wastewater – potential for high concentrations of metals, dissolved nitrogen and organic material **Incineration with Energy Recovery** Air/ Water Pollution ▪ Noise, dust, traffic, visual amenity, potential to impact fauna and flora ▪ Deposition of substances on surface water ▪ Solid, liquid emissions ▪ Gaseous emissions include odour, acid gas, heavy metals, particulates, organic compounds

Minerals & Waste	
Vale of Glamorgan Council Municipal Waste Strategy 2004	
○ Development of an 'in-vessel' composting facility for the treatment of kerbside segregated organic materials (including green waste and organic kitchen wastes). ○ This will need to be in place to meet the 2006/07 and 2009/10 composting targets of 10% and 15%, respectively. ○ Provision of facilities for the local reuse and reprocessing of materials segregated from the municipal waste stream. ○ Provision of a new Household Waste Recycling Centre (HWRC) to replace the existing civic amenity site in Sully. ○ Provision of a waste transfer facility for residual waste (i.e. materials that are not segregated for recycling or composting). ○ Possible provision, in the medium to long term (by 2010, or soon thereafter), of a residual waste treatment facility. ▪ The continued use of small scale farm-based open windrow composting in the short term for green wastes. Open windrow techniques will also be required for further maturation of the product from the 'in-vessel' facility.	▪ Ash residues comprising fine particles, [need to landfill ash/ scrap] dioxins, heavy metals salts, unreacted lime and carbon ▪ Contamination, accumulation of toxic substance (food chain)] **Landfill & Landraise** Air/ Water Pollution, Invasive Species, Land Take ▪ Methane and carbon monoxide emissions ▪ Leachate, salts, heavy metals, biodegradable and persistent organics ▪ Accumulation of hazardous substances in soil ▪ Topography alteration, visual intrusion ▪ Soil occupancy, prevention of other land uses ▪ Attraction of vermin ▪ Contamination, accumulation of toxic substances ▪ Potential exposure to hazardous substances ▪ Impact on surface water runoff, flood risk **SAC Specific Issues** ▪ Specific potential in-combination impacts cannot be explored in absence of specific waste locations.

Other Plans and Programmes

Cardiff International Airport Master Plan 2006	
Plan Type	**Masterplan**
Plan Owner/ Competent Authority	**Cardiff International Airport**
Currency	**2006**
Region/Geographic Coverage	**administrative boundary**
Sector	**Planning**
Related work HRA/AA	**N/A**
Document Details	**Potential impacts that could cause 'in-combination' effects**
Runway It is not envisaged that any runway extension is required to meet the traffic forecasts; a taxiway extension would satisfy this increased traffic. The taxiway extension would provide a parallel route running right to the end of the runway pavement. **Terminal, Aprons, Car Parks and Access Roads** It is likely that, in addition to a reorganisation of the existing stand layout, additional stands and parking areas will be required within this time frame. There is no requirement for a new terminal at any time in the planned period. It is anticipated that all the growth forecast can be accommodated by modest extensions and re-organisations of the existing terminal building. The floor space of the Terminal totals at approximately 47,800 sq m. in 2030. Based on 6000 sq m per million passengers, which is an accepted standard, this would provide for projected passenger numbers of 7.9million for 2030. Car parking will be accommodated by structural car parking	**Overarching Development Pressures** ▪ Increased air traffic - increased levels of disturbance (noise), emissions and recreational pressure. ▪ Improvements to highways access - increase in recreational pressure as a result of improved access. **SAC Specific Issues** ▪ A greater number of planes and improved highways access has the potential to increase the levels of recreational pressure at Cardiff Beech Woods SAC and the Severn Estuary SPA/ Ramsar/SAC. ▪ Severn Estuary SPA/ Ramsar/SAC - overwintering birds can be disturbed by sudden movements and noises that can result in reduced food intake and/or increased energy expenditure. ▪ Cardiff Beech Woods SAC - All component SSSIs are used to a greater or lesser extent for recreation purposes. Castell Coch Woodlands and Fforestganol a Chwm Nofydd experience the most recreation pressure, and are popular for walking, climbing and mountain biking. The Taff train runs through part of the Castell Coch Woodlands site and the historic building of Castell Coch attracts many visitors, which increases the access pressure on the woodlands. The road section is becoming

Cardiff International Airport Master Plan 2006	
on the existing car parking sites. This will minimise land take but may lead to a slight increase in visual intrusion. **Highways Access** Short-term It was proposed in the Culverhouse Cross Study to implement a range of public transport and highway improvements, including the 'trunking' of the existing A48 between Culverhouse Cross and Bonvilston and the A4226 (Five Mile Lane) to the airport. Following the trunking of the route, highway improvements to the existing route were proposed, largely to improve safety. Medium Term In the Culverhouse Cross Study it is proposed to improve the A48/ Five Mile Lane route from the Culverhouse Cross junction to the airport, providing an alternative route to the current signed route via Wenvoe and north Barry. This would involve the following proposals: ▪ Junction capacity enhancement, (junction at south end A4226 Five Mile Lane / Waycock Road with A4050 in north Barry at Green Farm); ▪ Safety enhancements on Five Mile Lane / Waycock Road; ▪ Junction capacity and safety enhancements at the Five Mile Lane junction with A48 (Sycamore Cross). Longer Term In the longer-term, further improvements of this route to allow airport traffic to avoid Culverhouse Cross were to be considered. The preferred option involved a new link to the airport from the M4 at Junction 34 to the A48 at Sycamore	increasingly popular for climbing, and this is unlikely to be a problem for the geological interest of the site. However, climbing could be potentially damaging to trees at the top of the crag.

Cardiff International Airport Master Plan 2006	
Cross. In conjunction with the new highway link, it would be possible to provide a strategic park and ride/modal interchange at Junction 34 of the M4. These longer-term proposals are referred to in Phase 3 of the Trunk Road Forward Programme of the Welsh Assembly Government, which indicates a commencement of work after March 2010. **Future Opportunities for Rail** A number of options for introducing enhanced services to Rhoose Cardiff International Airport station have been considered. The options generally revolve around the basic principle of two all-station Valley Lines services per hour on the Vale of Glamorgan line and at least one interurban service from Bristol.	

Appendix 3: Deposit LDP Policy Screening

Policy Screening: Categorising the Potential Effects of the Plan[1]	
Criteria Category	**Rationale**
Category A: No negative effect	
A1	Options/ policies that will not themselves lead to development e.g. because they relate to design or other qualitative criteria for development, or they are not a land use planning policy.
A2	Options/ policies intended to protect the natural environment, including biodiversity.
A3	Options/ policies intended to conserve or enhance the natural, built or historic environment, where enhancement measures will not be likely to have any negative effect on a European site.
A4	Options/ policies that positively steer development away from European sites and associated sensitive areas.
A5	General policy statements or policies which only express general information or political aspirations.
Category B: No significant effect	
B	Options/ policies that could have an effect but would not be likely to have a significant (negative) effect on a European site (alone or in-combination with other plans or projects) because the effects are trivial or 'de minimis' even if combined with other effects.
Category C: Likely significant effect alone	
C1	The option, policy could **directly affect** a European site because it provides for, or steers, a quantity or type of development onto a European site, or adjacent to it.
C2	The option, policy could **indirectly affect** a European site e.g. because it provides for, or steers, a quantity or type of development that may be very close to it, or ecologically, hydrologically or physically connected to it or it may increase disturbance as a result of increased recreational pressure.
C3	Proposals for a **magnitude of development** that, no matter where it is located, the development would be likely to have a significant effect on a European site.
C4	An option, or policy that makes provision for a quantity/ type of development, generally, (and may indicate a broad scale and / or one or more broad locations e.g. a particular part of the plan area) so a likelihood of a significant effect cannot be ruled out, but more precise scale and / or detailed location of the development is to be selected following **consideration of options in a later, more specific, lower tier plan**, subject to Habitats Regulations Appraisal.
C5	Options, policies or proposals for developments or infrastructure projects that **could block options or alternatives** for the provision of other development or projects in the future, which will be required in the public interest, that may lead to adverse effects on European sites, which would otherwise be avoided.

[1] Tyldesley, D., 2009, *Draft Guidance for Plan Making Authorities in Wales: The Appraisal of Plans under the Habitats Regulations* for Countryside Council for Wales CCW Bangor

Policy Screening: Categorising the Potential Effects of the Plan[1]	
Criteria Category	**Rationale**
C6	Options, policies or proposals which **depend on how the policies etc are implemented** in due course, for example, through the development management process. There is a theoretical possibility that if implemented in one or more particular ways, the proposal could possibly have a significant effect on a European site, and is not merely a general statement of policy.
C7	Any other options, policies or proposals that would be **vulnerable to failure** under the Habitats Regulations at project assessment stage; to include them in the plan would be regarded by the EC as 'faulty planning'.
C8	Any other proposal that may have an adverse effect on a European site, which might try to pass the tests of the Habitats Regulations at project assessment stage by arguing that the **plan provides the imperative reasons** of overriding public interest to justify its consent despite a negative assessment.
Category D: Likely significant effects in combination	
D1	The option, policy or proposal alone would not be likely to have significant effects but if its effects are combined with the effects of other policies or proposals **provided for or coordinated** by the Local Development Document (internally) the **cumulative** effects would be likely to be significant.
D2	Options, policies or proposals that alone would not be likely to have significant effects but if their effects are **combined with the effects of other plans and projects** and possibly the effects of other developments provided for in the Local Development Document as well, the combined effects are likely to be significant.
D3	Options or proposals that are, or could be, part of a **programme or sequence of development** delivered over a period, where the implementation of the early stages would not have a significant effect on European sites, but which would dictate the nature, scale, duration, location, timing of the whole project, the later stages of which could have adverse effects on such sites.

Deposit LDP Policy	Assessment Category	Can the element be changed at screening stage to avoid likely significant effect (LSE)	Likely Significant Effect (LSE) No X Yes ✓ Uncertain ?
Strategic Policies			
SP 1 – THE STRATEGY	**C2 & D2**	The Strategy has potential for direct impacts on the Severn Estuary SPA/cSAC/RAMSAR. Indirect impacts are possible for other European sites. The potential for the Deposit LDP to act in combination with other plans, programmes and projects to have significant effects on European sites is considered in Section 4 of the AA Report.	**?**
SP 2 – STRATEGIC SITES	**C2 & D2**	The site allocations screening (Appendix 5) assessed that development proposed at the 3 locations identified in the policy (Barry Waterfront, St,Athan SOA and Land adjacent to the Airport at Rhoose) are not likely to have significant effects alone on European sites. The potential for the Deposit LDP to act in combination with other plans, programmes and projects to have significant effects on European sites is considered in Section 4 of the AA Report.	**?**
SP 3 – RESIDENTIAL REQUIREMENT	**C2 & D2**	The site allocations screening (Appendix 5) assessed that development proposed at the locations identified in the policy are not likely to have significant effects alone on European sites. A number recommendations were made to mitigate any potential impacts. The potential for the Deposit LDP to act in combination with other plans, programmes and projects to have significant effects on European sites is considered in Section 4 of the AA Report.	**?**
SP 4 – AFFORDABLE HOUSING PROVISION	**D2**	Refer to Strategic Policy SP1.	**?**

SP 5 – EMPLOYMENT REQUIREMENTS	**D2**	The site allocations screening (Appendix 5) assessed that development proposed at the 3 locations identified in the policy are not likely to have significant effects alone on European sites. The potential for the Deposit LDP to act in combination with other plans, programmes and projects to have significant effects on European sites is considered in Section 4 of the AA Report.	**?**
SP 6 – RETAIL	**D2**	Policy makes provision for retail development, predominantly in Barry Waterfront. Refer to Policy SP1.	**?**
SP 7 – TRANSPORTATION	**D2**	The site allocations screening (Appendix 5) assessed that development proposed at the 5 locations identified in the policy are not likely to have significant effects alone on European sites.	**?**
SP 8 – SUSTAINABLE WASTE MANAGEMENT	**C2 & D2**	Operational mineral working sites are included as suitable locations for open air waste facilities such as civic amenity sites and composting. This could have implication for aquifers and potential impact on water sensitive European sites such as Kenfig. Further research/evidence is required about the use of mineral working sites for waste management, any implications on the aquifer and the likelihood of any impact on Kenfig SAC. The potential for the Deposit LDP to act in combination with other plans, programmes and projects to have significant effects on European sites is considered in Section 4 of the AA Report.	**?**
SP 9 – MINERALS	**C4**	Safeguards existing permitted reserves of limestone. Safeguards future limestone, sand and gravel reserves where these could be worked 'without unacceptable detriment to the environment'. Regarding the impact of minerals working on Kenfig SAC, the VoG HRA/AA Screening Report (2007) stated: *'... there are three operational quarries (Ewenny, Pant, Lithalun) within 3 kilometres of the SAC. Mineral extraction and/or after use of the site could therefore impact upon the SAC as described above however this is considered to be unlikely due to the distance and ground contours. However, the site should be subject to a more detailed assessment at a later stage of the LDP development'.*	**?**

		Further research/evidence is required about the use of mineral working sites, any implications on the aquifer and the likelihood of any impact on Kenfig.	
SP 10 – BUILT AND NATURAL ENVIRONMENT	**A1/A2**	Policy will not lead to development itself and also seeks to protect the natural environment.	**X**
SP 11 - TOURISM AND LEISURE	**D2**	Encourages proposals for sustainable tourism and leisure. Refer to Policy SP1.	**?**
Managing Development Policies			
MD1: LOCATION OF NEW DEVELOPMENT	**A1**	Policy will not lead to development itself.	**X**
MD 2: PLACE MAKING	**A1**	Policy will not lead to development itself.	**X**
MD 3 – DESIGN OF NEW DEVELOPMENT	**A1**	Policy will not lead to development itself.	**X**
MD 4: COMMUNITY INFRASTRUCTURE AND PLANNING OBLIGATIONS	**A1**	Policy will not lead to development itself.	**X**
MD 5: ENVIRONMENTAL PROTECTION	**A1**	Policy will not lead to development itself.	**X**
MD 6: PROMOTING BIODIVERSITY	**A1**	Policy will not lead to development itself.	**X**
MD 7: AFFORDABLE HOUSING IN RURAL AREAS	**D2**	Policy encourages and sets criteria for the provision of affordable housing. Affordable housing provision is addressed under SP4, above.	**?**
MD 8 – CONVERSION AND RENOVATION OF RURAL BUILDINGS	**B**	Policy encourages conversions and renovations, setting out criteria to guide any such applications. These can have an impact where old/ disused buildings are valuable for bat habitats – but this is not the case for European sites in the VoG.	**X**
MD 9 – REPLACEMENT DWELLINGS IN THE COUNTRYSIDE	**B**	Any impact likely to be trivial/minimal, given the location and nature of European sites.	**X**
MD 10 TOURISM AND LEISURE	**D2**	Encourages proposals for sustainable tourism and leisure. Refer to Policy SP1.	**?**
MD 11 – EMPLOYMENT LAND AND PREMISES	**D2**	Encourages and sets criteria for employment development where need cannot be met on an existing or allocated employment site. Refer to Policy SP1.	**?**
MD 12 – GYPSY AND TRAVELLER ACCOMMODATION	**B**	Refer to Policy SP1. Deposit Plan only allocates an existing site.	**X**
MD 13 – LOW CARBON AND RENEWABLE ENERGY GENERATION	**D2**	Encourages small scale low carbon and renewable energy schemes. Refer to Policy SP1.	**?**

Managing Growth Policies			
MG 1 - HOUSING SUPPLY IN THE VALE OF GLAMORGAN	**D2**	Land for new residential development is allocated in accordance with Policies SP 3 and MG 2 for 8,007 dwellings. The remaining units will be delivered by: • Development sites with extant planning permissions; • Development of unallocated windfall sites in suitable locations; and • Small sites, including infill, the conversion of suitable buildings and subdivision of existing dwellings. See Policies SP1, SP2, SP3 and MG2.	**?**
MG 2 - HOUSING ALLOCATIONS	**D2**	Proposes 36 sites with a total of 8007 units. See Policy SP2. The potential for the Deposit LDP to act in combination with other plans, programmes and projects to have significant effects on European sites is considered in Section 4 of the AA Report.	**?**
MG 3 – STRATEGIC SITE AT BARRY WATERFRONT	**C2 & D2**	Land at Barry Waterfront is allocated for mixed use development with 2000 homes. Given mitigation in place this was not considered to have significant effects alone - see site assessment in Appendix 5. The potential for the Deposit LDP to act in combination with other plans, programmes and projects to have significant effects on European sites is considered in Section 4 of the AA Report.	**?**
MG 4 – STRATEGIC SITE AT ST ATHAN STRATEGIC OPPORTUNITY AREA	**D2**	See Appendix 5 for site assessment. The potential for the Deposit LDP to act in combination with other plans, programmes and projects to have significant effects on European sites is considered in Section 4 of the AA Report.	**?**
MG 5 – AFFORDABLE HOUSING	**A1**	Policy will not lead to development itself – involves proportion of affordable housing.	**X**
MG 6 – RESIDENTIAL DEVELOPMENT IN KEY, SERVICE CENTRE AND PRIMARY SETTLEMENTS	**D2**	Policy sets criteria for new residential development within key centres and primary settlements. See Policies MG1 and SP1. The potential for the Deposit LDP to act in combination with other plans, programmes and projects to have significant effects on European sites is considered in Section 4 of the AA Report.	**?**
MG 7 – RESIDENTIAL	**D2**	See Policies MG1 and SP1	**?**

DEVELOPMENT WITHIN MINOR RURAL SETTLEMENTS		The potential for the Deposit LDP to act in combination with other plans, programmes and projects to have significant effects on European sites is considered in Section 4 of the AA Report.	
MG 8 - HOUSING DENSITIES	**A1**	Policy will not lead to development itself – involves proportion of housing densities.	**X**
MG 9 – GYPSY AND TRAVELLER SITE	**B**	Any impact likely to be trivial/minimal, given this concerns the Council's current site.	**X**
MG 10 – PROVISION OF EDUCATIONAL FACILITIES	**D2**	Land is allocated for the future development of new and improved educational facilities at: 1. Penarth Learning Community, Sully Road, Penarth; 2. Llantwit Major Comprehensive and Primary Schools, Ham Lane, Llantwit Major; and 3. A new primary and nursery school at Barry Waterfront, Barry. See Policy SP1. The potential for the Deposit LDP to act in combination with other plans, programmes and projects to have significant effects on European sites is considered in Section 4 of the AA Report.	**?**
MG 11 - LLANDOUGH HOSPITAL	**B**	Potential expansion of hospital site.	**X**
MG 12 - EMPLOYMENT ALLOCATIONS	**D2**	Makes provision for 3 strategic and 9 local employment sites. The potential for the Deposit LDP to act in combination with other plans, programmes and projects to have significant effects on European sites is considered in Section 4 of the AA Report.	**?**
MG 13 – STRATEGIC SITE ADJACENT TO CARDIFF AIRPORT AND PORT ROAD, RHOOSE	**D2**	See Policy SP1. The potential for the Deposit LDP to act in combination with other plans, programmes and projects to have significant effects on European sites is considered in Section 4 of the AA Report.	**?**
MG 14 – RURAL ENTERPRISE	**B**	Small scale employment uses in rural areas.	**X**
MG 15 – REPLACEMENT CATTLE MARKET	**B**	No impact.	**X**
MG 17 – RETAIL HIERARCHY	**A1**	Policy will not lead to development itself.	**X**
MG 18 – NON A1 RETAIL USES WITHIN TOWN AND DISTRICT RETAIL CENTRES	**A1**	Policy will not lead to development itself (more about change of use). See Policy SP1. The potential for the Deposit LDP to act in combination with other plans, programmes and projects to have significant effects on European sites is considered in Section 4 of the AA Report.	**X**
MG 19 – NON A1 RETAIL USES WITHIN LOCAL &	**A1**	Policy will not lead to development itself (more about change of use).	**X**

MG 16 – ALLOCATIONS **D2** Barry Waterfront and former garden centre at Crowbridge. **?**

NEIGHBOURHOOD SHOPPING CENTRES			
MG 20 – TRANSPORT PROPOSALS	**D2**	Policy concerns improvement to walking, cycling, bus routes, highway improvements (including new link road) and interchange improvements. See Policy SP1 The potential for the Deposit LDP to act in combination with other plans, programmes and projects to have significant effects on European sites is considered in Section 4 of the AA Report.	**?**
MG 21 – SPECIAL LANDSCAPE AREAS	**A1**	Policy will not lead to development itself.	**X**
MG 22 - GREEN WEDGES	**A1**	Policy will not lead to development itself.	**X**
MG 23 - SITES OF IMPORTANCE FOR NATURE CONSERVATION	**A1**	Policy will not lead to development itself.	**X**
MG 24 – DEVELOPMENT IN MINERALS SAFEGUARDING AREAS	**C2**	Policy safeguards mineral reserves from built development. However, if these areas are worked in the future, they could have an impact on European sites, particularly Kenfig. Further research/evidence is required about the use of mineral working sites, any implications on the aquifer and the likelihood of any impact on Kenfig. This could be looked at as part of a Water Cycle Strategy.	**?**
MG 25 – BUFFER ZONES	**A1**	Policy will not lead to development itself.	**X**
MG 26 – DORMANT MINERAL SITES	**A3**	Policy seeks to prevent mineral extraction: instead to restore and landscape sites.	**X**

MG 27 - GLAMORGAN HERITAGE COAST	**C2**	Preservation and enhancement of the Heritage Coast. The policy restricts new development to development that is necessary for coastal defence (as identified within the Swansea Bay Shoreline Management Plan), development that is required for agriculture, nature conservation, informal recreation, appropriate tourism or coastal access, and other development for which a coastal location is essential. Whilst Policy SP10 requires development proposals to protect and where appropriate enhance sites designated for their European nature conservation importance, Policy MG27 should clarify that any development should not impact negatively on European Sites.	**?**
MG 28 – COSMESTON LAKES AND PORTHKERRY COUNTRY PARKS	**A1**	Policy will not lead to development itself.	**X**
MG 29 - TOURISM AND LEISURE FACILITIES IN BARRY.	**C2 & D2**	Land is allocated at the following locations for tourism related development: • Barry Island Amusement Park, Whitmore Bay; • Land at Nell's Point, Whitmore Bay; and • The Triangle Site, Barry Waterfront Refer to Policy SP1. The potential for the Deposit LDP to act in combination with other plans, programmes and projects to have significant effects on European sites is considered in Section 4 of the AA Report.	**?**

Appendix 4: Site Allocations Screening Matrix

The screening undertaken in the following matrix considers the potential for site allocations identified in the Vale of Glamorgan Deposit LDP to have likely significant effects on European sites. A variety of information sources were used to carry out the screening in the matrix below, including information from the European site characterisations and development and implementation table contained within the Deposit LDP. The screening matrix below has taken a precautionary approach when identifying possible European sites at risk, as recommended by the Welsh Government and good practice guidance.

Site Code/ Name	Area (Ha)	Capacity (dwellings)	Potential of Likely Significant Effect (LSE) *European Site Characterisations (qualifying features and vulnerabilities provided in Appendix 1)*	Potential to Mitigate through Avoidance Measures and Policy Measures/ Safeguards?	Residual Effect Yes/No
Strategic Sites					
SP 2 [1] MG 2 [1] - Barry Waterfront, Barry	43	2000	Mixed use, including: Residential (2000 dwellings), retail (A1: 6400 m² net), cafés, bars and restaurants (A3), hotel (C1) and, offices (B1: 3450m²) Given the distance of European sites from this allocation (7km), there are no pathways for development to have direct impacts on European sites. **Severn Estuary SAC, SPA & Ramsar** There is however, the potential for indirect impacts on the Severn Estuary SAC, SPA and Ramsar through increased recreation, atmospheric pollution, pressure on sewerage capacity. However, given its distance from the Severn Estuary (7km), the mitigation provided by LDP Policies, plus the infrastructure and implementation requirements of the development (e.g. transport contributions, public open spaces) would make any significant impacts unlikely. Potential in combination effects on European sites are	Policy mitigation/ safeguards in the Draft Deposit LDP include: • SP1 Strategy • SP10 Built & Natural Environment • SP11 Tourism & Leisure • MD2 Place Making • MD3 Design of New Development • MD5 Environmental Protection • MD6 Promoting Biodiversity • MD10 Tourism & Leisure • MG22 Green Wedges • MG23 Sites of Importance for Nature Conservation Infrastructure and Implementation Requirements: • Sustainable Transport Contributions • Public Open spaces – 13 LAPs, 2 LEAPs and 1 NEAP	No

Site Code/ Name	Area (Ha)	Capacity (dwellings)	Potential of Likely Significant Effect (LSE) *European Site Characterisations (qualifying features and vulnerabilities provided in Appendix 1)*	Potential to Mitigate through Avoidance Measures and Policy Measures/ Safeguards?	Residual Effect Yes/No
			considered in Section 4 of the AA Report.	Barry Waterfront Development Principles Document (already in existence and adopted): • Outline planning permission for the whole of the site required, in order to ensure a comprehensive approach to development and provision of infrastructure. • Environmental Statement • Transport Assessment • Retail Impact Assessment • Design and Access Statement • Sustainability and Energy Statement • Public Consultation Report	
SP 2 [2]. Also see policies SP 5 [1] and MG 12 [3] Aerospace Business Park, St Athan	88.53	0 (B1, B2, B8 and D1 uses)	Allocated for business and commercial uses aimed at the aerospace sector particularly for aerospace employment, research and development and associated training. Outline planning permission has been granted [2009/00501/OUT] on the site for an Aerospace Business Park promoted by the Welsh Government alongside proposals for a unified Defence Training Academy at the RAF St Athan base. This site is located considerable distance from any European Sites (over 12km), and given the nature of the uses it is considered that it would not have any significant effects alone. Potential in combination effects on European sites are considered in Section 4 of the AA Report.		No
SP 2 [2] MG 2 [2]	10.42	250	This site is located a considerable distance from any European sites (around 12km) and is therefore		No

Site Code/ Name	Area (Ha)	Capacity (dwellings)	Potential of Likely Significant Effect (LSE) *European Site Characterisations (qualifying features and vulnerabilities provided in Appendix 1)*	Potential to Mitigate through Avoidance Measures and Policy Measures/ Safeguards?	Residual Effect Yes/No
Land at Higher End, St Athan			considered to have no significant effects alone. Potential in combination effects on European sites are considered in Section 4 of the AA Report.		
SP 2 [2] MG 2 [3] Land at Church Farm, St Athan	8.47	200	This site is located a considerable distance from any European sites (around 12km) and is therefore considered to have no significant effects alone. Potential in combination effects on European sites are considered in Section 4 of the AA Report.		No
SP 2 [3]. Also see policies SP 5 [3], MG12 [2] and MG13 Land Adjacent to Cardiff Airport and Port Road, Rhoose	77.4	B1, B2 (Aerospace related), B8, Transportation and Recreation (part)	This site is located a considerable distance from any European sites (around 12km) and is therefore considered to have no significant effects alone. Potential in combination effects on European sites are considered in Section 4 of the AA Report.		No
SP 5 [2] MG 12 [1] Land to the South of Junction 34, M4 (former Bosch site, Miskin)	51.1	B1, B2 & B8	This site lies over 5km from the nearest European site, Cardiff Beech Woods SAC. Policy SP5 states that this site (along with the other SP5 employment locations) is intended to meet the needs of the following key economic sectors: • Aerospace Industry; • High Tech Manufacturing and • Logistics and Distribution. Impacts could occur from increased pollution associated with the development, either from increased road use (from distribution and logistics) or from specific	The site contains areas of high nature conservation value and the Council will seek appropriate mitigation and management of these areas within any future development proposals for the site. Consultation with CCW and the Council's Ecologist on development proposals is recommended. We recommended additional mitigation in order to minimise any impact: • Polluting industrial uses will not be permitted; and	No.

Site Code/ Name	Area (Ha)	Capacity (dwellings)	Potential of Likely Significant Effect (LSE) *European Site Characterisations (qualifying features and vulnerabilities provided in Appendix 1)*	Potential to Mitigate through Avoidance Measures and Policy Measures/ Safeguards?	Residual Effect Yes/No
			industrial purposes. Acidification and the deposition of nitrogen compounds present a major conservation threat to wildlife in many parts of the UK. The Joint Nature Conservation Committee (JNCC) advocates the reduction of acid deposition to levels that will sustain national and internationally designated habitats. The reduction of pollution to below critical loads and levels are also the government's stated objectives. The Statutory Nature Conservation Agencies and others have demonstrated that even when all currently proposed cuts in acidifying and eutrophying emissions are put in place a large number of internationally important habitats will still be receiving harmful levels of pollution in excess of their critical loads. The Council's 2007 Screening Report advised that '*A detailed evaluation of air pollution impacts to the Cardiff Beech Woods SAC will be required before the potential risks to the habitats and species can be properly assessed*'. The woodlands' location in industrialised South Wales, together with the presence of nearby quarrying and associated activities, means that there is the potential for localised atmospheric pollution. There is no evidence to date that this has had an adverse impact on the features but this may need to be addressed in more detail in the future. In the regional and national context critical loads may have been exceeded in recent years and this will need	• Travel plans will be drawn up for future uses, where appropriate.	

Site Code/ Name	Area (Ha)	Capacity (dwellings)	Potential of Likely Significant Effect (LSE) *European Site Characterisations (qualifying features and vulnerabilities provided in Appendix 1)*	Potential to Mitigate through Avoidance Measures and Policy Measures/ Safeguards?	Residual Effect Yes/No
			to be addressed when assessing air emissions of future developments. The Plan and this site allocation development is likely to result in increased vehicular movements and therefore produce a resultant increase in air pollution. However, the location of the designated site within industrial South Wales means that it is already subject to high levels of pollution (see above). Given that the uses are unknown, any air pollution impacts are difficult to assess. However, it is unlikely that this development in isolation would lead to any significant effects alone.		

Site Code/ Name	Area (Ha)	Capacity (dwellings)	Potential of Likely Significant Effect (LSE) *European Site Characterisations (qualifying features and vulnerabilities provided in Appendix 1)*	Potential to Mitigate through Avoidance Measures and Policy Measures/ Safeguards?	Residual Effect Yes/No
Residential Sites					
MG 2 [4] MG 12 [12] Land to the north of Waycock Cross	35.45	500 Mixed use, including: community facilities and Employment B1 use (10 ha)	This site lies around 9km away from the nearest European Site (Severn Estuary) and therefore will not have any significant effects alone. Potential in combination effects on European sites are considered in Section 4 of the AA Report.		No
MG 2 [5] Barry Island Pleasure Park. Barry Island	1.18	115 Mixed use, including: Leisure, Retail and Residential	This site lies around 7.5km away from the nearest European Site (Severn Estuary) and therefore will not have any significant effects alone. Potential in combination effects on European sites are considered in Section 4 of the AA Report.		No
MG 2 [6] White Farm, Barry	12.6	130	This site lies around 8km away from the nearest European Site (Severn Estuary) and therefore will not have any significant effects alone. Potential in combination effects on European sites are considered in Section 4 of the AA Report.		No
MG 2 [7] Land to the south west of Waycock Cross, Barry	19.03	570	This site lies around 9km away from the nearest European Site (Severn Estuary) and therefore will not have any significant effects alone. Potential in combination effects on European sites are considered in Section 4 of the AA Report.		No
MG 2 [8]	3.4	67	This site lies around 6km away from the nearest European		No

Site Code/ Name	Area (Ha)	Capacity (dwellings)	Potential of Likely Significant Effect (LSE) *European Site Characterisations (qualifying features and vulnerabilities provided in Appendix 1)*	Potential to Mitigate through Avoidance Measures and Policy Measures/ Safeguards?	Residual Effect Yes/No
Land to east of Pencoedtre Lane, North East Barry			Site (Severn Estuary) and therefore will not have any significant effects alone. Potential in combination effects on European sites are considered in Section 4 of the AA Report.		
MG 2 [9] Land west of Pencoedtre Lane, North East Barry	1.21	30	This site lies around 6km away from the nearest European Site (Severn Estuary) and therefore will not have any significant effects alone. Potential in combination effects on European sites are considered in Section 4 of the AA Report.		No
MG 2 [10] Cowbridge Comprehensive Lower School	0.8	23	This site lies more than 10km away from the nearest European Site (Dunraven Bay) and therefore will not significant effects alone. Potential in combination effects on European sites are considered in Section 4 of the AA Report.		No
MG 2 [11] Cowbridge Cattle Market	0.87	30	This site lies more than 10km away from the nearest European Site (Dunraven Bay) and therefore will not significant effects alone. Potential in combination effects on European sites are considered in Section 4 of the AA Report.		No
MG 2 [12] Cowbridge Comprehensive Sixth Form Block, Aberthin Road	0.52	15	This site lies more than 10km away from the nearest European Site (Dunraven Bay) and therefore will not significant effects alone. Potential in combination effects on European sites are considered in Section 4 of the AA Report.		No
MG 2 [13] Land adjoining St Athan Road,	4.27	100	This site lies more than 10km away from the nearest European Site (Dunraven Bay) and therefore will not significant effects alone.		No

Site Code/ Name	Area (Ha)	Capacity (dwellings)	Potential of Likely Significant Effect (LSE) *European Site Characterisations (qualifying features and vulnerabilities provided in Appendix 1)*	Potential to Mitigate through Avoidance Measures and Policy Measures/ Safeguards?	Residual Effect Yes/No
Llanblethian, Cowbridge			Potential in combination effects on European sites are considered in Section 4 of the AA Report.		
MG 2 [14] Plasnewydd Farm, Llantwit Major	4.15	120	This site lies more than 8km away from the nearest European Site (Dunraven Bay) and about 12km from Kenfig, and therefore will not have any significant effects alone. Potential in combination effects on European sites are considered in Section 4 of the AA Report.		No
MG 2 [15] Land to rear of Heol-y-Felin Estate, Llantwit Major (reserve site)	15.81	380	This site lies more than 8km away from the nearest European Site (Dunraven Bay) and about 12km from Kenfig, and therefore will not have any significant effects alone. Potential in combination effects on European sites are considered in Section 4 of the AA Report.	• Following from the TA, local highway improvements may be required, particularly at Ham Lane East and its junction with Boverton Road. • DCWW have advised that improvements would be required to the Llantwit Major Sewage Pumping Station (SPS) • Planning Obligations to be informed by Policy MD4 • Investigation into the potential of a sustainable drainage system and suitability of soakaways for the disposal of surface water run-off. • Consultation with the Environment Agency will be required to discuss the suitability of the main river to accept surface water run-off and the level of attenuation potentially required.	No
MG 2 [16] Land at Fort Road, Lavernock	24.30	400	Site lies adjacent to Severn Estuary SAC, SPA & Ramsar. There are a range of direct and indirect impacts possible, including land-take, recreational disturbance, disturbance through noise and vibration and pollution through ground and surface water run-off.	Policy mitigation/ safeguards in the Draft Deposit LDP include: • SP1 Strategy • SP10 Built & Natural Environment • SP11 Tourism & Leisure	No

Site Code/ Name	Area (Ha)	Capacity (dwellings)	Potential of Likely Significant Effect (LSE) *European Site Characterisations (qualifying features and vulnerabilities provided in Appendix 1)*	Potential to Mitigate through Avoidance Measures and Policy Measures/ Safeguards?	Residual Effect Yes/No
			Given that the site is raised on a headland above the Severn Estuary, direct impacts from land take are unlikely. There is however, the potential for indirect impacts on the Severn Estuary SAC, SPA and Ramsar through increased recreation, atmospheric pollution, pressure on sewerage capacity and surface run-off. The 400 dwellings proposed for the site will be phased over the life of the plan (2016 to 2026) and the mitigation provided by Deposit LDP policies will seek to protect biodiversity and minimise the impact of development on the environment. A coastal buffer zone will help to protect the estuary, prevent visual intrusion and provide recreational open space. Developer contributions will be made to the cycle network. Given the above, and the application of other policies in the Plan, it is assessed that development at this location will not have likely significant effects on the Severn Estuary SAC, SPA and Ramsar alone. However, we note and support the Plan's requirement for a 'project level HRA given sites' location to the Severn Estuary SAC, SPA & Ramsar'.	• MD2 Place Making • MD3 Design of New Development • MD5 Environmental Protection • MD6 Promoting Biodiversity • MD10 Tourism & Leisure • MG22 Green Wedges • MG23 Sites of Importance for Nature Conservation Policy SP10 requires development proposals to protect and where appropriate enhance sites designated for their European nature conservation importance.	
MG 2 [17] Land adjoining St Joseph's School, Sully Road, Penarth	2.68	70	This site lies around 2.5km away from the nearest European Site (Severn Estuary), separated from the estuary by Penarth town. It is unlikely to have any direct or indirect impact. Potential in combination effects on European sites are considered in Section 4 of the AA Report.	• DCWW have advised that improvements would be required to the Stoneyland Sewage Pumping Station • Planning Obligations to be informed by Policy MD4 • Investigation into the use of sustainable drainage systems and suitability of soakaways for the disposal of surface	No

Site Code/ Name	Area (Ha)	Capacity (dwellings)	Potential of Likely Significant Effect (LSE) *European Site Characterisations (qualifying features and vulnerabilities provided in Appendix 1)*	Potential to Mitigate through Avoidance Measures and Policy Measures/ Safeguards?	Residual Effect Yes/No
				water run-off. • If percolation drainage is not viable surface water attenuation may be required with flows being limited to a discharge rate to be agreed.	
MG 2 [18] Headlands School, St Augustine's Road	2.20	80	Site lies around 100m from part of the Severn Estuary SAC, SPA & Ramsar. There are a range of direct and indirect impacts possible, including land-take, recreational disturbance, disturbance through noise and vibration and pollution through ground and surface water run-off. There is no phasing of the development – all 80 units planed between now and 2016. The mitigation provided by Deposit LDP policies will seek to protect biodiversity and minimise the impact of development on the environment. Given the above, and the application of other policies in the Plan, it is assessed that development at this location will not have likely significant effects on the Severn Estuary SAC, SPA and Ramsar alone. However, we note and support the Plan's requirement for a 'project level HRA given sites' location to the Severn Estuary SAC, SPA & Ramsar'.	Policy mitigation/ safeguards in the Draft Deposit LDP include: • SP1 Strategy • SP10 Built & Natural Environment • SP11 Tourism & Leisure • MD2 Place Making • MD3 Design of New Development • MD5 Environmental Protection • MD6 Promoting Biodiversity • MD10 Tourism & Leisure • MG22 Green Wedges • MG23 Sites of Importance for Nature Conservation Policy SP10 requires development proposals to protect and where appropriate enhance sites designated for their European nature conservation importance.	No
MG 2 [19] Land at and adjoining St Cyres School, Murch Road,	12.69	320	This site lies around 3-4km away from the nearest European Site (Severn Estuary), so direct or indirect impacts are unlikely. Potential in combination effects on European sites are	• DCWW have advised that there will be a requirement for off-site water mains to be laid to the boundary of and within the site itself. DCWW have advised that a hydraulic modeling assessment of the	No

Site Code/ Name	Area (Ha)	Capacity (dwellings)	Potential of Likely Significant Effect (LSE) *European Site Characterisations (qualifying features and vulnerabilities provided in Appendix 1)*	Potential to Mitigate through Avoidance Measures and Policy Measures/ Safeguards?	Residual Effect Yes/No
Dinas Powys.			considered in Section 4 of the AA Report.	local water supply network will be required. • Water mains protection measures required • Foul and surface water flows should be on separate systems • Investigation into the potential of a sustainable drainage system and suitability of soakaways for the disposal of surface water run-off.	
MG 2 [20] Land at Caerleon Road, Dinas Powys	2.54	60	This site lies around 3-4km away from the nearest European Site (Severn Estuary) so direct or indirect impacts are unlikely. Potential in combination effects on European sites are considered in Section 4 of the AA Report.		No
MG 2 [21] Land South of Llandough Hill / Penarth Road.	5.23	150	This site lies around 3km away from the nearest European Site (Severn Estuary) so direct or indirect impacts are unlikely. Potential in combination effects on European sites are considered in Section 4 of the AA Report.		No
MG 2 [22] Land north and south of Leckwith Road, Llandough	0.96	20	This site lies around 3-4km away from the nearest European Site (Severn Estuary) so direct or indirect impacts are unlikely. Potential in combination effects on European sites are considered in Section 4 of the AA Report.		No

Site Code/ Name	Area (Ha)	Capacity (dwellings)	Potential of Likely Significant Effect (LSE) *European Site Characterisations (qualifying features and vulnerabilities provided in Appendix 1)*	Potential to Mitigate through Avoidance Measures and Policy Measures/ Safeguards?	Residual Effect Yes/No
MG 2 [23] Land north of the Railway Line, Rhoose.	25.82	680 (including open space)	This site is located a considerable distance from any European site (around 12km) and is therefore considered to have no direct or indirect impact. Potential in combination effects on European sites are considered in Section 4 of the AA Report. The Environment Agency has indicated that the site is located on a major aquifer. Therefore, no discharge of foul or contaminated run-off will be permitted. The Agency will need to be consulted prior to any works being undertaken at the site to discuss the necessary measures required to protect the aquifer.	• Mitigation measures to prevent surface water flooding will need to be considered due to historic record of surface water flooding adjoining the railway. • Recommended that prospective developers investigate the disposal of surface water direct to the sea.	No
MG 2 [24] Land south of the Railway Line, Rhoose Point.	2.65	Mixed use - 60% residential and 40% community uses providing 50 dwellings	This site is located a considerable distance from any European site (around 12km) and is therefore considered to have no direct or indirect impact. Potential in combination effects on European sites are considered in Section 4 of the AA Report.	Assessment of surface water disposal and management will be required as existing foul and surface water drainage systems which serve the site may have limited capacity.	No
MG 2 [25] Land West of Swanbridge Road, Sully (reserve site)	29.08	720 including transport improvements	This site lies 2.5km from the Severn Estuary European Site and whilst it is a sizeable development of 720 units direct impacts are unlikely. The 720 dwellings proposed for the site will be phased over the life of the plan (2016 to 2026) and the mitigation provided by Deposit LDP policies will seek to protect biodiversity and minimise the impact of development on the environment. There could be indirect impacts from this proposal in	Policy mitigation/ safeguards in the Draft Deposit LDP include: • SP1 Strategy • SP10 Built & Natural Environment • SP11 Tourism & Leisure • MD2 Place Making • MD3 Design of New Development • MD5 Environmental Protection • MD6 Promoting Biodiversity • MD10 Tourism & Leisure	No

Site Code/ Name	Area (Ha)	Capacity (dwellings)	Potential of Likely Significant Effect (LSE) *European Site Characterisations (qualifying features and vulnerabilities provided in Appendix 1)*	Potential to Mitigate through Avoidance Measures and Policy Measures/ Safeguards?	Residual Effect Yes/No
			terms of recreational disturbance but the mitigation contained in the Plan policies should make any impact unlikely. Potential in combination effects on European sites are considered in Section 4 of the AA Report.	• MG22 Green Wedges • MG23 Sites of Importance for Nature Conservation Policy SP10 requires development proposals to protect and where appropriate enhance sites designated for their European nature conservation importance.	
MG 2 [26] Land at the west of Port Road, Wenvoe	6.98	150	This site is approximately 7km from the Severn Estuary and around 9km from Cardiff Beech Woods, and no direct or indirect impacts are likely. Potential in combination effects on European sites are considered in Section 4 of the AA Report.		No
MG 2 [27] Land adjoining Court Close, Aberthin.	0.75	20	This site lies more than 10km away from the nearest European Site (Dunraven Bay) and therefore will not have any direct or indirect impact. Potential in combination effects on European sites are considered in Section 4 of the AA Report.		No
MG 2 [28] Land to rear of St. David's Church in Wales Primary School, Colwinston.	2.55	60	This site lies around 6km from Dunraven Bay, 7km from Kenfig and 10km from Cefn Cribwr Grasslands and therefore will not have any direct or indirect impact. Potential in combination effects on European sites are considered in Section 4 of the AA Report.		No
MG 2 [29] ITV Wales Site	7.13	220	This site lies around 8km from both the Severn Estuary and Cardiff Beech Woods and will not have any direct or indirect impact. Potential in combination effects on European sites are		No

Site Code/ Name	Area (Ha)	Capacity (dwellings)	Potential of Likely Significant Effect (LSE) *European Site Characterisations (qualifying features and vulnerabilities provided in Appendix 1)*	Potential to Mitigate through Avoidance Measures and Policy Measures/ Safeguards?	Residual Effect Yes/No
			considered in Section 4 of the AA Report.		
MG 2 [30] The Former Garden Emporium, Fferm Goch.	2.19	40	This site lies just under 10km away from Kenfig and Dunraven Bay and about 12km away from Cefn Cribwr Grasslands and therefore will not have any direct or indirect impact. Potential in combination effects on European sites are considered in Section 4 of the AA Report.		No
MG 2 [31] Ogmore Residential Centre, Ogmore by Sea.	3.06	70	These sites lie around 2km from both Kenfig and Dunraven Bay European Sites. Dunraven Bay SAC is primarily designated for the population of shore dock which is located on an inaccessible cliff face. Therefore, development is unlikely to have direct or indirect impacts on this site. Kenfig SAC is a largely intact dune system in South Wales with extensive areas of fixed dune vegetation; part of which is in direct proximity to Ogmore. Development in this vicinity has the potential for likely significant effect on the Kenfig SAC through changes to the groundwater which feeds the site. Development in smaller settlements may also have an impact on the Kenfig and Ogwr rivers and potential cumulative impacts will need to be considered. Cumulative impacts may also occur in conjunction with any development plans for Porthcawl which is immediately adjacent to part of the Kenfig SAC boundary. The Kenfig/Cynffig SAC is designated for its internationally significant coastal dune systems. Annex I habitats of the EC Habitats Directive that are the primary reasons for designating the site include fixed dunes with	Policy mitigation/ safeguards in the Draft Deposit LDP include: • SP1 Strategy • SP10 Built & Natural Environment • SP11 Tourism & Leisure • MD2 Place Making • MD3 Design of New Development • MD5 Environmental Protection • MD6 Promoting Biodiversity • MD10 Tourism & Leisure • MG22 Green Wedges • MG23 Sites of Importance for Nature Conservation Policy SP10 requires development proposals to protect and where appropriate enhance sites designated for their European nature conservation importance. For both developments, the Plan states that 'Investigation into the potential of sustainable drainage systems and use of soakaways required'. It also requires that any proposals for the sites are accompanied by a surface	No
MG 2 [32] Ogmore Caravan Park, Ogmore-by-Sea	3.64	82			

Site Code/ Name	Area (Ha)	Capacity (dwellings)	Potential of Likely Significant Effect (LSE) *European Site Characterisations (qualifying features and vulnerabilities provided in Appendix 1)*	Potential to Mitigate through Avoidance Measures and Policy Measures/ Safeguards?	Residual Effect Yes/No
			herbaceous vegetation, dunes with Salex repens spp. Argentea, humid dune slacks and Hard oligo-mesotrophic waters with benthic vegetation of Chara spp. Annex II species that are the primary reason for designating the site include Petalwort and Fen Orchid (Joint Nature Conservation Committee, http://www.jncc.gov.uk). The particular vulnerabilities of the site include: • falling water tables from local extraction of water and/or drainage of adjacent land used for agriculture or housing • water quality the major water quality concerns are related to elevated nutrient levels. Elevated levels of nitrogen have been found at Burrows Well on Merthyr Mawr and there is also some indication that dune slacks are becoming increasingly eutrophic. The nature of the underlying limestone aquifer means that off-site activities a considerable distance away can potentially have an impact on the SAC • petalwort is vulnerable to impacts of drainage Water pollution could cause nutrient enrichment resulting in changes to the types and abundance of vegetation, with an impact on species that are integral to the combined site designation. These impacts can be from poor water quality from insufficient treatment of waste water and therefore can in part be addressed through the LDP, although this would need to be in combination with the implementation of other measures to control pollution. There could also be impacts of water quantity, with the	water drainage assessment. To address the identified issues with regard to water levels and quality it is recommended: • that the Plan (within the delivery and implementation table) requires that any proposals for the sites are accompanied by a sustainable water strategy, which not only considers surface water drainage but also includes an assessment of groundwater pollution risk and management. • that the Deposit Plan includes a policy that requires the efficient use of water in new developments. Policy MD3 (Design of new development) could include wording that requires new residential development to achieve Level 5 for the water aspect of the Code for Sustainable Homes from adoption of the LDP. • that the LDP includes policy wording to ensure that there is capacity in waste water treatment facilities prior to occupation of any new development throughout the lifetime of the plan.	

Site Code/ Name	Area (Ha)	Capacity (dwellings)	Potential of Likely Significant Effect (LSE) *European Site Characterisations (qualifying features and vulnerabilities provided in Appendix 1)*	Potential to Mitigate through Avoidance Measures and Policy Measures/ Safeguards?	Residual Effect Yes/No
			pools and dune slacks on the combined site requiring high ground water levels. Therefore, water demand from new built development could have an impact on this. The EAW Review of Consents process will ensure that any new abstractions will not have adverse effects on the integrity of Kenfig SAC through reduced water levels. In addition, mineral workings can have an impact, such as quarry dewatering and the possible impacts of this on the SAC will need to be taken into account by the LDP through minerals policy for new mineral developments or the review of existing permissions. Regarding the impact of minerals working on Kenfig SAC, the VoG HRA/AA Screening Report (2007) stated: *'... there are three operational quarries (Ewenny, Pant, Lithalun) within 3 kilometres of the SAC. Mineral extraction and/or after use of the site could therefore impact upon the SAC as described above however this is considered to be unlikely due to the distance and ground contours. However, the site should be subject to a more detailed assessment at a later stage of the LDP development'.* Groundwater aquifers underlying the Porthcawl Development Area have recently been classified as 'not at risk' by the Environment Agency under the Water Framework Directive (Environment Agency, http://www.environment-agency.gov.uk).		
MG 2 [33] Land to the East of St Nicholas	2.39	50	This site lies around 7.5km from Cardiff Beech Woods and around 10km from the Severn Estuary and therefore will not have any direct or indirect impact.		No

Site Code/ Name	Area (Ha)	Capacity (dwellings)	Potential of Likely Significant Effect (LSE) *European Site Characterisations (qualifying features and vulnerabilities provided in Appendix 1)*	Potential to Mitigate through Avoidance Measures and Policy Measures/ Safeguards?	Residual Effect Yes/No
			Potential in combination effects on European sites are considered in Section 4 of the AA Report.		
MG 2 [34] Land off St. Brides Road, Wick	5.93	150	This site lies around 3-4km from Dunraven Bay and around 7km from Kenfig and therefore will not have any direct or indirect impact. Given the nature of the interest at Dunraven, it is unlikely to be affected. It is considered too distant to affect Kenfig. Potential in combination effects on European sites are considered in Section 4 of the AA Report.		No
MG 2 [35] Land north of Sandy Lane, Ystradowen	1.58	40	This site is over 10km from any European Site and will not have any direct or indirect impact. Potential in combination effects on European sites are considered in Section 4 of the AA Report.		No
MG 2 [36] Land Off Badger's Brook Rise, Ystradowen.	1.8	45	This site is over 10km from any European Site and will not have any direct or indirect impact. Potential in combination effects on European sites are considered in Section 4 of the AA Report.		No

Site Code/ Name	Area (Ha)	Capacity (job potential)	Potential of Likely Significant Effect (LSE) [In Combination] *European Site Characterisations (qualifying features and vulnerabilities provided in Appendix 1)*	Potential to Mitigate through Avoidance Measures and Policy Measures/ Safeguards?	Residual Effect Yes/No
Employment sites					
MG 12 [4] Atlantic Trading Estate	6.6		Site lies about 6-7km west of Severn Estuary European Site and will not have any direct or indirect impact. Potential in combination effects on European sites are considered in Section 4 of the AA Report.		No
MG 12 [5] Land at Ffordd y Mileniwm Way, Barry	7.8		Site lies about 6-7km west of Severn Estuary European Site and will not have any direct or indirect impact. Potential in combination effects on European sites are considered in Section 4 of the AA Report.	Site has no sewage provision and additional foul discharges may require an upgrade to the Bendricks Sewage Pumping Station. Surface water run-off could discharge directly into No 2 Dock and it is recommended that any prospective developer discusses proposals with the operator of the Dock, Associated British Ports.	No
MG 12 [6] Hayes Lane, Barry	1.4		Site lies about 6-7km west of Severn Estuary European Site and will not have any direct or indirect impact. Potential in combination effects on European sites are considered in Section 4 of the AA Report.		No
MG 12 [7] Hayes Road, Sully	7.5		B1 uses. Site located 4-5km from Severn Estuary and requires coastal buffer strip as borders coastal SSSI. Given location and B1 use the development is unlikely to have an impact. Potential in combination effects on European sites are considered in Section 4 of the AA Report.		No
MG 12 [8]	3.9		B2 not acceptable.		No

Site Code/ Name	Area (Ha)	Capacity (job potential)	Potential of Likely Significant Effect (LSE) [In Combination] *European Site Characterisations (qualifying features and vulnerabilities provided in Appendix 1)*	Potential to Mitigate through Avoidance Measures and Policy Measures/ Safeguards?	Residual Effect Yes/No
Hayes Wood, Barry			Site located 4-5km from Severn Estuary and requires coastal buffer strip as borders coastal SSSI. Given location and B1 use the development is unlikely to have an impact. Potential in combination effects on European sites are considered in Section 4 of the AA Report.		
MG 12 [9] Llandow Trading Estate	6.8		Sites are over 5km from Dunraven Bay and around 7.5km from Kenfig and no direct or indirect impacts are likely. Potential in combination effects on European sites are considered in Section 4 of the AA Report.	• Restrictions may be imposed following consultation with Environment Agency regarding pollution control and materials storage, as the site is known to drain to a carboniferous limestone aquifer. • Investigation into the potential of sustainable drainage systems and use of soakaways required. • If percolation drainage is not viable surface water attenuation may be required with flows being limited to a discharge rate to be agreed.	No
MG 12 [10] Vale Business Park, Llandow	12.4				
MG 12 [11] Also see Policy MG 15 Land to the West of Ruthin Road, St Mary Hill	4.1		Replacement cattle market. No impact likely.		No
MG 12 [12] Also see MG 2 [4] Land to the north of Waycock Cross	10		B1 uses. This site lies around 9km away from the nearest European Site (Severn Estuary) and therefore will not have any direct or indirect impact. Potential in combination effects on European sites are considered in Section 4 of the AA Report.		No

Site Code/ Name	Area (Ha)	Capacity	Potential of Likely Significant Effect (LSE) [In Combination] *European Site Characterisations (qualifying features and vulnerabilities provided in Appendix 1)*	Potential to Mitigate through Avoidance Measures and Policy Measures/ Safeguards?	Residual Effect Yes/No
Retail use					
MG 16 [1] Land at West Pond and South Quay, Barry Waterfront, Barry		A1 Retail (Supermarket) 6,400 m²	Over 6km from the Severn Estuary and unlikely to have any direct or indirect impact. Potential in combination effects on European sites are considered in Section 4 of the AA Report.		No
MG 16 [2] Former Garden Centre at Birds Lane, Cowbridge		A1 Retail (Supermarket) 1,881 m²	Over 10km from any European Site and unlikely to have any direct or indirect impact. Potential in combination effects on European sites are considered in Section 4 of the AA Report.		No

Site Code/ Name	Proposal	Potential of Likely Significant Effect (LSE) [In Combination] *European Site Characterisations (qualifying features and vulnerabilities provided in Appendix 1)*	Potential to Mitigate through Avoidance Measures and Policy Measures/ Safeguards?	Residual Effect Yes/No
Transport				
MG20 1-4 Walking and cycling	National Cycle Network Route 88 and associated local and rural connections. Pont-y-Werin Connections / Penarth Town Centre	No direct or indirect impacts considered likely.		No

Site Code/ Name	Proposal	Potential of Likely Significant Effect (LSE) [In Combination] *European Site Characterisations (qualifying features and vulnerabilities provided in Appendix 1)*	Potential to Mitigate through Avoidance Measures and Policy Measures/ Safeguards?	Residual Effect Yes/No
	A4050 Port Road to Cardiff Airport All Wales Coastal Path			
MG20 5-7	New direct rail link, Vale of Glamorgan line to Cardiff Airport terminal Barry Waterfront Station Park and Ride, Barry Dinas Powys – Llandough – Leckwith – Cardiff Corridor bus priority measures	No direct or indirect impacts considered likely.		No
MG 20 [8]	Gileston Old Mill – Highway improvements along the B4265 at Gileston	Gained outline planning permission. More than 15km from any European site and no direct or indirect impacts likely. Potential in combination effects on European sites are considered in Section 4 of the AA Report.		No
MG20 (9)	Barry Waterfront, Barry – Barry Island Link Road	The scheme will be delivered as part of the development of the strategic site at Barry Waterfront (see strategic site SP 2 [1] above and Policy MG 3) Gained outline planning permission (see applications: 2009/00946/OUT and 2009/00947/OUT). Around 8km from the Severn Estuary and no direct or indirect impacts considered likely. Potential in combination effects on European sites are considered in Section 4 of the AA Report.		No

Site Code/ Name	Proposal	Potential of Likely Significant Effect (LSE) [In Combination] *European Site Characterisations (qualifying features and vulnerabilities provided in Appendix 1)*	Potential to Mitigate through Avoidance Measures and Policy Measures/ Safeguards?	Residual Effect Yes/No
MG 20 (10)	A 4226 Five Mile Lane – Highway Improvement Scheme	The scheme is included within the Welsh Government's National Transport Plan and has previously been awarded funding by the Welsh Government from the Principal Road Grant. A draft WelTAG1 report has been prepared and further work is ongoing before Welsh Government approval. The scheme requires: • Environmental Statement • WelTAG appraisal • Flood Consequence Assessment The scheme is over 6km from the Severn Estuary and no direct or indirect impacts considered likely. Potential in combination effects on European sites are considered in Section 4 of the AA Report.		No
MG20 (11)	Barry Waterfront Station Interchange	The scheme is over 6km from the Severn Estuary and no direct or indirect impacts considered likely. Potential in combination effects on European sites are considered in Section 4 of the AA Report.		No
MG20 (12)	Cardiff Airport Transport Hub	The scheme is over 12km from the Severn Estuary and no direct or indirect impacts considered likely. Potential in combination effects on European sites are considered in Section 4 of the AA Report.		No

Site Code/ Name	Location	Scheme	Potential of Likely Significant Effect (LSE) [In Combination] *European Site Characterisations (qualifying features and vulnerabilities provided in Appendix 1)*	Potential to Mitigate through Avoidance Measures and Policy Measures/ Safeguards?	Residual Effect Yes/No

Site Code/ Name	Location	Scheme	Potential of Likely Significant Effect (LSE) [In Combination] *European Site Characterisations (qualifying features and vulnerabilities provided in Appendix 1)*	Potential to Mitigate through Avoidance Measures and Policy Measures/ Safeguards?	Residual Effect Yes/No
Education					
MG10 (1-3)	Sully Road, Penarth	Penarth Learning Community	This site lies around 2.5km away from the nearest European Site (Severn Estuary), separated from the estuary by Penarth town. It is unlikely to have any direct or indirect impact. Potential in combination effects on European sites are considered in Section 4 of the AA Report.		No
	Ham Lane, Llantwit Major	Llantwit Major Comprehensive and Primary Schools	This site lies around 8km away from the nearest European Site and is unlikely to have any direct or indirect impact. Potential in combination effects on European sites are considered in Section 4 of the AA Report.		No
	Land at West Pond and South Quay, Barry Waterfront, Barry	Barry Waterfront Primary School	The scheme is over 6km from the Severn Estuary and no direct or indirect impacts considered likely. Potential in combination effects on European sites are considered in Section 4 of the AA Report.		No

Site Code/ Name	Area (Ha)	Capacity	Potential of Likely Significant Effect (LSE) [In Combination] *European Site Characterisations (qualifying features and vulnerabilities provided in Appendix 1)*	Potential to Mitigate through Avoidance Measures and Policy Measures/ Safeguards?	Residual Effect Yes/No
Leisure and Tourism					
MG28 (1) Cosmeston Lakes Country Park	27		Country Park extension, no direct or indirect impact.		No
MG28 (2) Porthkerry Country Park	42		Country Park extension, no direct or indirect impact.		No
MG29 (1) Barry Island Pleasure Park	Mixed use		Site around 8km from Severn Estuary and no direct or indirect impact. Potential in combination effects on European sites are considered in Section 4 of the AA Report		No
MG29 (2) Land At Nell's Point, Whitmore Bay	4.45		Site around 8km from Severn Estuary and no direct or indirect impact. Potential in combination effects on European sites are considered in Section 4 of the AA Report		No
MG29 (3) The Triangle Site, Barry Waterfront	0.81		Over 5km from Severn Estuary and no direct or indirect impact. Potential in combination effects on European sites are considered in Section 4 of the AA Report		No