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Advisory Service

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Draft Habitats Regulations Assessment

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1 Introduction

- 1.1 The Habitats Directive applies the precautionary principle to Natura 2000 sites (Special Areas of Conservation, SACs, and Special Protection Areas, SPAs; as a matter of UK Government policy, Ramsar sites¹ are given equivalent status). The need for Appropriate Assessment is set out within Article 6 of the EC Habitats Directive 1992, and interpreted into British law by the Conservation of Habitats and Species Regulations 2010 (**Box 1**). The ultimate aim of the Directive is to “*maintain or restore, at favourable conservation status, natural habitats and species of wild fauna and flora of Community interest*” (Habitats Directive, Article 2(2)). This aim relates to habitats and species, not the European sites themselves, although the sites have a significant role in delivering favourable conservation status.

Box 1. The legislative basis for Appropriate Assessment

Habitats Directive 1992

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

Article 6 (3)

Conservation of Habitats and Species Regulations 2010

“A competent authority, before deciding to ... give any consent for a plan or project which is likely to have a significant effect on a European site ... shall make an appropriate assessment of the implications for the site in view of that sites conservation objectives ... The authority shall agree to the plan or project only after having ascertained that it will not adversely affect the integrity of the European site”.

- 1.2 URS has been appointed by Wirral Borough Council (“the Council”) to assist in undertaking a Habitat Regulations Assessment (HRA) of the potential effects of the Core Strategy Local Plan, on the Natura 2000 network and Ramsar sites.
- 1.3 The Local Plan will supersede the current Unitary Development Plan. The current Unitary Development Plan was adopted in 2000 and the majority of policies and proposals are “saved” until the Local Plan comes into effect.
- 1.4 Chapter 2 of this report explains the process by which the HRA has been carried out. Chapter 3 explores the relevant pathways of impact resulting from the scale of development that will be delivered in Wirral. Chapters 4 to 13 provide the Appropriate Assessment for the Core Strategy as a whole organised on the basis of one chapter per European site, except where multiple sites overlap in a particular geographic area (e.g. Ribble & Alt Estuaries SPA and Ramsar sites). Each chapter begins with a consideration of the interest features and ecological condition of the site and environmental process essential to maintain site integrity. An assessment of the Core Strategy in respect of each European site is then carried out and avoidance and mitigation strategies proposed where necessary. The key findings are summarised in Chapter 14: Conclusions.

¹ Wetlands of International Importance designated under the Ramsar Convention 1979

Wirral Core Strategy

- 1.5 The Wirral Core Strategy is a long term planning document that will set the framework for future development and investment in Wirral over the next 15 to 20 years. Once adopted, the Core Strategy will form part of the Local Plan for the Borough. The Core Strategy will be used as the basis for determining individual planning applications and for other decisions taken under the Planning Acts.
- 1.6 The Council began preparing a Core Strategy for Wirral in July 2005. Initial consultation was undertaken to identify the Borough's strengths, weaknesses, opportunities, threats and local needs. The findings were then prioritised by a series of public workshops held in November 2006. Additional consultation with under-represented groups took place during summer 2007. Formal consultation on Issues, Vision and Objectives took place in February 2009 and on Spatial Options in January 2010. Draft Preferred Options were also subject to consultation during 2010 and an HRA accompanied that exercise.
- 1.7 This HRA is being undertaken on the Draft Proposed Submission Plan. The plan period is fifteen years from estimated date of adoption (December 2013) with an anticipated plan period of 2013 to 2028.
- 1.8 There have been several changes since the Preferred Options Report (2010). In particular, while the Preferred Options Report was prepared on the basis of a forecast declining population, the 2011 Census data showed that Wirral's population grew by 2.4% between 2001 and 2011. While revised population projections have yet to be issued, this change has had an impact on the approach taken to future housing provision, in particular. The purpose of this current HRA document is to analyse the potential adverse effects of the Core Strategy, taking account of changes since the Preferred Options, but also to identify where and how recommendations from the previous HRA have been taken into account in Plan development.
- 1.9 Whilst some broad locations for development are identified in this Core Strategy, the allocation of individual sites will be implemented through a subsequent Site Allocations DPD. Appendix 1 lists the submission draft core strategy policies, and provides a summary (and HRA Screening) of each. It identifies the submission draft core strategy policies which have been 'screened out' from more detailed consideration in this report – those with no potential for effects on European Sites (or in the case of CS39 (Waste Management), because there is a separate Joint Waste DPD for Merseyside which has its own HRA).

2 Methodology

Introduction

- 2.1 This section sets out our approach and methodology for undertaking the HRA. Habitat Regulations Assessment itself operates independently from the Planning Policy system, being a legal requirement of a discrete Statutory Instrument. Therefore there is no direct relationship to the National Planning Policy Framework and the 'Test of Soundness'. The HRA process that we have adopted has been designed to ensure that the HRA is: a) compliant; b) accepted by key stakeholders including Natural England and the Countryside Council for Wales; c) has clear recommendations that can be used by the Council to develop their plan; and d) has a clear record of the process undertaken, providing the necessary evidence base for the plan.

A Proportionate Assessment

- 2.2 Project-related HRA often requires bespoke survey work and novel data generation in order to accurately determine the significance of adverse effects, that is, to look beyond the risk of an effect to a justified prediction of the actual likely effect and to the development of avoidance or mitigation measures.
- 2.3 However, the draft CLG guidance² makes it clear that when implementing HRA of land-use plans, the Appropriate Assessment (AA) should be undertaken at a level of detail that is appropriate and proportional to the level of detail provided within the plan itself:
- "The comprehensiveness of the [Appropriate] assessment work undertaken should be proportionate to the geographical scope of the option and the nature and extent of any effects identified. An AA need not be done in any more detail, or using more resources, than is useful for its purpose. It would be inappropriate and impracticable to assess the effects [of a strategic land use plan] in the degree of detail that would normally be required for the Environmental Impact Assessment (EIA) of a project."*
- 2.4 In other words, there is a tacit acceptance that appropriate assessment can be tiered and that all impacts are not necessarily appropriate for consideration to the same degree of detail at all tiers (**Figure 1**).
- 2.5 For a Local Plan Core Strategy the level of detail concerning the developments that will be delivered is usually insufficient to make a highly detailed assessment of significance of effects. For example, precise and full determination of the impacts and significant effects of a new settlement will require extensive details concerning the design of the town, including layout of greenspace and type of development to be delivered in particular locations, yet these data will not be decided until subsequent stages.
- 2.6 The most robust and defensible approach to the absence of fine grain detail at this level is to make use of the precautionary principle. In other words, the plan is never given the benefit of the doubt; it must be assumed that a policy/measure is likely to have an impact leading to a significant adverse effect upon a European site unless it can be clearly established otherwise.

² CLG (2006) Planning for the Protection of European Sites, Consultation Paper

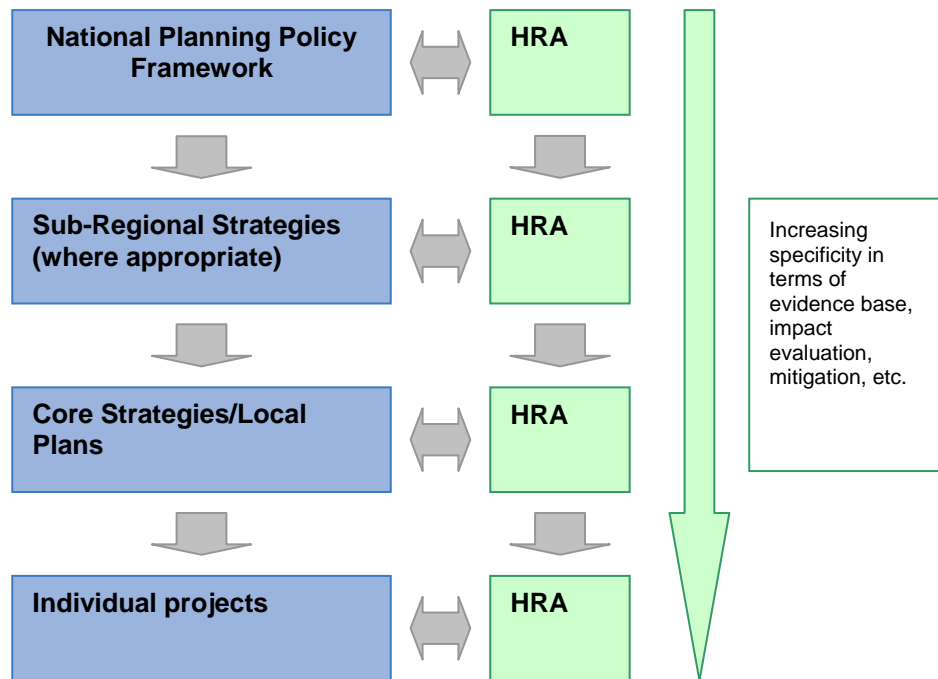


Figure 1: Tiering in HRA of Land Use Plans

The Process of HRA

- 2.7 The HRA is likely to be carried out in the continuing absence of formal Government guidance. CLG released a consultation paper on AA of Plans in 2006³. As yet, no further formal guidance has emerged. However, Natural England has produced its own informal internal guidance and Countryside Council for Wales has produced guidance for Welsh authorities on ‘the appraisal of plans under the Habitats Directive’ as is a separate guidance document aimed at complementing and supplementing the guidance/advice provided within Technical Advice Note 5: Nature Conservation and Planning (2009). Although there is no requirement for an HRA to follow either guidance, both have been referred to in producing this final version of the HRA.
- 2.8 **Figure 2** below outlines the stages of HRA according to current draft CLG guidance. The stages are essentially iterative, being revisited as necessary in response to more detailed information, recommendations and any relevant changes to the plan until no significant adverse effects remain.

³ CLG (2006) Planning for the Protection of European Sites, Consultation Paper

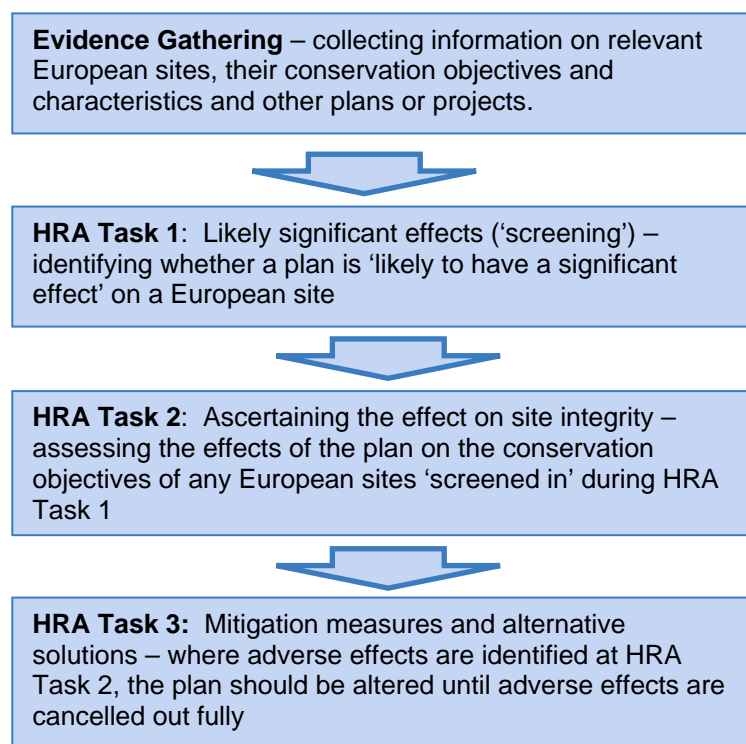


Figure 2: Four-Stage Approach to Habitat Regulations Assessment

2.9 In practice, we and other practitioners have discovered that this broad outline requires some amendment in order to feed into a developing land use plan such as a Core Strategy. The following process has been adopted for carrying out the subsequent stages of the HRA.

Task One: Likely Significant Effect Test (Screening)

2.10 The first stage of any Habitat Regulations Assessment is a Likely Significant Effect (LSE) test - essentially a high level risk assessment to decide whether the full subsequent stage known as Appropriate Assessment is required. The essential question is:

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

2.11 The objective is to 'screen out' those plans and projects (or site allocations/policies) that can, without any detailed appraisal, be said to be unlikely to result in significant adverse effects upon European sites, usually because there is no mechanism or pathway for an adverse interaction with European sites.

2.12 Habitat Regulations Assessment Interim Screening was undertaken by Wirral Metropolitan Borough Council in November 2009 on the Core Strategy Spatial Options Report. The draft Core Strategy was screened in with respect to likely significant effects on the Natura 2000 sites listed below in Table 1.

2.13 The approach adopted to the screening stage is summarised in paragraphs 3.49 to 3.51 and the detailed findings in Appendix 1 to this document which lists the proposed policies by title and number; a summary of the policy itself and the reasons for individual policies being screened in or out in relation to potential impacts on European sites.

Tasks Two and Three: Appropriate Assessment and Mitigation

- 2.14 With regard to those European sites where it was not considered possible to ‘screen out’ the Core Strategy without detailed appraisal, it was necessary to progress to the later ‘Appropriate Assessment’ stage to explore the adverse effects and devise mitigation. The steps involved in this are detailed in Box 2.

Box 2. The steps involved in the Appropriate Assessment exercise undertaken for the Wirral Core Strategy

1. Explore the reasons for the European designation of these sites.
2. Explore the environmental conditions required to maintain the integrity of the selected sites and become familiar with the current trends in these environmental processes.
3. Gain a full understanding of the plan and its policies and consider each policy within the context of the environmental processes – would the policy lead to an impact on any identified process?
4. Decide if the identified impact will lead to an adverse effect.
5. Identify other plans and projects that might affect these sites in combination with the Plan and decide whether any adverse effects that might not result from the Plan in isolation will do so “in combination”.
6. Develop measures to avoid the effect entirely or, if not possible, to mitigate the impact sufficiently that its effect on the European site is rendered effectively inconsequential.

- 2.15 In evaluating significance, URS has relied on its professional judgement as well as stakeholder consultation.
- 2.16 The level of detail concerning developments that will be permitted under land use plans will never be sufficient to make a detailed quantification of adverse effects. Therefore, we have again taken a precautionary approach (in the absence of more precise data) assuming as the default position that if an adverse effect cannot be confidently ruled out, avoidance or mitigation measures must be provided. This is in line with CLG guidance that the level of detail of the assessment, whilst meeting the relevant requirements of the Habitats Regulations, should be ‘appropriate’ to the level of plan or project that it addresses (see Figure 2 for a summary of this ‘tiering’ of assessment).
- 2.17 When undertaking this part of the assessment it is essential to bear in mind the principal intention behind the legislation i.e. to ensure that those projects or plans which in themselves have minor impacts are not simply dismissed on that basis, but are evaluated for any cumulative contribution they may make to an overall significant effect. In practice, in combination assessment is therefore of greatest relevance when the plan would otherwise be screened out because its individual contribution is inconsequential.

Physical scope of the HRA

- 2.18 The physical scope of the HRA is as shown in Table 1. The location of these European Sites with respect to the Wirral Borough Boundary and Plan Area is illustrated in Figures 3 and 4.

2.19 The plan area corresponds to the Wirral Borough Boundary which includes extensive intertidal areas, especially along the Dee and North Wirral coasts. The physical scope has been largely determined by previous HRA Screening on the Core Strategy Spatial Options Report (Wirral November 2009) with the opinions of Natural England and Countryside Council for Wales received through consultation on that HRA Screening Report also taken forward. River Eden SAC has been added based on potential water abstraction pathways, identified through wider work undertaken by URS.

Table 1: Physical scope of the HRA

European site	Reason for inclusion
Dee Estuary SPA/Ramsar/SAC	Located within Wirral Borough and immediately adjacent to the plan area, with potential pathways of impacts through direct disturbance of qualifying species; waste water discharges; water abstraction; port activity; coastal squeeze and loss of supporting habitat; recreational activities; aerial emissions and renewable energy schemes.
Mersey Estuary SPA/Ramsar	Located within Wirral Borough and immediately adjacent to the plan area, with potential pathways of impacts through direct disturbance of qualifying species; waste water discharges; water abstraction; port activity; coastal squeeze and loss of supporting habitat; Liverpool John Lennon Airport, recreational activities; aerial emissions and renewable energy schemes.
Mersey Narrows and North Wirral Foreshore pSPA/Ramsar	Located within Wirral Borough and immediately adjacent to the plan area, with potential pathways of impacts through direct disturbance of qualifying species; waste water discharges; water abstraction; port activity; coastal squeeze and loss of supporting habitat; recreational activities; aerial emissions and renewable energy schemes.
Liverpool Bay SPA	Located immediately adjacent to the Wirral, with potential pathways of impacts through waste water discharges; port activity; coastal squeeze and loss of supporting habitat; recreational activities and renewable energy schemes.
Sefton Coast SAC	Located within Merseyside with hydraulic connections to the Mersey (within Wirral Borough Core Strategy Area) with potential pathways of impacts through waste water discharges; recreational activities and renewable energy schemes.
Ribble & Alt Estuaries SPA and Ramsar site	Located within Merseyside with hydraulic connections to the Mersey (within Wirral Borough Core Strategy Area) with potential pathways of impacts through waste water discharges; port activity; recreational activities and renewable energy schemes.
River Dee & Bala Lake SAC	Located within 15km of Wirral Borough, potential pathways of impacts identified through water abstraction.
Martin Mere SPA	Whilst this is located approximately 20km north of Wirral, any

European site	Reason for inclusion
Berwyn and South Clwyd Mountains SAC and Berwyn SPA	renewable energy policies (e.g. wind turbines), alone or in combination have the potential to affect flight paths of qualifying bird species. Potential pathways of impacts arising through changes in air quality
River Eden SAC	Haweswater Lake (to which the River is hydrologically connected) is likely to form part of the future water supply for Merseyside, so there are potential pathways of impacts through water abstraction.

2.20 No other pathways to European sites have been identified.

2.21 Thought was given to including the following European sites, but these were scoped out of further assessment by previous HRA Screening on the Issues Visions and Objectives Core Strategy Report (Wirral November 2009), in agreement with Natural England and the Countryside Council for Wales. No realistic pathway has been identified between the Core Strategy and these sites.

- Deeside and Buckley Newt Site SAC
- Halkyn Mountain Newt Site SAC
- Alyn Valley Woods SAC
- Oak Mere SAC
- West Midland Mosses SAC

2.22 Further details regarding the interest features and vulnerabilities of the European sites included within the scope of the HRA are given below.

2.23 All baseline data relating to these European Sites presented in subsequent sections of this Report is taken from Joint Nature Conservancy Council websites (JNCC) unless otherwise stated. A full reference list of sites used is given in Section 15 (References).

The 'in combination' scope

2.24 It is a requirement of the Regulations that the impacts and effects of any land use plan being assessed are not considered in isolation but in combination with other plans and projects that may also be affecting the European site(s) in question. In practice, 'in combination assessment' is of greatest importance when the DPD would otherwise be screened out because the individual contribution is inconsequential. It is neither practical nor necessary to assess the 'in combination' effects of the DPD within the context of all other plans and projects within the region. The principal other plans and projects that we are considering are:

Projects

- Gwynt Y Mor Offshore Windfarm Project;
- Peel Ports 'Super Port';
- Liverpool John Lennon Airport expansion;
- The Mersey Gateway: Proposed 2nd Mersey Crossing (Halton);

- Proposed incinerators at Runcon and Ince Marches;
- Frodsham Windfarm;
- Power from the Mersey (indefinitely suspended);
- Thornton to Switch Island Link Road;
- Crosby Water Centre, Seaforth Terminal and possible visitor centres at Formby/Marshside;
- Burbo Windfarm Extension
- Wirral and Liverpool Waters

Plans

- The Wales Spatial Plan;
- North West of England Plan - Regional Spatial Strategy to 2021
- Draft West Cheshire and North East Wales Sub-Regional Spatial Strategy (2007);
- Liverpool City Region Renewable Energy Capacity Study;
- North West England & North Wales Shoreline Management Plan 2;
- Liverpool Core Strategy;
- Cheshire West and Chester Local Plan;
- Knowsley Core Strategy;
- Sefton Core Strategy;
- Halton Core Strategy;
- St Helens Core Strategy;
- Flintshire Unitary Development Plan + Proposed Modifications;
- Denbighshire Unitary Development Plan + Local Development Plan;
- Mersey Heartlands Growth Point Programme of Delivery (Wirral and Liverpool);
- Merseyside Joint Waste Development Plan Document;
- Greater Manchester Joint Waste Development Framework;
- Dee Catchment Abstraction Management Strategy;
- Dee Draft River Basin Management Plan;
- North West River Basin Management Plan;
- United Utilities Water Resource Management Plan;
- West Lancashire Core Strategy;
- Great Ormes Head to Formby Point Shoreline Management Plan (under review);
- Formby Point to River Wyre Shoreline Management Plan (under review);
- Wales Transport Plan; and
- Liverpool and Wirral Waters Development masterplans.

2.25 In practice, in combination assessment is of greatest relevance when the plan would otherwise be screened out because its individual contribution is inconsequential. For the purposes of this assessment, we have determined that, due to the nature of the identified impacts, the key other plans and projects relate to the additional housing and commercial/industrial allocations proposed for other Merseyside authorities Cheshire West and Chester, West Lancashire and North Wales over the lifetime of the Core Strategy, other transport priorities and renewable energy policies.

Table 2. Housing to be delivered within Merseyside under most recent published proposals (housing numbers are subject to change)

<i>Local Authority</i>	<i>Total housing under most recent published proposals</i>
Knowsley	7,650 new dwellings between 2010 and 2027
Halton	9,000 between 2010 and 2028 ⁴
St Helens	13,680 between 2003 and 2027
Liverpool	40,950 dwellings (net) between 2011 and 2028
Sefton	8,850 between 2010 and 2028

2.26 With regard to the specific issue of water resources, the long distance transfer pathways that exist for the supply of water to the Merseyside area and the fact that these same pathways or water sources also supply parts of North Wales, the West Midlands, Manchester, Cumbria and Cheshire, means that development across a much broader area must be considered in relation to 'in combination' impacts on water resources, as follows:

- North East Wales – specific housing levels to be delivered are not mentioned in the Wales Spatial Plan or its 2008 update but a significant increase is likely;
- Greater Manchester area – 185,800 homes to be delivered across Manchester, Salford, Oldham, Rochdale, Tameside, Stockport, Trafford, Congleton, Macclesfield (both now in Cheshire East), Bolton, Bury and Wigan between 2003 and 2021
- West Midlands – potentially up to 445,600 additional homes across the region until 2026
- West Cumbria – 11,640 homes to be delivered across Allerdale, Barrow-in-Furness and Copeland between 2003 and 2021; and
- Rest of Cheshire – approximately 12,000 homes to be delivered across Crewe & Nantwich (now in Cheshire East) and Vale Royal (now part of Cheshire West & Chester) between 2003 and 2021; a further 20,700 to be delivered elsewhere in Cheshire East.

2.27 It should be noted that, while the broad potential impacts of these other projects and plans will be considered, we do not propose carrying out HRA on each of these plans – we will however draw upon existing HRAs that have been carried out for surrounding regions and plans.

⁴ 9,000 new homes (net of demolitions) should be provided between 2010 and 2026 at a minimum rate of:

- 400 units per annum for the period April 2010 – March 2015
- 600 units per annum for the period April 2015 – March 2020
- 500 units per annum for the period April 2020 – March 2028

Beyond 2028, development should continue at a minimum rate of 500 units per annum (net gain) unless this is superseded by a change to policy at national level.

3 Pathways of Impact

Introduction

- 3.1 In carrying out an HRA it is important to avoid confining assessment to effectively arbitrary boundaries (such as Local Authority boundaries) but to use an understanding of the various ways in which land use plans can impact on European sites by following the pathways along which development can be connected with European sites, in some cases many kilometres distant. Briefly defined, pathways are routes by which a change in activity associated with a development can lead to an effect upon a European site. It is also important to bear in mind CLG guidance which states that the AA should be '*proportionate to the geographical scope of the [plan policy]*' and that '*an AA need not be done in any more detail, or using more resources, than is useful for its purpose*' (CLG, 2006, p.6⁵).
- 3.2 The following indirect pathways of impact are considered relevant to the HRA of the Core Strategy.

Disturbance

- 3.3 Habitat Regulation Assessments of Core Strategies tend to focus on recreational sources of disturbance as a result of new residents or an increasingly aging population with more leisure time available. While this is a key factor, other sources of disturbance associated with an increase in commercial development, road transport adjacent to sensitive sites or increases in shipping and aircraft movement may also result.
- 3.4 There have been several papers published that empirically demonstrate that damage to vegetation in woodlands and other habitats can be caused by vehicles, walkers, horses and cyclists:
- Wilson & Seney (1994)⁶ examined the degree of track erosion caused by hikers, motorcycles, horses and cyclists from 108 plots along tracks in the Gallatin National Forest, Montana. Although the results proved difficult to interpret, it was concluded that horses and hikers disturbed more sediment on wet tracks, and therefore caused more erosion, than motorcycles and bicycles.
 - Cole et al (1995a, b)⁷ conducted experimental off-track trampling in 18 closed forest, dwarf scrub and meadow and grassland communities (each tramped between 0 and 500 times) over five mountain regions in the US. Vegetation cover was assessed two weeks and one year after trampling, and an inverse relationship with trampling intensity was discovered, although this relationship was weaker after one year than two weeks indicating some recovery of the vegetation. Differences in plant morphological characteristics were found to explain more variation in response between different vegetation types than soil and topographic factors. Low-growing, mat-forming grasses regained their cover best after two weeks and were considered most resistant to trampling, while tall forbs (non-woody vascular plants other than

⁵ Department for Communities and Local Government. 2006. *Planning for the Protection of European Sites: Appropriate Assessment*. <http://www.communities.gov.uk/index.asp?id=1502244>

⁶ Wilson, J.P. & J.P. Seney. 1994. Erosional impact of hikers, horses, motorcycles and off road bicycles on mountain trails in Montana. *Mountain Research and Development* 14:77-88

⁷ Cole, D.N. 1995a. Experimental trampling of vegetation. I. Relationship between trampling intensity and vegetation response. *Journal of Applied Ecology* 32: 203-214

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

grasses, sedges, rushes and ferns) were considered least resistant. Cover of hemicryptophytes and geophytes (plants with buds below the soil surface) was heavily reduced after two weeks, but had recovered well after one year and as such these were considered most resilient to trampling. Chamaephytes (plants with buds above the soil surface) were least resilient to trampling. It was concluded that these would be the least tolerant of a regular cycle of disturbance.

- Cole (1995c)⁸ conducted a follow-up study (in 4 vegetation types) in which shoe type (trainers or walking boots) and trampler weight were varied. Although immediate damage was greater with walking boots, there was no significant difference after one year. Heavier trampers caused a greater reduction in vegetation height than lighter trampers, but there was no difference in effect on cover.
- Cole & Spildie (1998)⁹ experimentally compared the effects of off-track trampling by hiker and horse (at two intensities – 25 and 150 passes) in two woodland vegetation types (one with an erect forb understorey and one with a low shrub understorey). Horse traffic was found to cause the largest reduction in vegetation cover. The forb-dominated vegetation suffered greatest disturbance, but recovered rapidly. Higher trampling intensities caused more disturbance.

3.5 The total volume of dog faeces deposited on sites can be surprisingly large. For example, at Burnham Beeches National Nature Reserve over one year, Barnard¹⁰ estimated the total amounts of urine and faeces from dogs as 30,000 litres and 60 tonnes respectively. The specific impact on the New Forest has not been quantified from local studies; however, the fact that habitats for which the SAC is designated appear to already be subject to excessive nitrogen deposition¹¹, suggests that any additional source of nutrient enrichment (including uncollected dog faeces) will make a cumulative contribution to overall enrichment. In sites that are heavily used by dog walkers, degradation of valuable habitat types near car parks, entrance points and tracks can be seen that is attributable to nutrient enrichment. Such enrichment is visible near the main car parks around Chobham Common NNR in Surrey, for example, where heathland is lost and coarse grasses predominates. Any such contribution must then be considered within the context of other recreational sources of impact on sites.

Direct disturbance of wildlife

3.6 This section concerns itself primarily with bird disturbance as the only other animal for which internationally important sites covered in this report are designated are the great crested newt and natterjack toad, which are relatively unaffected by noise and visual activity associated with recreation.

Breeding birds

3.7 Concern regarding the effects of disturbance on birds stems from the fact that they are expending energy unnecessarily and the time they spend responding to disturbance is time that is not spent feeding¹². Disturbance therefore risks increasing energetic output while reducing energetic input, which can adversely affect the 'condition' and ultimately survival of the birds. In addition,

⁸ Cole, D.N. 1995c. Recreational trampling experiments: effects of trampler weight and shoe type. Research Note INT-RN-425. U.S. Forest Service, Intermountain Research Station, Utah.

⁹ Cole, D.N., Spildie, D.R. 1998. Hiker, horse and llama trampling effects on native vegetation in Montana, USA. *Journal of Environmental Management* 53: 61-71

¹⁰ Barnard, A. (2003) Getting the Facts - Dog Walking and Visitor Number Surveys at Burnham Beeches and their Implications for the Management Process. *Countryside Recreation*, 11, 16 - 19

¹¹ UK Air Pollution Information System. www.apis.ac.uk

¹² Riddington, R. *et al.* 1996. The impact of disturbance on the behaviour and energy budgets of Brent geese. *Bird Study* 43:269-279

displacement of birds from one feeding site to others can increase the pressure on the resources available within the remaining sites, as they have to sustain a greater number of birds¹³. Moreover, the more time a breeding bird spends disturbed from its nest, the more its eggs are likely to cool and the more vulnerable they, or any nestlings, are to predators.

Wintering birds

3.8 The potential for disturbance may be less in winter than in summer, in that there are often a smaller number of recreational users. In addition, the consequences of disturbance at a population level may be reduced because birds are not breeding. However, winter activity can still cause important disturbance, especially as birds are particularly vulnerable at this time of year due to food shortages, such that disturbance which results in abandonment of suitable feeding areas through disturbance can have severe consequences. Several empirical studies have, through correlative analysis, demonstrated that out-of-season (October-March) recreational activity can result in quantifiable disturbance:

- Tuite et al¹⁴ found that during periods of high recreational activity, bird numbers at Llangorse Lake decreased by 30% as the morning progressed, matching the increase in recreational activity towards midday. During periods of low recreational activity, however, no change in numbers was observed as the morning progressed. In addition, all species were found to spend less time in their 'preferred zones' (the areas of the lake used most in the absence of recreational activity) as recreational intensity increased.
- Underhill et al¹⁵ counted waterfowl and all disturbance events on 54 water bodies within the South West London Water Bodies Special Protection Area and clearly correlated disturbance with a decrease in bird numbers at weekends in smaller sites and with the movement of birds within larger sites from disturbed to less disturbed areas.
- Evans & Warrington¹⁶ found that on Sundays total water bird numbers (including shoveler and gadwall) were 19% higher on Stocker's Lake LNR in Hertfordshire, and attributed this to observed greater recreational activity on surrounding water bodies at weekends relative to week days. However, in this study, recreational activity was not quantified in detail, nor were individual recreational activities evaluated separately.
- Tuite et al¹⁷ used a large (379 site), long-term (10-year) dataset (September – March species counts) to correlate seasonal changes in wildfowl abundance with the presence of various recreational activities. They found that shoveler was one of the most sensitive species to disturbance. The greatest impact on winter wildfowl numbers was associated with sailing/windsurfing and rowing.

Other activities causing disturbance

3.9 Human activity can affect birds either directly (e.g. through causing them to flee) or indirectly (e.g. through damaging their habitat). The most obvious direct effect is that of immediate mortality such as death by shooting, but human activity can also lead to behavioural changes (e.g.

¹³ Gill, J.A., Sutherland, W.J. & Norris, K. 1998. The consequences of human disturbance for estuarine birds. *RSPB Conservation Review* 12: 67-72

¹⁴ Tuite, C. H., Owen, M. & Paynter, D. 1983. Interaction between wildfowl and recreation at Llangorse Lake and Talybont Reservoir, South Wales. *Wildfowl* 34: 48-63

¹⁵ Underhill, M.C. et al. 1993. *Use of Waterbodies in South West London by Waterfowl. An Investigation of the Factors Affecting Distribution, Abundance and Community Structure.* Report to Thames Water Utilities Ltd. and English Nature. Wetlands Advisory Service, Slimbridge

¹⁶ Evans, D.M. & Warrington, S. 1997. The effects of recreational disturbance on wintering waterbirds on a mature gravel pitlake near London. *International Journal of Environmental Studies* 53: 167-182

¹⁷ Tuite, C.H., Hanson, P.R. & Owen, M. 1984. Some ecological factors affecting winter wildfowl distribution on inland waters in England and Wales and the influence of water-based recreation. *Journal of Applied Ecology* 21: 41-62

alterations in feeding behaviour, avoidance of certain areas *etc.*) and physiological changes (e.g. an increase in heart rate) that, although less noticeable, may ultimately result in major population-level effects by altering the balance between immigration/birth and emigration/death¹⁸.

- 3.10 The degree of impact that varying levels of noise will have on different species of bird is poorly understood except that a number of studies have found that an increase in traffic levels on roads does lead to a reduction in the bird abundance within adjacent hedgerows - Reijnen et al (1995) examined the distribution of 43 passerine species (i.e. 'songbirds'), of which 60% had a lower density closer to the roadside than further away. By controlling vehicle usage they also found that the density generally was lower along busier roads than quieter roads¹⁹.
- 3.11 Activities other than recreation may also lead to disturbance of wildlife. Of relevance to the Wirral Core Strategy for example would be noise and visual disturbance from ports and airports, and potentially disturbance from wind farms. Disturbance and displacement from feeding and areas has been demonstrated with regard to wintering geese²⁰, curlew and hen harriers²¹.
- 3.12 The sensitivity of wildlife to the noise of roads and aircraft varies greatly from species to species. However road and airport/aircraft noise can cause some wildlife – notably a range of grassland and woodland birds - to avoid areas near them, reducing the density of those animal populations²². Elsewhere, reduced breeding success has been recorded.
- 3.13 Large structures (e.g. a new bridge over the Mersey Estuary, offshore and onshore wind turbines), have the potential to alter bird flight paths (e.g. hunting flight paths for raptors, bird migratory paths, regular flight paths between roosting and feeding sites, and foraging routes for bats etc. This may result in a collision risk barrier effect or displacement which could make birds either vulnerable to predation or loss of vital energy stores.
- 3.14 Animals can also be disturbed by the movement of ships. For instance, a DTI study of birds of the North West coast noted that: "Divers and scoters were absent from the mouths of some busier estuaries, notably the Mersey... Both species are known to be susceptible to disturbance from boats, and their relative scarcity in these areas... may in part reflect the volume of boat traffic in these areas"²³.
- 3.15 Disturbing activities are on a continuum. The most disturbing activities are likely to be those that involve irregular, infrequent, unpredictable loud noise events, movement or vibration of long duration. Birds are least likely to be disturbed by activities that involve regular, frequent, predictable, quiet patterns of sound or movement or minimal vibration. The further any activity is from the birds, the less likely it is to result in disturbance.
- 3.16 The factors that influence a species response to a disturbance are numerous, but the three key factors are species sensitivity, proximity of disturbance sources and timing/duration of the potentially disturbing activity.
- 3.17 The distance at which a species takes flight when approached by a disturbing stimulus is known as the 'tolerance distance' (also called the 'escape flight distance') and differs between species to the same stimulus and within a species to different stimuli. These are given in Table 3, which compiles 'tolerance distances' from across the literature. It is reasonable to assume from this that

¹⁸ Riley, J. 2003. Review of Recreational Disturbance Research on Selected Wildlife in Scotland. Scottish Natural Heritage.

¹⁹ Reijnen, R. et al. 1995. The effects of car traffic on breeding bird populations in woodland. III. Reduction of density in relation to the proximity of main roads. *Journal of Applied Ecology* 32: 187-202

²⁰ Langston, R.H.W & Pullan, J.D. (2003). Effects of Wind Farms on Birds: Nature and Environment No. 139. Council of Europe.

²¹ Madders, M. & Whitfield, D.P. 2006. Upland raptors and the assessment of wind farm impacts. *Ibis* 148 (Suppl. 1), 43-56.

²² Kaseloo, P. A. and K. O. Tyson. 2004. Synthesis of Noise Effects on Wildlife Populations. FHWA Report.

²³ DTI (2006). Aerial Surveys of Waterbirds in Strategic Wind Farm Areas: 2004/05 Final Report

disturbance is unlikely to be experienced more than a few hundred metres from the birds in question. Tolerance distances are unknown for many birds and simple extrapolation to other species is not advised.

Table 3 - Tolerance distances of 21 water bird species to various forms of recreational disturbance, as described in the literature. All distances are in metres. Single figures are mean distances; when means are not published, ranges are given. ¹ Tydeman (1978), ² Keller (1989), ³ Van der Meer (1985), ⁴ Wolff et al (1982), ⁵ Blankestijn et al (1986).²⁴

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

Mechanical/abrasive damage and nutrient enrichment

- 3.18 Most types of aquatic or terrestrial European sites can be affected by trampling, which in turn causes soil compaction and erosion. Walkers with dogs contribute to pressure on sites through

²⁴ Tydeman, C.F. 1978. *Gravel Pits as conservation areas for breeding bird communities*. PhD thesis. Bedford College
Keller, V. 1989. Variations in the response of Great Crested Grebes *Podiceps cristatus* to human disturbance - a sign of adaptation? *Biological Conservation* 49:31-45

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

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

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

nutrient enrichment via dog fouling and also have potential to cause greater disturbance to fauna as dogs are less likely to keep to marked footpaths and also tend to move in a more erratic manner. Motorcycle scrambling and off-road vehicle use can cause more serious erosion, as well as disturbance to sensitive species. Boats can also cause some mechanical damage to intertidal habitats through grounding.

Atmospheric pollution

- 3.19 The main pollutants of concern for European sites are oxides of nitrogen (NO_x), ammonia (NH₃) and sulphur dioxide (SO₂). NO_x can have a directly toxic effect upon vegetation. In addition, greater NO_x or ammonia concentrations within the atmosphere will lead to greater rates of nitrogen deposition to soils. An increase in the deposition of nitrogen from the atmosphere to soils is generally regarded to lead to an increase in soil fertility, which can have a serious deleterious effect on the quality of semi-natural, nitrogen-limited terrestrial habitats.

Table 4. Main sources and effects of air pollutants on habitats and species

Pollutant	Source	Effects on habitats and species
Acid deposition	SO ₂ , NO _x and ammonia all contribute to acid deposition. Although future trends in S emissions and subsequent deposition to terrestrial and aquatic ecosystems will continue to decline, it is likely that increased N emissions may cancel out any gains produced by reduced S levels.	Can affect habitats and species through both wet (acid rain) and dry deposition. Some sites will be more at risk than others depending on soil type, bed rock geology, weathering rate and buffering capacity.
Ammonia (NH ₃)	Ammonia is released following decomposition and volatilisation of animal wastes. It is a naturally occurring trace gas, but levels have increased considerably with expansion in numbers of agricultural livestock. Ammonia reacts with acid pollutants such as the products of SO ₂ and NO _x emissions to produce fine ammonium (NH ₄ ⁺)- containing aerosol which may be transferred much longer distances (can therefore be a significant trans-boundary issue.)	Adverse effects are as a result of nitrogen deposition leading to eutrophication. As emissions mostly occur at ground level in the rural environment and NH ₃ is rapidly deposited, some of the most acute problems of NH ₃ deposition are for small relict nature reserves located in intensive agricultural landscapes.
Nitrogen oxides NO _x	Nitrogen oxides are mostly produced in combustion processes. About one quarter of the UK's emissions are from power stations, one-half from motor vehicles, and the rest from other industrial and domestic combustion processes.	Deposition of nitrogen compounds (nitrates (NO ₃), nitrogen dioxide (NO ₂) and nitric acid (HNO ₃)) can lead to both soil and freshwater acidification. In addition, NO _x can cause eutrophication of soils and water. This alters the species composition of plant communities and can eliminate sensitive species.
Nitrogen (N) deposition	The pollutants that contribute to nitrogen deposition derive mainly from NO _x and NH ₃ emissions. These pollutants cause acidification (see also acid deposition) as well as eutrophication.	Species-rich plant communities with relatively high proportions of slow-growing perennial species and bryophytes are most at risk from N eutrophication, due to its promotion of competitive and invasive species which can respond readily to elevated levels of N. N deposition can also increase the risk of damage from abiotic factors, e.g. drought and frost.
Ozone (O ₃)	A secondary pollutant generated by	Concentrations of O ₃ above 40 ppb can

Pollutant	Source	Effects on habitats and species
	photochemical reactions from NO _x and volatile organic compounds (VOCs). These are mainly released by the combustion of fossil fuels. The increase in combustion of fossil fuels in the UK has led to a large increase in background ozone concentration, leading to an increased number of days when levels across the region are above 40ppb. Reducing ozone pollution is believed to require action at international level to reduce levels of the precursors that form ozone.	be toxic to humans and wildlife, and can affect buildings. Increased ozone concentrations may lead to a reduction in growth of agricultural crops, decreased forest production and altered species composition in semi-natural plant communities.
Sulphur Dioxide SO ₂	Main sources of SO ₂ emissions are electricity generation, industry and domestic fuel combustion. May also arise from shipping and increased atmospheric concentrations in busy ports. Total SO ₂ emissions have decreased substantially in the UK since the 1980s.	Wet and dry deposition of SO ₂ acidifies soils and freshwater, and alters the species composition of plant and associated animal communities. The significance of impacts depends on levels of deposition and the buffering capacity of soils.

3.20 Sulphur dioxide emissions are overwhelmingly influenced by the output of power stations and industrial processes that require the combustion of coal and oil, as well (particularly on a local scale) as shipping.

3.21 Ammonia emissions are dominated by agriculture, with some chemical processes also making notable contributions. As such, it is unlikely that material increases in SO₂ or NH₃ emissions will be associated with Local Plans. NO_x emissions, however, are dominated by the output of vehicle exhausts (more than half of all emissions). Within a 'typical' housing development, by far the largest contribution to NO_x (92%) will be made by the associated road traffic. Other sources, although relevant, are of minor importance (8%) in comparison²⁵. Emissions of NO_x could therefore be reasonably expected to increase as a result of greater vehicle use as an indirect effect of the Local Plan.

3.22 According to the World Health Organisation, the critical NO_x concentration (critical threshold) for the protection of vegetation is 30 µgm⁻³; the threshold for sulphur dioxide is 20 µgm⁻³. In addition, ecological studies have determined 'critical loads'²⁶ of atmospheric nitrogen deposition (that is, NO_x combined with ammonia NH₃).

3.23 The National Expert Group on Transboundary Air Pollution (2001)²⁷ concluded that:

- In 1997, critical loads for acidification were exceeded in 71% of UK ecosystems. This was expected to decline to 47% by 2010.
- Reductions in SO₂ concentrations over the last three decades have virtually eliminated the direct impact of sulphur on vegetation.
- By 2010, deposited nitrogen was expected to be the major contributor to acidification, replacing the reductions in SO₂.

²⁵ Proportions calculated based upon data presented in Dore CJ et al. 2005. UK Emissions of Air Pollutants 1970 – 2003. UK National Atmospheric Emissions Inventory. <http://www.airquality.co.uk/archive/index.php>

²⁶ The critical load is the rate of deposition beyond which research indicates that adverse effects can reasonably be expected to occur

²⁷ National Expert Group on Transboundary Air Pollution (2001) Transboundary Air Pollution: Acidification, Eutrophication and Ground-Level Ozone in the UK.

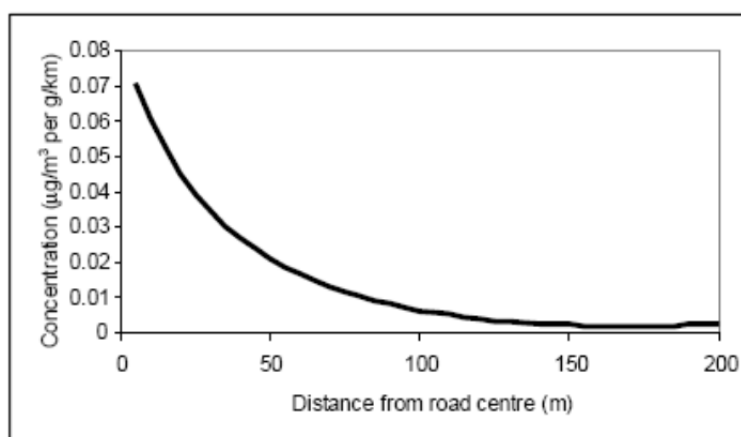
- Current nitrogen deposition is probably already changing species composition in many nutrient-poor habitats, and these changes may not readily be reversed.
- The effects of nitrogen deposition are likely to remain significant beyond 2010.
- Current ozone concentrations threaten crops and forest production nationally. The effects of ozone deposition are likely to remain significant beyond 2010.
- Reduced inputs of acidity and nitrogen from the atmosphere may provide the conditions in which chemical and biological recovery from previous air pollution impacts can begin, but the timescales of these processes are very long relative to the timescales of reductions in emissions.

3.24 Grice et al^{28 29} do however suggest that air quality in the UK will improve significantly over the next 15 years due primarily to reduced emissions from road transport and power stations.

Local air pollution

3.25 According to the Department of Transport's Transport Analysis Guidance, "*Beyond 200m, the contribution of vehicle emissions from the roadside to local pollution levels is not significant*"³⁰.

Figure 5. Traffic contribution to concentrations of pollutants at different distances from a road (Source: DfT)



3.26 This distance (200m) is therefore the distance that has been used throughout this HRA in order to determine whether European sites are likely to be significantly affected by traffic generated by development under the Core Strategy. Such a distance threshold cannot currently be applied to shipping emissions and we must therefore restrict ourselves to assuming that the presence of a pathway indicates a possible issue.

²⁸ Grice, S., T. Bush, J. Stedman, K. Vincent, A. Kent, J. Targa and M. Hobson (2006) Baseline Projections of Air Quality in the UK for the 2006 Review of the Air Quality Strategy, report to the Department for Environment, Food and Rural Affairs, Welsh Assembly Government, the Scottish Executive and the Department of the Environment for Northern Ireland.

²⁹ Grice, S., J. Stedman, T. Murrells and M. Hobson (2007) Updated Projections of Air Quality in the UK for Base Case and Additional Measures for the Air Quality Strategy for England, Scotland, Wales and Northern Ireland 2007, report to the Department for Environment, Food and Rural Affairs, Welsh Assembly Government, the Scottish Executive and the Department of the Environment for Northern Ireland.

³⁰ www.webtag.org.uk/archive/feb04/pdf/feb04-333.pdf

Diffuse air pollution

- 3.27 In addition to the contribution to local air quality issues, development can also contribute cumulatively to an overall change in background air quality across an entire region (although individual developments and plans are – with the exception of large point sources such as power stations – likely to make very small individual contributions). In July 2006, when this issue was raised by Runnymede District Council in the South East, Natural England advised that their Local Plan ‘*can only be concerned with locally emitted and short range locally acting pollutants*’³¹ as this is the only scale which falls within a local authority remit. It is understood that this guidance was not intended to set a precedent, but it inevitably does so since (as far as we are aware) it is the only formal guidance that has been issued to a Local Authority from any Natural England office on this issue.
- 3.28 In the light of this and our own knowledge and experience, it is considered reasonable to conclude that it must be the responsibility of central government to address the cumulative diffuse pan-authority air quality impacts, partly because such impacts stem from the overall quantum of development within a region (over which individual districts have little control), and since this issue can only practically be addressed at the highest pan-authority level. Diffuse air quality issues will not therefore be considered further within this HRA except to identify where the Core Strategy incorporates a suite of measures that will lead to an improvement in overall background air quality (or at least ensure that Wirral’s contribution to future negative trends in diffuse air quality is minimal). In this case there are several measures listed in Policy CS40 (Transport Requirements) would serve to protect the SAC/SPA/Ramsar site either directly or through promoting and delivering sustainable transport:
- Support the greater use of sustainable transport and travel and promote the use of public transport, walking and cycling;
 - provide accessible, safe and attractive facilities for pedestrians and cyclists, suitable for all abilities and ages which link to and contribute to the enhancement of existing networks;
 - reinforce the implementation of 20mph zones outside main routes in residential areas and ensure that pedestrians and cyclists have priority;
 - minimise the environmental impact of traffic likely to be generated by the development on residential areas and other sensitive uses, such as schools, care homes and hospitals;
 - secure appropriate provision for on-site parking and manoeuvring, including safe, covered cycle storage, cycle parking and other facilities (such as showers, bike cages and lockers) and the provision of electric vehicle charging infrastructure, where appropriate; and
 - secure appropriate measures to support the greater use of public transport networks and facilities, including the width of carriageways and infrastructure such as bus stops and laybys.

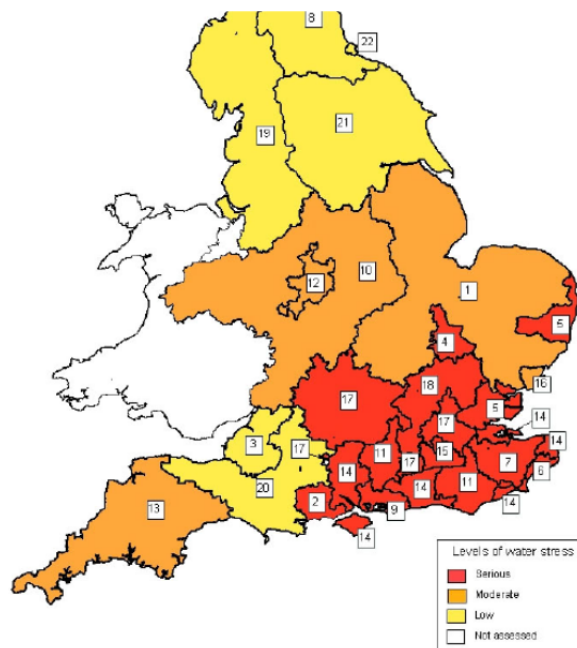
Water resources

- 3.29 The North West is generally an area of low water stress (see Figure 6).

Figure 6. Areas of water stress within England. It can be seen from this map that Merseyside is classified as being an area of low water stress (coded yellow).³²

³¹ English Nature (16 May 2006) letter to Runnymede Borough Council, ‘Conservation (Natural Habitats &c.) Regulations 1994, Runnymede Borough Council Local Development Framework’.

³² Figure adapted from Environment Agency. 2007. Identifying Areas of Water Stress. <http://publications.environment-agency.gov.uk/pdf/GEHO0107BLUT-e-e.pdf>



- 3.30 Initial investigation indicates that Wirral lies within United Utilities' Integrated Resource Zone which serves 6.5 million people in south Cumbria, Lancashire, Greater Manchester, Merseyside and most of Cheshire. The Integrated Zone is supplied with around 1800 MI/d of drinking water, of which about 500 MI/d comes from water sources in Wales, about 600 MI/d comes from sources in Cumbria, and the rest from sources in other parts of North West England. It constitutes a large integrated supply network that enables substantial flexibility in distributing supplies within the zone. The construction of the 'west to east link' will further aid this flexibility and thus break the traditional division in which Greater Manchester received water from Cumbria and Merseyside received water from the River Dee (which lies partly in England and partly in Wales) and from purely Welsh sources (e.g. Lake Vyrnwy).
- 3.31 In exploring water resource issues relating to Welsh European sites for St Helens Council, we determined from United Utilities that approximately 75% of St. Helens potable water supply is currently abstracted from the River Dee, 20% is abstracted from Lake Vyrnwy and only 5% is abstracted from sites in Cumbria. It is likely that similar proportions relate to Wirral although this is likely to change in the future as a result of the greater flexibility provided by the west-east link. In any case, Cumbrian and Welsh sources will still be involved in one ratio or another in water supply to Wirral.
- 3.32 The River Dee is a Special Area of Conservation and flows into the Dee Estuary which is also designated as a SAC as well as a SPA (and pSPA extension) and Ramsar site. Four water companies abstract from sources that affect the River Dee including United Utilities (UU), Dee Water Valley, Welsh Water and Severn Trent Water. Excessive abstraction from the Dee could therefore result in sufficient drawdown of water to damage the interest features of the River Dee and Bala Lake SAC (through desiccation, fish entrapment or a deterioration in water quality due to the lower proportion of freshwater to sediment) and in turn reduce freshwater flows into the Dee Estuary to such a degree as to damage the interest features of that site through an increase in salinity.

- 3.33 In the future as a result of the west-east link, Merseyside (including Wirral) will obtain a much greater proportion of its water supply from Lake District sources. This is likely to involve Haweswater as a principal reservoir. Haweswater is within the catchment of the River Eden SAC and thus we have also included consideration of drawdown and reduced flow impacts on this designated site in this report.

Water quality

- 3.34 The Sewage Treatment Works (STWs) that serve Wirral discharge into the Mersey downstream of the Mersey Estuary SPA/Ramsar site and upstream of the Liverpool Bay SPA and within close proximity to the Mersey Narrows & North Wirral Foreshore SPA and pRamsar, with the exception of the Heswall STW which discharges into the Dee Estuary SPA/SAC/Ramsar site and Meols STW which discharges onto the North Wirral coast via a long sea outfall within close proximity to the Mersey Narrows & North Wirral Foreshore pSPA and pRamsar and Dee Estuary SAC.
- 3.35 Increased amounts of housing or business development can lead to reduced water quality of rivers and estuarine environments. Sewage and industrial effluent discharges can contribute to increased nutrients on European sites leading to unfavourable conditions. In addition, diffuse aquatic pollution, partly from urban run-off, has been identified during an Environment Agency Review of Consents process as being a major factor in causing unfavourable condition of European sites.
- 3.36 The quality of the water that feeds European sites is an important determinant of the nature of their habitats and the species they support. Poor water quality can have a range of environmental impacts:
- At high levels, toxic chemicals and metals can result in immediate death of aquatic life, and can have detrimental effects even at lower levels, including increased vulnerability to disease and changes in wildlife behaviour. Eutrophication, the enrichment of plant nutrients in water, increases plant growth and consequently results in oxygen depletion. Algal blooms, which commonly result from eutrophication, increase turbidity and decrease light penetration. The decomposition of organic wastes that often accompanies eutrophication deoxygenates water further, augmenting the oxygen depleting effects of eutrophication. In the marine environment, nitrogen is the limiting plant nutrient and so eutrophication is associated with discharges containing available nitrogen; in the freshwater environment, phosphorus is usually a principal cause of eutrophication.
 - Some pesticides, industrial chemicals, and components of sewage effluent are suspected to interfere with the functioning of the endocrine system, possibly having negative effects on the reproduction and development of aquatic life, and subsequently bird life.
 - Increased discharge of treated sewage effluent can result both in greater scour (as a result of greater flow volumes) and in high levels of macroalgal growth, which can smother the mudflats of value to SPA birds.
- 3.37 For sewage treatment works close to capacity, further development may increase the risk of effluent escape into aquatic environments. In many urban areas, sewage treatment and surface water drainage systems are combined, and therefore a predicted increase in flood and storm events could increase pollution risk.
- 3.38 However, it is also important to note that the situation is not always simple – for sites designated for waterfowl, a STW discharge can actually be a useful source of food and birds will often

congregate around the outfall³³. In addition, while nutrient enrichment does cause considerable problems on the south coast (particularly in the Solent) due to the abundance of smothering macroalgae that is produced, it is not necessarily a problem in other areas where the macroalgae are broken up by tidal wave action and where colder and more turbid water limit the build-up in the first place.

- 3.39 Nonetheless, at this screening stage water quality impacts are considered to be an issue that requires investigation.

Port and Channel Construction, Maintenance Shipping and Dredging

- 3.40 The construction and maintenance of ports and inland shipping channels poses a number of environmental risks³⁴. Of particular importance is the dredging necessary to permit large vessels to enter ports, or to maintain inland channels. In natural estuaries and harbours, there is a balance between sediment transported out to sea and that which flows in with rivers and runoff, which tends to maintain an equilibrium depth. Often this is not deep enough to allow vessels safe passage, so navigational channels and harbours are dredged to deepen them. Because natural forces will tend to build up sediment until the channels and port return to their equilibrium, dredging to maintain safe depth is an ongoing maintenance activity. The need for such dredging is likely to increase in the future as ships become larger and require deeper ports or as inland water transport grows in importance.
- 3.41 Dredging poses direct threats to the areas in which it occurs. It introduces sediment into the adjacent water column, which is then re-deposited on the bottom. This has a variety of usually short-term effects on pelagic fish and the benthic community. The suspended sediment increases turbidity, decreasing light penetration and photosynthetic activity. Dredging can also have longer term effects on water circulation patterns, particularly in estuarine areas where water circulation determines the distribution of fresh and salt water, patterns of dissolved oxygen, and other water quality parameters. Changes in salinity can affect the viability of freshwater wetlands and tidal marshes, with consequent impacts on the distribution of marine life. Changes in water circulation patterns can also alter sediment accumulation, thus affecting all ecosystems in the immediate area³⁵.
- 3.42 Dredging for marine minerals has occurred in UK waters for many years, in response to the need for sand and gravel used as construction aggregate and for beach replenishment, including the Mersey. Mersey Silt has historically been identified as having a possible contribution to the supply of construction aggregates in north-west England³⁶ including as a concreting or mortaring sand as coarse aggregate or bricks.
- 3.43 The development of Ports and greater use of shipping for freight has the potential to result in disturbance of sediment releasing legacy heavy metal pollution (mercury, lead, cadmium and other poisons) that is bound into the sediment, or other introduction of these metals. Policies that encourage more freight by shipping also have the potential to result in pollution through fuel emissions, and accidental spillages.

³³ Anecdotal observation from the authors work on numerous sewage treatment works around the country (particularly London) and bird surveys undertaken by the author and colleagues on such sites

³⁴ OECD (ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT) (1997) The Environmental Effects of Freight available from <http://www.oecd.org/dataoecd/14/3/2386636.pdf> (Accessed June 2010)(p17)

³⁵ Marine Board, Commission on Engineering and Technical Systems, National Research Council (1985), Dredging Coastal Ports: An Assessment of the Issues. (Washington, D.C.: National Academy Press) (pp124-128)

³⁶ P.F.G. Banfill* and A.C. Benson (Department of Building Engineering),(1979). Alternative aggregate materials: Properties of Mersey Silt Building and Environment (Volume 14, Issue 3, 1979, Pages 203-208)

3.44 As a precaution these pathways have been considered in this report.

Coastal squeeze

- 3.45 Rising sea levels can be expected to cause intertidal habitats (principally saltmarsh, sand dunes and intertidal mudflats) to migrate landwards. However, in built-up areas, such landward retreat is often rendered impossible due the presence of the sea wall and other flood defences. In addition, development frequently takes place immediately behind the sea wall, so that the flood defences cannot be moved landwards to accommodate managed retreat of threatened habitats. The net result is that the quantity of saltmarsh, sand dunes and mudflat adjacent to built-up areas will progressively decrease as sea levels rise. This process is known as 'coastal squeeze'. In areas where sediment availability is reduced, the 'squeeze' also includes an increasingly steep beach profile and foreshortening of the seaward zones.
- 3.46 Intertidal habitat loss is mainly occurring in the south and east of the country, particularly between the Humber and Severn. Northwest England, south Wales, the Solent in Hampshire, the southeast around the Thames estuary and large parts of East Anglia are also affected but to a lesser degree.
- 3.47 Defra's current national assessment is that the creation of an annual average of at least 100 ha of intertidal habitat associated with European sites in England that are subject to coastal squeeze, together with any more specifically identified measures to replace losses of terrestrial and supra-tidal habitats, is likely to be required to protect the overall coherence of the Natura 2000 network. This assessment takes account of intertidal habitat loss from European sites in England that is caused by a combination of all flood risk management structures and sea level rise. The assessment will be kept under review taking account of the certainty of any adverse effects and monitoring of the actual impacts of plans and projects.³⁷.
- 3.48 Coastal squeeze cannot be assessed in detail until actual site allocations exist, but it can be at least broadly considered in the HRA of the Core Strategy.

Summary of Screening

- 3.49 All submission draft core strategy policies within the Core Strategy were screened for potential conflicts within European sites. A number of the submission draft core strategy policies were 'screened out' as there was no potential for any of these submission draft core strategy policies to result in adverse effects on European sites. The full screening table for the submission draft core strategy policies is contained within Appendix 1.
- 3.50 The following submission draft core strategy policies were deemed to require consideration as they may lead to adverse effects on European sites, generally because they promote and determine the location or scale of development (particularly housing and commercial development):
- CS2: Broad Spatial Strategy
 - CS4: Priorities for Wallasey
 - CS5: Priorities for Commercial Core of Birkenhead
 - CS6 - Priorities for Suburban Birkenhead

³⁷ Defra. 2005. Coastal Squeeze – Implications for Flood Management.
<http://www.defra.gov.uk/enviro/fcd/policy/csqueeze.pdf>

- CS7 - Priorities for Bebington, Bromborough and Eastham
- CS8 - Priorities for Leasowe, Moreton, Upton, Greasby and Woodchurch
- CS9 - Priorities for Hoylake and West Kirby
- CS10 - Priorities for Irby, Thingwall, Pensby, Heswall and Gayton
- CS11 - Priorities for the Rural Areas
- CS12 - Wirral Waters
- CS13 - Employment Land Requirement
- CS18 - Housing Requirement
- CS24 - Gypsies and Travellers

3.51 It should be noted that only policies that have the potential for negative impacts on European sites are screened in for assessment. Those policies that might have a beneficial effect are referred to where appropriate in the following chapters, but have not been actually assessed. This is due to the fact that HRA is only concerned with adverse effects.

4 The Dee Estuary SAC, SPA & Ramsar site

- 4.1 The Dee Estuary SPA, Ramsar site and SAC is located immediately adjacent to the Plan area within the Wirral Borough Boundary (See Figures 3 and 4). An extension to the Dee Estuary forms a proposed SPA³⁸. The Dee is a large funnel-shaped sheltered estuary and is one of the top five estuaries in the UK for wintering and passage waterfowl populations. The Dee Estuary site covers over 13,000ha and is the largest macro-tidal coastal plain Estuary between the larger Severn Estuary and the Solway Firth. The Dee Estuary is hyper-tidal with a mean spring tidal range of 7.7m at the mouth. The site has extensive areas of intertidal sand-flats, mud-flats and saltmarsh. In areas where agricultural use has not occurred, the saltmarshes grade into transitional brackish and swamp vegetation on the upper shore. The site also supports three sandstone islands (the Hilbre islands) which have important cliff vegetation and maritime heathland and grassland. The two sides of the Estuary show a marked difference between the industrialised usage of the Welsh coastal belt and the residential and recreational English side.
- 4.2 The two shorelines of the estuary show a marked contrast between the industrialised usage of the coastal belt in Wales and residential and recreational usage in England.

Reasons for Designation

- 4.3 The Dee Estuary qualifies as a SAC for both habitats and species. Firstly, the site contains the following Habitats Directive Annex I habitats:
- Water courses of plain to montane levels with the *Ranunculus fluitantis* and *Callitriche-Batrachion* vegetation;
 - Mudflats and sandflats not covered by seawater at low tide;
 - *Salicornia* and other annuals colonising mud and sand - The Dee Estuary is representative of pioneer glasswort *Salicornia spp.* saltmarsh in the north-west of the UK. *Salicornia spp.* saltmarsh forms extensive stands in the Dee, especially on the more sandy muds where there is reduced tidal scour. It mainly occurs on the seaward fringes as a pioneer community, and moving landwards usually forms a transition to common saltmarsh-grass *Puccinellia maritima* saltmarsh (SM10). There is also a low frequency of *Salicornia spp.* extending well inland. Associated species often include annual sea-blite *Suaeda maritima* and hybrid scurvy grass *Cochlearia x hollandica*.
 - Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*) - The Dee Estuary is representative of H1330 Atlantic salt meadows in the north-west of the UK. It forms the most extensive type of saltmarsh in the Dee, and since the 1980s it has probably displaced very large quantities of the non-native common cord-grass *Spartina anglica*. The high accretion rates found in the estuary are likely to favour further development of this type of vegetation. The saltmarsh is regularly inundated by the sea; characteristic salt-tolerant perennial flowering plant species include common saltmarsh-grass *Puccinellia maritima*, sea aster *Aster tripolium*, and sea arrowgrass *Triglochin maritima*. In a few areas there are unusual transitions to wet woodland habitats.
- 4.4 Secondly, the site contains the following Habitats Directive Annex II habitats and species:
- Estuaries

³⁸ Barbara McCarthy, Natural England (2009), *Pers. comms*, Telephone call 5th June 2009

- Annual vegetation of drift lines
- Vegetated sea cliffs of the Atlantic and Baltic coasts
- Embryonic shifting dunes
- Shifting dunes along the shoreline with *Ammophila arenaria* (‘white dunes’)
- Fixed dunes with herbaceous vegetation (‘grey dunes’)
- Humid dune slacks
- Sea lamprey *Petromyzon marinus*
- River lamprey *Lampetra fluviatilis*
- Petalwort *Petalophyllum ralfsii*

4.5 The Dee Estuary also qualifies as a SPA supporting:

During the breeding season:

- Common Tern *Sterna hirundo*, 277 pairs representing at least 2.3% of the breeding population in Great Britain (5 year mean 1991-95);
- Little Tern *Sterna albifrons*, 56 pairs representing at least 2.3% of the breeding population in Great Britain (RSPB, 5 year mean 1991-95).

On passage:

- Sandwich Tern *Sterna sandvicensis*, 818 individuals representing at least 5.8% of the population in Great Britain (5 year mean 1991-95);
- Redshank *Tringa totanus*, 8,451 individuals representing at least 4.8% of the Eastern Atlantic - wintering population (5 year peak mean 1991/2 - 1995/6).

Over winter:

- Bar-tailed Godwit *Limosa lapponica*, 1,013 individuals representing at least 1.9% of the wintering population in Great Britain (5 year peak mean 1991/2 - 1995/6)

4.6 This site also qualifies under Article 4.2 of the Directive (79/409/EEC) by supporting populations of European importance of the following migratory species:

- Black-tailed Godwit *Limosa limosa islandica*, 1,739 individuals representing at least 2.5% of the wintering Iceland - breeding population (5 year peak mean 1991/2 - 1995/6);
- Curlew *Numenius arquata*, 4,028 individuals representing at least 1.2% of the wintering Europe - breeding population (5 year peak mean 1991/2 - 1995/6);
- Dunlin *Calidris alpina alpina*, 22,479 individuals representing at least 1.6% of the wintering Northern Siberia/Europe/Western Africa population (5 year peak mean 1991/2 - 1995/6);
- Grey Plover *Pluvialis squatarola*, 2,193 individuals representing at least 1.5% of the wintering Eastern Atlantic - wintering population (5 year peak mean 1991/2 - 1995/6);
- Knot *Calidris canutus*, 21,553 individuals representing at least 6.2% of the wintering Northeastern Canada/Greenland/Iceland/Northwestern Europe population (5 year peak mean 1991/2 - 1995/6);

- Oystercatcher *Haematopus ostralegus*, 28,434 individuals representing at least 3.2% of the wintering Europe & Northern/Western Africa population (5 year peak mean 1991/2 - 1995/6);
- Pintail *Anas acuta*, 6,498 individuals representing at least 10.8% of the wintering Northwestern Europe population (5 year peak mean 1991/2 - 1995/6);
- Redshank *Tringa totanus*, 6,382 individuals representing at least 4.3% of the wintering Eastern Atlantic - wintering population (5 year peak mean 1991/2 - 1995/6);
- Shelduck *Tadorna tadorna*, 6,827 individuals representing at least 2.3% of the wintering Northwestern Europe population (5 year peak mean 1991/2 - 1995/6);
- Teal *Anas crecca*, 5,918 individuals representing at least 1.5% of the wintering Northwestern Europe population (5 year peak mean 1991/2 - 1995/6);

4.7 The Dee Estuary is also designated as a SPA for regularly supporting 130,408 individual waterfowl (5 year peak mean 1991/2 - 1995/6)³⁹.

4.8 In addition to the SPA designation the Dee Estuary is also designated as a Ramsar site by meeting Ramsar criteria 1, 5 and 6 as follows:

- Extensive intertidal mud and sand flats (20 km by 9 km) with large expanses of saltmarsh towards the head of the estuary;
- Supporting an overall bird assemblage of international importance; and
- Supporting the following species at levels of international importance: shelduck, oystercatcher, curlew, redshank, teal, pintail, grey plover, red knot, dunlin, bar-tailed godwit, black-tailed godwit and turnstone.

4.9 The historic trends and current pressures on the site are summarised below.

Historic Trends and Current Pressures

4.10 The majority of the site is in the ownership and sympathetic management of public bodies and voluntary conservation organisations. Unlike most western estuaries, sizeable areas of saltmarsh in the Dee remain ungrazed and therefore plant species that are susceptible to grazing are widespread. This distinctive flora would therefore be sensitive to an increase in grazing pressure. The intertidal and subtidal habitats of the estuary are broadly subject to natural successional change, although shellfisheries and dredging are a current concern. Threats to the estuary's conservation come from its industrialised shorelines on the Welsh side and the impact of adjacent historic industrial use. These include land contamination from chemical and steel manufacture and localised water quality problems. Remediation works are being undertaken. Contemporary issues relate to dock development and navigational dredging, coastal defence works and their impact on coastal process, regulation of shellfisheries, and the recreational use of sand dunes and saltmarshes.

4.11 The environmental pressures upon the Dee Estuary SAC, SPA & Ramsar site are mainly:

- overgrazing of ungrazed/little grazed saltmarsh;
- certain recreational activities in sensitive areas at sensitive times such as shellfishing (in terms of loss of material from the food chain) and dog walking (in terms of disturbance of waterfowl)

³⁹ The Ramsar citation sheet identifies the waterfowl population as 74,230 using slightly more recent data (5 year peak mean 1998/99-2002/2003). However, this is still more than the 20,000 needed for consideration as being internationally important.

- water quality threats from ex-industrial usage and agriculture;
- physical loss and alteration of coastal processes due to navigational dredging;
- 'coastal squeeze' from land reclamation and coastal flood defences and drainage used in order to develop coastal land, and from sea level rise;
- introduction of non-native species; and
- risk of excessive abstraction resulting in a decrease in freshwater flows into the estuary, reducing drinking and bathing habitat for birds and increasing the salinity in localised areas.

Summary Screening: Key potential pressures from Wirral

4.12 The following potential impacts of the Core Strategy upon Dee Estuary SAC/SPA/Ramsar were identified during the summary screening detailed in Appendix 1. These are:

- direct disturbance to qualifying bird species;
- waste water discharges;
- water abstraction;
- dock, port and channel construction, maintenance shipping and dredging;
- coastal squeeze and loss of supporting habitat,
- recreational activities;
- air pollution; and
- renewable energy.

Appropriate Assessment

Direct Disturbance of Qualifying Bird Species and Damage to Habitat

Appropriate Assessment

4.13 The current demographic trajectory for Wirral is currently one of slow growth (the population grew by 2.4 percent and by 7,500 households between 2001 and 2011). Wirral expects at least 10,012 additional net dwellings between 2012 and 2028 (Policy CS18). This could include up to 7,340 dwellings at Wirral Waters (within the Birkenhead Dock Estate at East Float, West Float and Bidston Dock) by 2028 (Policy CS12), increasing the local population by up to 16,600 people, of which approximately 70 percent are expected to be new migrants to the City Region. Several policies specifically indicate the placement of development including new housing within close proximity to the Dee Estuary (CS4: Priorities for Wallasey, CS8: Priorities for Leasowe, Moreton, Upton, Greasby and Woodchurch, CS9: Priorities for Hoylake and West Kirby, CS10: Priorities for Irby, Thingwall, Pensby, Heswall and Gayton and CS11: Priorities for the Rural Areas, covering Settlement Areas 1 and 5-8). The mudflats and sandflats of the Dee Estuary SAC/SPA/Ramsar site will present easily accessible areas for coastal recreation for these new residents. Also, for the purposes of HRA, development within Wirral must not be considered in isolation but in combination with the 70,000 dwellings that will be delivered across Merseyside and those to be delivered in North Wales over the same time period under other Local Plans and Core Strategies.

- 4.14 Policies within the Core Strategy seek to target tourism and recreation on the coastline (Policy CS2 - Broad Spatial Strategy) but make it clear that this would be within the context of ensuring protection of the European sites: *'Tourism investment will be targeted to support regeneration in Birkenhead, provide improvements within the coastal resorts of New Brighton, Hoylake and West Kirby and along the Mersey coastline; and to improve public access to the coast and countryside subject to the protection of European Sites and their supporting habitats'*. It goes on to add in the supporting text that *'A focus on maximising the use of existing resources will also minimise the potential for harmful impacts on other interests such as European Sites and their supporting habitats'*. This is also discussed in the overall Spatial Vision: *'A growth in sustainable tourism will be focused on the quality of the Borough's natural environment; built heritage; country parks; and coastline, with appropriate visitor facilities at Birkenhead, New Brighton, Leasowe, Hoylake, West Kirby, Thurstaston and along the Mersey coast, managed to avoid harm to European Sites and their supporting habitat'*.
- 4.15 Exposure to abrasion varies across the Dee Estuary and it can be attributed to three main sources, one of which is recreational pressures focussed on the upper shore (the other two sources are dredging operations and fisheries (in particular the commercial gathering of cockles)). Abrasion from recreational activity is considered to result in a deterioration of⁴⁰:
- the following SAC features: estuary; intertidal mudflats; and sandflats, Atlantic salt meadow, annual vegetation and drift lines.
 - the following SPA interest features: Annex 1 Species; Migratory species; waterbird assemblages; and
 - the following Ramsar site interest features: Criterion 5 (Regularly supports 20,000 or more waterbird species) and Criterion 6 (Regularly supports 1% or more of a species or sub-species of waterbird)
- 4.16 Abrasion can physically damage individual marine organisms and plants, as well as causing deterioration to the structure of saltmarshes and sediment communities. The sensitivity to abrasion is moderate for the majority of the estuary's features, though annual vegetation of drift lines is highly sensitive to abrasion due to the potential for damage to succulent plants and their root systems. Abrasion of muddy soft sediment communities can alter the habitat structure and may lead to a change in species composition, though clean sand communities have only low sensitivity. Excessive damage may ultimately result in the destabilisation of the sediment and lead to rapid erosion. Lampreys and hard substrate communities are considered to have a low sensitivity to the effects of abrasion.
- 4.17 Bait digging for lugworms and collection of razor fish, as with cockling, disturb the sediment through digging and to a lesser extent trampling. They may be sustainable where traditional methods are employed; however, a distinction should be made between traditional activities and commercial exploitation of the resource. The latter may impact on the favourable condition of the European marine site.
- 4.18 Walking, horse riding, use of motorcycles, quad biking, and sand yachts which contribute to abrasion, in particular during the summer months between Gronant and Point of Ayr and between West Kirby and Hoylake.
- 4.19 Annex I species, important migratory species and species of the waterbird assemblage are all considered highly vulnerable to abrasion of the intertidal mudflats and sandflats. Similarly all

⁴⁰ Natural England, Countryside Council for Wales and Welsh Assembly Government (January 2010) 'The Dee Estuary European Marine Site'

groups are considered moderately vulnerable to the abrasion of shingle ridges, though as a result of different combinations of sensitivity and exposure.

- 4.20 Birds utilising areas of saltmarsh within the estuary are considered to have a medium exposure to disturbance. As with the intertidal mud and sand flats much disturbance is associated with recreational activities occurring towards the top of the marsh, including dog walking, fishing, motorcycle scrambling and the flying of model aircraft. Noise from recreational activities also results in disturbance to Annex 1 species utilising habitats between the Gronant dune system at Talacre and the shingle spit at Point of Ayr.
- 4.21 New residential developments, leading to an increase in population, and provision of green infrastructure may lead to increased use of areas both within Natura 2000 sites, and other areas that support qualifying bird species. Waterside development projects also have the potential to cause direct disturbance to birds during both the construction process, and in the long term through sustained use of areas adjacent to regular feeding or roosting areas. There are likely to be cumulative disturbance impacts to birds through an increase in noise, vibration and lighting, as well as disturbance or injury from pets such as dogs and cats.
- 4.22 The majority of the western coastline of the Wirral has been identified as important for a number of qualifying bird species, with important feeding sites for mixed waders adjacent to the coastline from Heswall up to Hoylake, while valuable feeding sites for lapwing are identified around Little Neston and Parkgate. High water roost sites for a number of wader species have also been identified close to Heswall and West Kirby, with grey plover and bar-tailed godwit preferring land to the north of Wirral at West Kirby, while black-tailed godwit prefer the area adjacent to the coastline at Heswall. Teal and pintail favour feeding and loafing sites adjacent to and to the south of Heswall while there is an important low water feeding area for shelduck close to the shore between Heswall and West Kirby.⁴¹
- 4.23 Waterside developments, in particular, also have the potential to impact on qualifying bird species through both direct habitat loss of important roosting/feeding areas outside of existing Natura 2000 sites and through alteration of the landscape, affecting viewlines.
- 4.24 In meeting the needs of gypsies and travellers (Policy CS24), HRA Screening identified a pathway for direct disturbance on the Dee Estuary SAC/SPA/Ramsar, depending on the location of allocated sites.
- 4.25 HRA Screening at Preferred Options Stage identified that, should the Core Strategy include wind turbine construction, a pathway exists through the construction of onshore/offshore turbines to disrupt flight paths and displace qualifying bird species. Disturbance issues associated with maintenance activities were also identified. The Submission Draft Core Strategy includes numerous references to encouraging energy efficiency and the use and development of renewable, decentralised and low carbon energy within the Wirral (e.g. Policy CS43 - Design, Heritage and Amenity). However, impacts from wind turbine developments depend greatly on the siting of the turbines and no specific sites have yet been identified. There is certainly no specific policy commitment to wind turbines in the Submission Draft Core Strategy.
- 4.26 In-combination effects of direct disturbance to qualifying bird species could be experienced due to proposed development on the North Wales coast. This could result in greater detrimental impacts on qualifying bird species due to increased levels of disturbance; or disturbance of previously undisturbed areas due to residential/industrial development and/or improved opportunities for recreation. It is therefore clear that all the local authorities need to work together during production of their development plan documents to limit any potential for detrimental

⁴¹ Dee Estuary European Site. Regulation 33 Advice Jan 2010

impacts on qualifying species due to disturbance of important roosting/feeding areas along this coast.

Recommendations for amendments to policy made in Preferred Options HRA (2010)

4.27 The following recommendations were made in the 2010 Preferred Options HRA for amendments to the Core Strategy:

Avoidance of recreational impacts at European sites involves location of new development away from such sites which is clearly not possible in Wirral given that according to the England Leisure Day Visits surveys, day visitors typically travel up to 25.5km to visit the coast for the day. Where avoidance is not possible, an alternative approach is for the local authority in question (i.e. Wirral MBC) to manage tourism and recreational use of the coastlines. Mitigation will usually involve a mix of access management, habitat management and provision of alternative recreational space, but this cannot be delivered wholly by Wirral in isolation:

- *Access management* – restricting access to some or all of a European site - is not usually within the remit of the Borough Council and restriction of access may conflict with a range of Government policies on access to open space, and Government objectives for increasing exercise, improving health etc. However, active management of access may be possible, for example as practised on nature reserves.
- *Habitat management* - improved habitat management can improve the general health and condition of European sites and thus reduce their vulnerability to recreational pressure if coupled with other measures;
- *Provision of alternative recreational space* can help to attract recreational users away from sensitive European sites, and reduce additional pressure on them. Some species for which European sites have been designated are particularly sensitive to dogs, and many dog walkers may be happy to be diverted to other, less sensitive, sites. However the location and type of alternative space must be attractive for users to be effective.

To ensure that an adequate policy framework exists to enable the delivery of the necessary measures to mitigate adverse effects on the Dee Estuary from recreational sources the Core Strategy should include a commitment to work with the other Merseyside Authorities, MEAS, Natural England, Countryside Council for Wales and other partners (such as the Welsh local authorities surrounding the Dee Estuary) to devise a framework for the delivery of

- Suitably located Green Infrastructure where this will prove effective; and
- Enhanced access management to the European sites, to be informed by the collation of visitor survey data etc and which will need to be in place before the publication of the Site Allocations DPD.

4.28 The need to consider the impact of coastal access and recreation is already picked up in the text of policies CS2 and its supporting text, as discussed. The aforementioned Settlement Area policies (CS4 and CS8-CS11) all contain text that pledges to maintain and enhance the national and international importance of the inter-tidal foreshore. The supporting text for Policy CS30 (Requirements for Green Infrastructure) identifies that a Green Infrastructure Strategy is being prepared for the borough which will include among its objectives to: *'reflect the findings of the Core Strategy Habitats Regulations Assessment with regard to the role of GI to avoid and mitigate pressure on European sites resulting from proposed development'*. The Core Strategy goes on to state that *'Any necessary mitigation, which may involve a mix of access management, habitat management and provision of alternative recreational space, will need to be identified in*

the site-specific Local Plan that will follow the adoption of this Core Strategy, in consultation with the other adjoining Local Authorities, Natural England and other partners'. This is specifically intended to provide a policy commitment reflecting the recommendation above. It should be noted that the other Merseyside Authorities are making similar commitments in their Core Strategies. Given that the purpose of 'mitigation' at the Core Strategy level is to define a policy framework/commitment within which the details of actual measures can subsequently be developed, it is considered that the text of Policy CS30 and its supporting text do adequately reflect the recommendations made in the 2010 Preferred Options HRA.

- 4.29 For the Dee Estuary an appropriate framework may already exist through the forthcoming European Marine Site Management Scheme, which, if it follows the pattern of other EMS Management Schemes will include recreation/access management within its remit.
- 4.30 The delivery of enhanced access management and GI will need to be phased alongside delivery of housing and a mechanism established for monitoring effectiveness and amending the measures being delivered. The contribution of each authority should be based upon their contribution to recreational activity in each site or (where this info is not yet available) their relative populations and proximity to the site. In general therefore the devising of such a strategy (whether it is part of a specific future SPD or not) will need to be well advanced by the time the Site Allocations DPD is adopted as some strategic greenspace and a possible contribution to funding access management may need to be associated with particular sites.
- 4.31 As a further safeguard, it must be noted that any development set out in the Core Strategy must comply with Policy CS33 (Biodiversity and Geodiversity) which states that *'Development that could have an individual or in combination effect on a European Site or its supporting habitat, within or outside of the Borough, must provide sufficient information to enable compliance with the Habitats Regulations'* and that *'Sites identified for specific protection, including any necessary mitigation for the impact on European Sites and their supporting habitats, will be identified in a site-specific Local Plan'*. The supporting text adds that *'Applicants will be required to provide sufficient information to allow the Council to determine whether an assessment under the Habitats Regulations is necessary and to complete any assessment that may be required. The Council will work in partnership with neighbouring authorities to address the impacts of development on European sites located outside of the Borough'*. Further to this, Policy CS42 (Development Management) states that new development must *'comply with the legal requirements associated with the protection of European Sites and their supporting habitat, together with the provision of any relevant on-site or off-site mitigation'*.
- 4.32 Taking account of the amendments that have been made to the Submission Draft Core Strategy, it is concluded that there will be no adverse effect on the integrity of the Dee Estuary SAC/SPA/Ramsar/pSPA extension through direct disturbance as a result of any of the policies proposed within the Core Strategy.

Water Quality

Appropriate Assessment

- 4.33 As a European Marine Site, the Dee Estuary is sensitive to water pollution. This includes a wide range of pollutants that could arise through waste water discharge including toxic contamination (synthetic and non synthetic compounds), and non toxic contamination (including inorganic and organic nutrient loading, thermal regime, turbidity and salinity).

- 4.34 Development associated with submission draft core strategy policies within the Core Strategy can contribute to a rise in inorganic and organic nutrients present within the Dee Estuary through⁴²:
- river input - pollutants flowing into the estuary from the River Dee and other watercourses in the catchment influenced by agricultural runoff, sewage discharges and industry in the catchment;
 - direct discharge – pollutants are discharged into the estuary from the numerous water treatment works and combined sewerage outfalls situated around its shores. In addition there are inputs of paper pulp fibres from paper mills.
- 4.35 In 2001, the Dee Estuary from Chester Weir to its mouth was proposed by the Environment Agency Wales as a Sensitive Area to Eutrophication under the Waste Water Treatment Directive, as the estuary exceeded chemical and biological criteria indicative of eutrophic conditions. Evidence for eutrophication includes chemical data, reduced dissolved oxygen concentration in summer and elevated nitrogen concentrations in winter, Chlorophyll-a measurements, and evidence of algal scum. Two algal blooms were reported within the estuary between 1999 and 2001.
- 4.36 Recent investigations of faunal communities in the vicinity of the wastewater treatment works around the estuary found that the composition of these communities was generally classified as unbalanced and slightly polluted.
- 4.37 In the upper estuary the picture is further complicated by an interaction between nutrient loading and river flows. Nutrient levels in the canalised section of the lower river are believed to be particularly high due to sewage discharges and their limited dilution by freshwater river flow. During low flows and periods of warm weather, elevated water temperatures may still combine with the high nutrient levels to create suitable conditions for an algal bloom, causing oxygen depletion. This set of circumstances has resulted in fish kills in the upper estuary in the past.
- 4.38 On the basis of evidence used to support the proposal to designate the Dee Estuary as a Sensitive Area to Eutrophication it was determined that all the sub-features that are subject to frequent inundation are highly exposed to changes in both organic and inorganic nutrient loading. These sub-features are: subtidal sediment communities and rocky shore communities; all three mudflat and sandflat sub-features; *Salicornia* and other annuals colonising mud and sand; and the low to mid marsh communities of Atlantic salt meadow. The ephemeral, upper and high marsh communities and vegetated drift.
- 4.39 Annex I SPA species are also considered highly vulnerable to inorganic enrichment of the estuary channels and intertidal flats and moderately vulnerable with respect to saltmarsh. The migratory species and species of the waterbird assemblage are also considered highly vulnerable to enrichment of the estuary channels, intertidal flats and rocky shore communities and moderately vulnerable with respect to saltmarsh.
- 4.40 There are a series of wastewater treatment works around the estuary discharging effluent from the populations around the Dee Estuary including West Kirby and Heswall. Although the sewage is treated, toxic contaminants remain. Zinc loadings in sewage effluent discharged to the estuary are much higher than other metals, with Chester and Queensferry wastewater treatment works being the major contributors.
- 4.41 Many toxic compounds, especially synthetic compounds such as PCBs, are known to have toxic effects even in very low concentrations, and a high degree of bioaccumulation can occur within

⁴² Natural England, Countryside Council for Wales and Welsh Assembly Government (January 2010) 'The Dee Estuary European Marine Site'

many benthic organisms. Such compounds may then 'biomagnify' as they are transferred along the food chain if these organisms are predated upon. Thus, even relatively low concentrations of contaminants in discharges can cause impacts upon features towards the top of the food chain such as wading birds. The problem of biomagnification is compounded by the fact that many synthetic compounds such as PCBs are very stable in the environment and are rarely degraded.

- 4.42 Estuarine species and communities are generally highly sensitive to synthetic toxic compounds such as pesticides, PCBs (polychlorinated biphenyls) and biocides such as TBT (tributyltin). The effects of individual synthetic compounds upon many species found within the habitats of the Dee Estuary are poorly understood, but there is evidence from elsewhere of synthetic compounds causing high levels of toxicity to a variety of marine organisms
- 4.43 Studies of synthetic compounds within the species and habitats of the Dee Estuary have provided mixed results. In a general investigation into relative water quality in estuarine waters of the UK, the Dee Estuary was ranked the ninth most contaminated out of the 10 estuaries investigated. However, a narrower study looking at concentrations of two chemical products emitted during industrial production and from incinerators and car exhausts, polychlorinated dibenzo-para-dioxins (PCDDs) and polychlorinated dibenzofurans (PCDFs), found that concentrations within the Dee Estuary were the highest of the six estuaries studied. Grey seals (*Halichoerus grypus*) may be regarded as being at the top of the food chain within the Dee Estuary, and therefore most likely to bioaccumulate contaminants within their tissues.
- 4.44 In addition the intertidal mudflats and sandflats may be exposed to smothering in localised areas from jetting and flushing of drainage outfalls. Siltation can result from particulate matter being carried in effluent discharged into the estuary, or from maintenance dredging and dredged spoil disposal. Most estuarine communities are not considered to be particularly sensitive to siltation, as estuaries are naturally silty environments. However, hard substrate communities are the exception to this rule, being highly sensitive to siltation. Gravel and clean sand communities, and annual vegetation of drift lines are also moderately sensitive; though the latter is unlikely to be frequently exposed. Silt in the water column can smother or block the feeding and respiratory organs of marine invertebrates living in the substrate. It can also affect recruitment processes of both marine flora and fauna and can contribute to a reduction in light penetration through the water column.
- 4.45 Lamprey species are considered highly sensitive to changes in the thermal regime. This is because their upstream migration is thought to be temperature dependent, relying on the detection of a small change in water temperature, as well as the interaction between water temperature and oxygen levels described above. Only subtidal sediment and hard substrate communities have moderate sensitivity to changes in the thermal regime, other communities have lower sensitivity. Although there are several warm water discharges around the estuary, including cooling water outfalls from two power stations in the upper estuary channel, their effects upon the temperature regime of the estuary are believed to be localised. Heat energy is a dissipating 'pollutant' in this context, thus the impact of these outfalls is thought to be concentrated around the point of discharge. The habitat features of the European marine site were therefore determined to have at most a low exposure to changes in thermal regime. However, the lamprey species were considered to have potentially moderate levels of exposure, as they must pass along the full length of the channel to complete their life cycle. Therefore, the river and sea lamprey were determined to be highly vulnerable to changes in thermal regime, while the other features have only low vulnerability.
- 4.46 Although the overall theme for the west of the Borough is one of restraint, policies encouraging housing growth in Settlement Area 6 (West Kirby and Hoylake) (Policy CS9) and parts of Wallasey (CS4), Settlement Area 5 (CS8) and Settlement Area 7 (CS10) have the potential to

exacerbate these factors which are contributing to a deterioration in qualifying SAC, SPA and Ramsar features. Core Strategy policies could lead to an increased demand on wastewater treatment infrastructure: this is referenced in Policies CS4 – CS10 which make reference to ‘address any local limitations on ... disposal of wastewater’, with Policies CS8 and CS9 specifically referring to the need to ‘take account of the capacity of the North Wirral Wastewater Treatment Works’ and Policy CS7 referring to the need for the ‘provision of additional facilities for the treatment and disposal of wastewater at the Bromborough Waste Water Treatment Works’. These requirements stem from the Wirral Water Cycle Study (WCS) and clearly indicate that the delivery of development will be predicated on the identification and timely delivery of wastewater treatment solutions. The Wirral Water Cycle Study includes consideration of the constraints posed by European sites (in addition to a range of other environmental constraints) such that the development/infrastructure phasing requirements identified in the WCS will effectively enable adverse effects on European sites to be avoided.

- 4.47 Regeneration of coastal towns in Flintshire, on the North Wales coast, could result in cumulative impacts on water quality within the Dee Estuary in-combination with developments on the Wirral. North East Wales sub-regional strategy provides for up to 7500 new homes in Flintshire.
- 4.48 It should be noted that the majority of the processes that could result in a deterioration of water quality (unregulated waste water discharges, surface water runoff and pollution from construction activities) are either regulated through statutory requirements or can be mitigated through standard construction techniques and environmental good practice. These impacts are therefore unlikely.

Recommendations for amendments to policy made in Preferred Options HRA (2010)

- 4.49 The following recommendations were made in the 2010 Preferred Options HRA for amendments to the Core Strategy:

Avoiding an adverse effect is largely in the hands of the water companies (through their investment in future sewage treatment infrastructure) and the discharge consenting process. However, local authorities can also contribute through ensuring that sufficient wastewater treatment infrastructure is in place prior to development being delivered through the Core Strategy.

It is considered that to the Core Strategy should provide a firm commitment with regard to the linking of housing delivery to delivery of necessary infrastructure that will ensure that an adverse effect on European sites is avoided. The Core Strategy should make specific reference to the fact that subsequent policies should seek the phasing of development so as to ensure that it only takes place once any new water treatment infrastructure, or appropriate retro-fitted technology (e.g. nitrate removal) necessary to service the development while avoiding an adverse effect on European sites, is in place. The Core Strategy should also indicate how this need will be determined and delivered through interaction with other authorities (United Utilities, the Environment Agency etc) i.e. through a Water Cycle Study.

- 4.50 The aforementioned recognition in Policies CS4 – CS10 of the various wastewater treatment constraints that would need to be addressed as part of development delivery, and the fact that these stem from a Water Cycle Study which is driven primarily by requirements for environmental protection, effectively addresses the first and last parts of this recommendation. The recommendation for a policy explicitly referring to delivery of wastewater treatment infrastructure as a constraint on development is also reflected in Core Strategy policy CS44 (Phasing and Infrastructure) and its supporting text which states that: ‘Mitigation measures may require the implementation of development proposals to be phased in order to prevent significant harm to the environment or other interests of acknowledged importance. In most cases, this will mean

phasing the timing of new development to take account of development or improvement programmes that will need to be completed before the development can be properly accommodated. This includes provision for highway works, drainage, water supply and treatment infrastructure and the provision of mitigation for the impact on European Sites and their supporting habitats’.

- 4.51 With these commitments and requirements already identified in the Core Strategy, as well as general controls on water discharge and the consents process, it is concluded that there will be no significant impact on the Dee Estuary through reduced water quality due to any of the policies within the Core Strategy.

Water Abstraction

Appropriate Assessment

- 4.52 Development proposed within the Core Strategy is likely to result in increased water use, notably as a consequence of housing and business development under submission draft core strategy policies CS4 - CS13, CS18 and CS24).
- 4.53 Changes in salinity as a result of excessive freshwater abstraction of the River Dee is identified as a factor (alongside changes in turbidity and thermal regime described in water quality) that may cause deterioration and disturbance to Dee Estuary SAC, SPA and Ramsar features of interest⁴³. In addition lamprey species may directly be sucked up by large abstractions such as those for power station cooling systems (although it should be noted that Powergen and National Power stations in the upper estuary were designed to avoid fish entrapment).
- 4.54 It is therefore reasonable to consider impacts from damaging levels of abstraction to supply housing in Wirral when considered in combination with development elsewhere in United Utilities Integrated Resource Zone and development outside the zone that will receive water from the same sources (e.g. abstraction from the River Dee in relation to development in North Wales).
- 4.55 The adopted United Utilities Water Resource Management Plan (September 2009) indicates that the water available for use in the Integrated Resource Zone is expected to reduce by 24.8 Ml/d between 2009/10 and 2014/15. Without water efficiency measures or new resources the initial supply demand balance for the Integrated Resource Zone is calculated to be in deficit by 8 Ml/day by 2024/25.
- 4.56 However, further abstraction from the River Dee, or any other European sites beyond the current licensed volumes is not part of United Utilities’ intended future supply strategy⁴⁴, which rather depends on a mixture of demand management and increased abstraction from groundwater as follows:
- Construction of a bi-directional pipeline, known as the “West-to-East Link”, between Merseyside and North Manchester. This will help United Utilities maintain adequate supplies to Greater Manchester and Merseyside if there is a need to temporarily reduce supply from a major reservoir, for example due to maintenance work or drought conditions;
 - Maintain current leakage levels;

⁴³ Natural England, Countryside Council for Wales and Welsh Assembly Government (January 2010) ‘The Dee Estuary European Marine Site’

⁴⁴ Mark Smith of United Utilities North & Central Area Water Asset Management Team confirmed in a personal communication on 27/07/09 that abstraction from the Dee will not exceed the current licensed volume. The current licensed volume was subject to the Environment Agency’s Review of Consents process and no reductions were considered necessary. It can therefore be concluded that no adverse effects on the integrity of the River Dee (either alone or ‘in combination’) will result from the United Utilities abstraction

- Help customers save 9 MI/d by 2014/15 (increasing later on to 12 MI/d), through a base service water efficiency programme;
- Achieve a water demand reduction of 10 MI/d in a dry year by 2014/15 (increasing to 22 MI/d by 2034/35) as a result of the expected scale of voluntary metering of households; and
- Further reducing leakage by 23 MI/d by 2034/35.
- A programme of economic water efficiency measures to save 4 MI/d by 2034/35; and
- Implementing water source enhancements of 48 MI/d by 2034/35⁴⁵.

- 4.57 It can therefore be concluded that since no increased abstraction from European sites will be required in order to service new development in Wirral (or elsewhere within the Integrated Supply Zone) that significant effects on the Dee Estuary SAC, SPA or Ramsar site can be concluded to be unlikely. Risk of abstraction at inappropriate times of the year (such as periods of low flow) will be prevented by the Environment Agency's licensing regime and Review of Consents process.
- 4.58 In the future as a result of the west-east link, Merseyside (including Wirral) will obtain a much greater proportion of its water supply from Lake District sources. This is likely to reduce the impacts associated with abstraction for housing and industry on the Dee further.
- 4.59 New strategic water resource options will need to be in place prior to any developments where additional abstraction impacting European sites would otherwise be required. Unlike most of the indirect impacts on European sites that can derive from development (e.g. from recreational pressure or vehicle exhaust emissions) and which are generally not covered by any independent assessment or consenting regime, water supply is covered by a detailed abstraction licensing and Review of Consents process controlled by the Environment Agency. One of the principal functions of this regime is to ensure that the abstraction of water at volumes, rates or times of year that would result in adverse effects on internationally designated sites do not take place.
- 4.60 Avoiding adverse effects on European sites as a result of increased scales of abstraction to supply new housing must therefore principally be the responsibility of the water companies through their Water Resource Management Plans, water supply operations and abstraction licence applications and the Environment Agency through their licensing regime and Review of Consents process.
- 4.61 Clearly the concept of strategic forward planning of development requires local authorities to play their part in ensuring the pressures on available water resources are minimised as far as is practical, rather than relying entirely on the Environment Agency licensing regime, and this is the context within which the Wirral Core Strategy can deliver measures on its own account to supplement those avoidance strategies that will be implemented by the Environment Agency and water company as part of their wider resource planning roles. This it seeks to do primarily through encouraging water efficiency in new developments. Specifically, Policy CS21 (Criteria for New Housing Development) refers to the need for new housing to '*achieve water efficiency standards equivalent to Levels 3 and 4 of the Code for Sustainable Homes (2009)*'.
- 4.62 With the controls already in place in the Core Strategy in relation to water issues, and with additional protection provided through more stringent requirements on water resources as recommended above, it is concluded that there will be no significant impact on the Dee Estuary through abstraction of water related to future development on the Wirral.

⁴⁵ Widnes groundwater (22.7 MI/d), Southport groundwater (22.5 MI/d) and Oldham groundwater (2.5 MI/d)

Dock, Port and Channel Construction, Maintenance, Shipping and Dredging

Appropriate Assessment

- 4.63 The Wirral Core Strategy promotes greater use of ports and docks, recognising an importance for cargo handling and freight movements as an opportunity to maximise the potential for off-road transport; and contribute towards a sub-regional "SuperPort" (Submission draft core strategy policies CS2, CS5, CS12 and CS13).
- 4.64 Within the Dee, historic discharges are likely to have left a legacy of pollution due to the persistent nature of many of the contaminants released. Therefore these discharges have a bearing upon our assessment of current exposure. Much of this historic contamination of the estuary is likely to be bound within the sediments. Contemporary activities resulting in the disturbance of such contaminated sediments can therefore have an impact upon the levels of toxic substances available to estuarine communities. Historic industry has also left a legacy of contaminated land around the estuary that still presents problems due to contaminants leaching into the estuary, as well as the suspected historic contamination of intertidal sediments. Synthetic substances present at contaminated land sites include asbestos and a variety of solvents.
- 4.65 Construction of ports, or docks on land around the estuary, greater use of hydraulically connected waters for shipping, or dredging of sediments to allow for the movement of larger ships have the potential to disturb sediments or contaminants into the Estuary. Dredging and disposal of sediment also has the capacity to cause the smothering of benthic communities resulting in physical loss. It should be noted that the spatial strategy identifies that the proposed docks and ports are on the Mersey Estuary side of the Wirral Borough, rather than the Dee Estuary. It is therefore likely that this potential impact is less of an issue than for neighbouring Mersey Estuary SPA/Ramsar. However until spatial allocations are finalised under a forthcoming DPD, this potential impact cannot be dismissed.
- 4.66 Selective extraction is the removal of a particular type of substrate from within a habitat or community, for example the removal of fine sand from the gravel and clean sand sub-feature. This may also include more indiscriminate removal of habitat such as that involved in dredging to allow port access. Such impacts are described below (Coastal Squeeze and Loss of Supporting Habitats). All the estuarine communities within the site are considered to be moderately sensitive to selective extraction, except the rocky shore communities, which are considered highly sensitive due to their dependence on a fixed substrate.
- 4.67 The Dee Estuary is also potentially quite exposed to accidental chemical or oil spillage and maritime pollution due to its proximity to shipping access routes to the Port of Mostyn and the Mersey Ports, as well as the development of the Liverpool Bay oil and gas field. Policies that encourage greater use of these ports therefore do pose a risk for accidental spillage of chemicals, in addition to fuel emissions.
- 4.68 Dredging poses direct threats to the areas in which it occurs. It introduces sediment into the adjacent water column, which is then redeposited on the bottom. This has a variety of usually short-term effects on pelagic fish and the benthic community. The suspended sediment increases turbidity, decreasing light penetration and photosynthetic activity. Dredging can also have longer term effects on water circulation patterns, particularly in estuarine areas where water circulation determines the distribution of fresh and salt water, patterns of dissolved oxygen, and other water quality parameters. Changes in salinity can affect the viability of freshwater wetlands and tidal marshes, with consequent impacts on the distribution of marine life. Changes in water circulation

patterns can also alter sediment accumulation, thus affecting all ecosystems in the immediate area⁴⁶.

Recommendations for amendments to policy made in Preferred Options HRA (2010)

4.69 Based on this evidence it is clear that policies contained within the Core Strategy which encourage the development of docks and ports, and/or result in greater ship movements (either larger ships or new shipping routes which may require navigational dredging, or a greater number of ships creating more ship wash and erosion) have the potential to result in significant impacts on qualifying features of Dee Estuary SAC/SPA/Ramsar/pSPA extension. The impacts from these will differ and will thus require different mitigation. The Core Strategy is able to set the framework for these, but the details of specific measures would require further development at a project level, particularly since this will include authorities other than Wirral. Broadly, mitigation that could be designed into the design and management of new dock/port development may include:⁴⁷

- environmental policy, reviews and management systems;
- information and codes of conduct;
- ensuring safety;
- emergency response procedures;
- provision of information on Natura 2000 sites;
- zoning of activities;
- re-routing via alternative navigation channels;
- protection of intertidal features from ships wash using breakwaters and other structures;
- compliance with regulations covering cargo operations and promotion of good practice; and
- managing anchoring.

4.70 Where there is evidence that ship or boat wash is causing erosion of designated intertidal flats or saltmarsh habitat, and where other appropriate measures have been considered and applied, a further management option that may be considered is to protect the intertidal features by creating structures, such as breakwaters, bunds or mounds of sediments on the intertidal areas. Harwich Harbour Authority has applied this approach in Trimley Marshes on the Stour/Orwell Estuary⁴⁸. Such an approach to protecting marine features may also provide a beneficial use for dredged materials. However, the potential impacts on local hydrodynamics and ecology should be considered. This should not be considered where the costs of undertaking such a scheme would greatly outweigh the potential environmental gain. Furthermore, the potential application of this approach may be limited by the need for a grant aid to fund this work and by land ownership issues.

4.71 A further method of minimising ships' wash in the proximity of vulnerable shores might be to place moorings in the area to reduce speeds. This is a particularly useful approach where small speedboats and personal watercraft are a potential problem. Other variables which influence ships' wash, such as propeller wake, ship design and hull form, are outside the scope and powers of any port authority.

⁴⁶ Marine Board, Commission on Engineering and Technical Systems, National Research Council (1985), Dredging Coastal Ports: An Assessment of the Issues. (Washington, D.C.: National Academy Press) (pp124-128)

⁴⁷ http://www.ukmarinesac.org.uk/activities/ports/ph3_3_1.htm

⁴⁸ http://www.ukmarinesac.org.uk/activities/ports/ph3_3_1.htm

- 4.72 The following recommendations were made in the 2010 Preferred Options HRA for amendments to the Core Strategy:

It was recommended that, due to the sensitivity of the estuarine habitats and species, a more specific commitment is required to ensure no adverse impact on the integrity of the surrounding Natura 2000 sites from port development and activity. Therefore, a commitment in the Core Strategy should be given to ensure the development of new docks and ports, and any associated channel construction or dredging activity will be permitted subject only to the completion of a project based Appropriate Assessment. This would need to include a thorough consideration of impacts relating to construction (including potential disturbance of sediments and hydrodynamic modelling if required), operational impacts (including anticipated changes in boat traffic and associated impacts) with necessary mitigation in construction, design and management.

- 4.73 This is addressed through Policy CS16 (Criteria for Port-Related Development) states that '*Port and marine-related development will be permitted within the existing port estates at Birkenhead and Eastham; at Twelve Quays; along the Tranmere waterfront at Cammell Lairds; and along the Bromborough Coast*' but also states that any proposals must '*have no adverse impact on water quality or on designated European Sites or their supporting habitats.*'. The supporting text for this policy expands on this by stating that '*New port development is particularly liable to affect adjacent international nature conservation sites through impacts related to ship movements, dredging, water quality and additional port-related infrastructure, which can only be permitted subject to the completion of additional project-level screening and assessment. Any assessment will need to include a thorough consideration of impacts relating to construction, including any potential disturbance of sediments and hydrodynamic modelling; and operational impacts, including anticipated changes in the level and type of shipping and lorry movements and other associated impacts.*'
- 4.74 Given this incorporation of the previous recommendation, it is concluded that there will be no significant impact on the Dee Estuary through these activities related to policies within the Core Strategy.

Coastal Squeeze and Loss of Supporting Habitat

Appropriate Assessment

- 4.75 The Core Strategy identifies areas of land immediately adjacent to coastal habitats for economic revitalisation and housing growth. Whilst this is predominantly based around the eastern side of the Wirral (i.e. adjacent to the Mersey Estuary rather than the Dee Estuary), development focus on Hoylake and West Kirby has the potential to contribute to coastal squeeze.
- 4.76 Furthermore, land outside of the Dee Estuary SAC/SPA/Ramsar boundaries may serve as important supporting habitat, such as off-site roosting areas for qualifying bird species, i.e. areas where qualifying bird species roost that are not within the designated site boundaries. Loss of such land would also have the potential to result in impacts. Development between these important off-site areas and the Estuary itself could also impact on flight paths, making the supporting habitat less accessible to the birds. These important roosting/feeding areas need to be identified and considered prior to permission being granted for any developments to ensure no long-term detrimental impact on the populations of qualifying bird species.
- 4.77 Direct physical loss may result from a range of activities causing the removal or smothering of the interest features. The Dee Estuary is a complex system comprising one of the largest estuaries in the UK and supporting several estuarine habitat types, each of which contributes to the biodiversity of the system. In turn, these habitats support a rich variety of marine communities,

many of which are dependent upon the ecological functioning of other communities. Therefore physical loss of any single habitat as a result of activities such as coastal development could have wider implications for the survival of other communities, thus detrimentally affecting the favourable condition of the European site directly. This could result in a direct deterioration of qualifying SAC/SPA/Ramsar/pSPA extension features.

- 4.78 The Dee Estuary SPA provides important nesting, feeding and roosting habitats for Annex I species, and feeding and roosting habitat for important migratory species and species comprising the waterbird assemblage. The loss by removal (though coastal squeeze) or smothering of any of the supporting habitats (described in water quality), on which they depend, is likely to result in the loss of nesting and roosting sites and/or the reduction of food resources. It could also result in increased competition for food and space in areas that are already occupied, and ultimately reduce bird numbers on the estuary.
- 4.79 Wetland Bird Survey (WeBS) data⁴⁹ for the nearest WeBS Core Count area known as Meols and Leasowe Lighthouse Fields shows that the wet grasslands in this area of the north Wirral coast are utilised by wintering waterfowl. The predominant species are mallard, lapwing (flocks of almost 2,000 birds have been recorded), black-headed gull and herring gull but the data also indicate that several of the wintering/passage bird species for which the Dee Estuary SPA/Ramsar and Mersey Narrows & North Wirral Foreshore pSPA/pRamsar site were designated do use the site – particularly redshank (a 5-year peak monthly count of 112 birds constituting 7% of the Mersey Narrows & North Wirral Foreshore pSPA population) and curlew (5-year peak monthly count of 151 birds, approximately 3.7% of the Dee Estuary SPA population⁵⁰), but also small numbers of, grey plover (0.1% of the Dee Estuary SPA population), oystercatcher (0.1% of the Dee Estuary SPA population), dunlin (0.04% of the Dee Estuary SPA population) and turnstone (0.8% of the Mersey Narrows & North Wirral Foreshore pSPA population).
- 4.80 Physical loss of habitat within the SAC/SPA/Ramsar boundaries may arise from developments such as infrastructure construction and modification, coastal protection works, and land claim (e.g. as set out in Policy 34 (Flood Risk and Coastal Protection)). In these instances the physical loss would occur when areas of habitat are used for new purposes. In addition coastal developments and other anthropogenic activities may also cause the indirect loss of estuarine habitats through the interruption of existing coastal processes such as sediment transport. Sediments will enter the estuary either suspended in the water column, in the case of fine sand and silt, or moving along the seabed as 'bedload' in the case of coarser sand and gravel. Sediment supply may be interrupted either at source, for example by placing coastal defences in front of soft cliffs, or during transport where structures such as groynes in particular may disrupt and intercept the movement of bedload sediment. Such interruptions to sediment supply may occur either within the site or outside it. Eventually a lack of sediment supply will tend to cause habitat deterioration and then erosion. Indirect physical loss can also arise from changes to the estuaries morphology affecting the hydro-dynamic regime, for example widening or deepening of channels at the mouth of an estuary may increase the volume of water entering the estuary causing the erosion of sub-tidal sediments or sandbanks higher up the estuary.
- 4.81 In the future the hard frontages such as embankments and sea walls found along much of the estuary coastline will compromise its ability to evolve in response to rising sea levels and climate

⁴⁹ Data were supplied by the Wetland Bird Survey (WeBS), a joint scheme of the British Trust for Ornithology, The Wildfowl & Wetlands Trust, Royal Society for the Protection of Birds and Joint Nature Conservation Committee (the last on behalf of the Countryside Council for Wales, the Environment and Heritage Service, Natural England and Scottish Natural Heritage)

⁵⁰ Data on the SPA population are derived from the SPA Review section of the JNCC website <http://www.jncc.gov.uk/default.aspx?page=2053>

change. This will result in the erosion of saltmarsh and other intertidal communities. This process of coastal squeeze may result in significant loss of estuarine habitats in the long term, yet in the medium term it is likely that the estuary will continue to accrete and that the effects of coastal squeeze will not be apparent. Thus although the impacts from coastal squeeze may eventually be extensive they are not taken into account in the assessment of current exposure presented here.

- 4.82 Development pressures still exist within the estuary that could result in removal of areas of the intertidal mudflats and sandflats. Those areas close to existing terrestrial development may be most at risk. Recent examples of developments resulting in the removal of areas of this feature include the expansion of the Port of Mostyn, development of the West Kirby Marine Lake and the tipping of coal waste on the upper shore at Point of Ayr. There is well documented evidence of the migration of the main channel towards the Welsh shoreline, which has resulted in the loss of saltmarsh habitat in this area. This can be attributed to coastal squeeze between the main navigation channel and the sea wall. In addition removal of intertidal mudflat and sandflat communities may also occur due to capital or maintenance dredging operations associated with improving and maintaining vessel access to the Port of Mostyn. Even where dredged material is returned to the estuary, this may lead to direct loss of affected invertebrate communities due to burying or smothering. Mechanical changes to channel structure and flow may also result in consequential changes to the pattern of erosion, scour and deposition elsewhere within the affected channel.
- 4.83 Due to the severity of the effects of physical loss, all the estuary's habitat communities are considered to be highly sensitive to removal. Lamprey species are also considered highly sensitive to their own 'removal' for example by entrapment in abstracted waters.
- 4.84 Loss of additional areas of supporting habitat for qualifying bird species could also occur as a result of development policies on the north Wales coast. These in-combination effects could result in far greater effects due to cumulative losses, with birds having to travel greater distances between feeding and roosting sites.

Recommendations for amendments to policy made in Preferred Options HRA (2010)

- 4.85 The following recommendations were made in the 2010 Preferred Options HRA for amendments to the Core Strategy:

Preferred Options suggested that protection of supporting habitat would be considered in development proposals, but this protection should be strengthened by referring specifically to protection of supporting habitat and ensuring that these important areas are identified prior to any specific development sites being agreed. If supporting habitat were to be lost to any development then the applicant would need to determine how significant it was i.e. whether it was used by more than 1% of the population and to provide alternative habitat to replace it in a location that was reasonably close to the estuary.

Mitigation for coastal squeeze should include:

- Ensuring that new development is not delivered in locations which would require a change in coastal defence policy that might compromise natural coastal processes (e.g. from No Active Intervention to Hold the Line or Advance the Line); and
- Preventing development being delivered in areas that may compromise locations identified for managed retreat as set out in the Environment Agency Coastal Habitats Management Plan (CHaMP) and Regional Habitat Creation Programme.

The vast majority of roosting and feeding sites that have been identified for qualifying species from the Dee Estuary are already included within the boundaries of the various designations. However, two feeding sites for curlew have been identified outside the boundaries on the western Wirral: one in fields at the northern end of Piper's Lane to the north of Heswall and one further to the south close to Haddon Hall Farm to the east of Ness Botanic Gardens. These two areas should be identified within the Core Strategy as important supporting habitat for qualifying bird species which must be taken into consideration when assessing any impacts from development proposals.

Efforts must be made to identify any other important off-site roosting/breeding/feeding habitats for qualifying species from the Dee Estuary that occur within the Wirral Borough boundary before the Site Allocations DPD is adopted. A commitment should be given within the Core Strategy to identify all important areas of supporting habitat and to assess any impacts on these areas, and thereby potential impacts on qualifying species, prior to permitting any future development. The Site Allocation Document should include appropriate mechanisms to ensure the loss of such sites is adequately assessed and mitigated. Wirral should also work in conjunction with other Local Authorities to ensure there is no conflict with development of supporting areas outside the Wirral boundary.

- 4.86 Policy CS34 (Flood Risk and Coast Protection) states that '*Proposals for new coastal protection and sea defence works will only be permitted in line with the recommendations of the adopted Shoreline Management Plan and emerging Wirral Coastal Strategy and where sufficient evidence is provided to demonstrate that there will be no adverse effects on coastal processes*'. Since the adopted SMP and emerging Wirral Coastal Strategy will have been (once adopted) approved by the Environment Agency and Natural England and subject to HRA (including identification of mitigation requirements) a policy commitment to comply with the SMP and Coastal Strategy would ensure that Core Strategy development did not cause additional coastal squeeze issues.
- 4.87 With regard to loss of supporting habitat, the Core Strategy has included numerous references to the need to protect supporting habitat: Policy CS8 (Priorities for Leasowe, Moreton, Upton, Greasby and Woodchurch) states '*Maintain and enhance the national and international nature conservation value of the intertidal foreshores to the north of the Area **and their supporting habitats***', while Policy CS9 (Priorities for Hoylake and Kirby) states '*Maintain and enhance facilities for visitors ... while maintaining and enhancing the national and international nature conservation value of the intertidal foreshores **and their supporting habitats***', CS11 (Priorities for the Rural Areas) also refers to the need to protect the supporting habitats associated with the internationally important wildlife sites.
- 4.88 Any development set out in the Core Strategy must comply with Policy CS33 (Biodiversity and Geodiversity) which states that '*Development that could have an individual or in combination effect on a European Site **or its supporting habitat**, within or outside of the Borough, must*

*provide sufficient information to enable compliance with the Habitats Regulations' and that 'Sites identified for specific protection, including any necessary mitigation for the impact on European Sites **and their supporting habitats**, will be identified in a site-specific Local Plan'. Further to this, Policy CS42 (Development Management) states that new development must 'comply with the legal requirements associated with the protection of European Sites **and their supporting habitat**, together with the provision of any relevant on-site or off-site mitigation'.*

4.89 However, the Core Strategy does not at this stage go as far as the recommendations set out, in terms of providing a commitment to identify all important areas of supporting habitat and to assess any impacts on these areas, and thereby potential impacts on qualifying species, prior to permitting any future development. It is recognised that a commitment to undertake such an exercise at a district-wide scale prior to permitting future development may not be realistic, and that such matters can be deferred to individual planning applications and their associated environmental investigations. However, all important areas of supporting habitat should be identified prior to adoption of the Site Allocations DPD.

4.90 Due to the mitigation already provided within the Core Strategy, in relation to development of foreshore areas and development management, together with the additional measures referred to above for protecting valuable supporting habitats, it is considered that there will be no significant impact on the Dee Estuary through coastal squeeze and/or loss of supporting habitat related to policies within the Core Strategy.

Air Pollution

Appropriate Assessment

4.91 The current demographic trajectory for Wirral is currently one of slow growth (the population grew by 2.4 percent and by 7,500 households between 2001 and 2011). Wirral expects at least 10,012 additional net dwellings between 2012 and 2028 (Policy CS18). This could include up to 7,340 dwellings at Wirral Waters (within the Birkenhead Dock Estate at East Float, West Float and Bidston Dock) by 2028 (Policy CS12), increasing the local population by up to 16,600 people, of which approximately 70 percent are expected to be new migrants to the City Region. Natural England identify atmospheric deposition as a contributing factor to the deterioration of SAC features of interest in the Dee Estuary, but this is attributed primarily to the burning of fossil fuels associated in particular with two power stations and the Padeswood Cement Works which lie close to the estuary, rather than vehicle emissions⁵¹. It is possible that CHP developments have the potential to contribute to atmospheric emissions and nitrogen deposition but given that conventional domestic/commercial boilers (as opposed to industrial processes) typically contribute approximately 4% of NOx and sulphur emissions⁵², this is likely to be effectively inconsequential.

4.92 In combination effects on the Dee Estuary from air pollution could result from industrial operations, such as emissions from the proposed incinerators at Runcorn and Ince Marshes. However, these already have planning permission and industrial air emissions are heavily regulated so it is considered unlikely that such an effect would occur in practice, as permission would not be granted for any developments likely to release high levels of damaging emissions. There are also potential in combination effects from development along the north Wales coast, as the prevailing wind direction is west to east, therefore any emissions resulting from industrial

⁵¹ Natural England, Countryside Council for Wales and Welsh Assembly Government (January 2010) 'The Dee Estuary European Marine Site'

⁵² Dore CJ et al. (2005) - UK Emissions of Air Pollutants 1970 – 2003. UK National Atmospheric Emissions Inventory. <http://www.airquality.co.uk/archive/index.php>

development in north Wales could be deposited within the Dee Estuary. However, this is outside the control of Wirral Council.

- 4.93 The only major road (i.e. 'A' road or higher) that lies within 200m of the Dee Estuary SAC within Wirral is the A544 at Wallasey. No major roads lie within 200m of the SPA/Ramsar site. Reference to APIS⁵³ indicates that the actual SO₂ concentration in the SAC, SPA & Ramsar site is well below the critical level (according to APIS the concentration⁵⁴ is 1.1 µgm⁻³ compared to a critical level for damage of 20 µgm⁻³). Similarly, the current level of nitrogen deposition for the same point is 10.5 kgN/ha/yr compared to a minimum critical load for sub-littoral sediment or saltmarsh of 20 kgN/ha/yr - 30 kgN/ha/yr.
- 4.94 It should also be noted that APIS concludes the effects may be positive for most birds because nitrogen enrichment potentially means more prey species. The only SPA species for which nitrogen deposition is identified on APIS as being potentially negative are pintail and oystercatcher, if nitrogen deposition increases the sward height of their grassland foraging grounds. However, sward height is much more strongly influenced by other factors than atmospheric nitrogen deposition such as cut height & frequency and conventional fertilisation. Moreover, the APIS website also makes clear that four of the specific water bird species for which the SPA/Ramsar site is designed (redshank, knot, bar-tailed godwit and shelduck) are not vulnerable to changes in atmospheric nitrogen deposition.
- 4.95 Finally, elements of Policy CS40 (Transport Requirements) would serve to protect the SAC/SPA/Ramsar site either directly or through promoting and delivering sustainable transport:
- Support the greater use of sustainable transport and travel and promote the use of public transport, walking and cycling;
 - provide accessible, safe and attractive facilities for pedestrians and cyclists, suitable for all abilities and ages which link to and contribute to the enhancement of existing networks;
 - reinforce the implementation of 20mph zones outside main routes in residential areas and ensure that pedestrians and cyclists have priority;
 - minimise the environmental impact of traffic likely to be generated by the development on residential areas and other sensitive uses, such as schools, care homes and hospitals;
 - secure appropriate provision for on-site parking and manoeuvring, including safe, covered cycle storage, cycle parking and other facilities (such as showers, bike cages and lockers) and the provision of electric vehicle charging infrastructure, where appropriate; and
 - secure appropriate measures to support the greater use of public transport networks and facilities, including the width of carriageways and infrastructure such as bus stops and laybys.
- 4.96 Policy CS36 (Pollution and Risk) also provides some protection through stating that *'Development proposals likely to give rise to pollution to ... air ... will be permitted where it can be demonstrated that: all practical measures have been taken to minimise potential risk and harm to public health and safety, property and the built and natural environment ...'*
- 4.97 Based on this information it is concluded that the Wirral Core Strategy will not result in likely significant effects on the Dee Estuary SAC/SPA/Ramsar due to deterioration in air quality.

⁵³ Air Pollution Information System <http://www.apis.ac.uk/>, accessed 18/09/12

⁵⁴ For grid reference SJ236825

Renewable Energy

Appropriate Assessment

- 4.98 The Core Strategy contains numerous references to promotion of renewable energy (e.g. Policy CS43 - Design, Heritage and Amenity). HRA Screening identified that, should this include wind turbine construction, a pathway exists through the construction of onshore/offshore turbines to disrupt flight paths and displace qualifying bird species. Disturbance issues associated with maintenance activities were also identified. However, impacts from wind turbine developments depend greatly on the siting of the turbines and no specific sites have yet been identified. There is certainly no specific policy commitment to wind turbines.

Conclusion

- 4.99 With reference to all of the above, including protection measures already in place within the Core Strategy and the single outstanding recommendation with regard to identification of key areas of 'supporting habitat' as a strategic exercise, it can be concluded that none of the policies contained within the Wirral Submission Draft Core Strategy will have an adverse effect on the integrity of the Dee Estuary SAC/SPA/Ramsar/SPA. However, it is noted that further assessments will need to be undertaken in relation to site selection and specific projects at a later stage to ensure that site integrity is maintained.

5 Mersey Estuary SPA and Ramsar

Introduction

- 5.1 Figures 3 and 4 show the location of the Mersey Estuary SPA and Ramsar site, the extent to which it is located within the Borough of Wirral, and proximity to the Core Strategy Plan Area. The Mersey Estuary is a large sheltered estuary that receives drainage from a catchment area of c.5,000km² encompassing the conurbations of Liverpool and Manchester, and including the River Mersey and the River Bollin and their tributaries in Cheshire and Merseyside. The Estuary covers 5023.35ha of saltmarsh and inter-tidal sand and mudflats, with limited areas of brackish marsh, rocky shoreline and boulder clay cliffs, within a rural and industrial environment. The intertidal flats and saltmarshes provide feeding and roosting sites for large and internationally important populations of waterbirds, and during the winter, the site is of major importance for duck and waders. The site is also important during the spring and autumn migration periods, particularly for wader populations moving along the west coast of Britain.

Reasons for Designation

- 5.2 The Mersey Estuary is designated an SPA under Article 4.1⁵⁵
- Golden plover (*Pluvialis apricaria*): 3,040 individuals (1.2% of GB population)
- 5.3 SPA Article 4.2 - winter:
- Redshank (*Tringa totanus*): 4,993 individuals (2.8% of Eastern Atlantic population)
 - Dunlin (*Calidris alpina*): 48,789 individuals (3.6% of Northern Siberian / Europe / West African population)
 - Pintail (*Anas acuta*): 1,169 individuals (1.9% of NW European population)
 - Shelduck (*Tadorna tadorna*): 6,746 individuals (2.2% of wintering NW European population)
 - Eurasian teal (*Anas crecca*): 11,723 individuals (2.9% of NW European population)
 - Wigeon (*Anas penelope*): 11,886 individuals (4.2% of the GB population) Black-tailed godwit (*Limosa limosa*): 976 individuals (1.6% of the Iceland population)
 - Curlew (*Numenius arquata*): 1,300 individuals (1.1% of the GB population)
 - Grey plover (*Pluvialis squatarola*): 1,010 individuals (2.3% of the GB population)
 - Great crested grebe (*Podiceps cristatus*): 136 individuals (1.4% of the GB population)
 - Lapwing (*Vanellus vanellus*): 10,544 individuals (0.7% of the GB population)
- 5.4 SPA Article 4.2 - on passage:
- Ringed plover (*Charadrius hiaticula*): 505
- 5.5 Ramsar Criterion 6, Internationally important populations of:
- Shelduck

⁵⁵ All bird count data in this document is sourced from the SPA Review site accounts as available on the Joint Nature Conservation Committee website www.jncc.gov.uk/page-1412

- Black-tailed godwit (*Limosa limosa*)
- Redshank
- Eurasian teal
- Pintail
- Dunlin

5.6 Ramsar Criterion 5:

- 89,576 waterfowl (5-year peak mean 1998/99-2002/03)

5.7 Birdlife (2001) identify the Important Bird Area (IBA) to exceed the area currently designated as a Ramsar site, and recommend the designation expansion. This additional area is termed a 'potential Ramsar' (which precedes the 'proposed' Ramsar (pRamsar) designation). This additional area is not considered in the assessment as objectives and site boundaries are unconfirmed, however its status highlights the nature conservation value of areas of the Mersey outside of the SPA/Ramsar designation.

Historic Trends and Existing Pressures

5.8 Water pollution has been an issue in the Mersey Estuary since at least the 18th century, when the Mersey catchment became a prime location for industrial expansion, especially the textile industry. With this there was an associated growth in bleaching, dying, and finishing trades, and paper, heavy chemical and glass industries, which are still in production to this day. All of these industries used the waterways as a means for the disposal of industrial waste, resulting in a legacy of pollutants within the River Mersey and including mercury, pesticides (e.g. DDT), and persistent organic contaminants (e.g. polychlorinated biphenyls (PCBs), pentachlorophenol (PCP)) (Mersey Basin Campaign 2004). In addition, there was surface runoff, and the discharge of domestic waste-water and sewage directly into the waterways from a large and growing human population, resulting in gross pollution⁵⁶. The high levels of sewage discharged in to the waterways resulted in low oxygen levels and a major difficulty in improving water quality.

5.9 The problem of water pollution in the Mersey Estuary 'was probably at its worst in the 1960's' and made it the most polluted Estuary in the UK (Mersey Basin Campaign 2004). Major improvements to water quality have been realised since the formation of the Mersey Basin Campaign in 1985, which aims to 'revitalise the River Mersey and its waterfront' (Langston et al. 2006).

5.10 The major projects that brought about the improvements to water quality tackled the direct discharges of sewage into the region's waterways. New projects included: primary sewage works at Sandon Dock which replaced 28 crude sewage discharges directly into the Mersey Estuary through the MEPAS scheme (Mersey Estuary Pollution Alleviation Scheme); fine sewage screening plants on the Wirral peninsula; secondary sewage treatment and petrochemical effluent treatment plants at Ellesmere Port; secondary sewage treatment plants at Widnes and Warrington; modification of the Davyhulme sewage treatment plan in Greater Manchester to treat ammonia (which may kill salmonid species); and later secondary sewage treatment plants at

⁵⁶ Langston, W.J., Chesman, B.S. and Burt, G.R. (2006). Characterisation of European Marine Sites. Mersey Estuary SPA. [Online]. *Marine Biological Association of the United Kingdom. Occasional Publications* 18, 185pp. Available at: www.mba.ac.uk/nmbi/publications/occpub/pdf/occ_pub_18.pdf (accessed 15th June 2009).

Birkenhead/Bromborough. Other improvements have been made, including reducing inputs of mercury, lead, cadmium, PCP and chlorinated hydrocarbons into the Estuary.

5.11 However, certain inputs remain, including:

- pesticides and herbicides from agriculture (largely dairy farming) into the upper river system;
- phthalate esters (used as plasticisers, increasing flexibility in plastics) thought to come from wastewater discharges in the upper Mersey;
- hydrocarbon contamination from oil spillage/spills from Tranmere Oil Dock/Terminal, Stanlow (Shell) Oil Refinery and oil tanks along the southern bank of the Estuary, from pipelines that run between these sites along the southern bank of the Estuary, and from oil shipping spills in the Irish Sea;
- PCBs from the River Mersey (possibly also dredge spoils); and
- PCBs from contaminated land in the catchment area (Marine Biological Association, 2006).

5.12 The General Quality Assessment (GQA) scheme, introduced by the National Rivers Authority (NRA), and replaced by the Environment Agency (EA) in 1996, monitors the water quality of rivers and canals throughout England and Wales. It assesses the chemical and biological status, nutrient levels, and aesthetic water quality from permanent sampling stations. The Mersey Basin Campaign (2005) reports on sites in the Mersey catchment that detail low (Grades D, E and F, or 'fair' to 'bad') biological and chemical river water quality; only those within the Mersey catchment – see Appendix 2 – are described here. Such sampling sites are particularly concentrated in the area between Knowsley and Manchester, including St. Helens and Wigan, although biological quality is generally poor from Liverpool to Manchester.

5.13 The main current environmental pressures upon the Mersey Estuary SPA and Ramsar site are considered to be:

- disturbance of sediment from shipping and associated activities, releasing legacy heavy metal pollution (mercury, lead, cadmium and other poisons) that is bound into the sediment, or other introduction of these metals;
- pollution via rivers and drains by both treated sewerage and untreated runoff containing inorganic chemicals and organic compounds from everyday domestic products, which 'may combine together in ways that make it difficult to predict their ultimate effect of the marine environment. Some may remain indefinitely in the seawater, the seabed, or the flesh, fat and oil of sea creatures'⁵⁷;
- pollution via commercial shipping by chemical pollution and the dumping of litter at sea;
- 'coastal squeeze' and physical loss from land reclamation and coastal flood defences and drainage used in order to develop coastal land, and from sea level rise;
- loss or physical damage of marine benthic habitat directly and indirectly (through changed sedimentation/deposition patterns) as a result of navigational or aggregate dredging;
- disturbance to birds from increased recreational pressure (e.g. boat or other recreational activity) and wildfowling;
- introduction of non-native species; and

⁵⁷ Langston, W.J., Chesman, B.S. and Burt, G.R. (2006). Characterisation of European Marine Sites. Mersey Estuary SPA. [Online]. *Marine Biological Association of the United Kingdom. Occasional Publications* 18, 185pp. Available at: www.mba.ac.uk/nmbi/publications/occpub/pdf/occ_pub_18.pdf (accessed 15th June 2009).

- selective removal of species (e.g. bait digging, wildfowl, fishing) (Wildlife Trust 2006; Langston et al. 2006).

5.14 Although the Mersey Estuary does have a high load of nutrients mainly from diffuse sources, with levels for phosphate and nitrogen decreasing from point sources, recent modelling has shown that due to the natural turbidity of the water, there is only a low risk of excessive algal growth.

Summary Screening: Key potential pressures from Wirral

5.15 The Wirral Core Strategy has the potential to exacerbate existing key pressures being experienced by the Mersey Estuary SPA/Ramsar. Potential impacts identified during the summary screening detailed in Appendix 1 were:

- direct disturbance to qualifying bird species;
- waste water discharges;
- water abstraction;
- dock, port and channel construction, maintenance shipping and dredging;
- coastal squeeze and loss of supporting habitat,
- recreational activities;
- air pollution; and
- renewable energy.

Appropriate Assessment

Direct Disturbance of Qualifying Bird Species and Habitat Damage

Appropriate Assessment

5.16 The current demographic trajectory for Wirral is currently one of slow growth (the population grew by 2.4 percent and by 7,500 households between 2001 and 2011). Wirral expects at least 10,012 additional net dwellings between 2012 and 2028 (Policy CS18). This could include up to 7,340 dwellings at Wirral Waters (within the Birkenhead Dock Estate at East Float, West Float and Bidston Dock) by 2028 (Policy CS12), increasing the local population by up to 16,600 people, of which approximately 70 percent are expected to be new migrants to the City Region. A significant amount of net new housing will inevitably be concentrated in Birkenhead and Bromborough which are both relatively close to the Mersey Estuary SPA/Ramsar site. Several policies specifically indicate the placement of development including new housing within close proximity to the Mersey Estuary (CS4: Priorities for Wallasey, CS5: Priorities for Commercial Core of Birkenhead, CS6: Priorities for Suburban Birkenhead and CS11: Priorities for the Rural Areas, covering Settlement Areas 1, 2, 3 and 8). Policy CS7 specifically discusses securing '*improved pedestrian and cycle access from the residential areas, to the north and to and along the Mersey coastline*' albeit while adding the important proviso '*subject to the impact on coastal nature conservation*', while policies CS4, CS6 and CS8 all contain text that pledges to maintain and enhance the national and international importance of the inter-tidal foreshore. Also, for the purposes of HRA, development within Wirral must not be considered in isolation but in combination with the 70,000 dwellings that will be delivered across Merseyside and those to be delivered in North Wales over the same time period under other Local Plans and Core Strategies.

- 5.17 Policies within the Core Strategy seek to target tourism and recreation on the coastline (Policy CS2 - Broad Spatial Strategy) but make it clear that this would be within the context of ensuring protection of the European sites: *'Tourism investment will be targeted to support regeneration in Birkenhead, provide improvements within the coastal resorts of New Brighton, Hoylake and West Kirby and along the Mersey coastline; and to improve public access to the coast and countryside subject to the protection of European Sites and their supporting habitats'*. It goes on to add in the supporting text that *'A focus on maximising the use of existing resources will also minimise the potential for harmful impacts on other interests such as European Sites and their supporting habitats'*. This is also discussed in the overall Spatial Vision: *'A growth in sustainable tourism will be focused on the quality of the Borough's natural environment; built heritage; country parks; and coastline, with appropriate visitor facilities at Birkenhead, New Brighton, Leasowe, Hoylake, West Kirby, Thurstaston and along the Mersey coast, managed to avoid harm to European Sites and their supporting habitat'*.
- 5.18 An increase in recreational pressure on the Mersey Estuary SPA/Ramsar has the potential to result in adverse effects on qualifying features of the SPA/Ramsar in the following ways⁵⁸:
- abrasion (boating, anchoring, trampling), is considered to have the potential to affect internationally important assemblages of wildfowl;
 - selective extraction of species (harvesting, bait digging (lugworms, mussels), recreational fishing);
 - visual presence of recreational activity; and
 - disturbance to birds from increased recreational pressure (e.g. boat or other recreational activity) and wildfowling.
- 5.19 The Mersey Estuary Conservation Group⁵⁹ identifies the 'best areas to observe bird life of the Mersey Estuary during winter'. Of the twelve sites listed, three are located within the Borough of Wirral. These are New Brighton, New Ferry and Eastham Country Park on the south shore. These sites are either within or immediately adjacent to the SPA/Ramsar designation. This list suggests that a proportion of the existing recreational pressures on the Mersey arise from visitor sites within Wirral. A significant management issue is presented by Personal Watercraft (jetskis etc) which generally operate outside regulated groups (sailing clubs etc). These launch from New Brighton and the North Wirral coast in particular.
- 5.20 Submission draft core strategy policies have been identified which have the potential to encourage greater recreational use of the Mersey Estuary either due to a focus of development (and therefore population) on waterside locations, or encouraging accessibility (e.g. through green infrastructure) through these sites.
- 5.21 The focus of waterside development along the east coast of the Wirral is likely to increase the population of people living and working on those waterside locations immediately adjacent to the Mersey Estuary, therefore increasing the number of recreational users in these areas, particularly when considered in combination with emerging proposals for a marina on the Rock Ferry foreshore. However, much of this area is already extremely built up with docks and industrial development and access to the salt marsh areas of the Estuary itself is either prohibited or restricted thereby reducing the potential for greater direct recreational disturbance of these areas. There could be an increase in recreational boating activities on the Mersey would could impact on the qualifying features of the SPA/Ramsar through both disturbance and potential pollution from oil spills.

⁵⁸ Langston, W.J., Chesman, B.S. and Burt, G.R. (2006). Characterisation of European Marine Sites. Mersey Estuary SPA. [Online].

⁵⁹ www.merseyestuary.org.uk

- 5.22 It is worth noting that the recreational resource of nearby coastal areas associated with the Mersey Narrows and North Wirral Foreshore pSPA/Ramsar, Sefton Coast SAC, Ribble and Alt Estuary SPA/Ramsar and Dee Estuary SAC/SPA/Ramsar are considered to be more popular than the Mersey Estuary. This is partly due to the industrial legacy leaving a less attractive waterside location and high levels of pollution within the Mersey Estuary, and also the alternative coastal locations generally being a more popular visitor destination (offering a larger choice of recreational activities). However, in-combination adverse recreational impacts may occur.
- 5.23 HRA Screening identified potential pathways whereby policies within the Wirral Core Strategy have the potential to result in direct disturbance to qualifying bird species of the Mersey Estuary SPA/Ramsar. These pathways are assessed in more detail below, including a discussion on any mitigation already built into the Core Strategy.
- 5.24 New residential developments and provision of green infrastructure may lead to increased use of areas both within Natura 2000 sites, and other areas that support qualifying bird species. Waterside development projects also have the potential to cause direct disturbance to birds during both the construction process, and in the long term through sustained use of areas adjacent to regular feeding or roosting areas. There are likely to be cumulative disturbance impacts to birds through an increase in noise, vibration and lighting, as well as disturbance or injury from pets such as dogs and cats.
- 5.25 The Natura 2000 sites within the Mersey are part of a wider network of Natura 2000 sites on the west and North West coast of England and Wales, between which there is a huge exchange of birds at all times of the year. These sites extend to the Ribble and Alt Estuaries to the north and to the Dee Estuary in the south, although exchange of birds occurs on a much wider scale. Movement between sites is probably greatest during times of spring and autumn passage when these sites form part of a wider migratory network and serve as important 'stepping stones' along migratory routes, as well significant areas for wintering wildfowl⁶⁰. It is due to this high exchange of birds between sites that impacts on one site could also have a adverse effect on the integrity of other sites within this network.
- 5.26 The most important factor governing bird use of the Mersey is the tidal cycle, with areas of expansive intertidal mud used extensively for feeding at low tides and areas of saltmarsh being used at high tides for roosting. Saltmarsh is also used as feeding areas for some species. Important areas identified within the Mersey Feasibility Study, Winter Bird Report which are located within the Wirral Borough Boundary are Perch Rock and New Brighton, New Ferry and Eastham along the north coast. The north-east corner of the Wirral is used extensively by a number of qualifying bird species, with Eurasian oystercatchers using the exposed sandy beach at low tide and roosting on the breakwaters and surrounding structures at high tide. Purple sandpipers also used the rocky areas, groynes and shore defences at New Brighton for feeding and roosting, and the Marine Lake area was also used as a high tide roost and for feeding on the tide line by ruddy turnstones, as well as by Eurasian oystercatchers as a high tide roost as it was relatively undisturbed.
- 5.27 New Ferry was found to support a good mix of both wildfowl and wading species and was the most important site on the Mersey for northern pintail and black-tailed godwit. The exposed muddy areas were used for feeding at low tide by a number of species and there is also a locally important wader roost in this area. There was also significant bird usage of the mudflats adjacent to Eastham Docks for feeding. These areas will all therefore be susceptible to impacts on the qualifying bird species through increased disturbance as a result of new developments and recreational activities.

⁶⁰ RSK Carter Ecological Limited (2010). Mersey Feasibility Study. Winter Bird Report

- 5.28 In meeting the needs of gypsies and travellers (Policy CS24), HRA Screening identified a pathway for direct disturbance on the Mersey Estuary SPA/Ramsar, depending on the location of allocated sites.
- 5.29 HRA Screening at Preferred Options Stage identified that, should the Core Strategy include wind turbine construction, a pathway exists through the construction of onshore/offshore turbines to disrupt flight paths and displace qualifying bird species. Disturbance issues associated with maintenance activities were also identified. The Submission Draft Core Strategy includes numerous references to encouraging energy efficiency and the use and development of renewable, decentralised and low carbon energy within the Wirral (e.g. Policy CS43 - Design, Heritage and Amenity). However, impacts from wind turbine developments depend greatly on the siting of the turbines and no specific sites have yet been identified. There is certainly no specific policy commitment to wind turbines in the Submission Draft Core Strategy.
- 5.30 In-combination effects of direct disturbance to qualifying bird species could be experienced due to proposed developments along the coastline in Cheshire West and Chester, as the area around Ellesmere Port is targeted as a strategic location for development. This could result in greater detrimental impacts on qualifying bird species due to increased levels of disturbance; or disturbance of previously undisturbed areas due to residential/industrial development and/or improved opportunities for recreation. It is therefore clear that all the local authorities need to work together during production of their development plan documents to limit any potential for detrimental impacts on qualifying species due to disturbance of important roosting/feeding areas along this coast.
- 5.31 In combination disturbance effects to qualifying bird species of the Mersey Estuary SPA and Ramsar are also likely to be experienced through the proposed expansion of The Liverpool John Lennon Airport (JLA) and disturbance/displacement/collision of qualifying bird species due to an increase in bird scaring devices and airplanes landing closer to the SPA/Ramsar designation area, particularly since the airport masterplan suggests that impacts are occurring at current levels of airport activity. A suite of ecological surveys has been undertaken in connection with the airport expansion⁶¹. Aircraft currently take off or land over the mudflats adjacent to the Mersey Estuary SPA/Ramsar site. Since these flats are used by a proportion of the passage and wintering waterfowl for which the Estuary is of international importance, there are potential disturbance effects on both feeding and roosting waterfowl under the flight path.

Recommendations for amendments to policy made in Preferred Options HRA (2010)

- 5.32 To address this issue, the 2010 HRA of the Preferred Options made similar recommendations to those already discussed in relation to the Dee Estuary. It is considered that, as with the Dee Estuary, the amendments that the Council has made to Policies CS2, CS30 and CS33 would provide an adequate policy framework to protect the Mersey Estuary SPA/Ramsar site.

Water Quality

Appropriate Assessment

- 5.33 Policies encouraging housing, employment and industrial growth along the eastern side of the Wirral (namely Birkenhead/Bromborough) bordering the western Mersey Estuary SPA/Ramsar have the potential to contribute to a deterioration in water quality entering the Mersey Estuary. This could arise through domestic sewage and industrial effluent, exacerbating historic trends and existing pressures described above. The Council expects at least 10,012 additional net dwellings between 2012 and 2028 (Policy CS18). This could include up to 7,340 dwellings at

⁶¹ John Lennon Liverpool Airport Masterplan November 2007
http://www.liverpoolairport.com/assets/_files/documents/oct_08/peel_1224146206_12_Master_Plan_Chapter_11.pdf

Wirral Waters (within the Birkenhead Dock Estate at East Float, West Float and Bidston Dock) by 2028 (Policy CS12), increasing the local population by up to 16,600 people, of which approximately 70 percent are expected to be new migrants to the City Region. A significant amount of net new housing will inevitably be concentrated in Birkenhead and Bromborough which are both relatively close to the Mersey Estuary SPA/Ramsar site.

- 5.34 Moreover, a large amount of new employment land will also be focused in Birkenhead/Bromborough. Water quality impacts could occur during the construction of these sites due to the location of the development areas.
- 5.35 Table 5⁶² summarises the water quality issues being experienced at the Mersey SPA/Ramsar site, along with the likely causes and features of interest at risk of being adversely affected.

⁶² English Nature, Plymouth Marine Partnership, The Marine Biological Association (2006) *Characterisation of European Marine Site: the Mersey Estuary Special Protection Area*, Marine Biological Association Occasional Publication No18.

'contaminant'	Area	Potential Sources	Most vulnerable features/biota
1) Organotins (TBT, TPT)	Highest levels in water at the head of estuary – may reflect high suspended solids loads. Persistent in sediments throughout the estuary, with localised hotspots.	Probably multiple sources of TBT including docks (ub Birkenhead), Manchester Ship Canal, Chemical industry, WwTWs. TPT found in eels from Weston Canal (sources agricultural or manufacturing?)	Molluscs, particularly gastropods
2) Metals	No acute problems identified but Hg, Zn and Cu considered risks, especially upstream. Sediment widely above ISQG/TEL and sometimes above PEL at upper Estuary sites: reflected in bioavailability.	WwTWs, industry, urban run-off, shipping. Sediments principal sink for most metals: Modified conditions at some sites could increase bioavailability	Invertebrates (primarily molluscs and crustaceans), larval fish. Bioaccumulation in birds not evaluated but potential risks eg from organometals (alkyl Hg and Pb)
3) Nutrients	Especially toward freshwater inputs. Widnes, Eastham Locks	Freshwater and point source inputs including the Manchester Ship Canal. WwTWs discharges also important Possibly sediments – (phosphate, ammonia)	Invertebrates, fish (esp. early life stages), birds, General diversity
4) Hydrocarbons, PAHs	Poorly defined, due to lack of sampling but evidence of enrichment in sediments, notably Seacombe Ferry	Mixed petrogenic inputs from numerous discharges. Incomplete combustion of fossil fuels, refineries, run-off, boats and ships aircraft. Sediments main reservoir	Benthic invertebrates and fish (NB those in contact with sediment). No bioaccumulation data.
5) Pesticides, herbicides and other organics	Estuarine sediments an important reservoir but little information on spatial distributions within the EMS. Direct toxicity improbable, though sublethal manifestations including endocrine disruption have been demonstrated	Not quantified due to insufficient data but probably includes a significant component from industry, sewage discharges and agricultural and urban run-off. In depositional areas, sediment subsurface maxima reflect historical inputs	Invertebrates (esp. crustacea), fish The region is still a hotspot for bioaccumulation of PCBs and a number of OC pesticides: very few bioaccumulation data in EMS itself Extent of endocrine disruption not fully tested, particularly in invertebrates.

5.36 An earlier (1999) but useful indication of the location and size of waste water treatment work inputs to the Mersey Estuary shows major trade and sewage effluent to be discharged throughout the Estuary with significant inputs from Widnes, Runcorn, and Ellesmere Port as well as those in the Wirral⁶³. Estimated inputs from trade effluent at that time (~650,000 m³/day) represent just over half the amount of sewage effluent (~1,200,00 m³/day). This is significantly greater than the neighbouring Dee Estuary with estimated trade effluents as ~50,000 m³/day and sewage effluent ~62,000 m³/day). There are few other European Marine Sites which have such a high level of discharge, other than the Thames and Solent in Southampton. No data on contaminants in discharges is currently available. Water quality issues are clearly a major issue currently being

⁶³ English Nature, Plymouth Marine Partnership, The Marine Biological Association (2006) *Characterisation of European Marine Site: the Mersey Estuary Special Protection Area*, Marine Biological Association Occasional Publication No18.

experienced by Mersey Estuary SPA/Ramsar. However, water companies are implementing an ongoing programme of improvements in response to water quality standards.

5.37 The Environment Agency is understood to have conducted its own review of sources in relation to HRA. According to Langston et al⁶⁴ the Environment Agency Review of Consents for 3886 permitted water discharges were 'screened in', and of these 919 were taken through from Stage 2 to Stage 3 Appropriate Assessment. These included:

- Those discharges responsible for discharging the top 90% of the nutrient/BOD/ammonia load entering the Mersey Estuary;
- Those discharges discharging directly into the Mersey Estuary;
- Those discharges authorised to discharge a List 1 and/or List 2 Dangerous substance that has been found to be either exceeding or at risk of exceeding the Environmental Quality Standard in the Mersey Estuary;
- All IPC/IPPPC water discharges not already considered under the Directive.

5.38 Of the 919 discharges requiring an AA only around 380 are continuous discharges. The remainder largely represent intermittent discharges (storm sewage overflows / emergency discharges from pumping stations). Box 3 indicates the Environment Agency priority outfalls of the Mersey⁶⁵. Whilst some priority outfalls are located in the Wirral, many are located in other plan areas, namely Halton and Liverpool.

Box 3. Environment Agency priority Mersey outfalls



5.39 The historic and existing pressures of the site clearly identify the combined pollution pressure from runoff and waste water discharges throughout the Mersey catchment including the Upper

⁶⁴ Langston, W.J., Chesman, B.S. and Burt, G.R. (2006). Characterisation of European Marine Sites. Mersey Estuary SPA. [Online]. Marine Biological Association of the United Kingdom. Occasional Publications 18, 185pp. Available at : www.mba.ac.uk/nmb/publications/occpub/pdf/occ_pub_18.pdf (accessed 15th June 2009).

⁶⁵ English Nature, Plymouth Marine Partnership, The Marine Biological Association (2006) *Characterisation of European Marine Site: the Mersey Estuary Special Protection Area*, Marine Biological Association Occasional Publication No18.

reaches which are located well away from the Wirral. It is reasonable to identify the potential for an *in-combination* effect of the Wirral Core Strategy (above the existing baseline) on the water quality pressures being experienced in the Mersey Estuary SPA/Ramsar.

- 5.40 It should be noted that the Mersey Basin clean-up campaign has produced substantial improvements over the last 25 years. The Mersey is now reported to support a wide range of fish species, including migratory fish, and there has been an increase in numbers of other animals returning to the estuary including reported sightings of porpoises, grey seals and octopus. Natural England *et al.*⁶⁶ conclude that in the absence of specific information on individual discharges, there is insufficient evidence to justify further expensive remedial action on particular sources. However, there is sufficient uncertainty to justify a more targeted and detailed programme of research and surveillance to measure actual biological impacts at a variety of levels (e.g. biochemistry, bioaccumulation, biomarkers, community structure) at sites within the European Marine Sites and near priority discharges. If results indicate deleterious effects which can be attributed to known causes, then the case for remedial action against key sources (which may include multiple inputs) would be placed on a stronger scientifically sound basis. At the very least such a program would provide a benchmark for assessing future changes in the condition of the site and likely contributions from water quality.
- 5.41 Part of the purpose of the Core Strategy is to encourage redevelopment and investment to reverse this trend. As a precaution we have therefore concluded that Core Strategy policies could lead to an increased demand on wastewater treatment infrastructure. This is referenced in Policies CS4 – CS9 which make reference to ‘address any local limitations on ... disposal of wastewater’, with Policy CS7 referring to the need for the ‘provision of additional facilities for the treatment and disposal of wastewater at the Bromborough Waste Water Treatment Works’. These requirements stem from the Wirral Water Cycle Study (WCS) and clearly indicate that the delivery of development will be predicated on the identification and timely delivery of wastewater treatment solutions. The Wirral Water Cycle Study includes consideration of the constraints posed by European sites (in addition to a range of other environmental constraints) such that the development/infrastructure phasing requirements identified in the WCS will effectively enable adverse effects on European sites to be avoided.

Recommendations for amendments to policy made in Preferred Options HRA (2010)

- 5.42 To address this issue, the 2010 HRA of the Preferred Options made similar recommendations to those already discussed in relation to the Dee Estuary. It is considered that, as with the Dee Estuary, the amendments that the Council has made to Policies CS4 – CS9 and CS44 would provide an adequate policy framework to protect the Mersey Estuary SPA/Ramsar site.

Dock, Port and Channel Construction, Maintenance, Shipping and Dredging

Appropriate Assessment

- 5.43 The Wirral Core Strategy promotes greater use of ports and docks, recognising an importance for cargo handling and freight movements as an opportunity to maximise the potential for off-road transport; and contribute towards a sub-regional "SuperPort" (Submission draft core strategy policies CS2, CS5, CS12 and CS13). Development of Ports and Docks has the potential to disturb substrates which could result in circulation of synthetic chemical pollutants and heavy metals, leading to potential harm to benthic communities, aquatic invertebrates and habitats required by qualifying bird species. Furthermore greater shipping freight has the potential for increased pollution through fuel emissions/ accidental spillage. .

⁶⁶ English Nature, Plymouth Marine Partnership, The Marine Biological Association (2006) *Characterisation of European Marine Site: the Mersey Estuary Special Protection Area*, Marine Biological Association Occasional Publication No18.

- 5.44 The above risks are highlighted by a study by Natural England *et al*⁶⁷. The level of Tributyltin (TBT) in tidal waters exceeds the EQS at most sites, sometimes by a considerable margin. Sources include the Manchester Ship Canal, docks and shipyards, and the river Mersey itself: highest levels were at Monks Hall at the head of the tidal waterway. Sediments in docks contain hotspots which are above action limits (for safe disposal). Redistribution of these sediments must be considered a potential threat to the condition of the site. Further investigation of sources, trends and impacts has been recommended by the study.
- 5.45 Heavy metal distribution, along with PAHs, PCBs and DDT residues from historical inputs, are of significance. Enhanced loadings sometimes appear in subsurface layers in sediment cores. Dredging has been identified as a key activity that could re-expose these layers making them and their associated contaminant burdens available to organisms. The study calls for further biomonitoring of sediments (bioaccumulation and effects) and possibly to transfer of contaminants through dietary organisms to bird populations of the SPA.
- 5.46 Based on these conclusions, it is reasonable to conclude that development of docks, ports, greater ship movements through the Mersey, and any associated navigational dredging has the potential to result in impacts on qualifying features of the Mersey Estuary SPA/Ramsar.
- 5.47 With regards to greater shipping freight in the Mersey and the potential for pollution through fuel emissions/accidental spillages, it should be noted that oil pollution is a continual threat to all inshore marine habitats, and is particularly pronounced in the Mersey Estuary due to its enclosed and sheltered nature. Risks include small leaks, spills and discharges, as well as the possibility of a major accident. There are a number of ways in which oil could potentially impact on the interest features of the SPA which include intertidal habitats, shellfish beds, benthic communities, Zostera plants, eggs and planktonic larval stages of fish, molluscs and crustaceans.
- 5.48 In addition to shipping, sources also include river-borne discharges (including road runoff and atmospheric discharges). Studies have found total hydrocarbon concentrations (THC) in the Mersey to be amongst the most elevated in the UK⁶⁸. In the mouths of the estuaries sampled (including Liverpool Bay for the Mersey), the highest THC levels occurred at low tide, reflecting respective dominant flows of more highly contaminated water from upstream. A variety of sources were suggested including industrial discharges and spillages from shipping and land-based sources.
- 5.49 Increased port activities and levels of shipping resulting from proposals for the Port of Liverpool and the Manchester Ship Canal have the potential to result in in-combination effects on the Mersey Estuary. However, shipping is heavily regulated so levels of activity which have the potential to result in detrimental impacts on the Mersey Estuary are highly unlikely to be approved.

Recommendations for amendments to policy made in Preferred Options HRA (2010)

- 5.50 As with the Dee Estuary the recommendations made in the 2010 Preferred Options HRA are addressed through Policy CS16 (Criteria for Port-Related Development) states that '*Port and marine-related development will be permitted within the existing port estates at Birkenhead and Eastham; at Twelve Quays; along the Tranmere waterfront at Cammell Lairds; and along the Bromborough Coast*' but also states that any proposals must '*have no adverse impact on water quality or on designated European Sites or their supporting habitats*'. The supporting text provides further clarity as discussed in Chapter 4.

⁶⁷ English Nature, Plymouth Marine Partnership, The Marine Biological Association (2006) *Characterisation of European Marine Site: the Mersey Estuary Special Protection Area*, Marine Biological Association Occasional Publication No18.

⁶⁸ Kirby et al (1998) in English Nature, Plymouth Marine Partnership, The Marine Biological Association (2006) *Characterisation of European Marine Site: the Mersey Estuary Special Protection Area*, Marine Biological Association Occasional Publication No18.

Coastal Squeeze and Loss of Supporting Habitat

Appropriate Assessment

- 5.51 The Core Strategy identifies areas of land immediately adjacent to coastal habitats for economic revitalisation and housing growth. The Council expects at least 10,012 additional net dwellings between 2012 and 2028 (Policy CS18). This could include up to 7,340 dwellings at Wirral Waters (within the Birkenhead Dock Estate at East Float, West Float and Bidston Dock) by 2028 (Policy CS12), increasing the local population by up to 16,600 people, of which approximately 70 percent are expected to be new migrants to the City Region. A significant amount of net new housing will inevitably be concentrated in Birkenhead and Bromborough which are both relatively close to the Mersey Estuary SPA/Ramsar site.
- 5.52 Furthermore, land outside of the Mersey Estuary SPA/Ramsar boundaries may serve as important supporting habitat for off-site roosting areas of qualifying bird species, i.e. areas where qualifying bird species roost that are not within the designated site boundaries. Loss of such land would also have the potential to result in impacts. Development between these important off-site areas and the Estuary itself could also impact on flight paths, making the supporting habitat less accessible to the birds. These important roosting/feeding areas need to be identified and considered prior to permission being granted for any developments to ensure no long-term detrimental impact on the populations of qualifying bird species.
- 5.53 Work has been undertaken to establish the location of such important supporting habitat sites for qualifying bird species within Merseyside⁶⁹. However, the majority of those areas outside the designated site boundaries are located outside the Wirral County Borough boundary so would not be directly affected by the policies within the Core Strategy for the Wirral.
- 5.54 Direct physical loss may result from a range of activities causing the removal or smothering of the interest features. The Mersey Estuary is a complex system which supports a rich variety of marine communities, many of which are dependent upon the ecological functioning of other communities. Therefore physical loss of any single habitat as a result of activities such as coastal development could have wider implications for the survival of other communities, thus detrimentally affecting the favourable condition of the European site directly. This could result in a direct deterioration of qualifying SPA/Ramsar features.
- 5.55 The Mersey Estuary SPA/Ramsar provides important nesting, feeding and roosting habitats for large and internationally important populations of waterbirds, and during the winter it is of major importance for ducks and waders. It is also of major importance for birds moving along the west coast of Britain during the spring and autumn migration periods. The loss by removal (through coastal squeeze) or smothering of any of the supporting habitats on which they depend, is likely to result in the loss of nesting and roosting sites and/or the reduction of food resources. It could also result in increased competition for food and space in areas that are already occupied, and ultimately reduce bird numbers on the estuary.
- 5.56 Physical loss of habitat within the SPA/Ramsar boundaries may arise from developments such as infrastructure construction and modification and coastal protection works, and land claim (e.g. as put forward by Policy CS7). In these instances the physical loss would occur when areas of habitat are used for new purposes. In addition coastal developments and other anthropogenic activities may also cause the indirect loss of estuarine habitats through the interruption of existing coastal processes such as sediment transport. Sediments will enter the estuary either suspended in the water column, in the case of fine sand and silt, or moving along the seabed as 'bedload' in the case of coarser sand and gravel. Sediment supply may be interrupted either at

⁶⁹ RSK (2010) Mersey Feasibility Study Winter Bird Report

source, for example by placing coastal defences in front of soft cliffs, or during transport where structures such as groynes in particular may disrupt and intercept the movement of bedload sediment. Such interruptions to sediment supply may occur either within the site or outside it. Eventually a lack of sediment supply will tend to cause habitat deterioration and then erosion. Indirect physical loss can also arise from changes to the estuaries morphology affecting the hydro-dynamic regime, for example widening or deepening of channels at the mouth of an estuary may increase the volume of water entering the estuary causing the erosion of sub-tidal sediments or sandbanks higher up the estuary.

- 5.57 Loss of additional areas of supporting habitat for qualifying bird species could also occur as a result of development policies within adjoining borough boundaries, such as Cheshire West and Chester Council. Important off-site feeding and roosting areas for qualifying species from the Mersey Estuary have been identified as Frodsham Marsh, Ince Marsh, Weaver Bend and the mudflats off Ellesmere Port⁷⁰. Any loss of these areas could therefore have in-combination effects on the qualifying bird species, leading to greater detrimental impacts overall.

Recommendations for amendments to policy made in the Preferred Options HRA (2010)

- 5.58 To address this issue, the 2010 HRA of the Preferred Options made similar recommendations to those already discussed in relation to the Dee Estuary. It is considered that, as with the Dee Estuary, the amendments that the Council has made to Policies CS8, CS9, CS11, CS33, CS34 and CS42 would provide an adequate policy framework to protect the Mersey Estuary SPA/Ramsar site.

- 5.59 **However, the Core Strategy does not at this stage go as far as the recommendations set out, in terms of providing a commitment to identify all important areas of supporting habitat and to assess any impacts on these areas, and thereby potential impacts on qualifying species, prior to permitting any future development. It is recognised that a commitment to undertake such an exercise at a district-wide scale prior to permitting future development may not be realistic, and that such matters can be deferred to individual planning applications and their associated environmental investigations. However all important areas of supporting habitat should be identified prior to adoption of the Site Allocations DPD.**

- 5.60 Due to the mitigation already provided within the Core Strategy, in relation to development of foreshore areas and development management, together with the additional measures referred to above for protecting valuable supporting habitats, it is considered that there will be no significant impact on the Mersey Estuary through coastal squeeze and/or loss of supporting habitat related to policies within the Core Strategy.

Air Pollution

Appropriate Assessment

- 5.61 The current demographic trajectory for Wirral is currently one of slow growth (the population grew by 2.4 percent and by 7,500 households between 2001 and 2011). Wirral expects at least 10,012 additional net dwellings between 2012 and 2028 (Policy CS18). This could include up to 7,340 dwellings at Wirral Waters (within the Birkenhead Dock Estate at East Float, West Float and Bidston Dock) by 2028 (Policy CS12), increasing the local population by up to 16,600 people, of which approximately 70 percent are expected to be new migrants to the City Region. It is therefore reasonable to assume that the rise in vehicle movements as a result of the core strategy are more likely to be focused around the eastern side of the Borough (around

⁷⁰ RSK (2010) Mersey Feasibility Study Winter Bird Report

Birkenhead and Bromborough) where economic and housing development will be focused. This is the area closest to the Mersey Estuary SPA/Ramsar site.

- 5.62 In combination effects on the Mersey Estuary from air pollution could result from industrial operations, such as emissions from the proposed incinerators at Runcorn and Ince Marshes. However, these already have planning permission and industrial air emissions are heavily regulated so it is considered unlikely that such an effect would occur in practice, as permission would not be granted for any developments likely to release high levels of damaging emissions. Additional in-combination effects could result from the expansion of Liverpool Airport causing deterioration in local air quality and thus increased nitrogen and sulphur deposition.
- 5.63 However, according to the Site Relevant Critical Load function of the UK Air Pollution Information System for each bird for which the Mersey Estuary SPA was designated indicates that the modelled nitrogen deposition for the most recent year available (2005) within the site is 15.1 kgN/ha/yr⁷¹ compared to a critical load (for littoral sediment the key habitat for the waterfowl population) of 20-30 kgN/ha/yr; moreover, APIS predicts that this will fall by 2020 to 12.04 kgN/ha/yr, so the development discussed in this HRA must be set against a background trend of improving air quality. Moreover, APIS reports that the bird species of the SPA are not considered likely to be affected by increased nitrogen deposition and may in fact be subject to a positive effect because nitrogen enrichment potentially means more prey species. Even if an adverse effect was possible it is unlikely that increases in traffic as a result of development across Merseyside would result in the very large increases in nitrogen deposition which would be required to exceed the critical load, given that road transport is currently only responsible for 7% of nitrogen deposition in the SPA.
- 5.64 Finally, elements of Policy CS40 (Transport Requirements) would serve to protect the SPA/Ramsar site either directly or through promoting and delivering sustainable transport:
- Support the greater use of sustainable transport and travel and promote the use of public transport, walking and cycling;
 - provide accessible, safe and attractive facilities for pedestrians and cyclists, suitable for all abilities and ages which link to and contribute to the enhancement of existing networks;
 - reinforce the implementation of 20mph zones outside main routes in residential areas and ensure that pedestrians and cyclists have priority;
 - minimise the environmental impact of traffic likely to be generated by the development on residential areas and other sensitive uses, such as schools, care homes and hospitals;
 - secure appropriate provision for on-site parking and manoeuvring, including safe, covered cycle storage, cycle parking and other facilities (such as showers, bike cages and lockers) and the provision of electric vehicle charging infrastructure, where appropriate; and
 - secure appropriate measures to support the greater use of public transport networks and facilities, including the width of carriageways and infrastructure such as bus stops and laybys.
- 5.65 Policy CS36 (Pollution and Risk) also provides some protection through stating that *'Development proposals likely to give rise to pollution to ... air ... will be permitted where it can be demonstrated that: all practical measures have been taken to minimise potential risk and harm to public health and safety, property and the built and natural environment ...'*
- 5.66 Based on this information it is concluded that the Wirral Core Strategy will not result in likely significant effects on the Mersey Estuary SPA/Ramsar due to deterioration in air quality.

⁷¹ Data accessed on the APIS website (www.apis.ac.uk) 18/09/12

Renewable Energy

Appropriate Assessment

- 5.67 HRA Screening at Preferred Options Stage identified that, should the Core Strategy include wind turbine construction, a pathway exists through the construction of onshore/offshore turbines to disrupt flight paths and displace qualifying bird species. Disturbance issues associated with maintenance activities were also identified. The Submission Draft Core Strategy includes numerous references to encouraging energy efficiency and the use and development of renewable, decentralised and low carbon energy within the Wirral (e.g. Policy CS43 - Design, Heritage and Amenity). However, impacts from wind turbine developments depend greatly on the siting of the turbines and no specific sites have yet been identified. There is certainly no specific policy commitment to wind turbines in the Submission Draft Core Strategy.

Conclusion

- 5.68 With reference to all of the above, including protection measures already in place within the Core Strategy and the single outstanding recommendation with regard to identification of key areas of 'supporting habitat' as a strategic exercise, it can be concluded that none of the policies contained within the Wirral Submission Draft Core Strategy will have an adverse effect on the integrity of the Mersey Estuary SPA/Ramsar. However, it is noted that further assessments will need to be undertaken in relation to site selection for development as well as more detailed assessments in relation to specific projects at a later stage to ensure that site integrity is maintained.

6 Mersey Narrows & North Wirral Foreshore pSPA / pRamsar site

Introduction

- 6.1 The Mersey Narrows and North Wirral Foreshore pSPA and pRamsar site is approximately 2,078ha, located at the mouths of the Mersey and Dee estuaries, immediately adjacent to the Core Strategy Plan Area. The site comprises intertidal habitats at Egremont foreshore (feeding habitat for waders at low tide), man-made lagoons at Seaforth Nature Reserve (high tide roost and nesting site for terns) and the extensive intertidal flats at North Wirral Foreshore (supports large numbers of feeding waders at low tide and also includes important high-tide roost sites). The most notable feature of the site is the exceptionally high density of wintering Turnstone. The Mersey Narrows and North Wirral Foreshore has clear links in terms of bird movements with the nearby Dee Estuary SPA and Ramsar site, Ribble and Alt Estuaries SPA and Ramsar site, and (to a lesser extent) the Mersey Estuary SPA and Ramsar site (Wirral MBC, 2001). The North Wirral Foreshore component of the pSPA/pRamsar site overlaps with the Dee Estuary SAC.

Reasons for Designation

- 6.2 The Mersey Narrows and North Wirral Foreshore pSPA and pRamsar site is proposed on the grounds of its feeding and roosting habitat for non-breeding wading birds, and as a breeding site for terns (Wirral MBC, 2001). The Birds Directive Annex I species (qualifying the site under Article 4.1), which can be found in any season, are:
- The site regularly supports more than 1% of the GB populations of 3 species listed in Annex I of the EC Birds Directive (Bar-tailed Godwit *Limosa lapponica*, Little Gull *Hydrocoloeus minutus* and Common Tern *Sterna hirundo*).
- 6.3 The site also qualifies under Article 4.2 of the Birds Directive, as it is used regularly by 1% or more of the biogeographical populations of the following migratory species:
- Knot *Calidris canutus*: 10,661 individuals = 3.0% of NW European, NE Canadian, Greenland & Icelandic populations;
 - Redshank *Tringa totanus*: 1,606 individuals = 1.1% Eastern Atlantic population; and
 - Turnstone *Arenaria interpres*: 1,593, individuals = 2.3% Western Palearctic population.
- 6.4 Additionally, in qualifying under Article 4.2 of the Birds Directive, the site regularly supports over 20,000 individuals of a wider range of species, including dunlin, knot *Calidris canutus*, grey plover *Pluvialis squatarola*, oystercatcher *Haematopus ostralegus* and cormorant *Phalacrocorax carbo*.
- 6.5 The site qualifies under the Ramsar Convention under Criterion 5, regularly supporting over 20,000 waterbirds (non-breeding season, 28,841 individual waterbirds), and Criterion 6, regularly supporting 1% of the species or subspecies of waterbird in any season listed above.

Historic Trends and Current Pressures

- 6.6 Due to its location at the mouth of the Mersey Estuary and in the Liverpool Bay, this site has been subject to the same changes as described for the Liverpool Bay SPA and pRamsar site and the Mersey Estuary SPA and Ramsar site, in particular water quality improvements since the

1960s (especially since 1985), as well as increases in agricultural effluent pollution during this same period.

6.7 Some of the main current (as opposed to future) environmental pressures relevant to the nature conservation objectives of the Mersey Narrows and North Wirral Foreshore pSPA / pRamsar site are:

- disturbance of sediment releasing legacy heavy metal pollution (lead, cadmium, arsenic and other poisons) that is bound into the sediment;
- pollution via rivers and drains by both treated sewerage and untreated runoff containing inorganic chemicals and organic compounds from everyday domestic products, which 'may combine together in ways that make it difficult to predict their ultimate effect on the marine environment... Some may remain indefinitely in the seawater, the seabed, or the flesh, fat and oil of sea creatures';
- pollution via commercial shipping by chemical or noise pollution and the dumping of litter at sea;
- damage of marine benthic habitat directly from fishing methods;
- damage of marine benthic habitat along the North Wirral Foreshore directly or indirectly from aggregate extraction, particularly anywhere that dredging may be altering erosion/deposition patterns;
- 'coastal squeeze' (a type of coastal habitat loss) from land reclamation and coastal flood defences and drainage used in order to farm or develop coastal land, and from sea level rise;
- loss or damage of marine benthic habitat directly and indirectly (through changed sedimentation/deposition patterns) as a result of navigational dredging in order to accommodate large vessels – e.g. into the ports of Liverpool;
- harm to wildlife (especially birds) or habitat loss due to increasing proposals/demand for offshore wind turbines;
- pollution, direct kills, litter, disturbance or loss of habitat as a result of water-based recreation or other recreation activity and related development along the foreshore (Wildlife Trust, 2006);
- introduction of non-native species and translocation; and
- selective removal of species (e.g. bait digging, wildfowling, fishing) (Wildlife Trust, 2006 and Marine Biological Association, 2006).

6.8 The following potential impacts of the Core Strategy upon Mersey Narrows and North Wirral Foreshore pSPA/pRamsar were identified during the summary screening detailed in Appendix 1. These are:

- direct disturbance to qualifying bird species;
- waste water discharges;
- water abstraction;
- dock, port and channel construction, maintenance shipping and dredging;
- coastal squeeze and loss of supporting habitat,
- recreational activities;
- air pollution; and

- renewable energy.

Appropriate Assessment

Direct Disturbance of Qualifying Bird Species and Habitat Damage

Appropriate Assessment

- 6.9 Since the North Wirral Foreshore component of this pSPA/pRamsar site overlaps with the Dee Estuary SAC and the recreational impact pathways are very similar as for the Dee Estuary SPA/Ramsar site, extensive text on this impact pathway has not been repeated in this Chapter as it has effectively already been covered in previous Chapters.
- 6.10 Several online sources^{72 73} suggest that the North Wirral Foreshore is both easily accessible and well used by dog walkers and there is high pressure from recreational uses. These sources also suggest water based recreation (e.g. jet-skis) to be potentially damaging. During the summer months in particular, there is a high degree of recreational use of the intertidal sandflats between West Kirby and Hoylake. Activities practised include walking, horse riding, use of motorcycles and sand yachts⁷⁴.
- 6.11 Bait digging is also practised on North Wirral Foreshore and recently significant numbers of people have been observed collecting razor fish. As with cockling, such activities disturb the sediment through digging and to a lesser extent trampling. This exploitation may also be sustainable at low intensities where traditional methods are employed; however commercial exploitation of these resources may impact on the favourable condition of the European marine site through widespread disturbance of the sediment structure and changes to sediment community composition.
- 6.12 The Mersey Estuary Conservation Group⁷⁵ identifies the 'best areas to observe bird life of the Mersey Estuary during winter'. Of the twelve sites listed, three are located within the Borough of Wirral and one, New Brighton, lies within or immediately adjacent to the pSPA/pRamsar designation. Therefore, increased recreation has the potential to have an adverse effect on the integrity of this Natura 2000 site through physical damage to sensitive habitats and direct disturbance to birds.
- 6.13 Mersey Narrows and North Wirral Foreshore pSPA/pRamsar site is part of a wider network of Natura 2000 sites on the west and north-west coast of England and Wales, between which there is a huge exchange of birds at all times of the year. These sites extend to the Ribble and Alt Estuaries to the north and to the Dee Estuary in the south, although exchange of birds occurs on a much wider scale. Movement between sites is probably greatest during times of spring and autumn passage when these sites form part of a wider migratory network and serve as important 'stepping stones' along migratory routes, as well significant areas for wintering wildfowl⁷⁶. It is due to this high exchange of birds between sites that impacts on one site could also have an adverse effect on the integrity of other sites within this network.
- 6.14 The north-east corner of the Wirral provides important low tide feeding areas and high tide roosting sites for a variety of species, including redshank and European oystercatcher which are qualifying species. Areas of expansive intertidal mud are used extensively for feeding at low

⁷² <http://friendsofnorthwirralcoastalpark.co.uk/>

⁷³ <http://www.wirralglobe.co.uk/news/1732173.0/>

⁷⁴ The Dee Estuary, Regulation 33 Advice

⁷⁵ www.merseyestuary.org.uk

⁷⁶ RSK Carter Ecological Limited (2010). Mersey Feasibility Study. Winter Bird Report

tides and areas of saltmarsh used at high tides for roosting. Saltmarsh is also used as feeding areas for some species. Important areas identified within the Mersey Feasibility Study, Winter Bird Report which are located within the Wirral Borough Boundary are Perch Rock and New Brighton; New Ferry; and Eastham along the north coast. The north-east corner of the Wirral is used extensively by a number of qualifying bird species, with Eurasian oystercatchers using the exposed sandy beach at low tide and roosting on the breakwaters and surrounding structures at high tide. Purple sandpipers also used the rocky areas, groyne and shore defences at New Brighton for feeding and roosting, and the Marine Lake area was also used as a high tide roost and for feeding on the tide line by ruddy turnstones, as well as by Eurasian oystercatchers as a high tide roost as it was relatively undisturbed.

6.15 In-combination effects of direct disturbance to qualifying bird species could be experienced due to proposed developments along other coastlines in the area including within Cheshire West and Chester, north Wales and other parts of Merseyside. This could result in greater detrimental impacts on qualifying bird species due to increased levels of disturbance; or disturbance of previously undisturbed areas due to residential/industrial development and/or improved opportunities for recreation. It is therefore clear that all the local authorities need to work together during production of their development plan documents to limit any potential for detrimental impacts on qualifying species due to disturbance of important roosting/feeding areas along this coast.

6.16 In combination disturbance effects to qualifying bird species of the Mersey Narrows and North Wirral Foreshore pSPA/pRamsar site are also likely to be experienced through the proposed expansion of The Liverpool John Lennon Airport (JLA) and disturbance/displacement/collision of qualifying bird species due to an increase in bird scaring devices and airplanes landing closer to the Mersey Estuary SPA/Ramsar designation area. However, a suite of ecological surveys undertaken in connection with the airport expansion⁷⁷ concluded that there would be no significant impact to feeding or roosting birds using the shore adjacent to JLA, and thus no adverse effect on the integrity of the protected site. At this stage it should be noted that these conclusions have not been signed off by Natural England.

Recommendations for amendments to policy made in the Preferred Options HRA (2010)

6.17 To address this issue, the 2010 HRA of the Preferred Options made similar recommendations to those already discussed in relation to the Dee Estuary. It is considered that, as with the Dee Estuary, the amendments that the Council has made to Policies CS2, CS30 and CS33 would provide an adequate policy framework to protect the Mersey Narrows & North Wirral Foreshore pSPA/pRamsar site. Improved habitat management can improve the general health and condition of European sites and thus reduce their vulnerability to recreational pressure if coupled with other measures. The Council does have management responsibility for areas of the Dee Estuary and North Wirral foreshore, The Council can help to set a framework for improved habitat management by promoting cross-authority collaboration and funding of habitat management.

Water Quality

Appropriate Assessment

6.18 The Mersey Narrows and North Wirral Foreshore pSPA/pRamsar includes the mouth of the Mersey Estuary including Egremont Foreshore on the south bank and Seaforth on the north bank. The two areas are separated by approximately 2km but are considered to be an integral site on the basis of the constant interchange of bird populations. Therefore, policies (as previously discussed) encouraging housing, employment and industrial growth along the eastern

⁷⁷ John Lennon Liverpool Airport Masterplan November 2007
http://www.liverpoolairport.com/assets/_files/documents/oct_08/peel_1224146206_12_Master_Plan_Chapter_11.pdf

side of the Wirral (namely Birkenhead/Bromborough) bordering the western Mersey Estuary SPA/Ramsar have the potential to contribute to a deterioration in water quality entering Mersey Narrows and North Wirral Foreshore pSPA/pRamsar. This could arise through domestic sewage and industrial effluent, exacerbating historic trends and existing pressures described above. Meols STW discharges onto the North Wirral coast via a long sea outfall within close proximity to the Mersey Narrows & North Wirral Foreshore pSPA and pRamsar site.

- 6.19 Table 5⁷⁸ in Section 5 of this report on the Mersey Estuary summarises the water quality issues being experienced at the Mersey SPA/Ramsar site, along with the likely causes and features of interest at risk of being adversely affected. These issues could also impact on the Mersey Narrows and North Wirral Foreshore pSPA/pRamsar due to hydraulic the connections. Similarly, any water quality issues relating to the Dee Estuary SAC/SPA/Ramsar (Section 4) could also impact on the site.
- 6.20 The diverse invertebrate community which lives in the intertidal areas is sensitive to changes in water quality as well as water levels therefore, any impacts on water quality due to developments on the Wirral, as well as those in the surrounding areas of Halton, Liverpool and West Cheshire and Chester could have an adverse impact on the integrity of the site through a reduction in prey availability for the qualifying bird species.

Recommendations for amendments to policy made in the Preferred Options HRA (2010)

- 6.21 To address this issue, the 2010 HRA of the Preferred Options made similar recommendations to those already discussed in relation to the Dee Estuary. It is considered that, as with the Dee Estuary, the amendments that the Council has made to Policies CS4 – CS9 and CS44 would provide an adequate policy framework to protect the Mersey Narrows & North Wirral Foreshore pSPA/pRamsar site.

Coastal Squeeze and Loss of Supporting Habitat

Appropriate Assessment

- 6.22 The Core Strategy identifies areas of land immediately adjacent to coastal habitats for economic revitalisation and housing growth. The Council expects at least 10,012 additional net dwellings between 2012 and 2028 (Policy CS18). This could include up to 7,340 dwellings at Wirral Waters (within the Birkenhead Dock Estate at East Float, West Float and Bidston Dock) by 2028 (Policy CS12), increasing the local population by up to 16,600 people, of which approximately 70 percent are expected to be new migrants to the City Region.
- 6.23 Wetland Bird Survey (WeBS) data⁷⁹ for the nearest WeBS Core Count area known as Meols and Leasowe Lighthouse Fields shows that the wet grasslands in this area of the north Wirral coast are utilised by wintering waterfowl. The predominant species are mallard, lapwing (flocks of almost 2,000 birds have been recorded), black-headed gull and herring gull but the data also indicate that several of the wintering/passage bird species for which the Dee Estuary SPA/Ramsar and Mersey Narrows & North Wirral Foreshore pSPA/pRamsar site were designated do use the site – particularly redshank (a 5-year peak monthly count of 112 birds constituting 7% of the Mersey Narrows & North Wirral Foreshore pSPA population) and curlew (5-year peak monthly count of 151 birds, approximately 3.7% of the Dee Estuary SPA

⁷⁸ English Nature, Plymouth Marine Partnership, The Marine Biological Association (2006) *Characterisation of European Marine Site: the Mersey Estuary Special Protection Area*, Marine Biological Association Occasional Publication No18.

⁷⁹ Data were supplied by the Wetland Bird Survey (WeBS), a joint scheme of the British Trust for Ornithology, The Wildfowl & Wetlands Trust, Royal Society for the Protection of Birds and Joint Nature Conservation Committee (the last on behalf of the Countryside Council for Wales, the Environment and Heritage Service, Natural England and Scottish Natural Heritage)

population⁸⁰), but also small numbers of, grey plover (0.1% of the Dee Estuary SPA population), oystercatcher (0.1% of the Dee Estuary SPA population), dunlin (0.04% of the Dee Estuary SPA population) and turnstone (0.8% of the Mersey Narrows & North Wirral Foreshore pSPA population).

- 6.24 Work has been undertaken to establish the location of such important supporting habitat sites for qualifying bird species within Merseyside⁸¹. However, the majority of those areas outside the designated site boundaries are located outside the Wirral Borough boundary so would not be directly affected by the policies within the Core Strategy for the Wirral.
- 6.25 Direct physical loss may result from a range of activities causing the removal or smothering of the interest features. The coastal/intertidal habitats form a complex system which supports a rich variety of marine communities, many of which are dependent upon the ecological functioning of other communities. Therefore physical loss of any single habitat as a result of activities such as coastal development could have wider implications for the survival of other communities, thus detrimentally affecting the favourable condition of the European site directly. This could result in a direct deterioration of qualifying pSPA/pRamsar features.
- 6.26 Mersey Narrows and North Wirral pSPA/pRamsar provides important feeding and roosting habitat for non-breeding wading birds as well as breeding habitat for common tern. It is also of major importance for birds moving along the west coast of Britain during the spring and autumn migration periods. The loss by removal (through coastal squeeze) or smothering of any of the supporting habitats on which they depend, is likely to result in the loss of nesting and roosting sites and/or the reduction of food resources. It could also result in increased competition for food and space in areas that are already occupied, and ultimately reduce bird numbers within the site.

Recommendations for amendments to policy

- 6.27 To address this issue, the 2010 HRA of the Preferred Options made similar recommendations to those already discussed in relation to the Dee Estuary. It is considered that, as with the Dee Estuary, the amendments that the Council has made to Policies CS8, CS9, CS11, CS33, CS34 and CS42 would provide an adequate policy framework to protect the Mersey Estuary SPA/Ramsar site.
- 6.28 **However, the Core Strategy does not at this stage go as far as the recommendations set out, in terms of providing a commitment to identify all important areas of supporting habitat and to assess any impacts on these areas, and thereby potential impacts on qualifying species, prior to permitting any future development. It is recognised that a commitment to undertake such an exercise at a district-wide scale prior to permitting future development may not be realistic, and that such matters can be deferred to individual planning applications and their associated environmental investigations. However, all important areas of supporting habitat should be identified prior to adoption of the Site Allocations DPD.**
- 6.29 Due to the mitigation already provided within the Core Strategy, in relation to development of foreshore areas and development management, together with the additional measures referred to above for protecting valuable supporting habitats, it is considered that there will be no significant impact on the Mersey Narrows and North Wirral Foreshore pSPA/pRamsar through coastal squeeze and/or loss of supporting habitat related to policies within the Core Strategy.

⁸⁰ Data on the SPA population are derived from the SPA Review section of the JNCC website <http://www.jncc.gov.uk/default.aspx?page=2053>

⁸¹ RSK (2010) Mersey Feasibility Study Winter Bird Report

Air Pollution

Appropriate Assessment

- 6.30 The only major road (i.e. 'A' road or higher) that lies within 200m of the Mersey Narrows and North Wirral Foreshore pSPA/pRamsar site is the A544 at Wallasey. No major roads lie within 200m of the SPA/Ramsar site. The Core Strategy identifies areas of land immediately adjacent to coastal habitats for economic revitalisation and housing growth. The Council expects at least 10,012 additional net dwellings between 2012 and 2028 (Policy CS18). This could include up to 7,340 dwellings at Wirral Waters (within the Birkenhead Dock Estate at East Float, West Float and Bidston Dock) by 2028 (Policy CS12), increasing the local population by up to 16,600 people, of which approximately 70 percent are expected to be new migrants to the City Region.
- 6.31 In combination effects on the Mersey Narrows and North Wirral Foreshore pSPA/pRamsar from air pollution could result from industrial operations, such as emissions from the proposed incinerators at Runcorn and Ince Marshes. However, industrial air emissions are heavily regulated so it is considered unlikely that such an effect would occur in practice, as permission would not be granted for any developments likely to release high levels of damaging emissions. Additional in-combination effects could result from the expansion of Liverpool Airport causing a deterioration in local air quality and thus increased nitrogen deposition.
- 6.32 However, according to the UK Air Pollution Information System for the grid reference in the central Wirral section of the pSPA/pRamsar site (SJ249920) nitrogen deposition is currently 9.2 kgN/ha/yr compared to a critical load (for littoral sediment the key habitat for the waterfowl population) of 20-30 kgN/ha/yr. Moreover, APIS reports that the bird species of the SPA are not considered likely to be affected by increased nitrogen deposition and may in fact be subject to a positive effect because nitrogen enrichment potentially means more prey species. Even if an adverse effect was possible it is unlikely that increases in traffic as a result of development across Merseyside would result in the very large increases in nitrogen deposition which would be required to exceed the critical load.
- 6.33 Finally, elements of Policy CS40 (Transport Requirements) would serve to protect the pSPA/pRamsar site either directly or through promoting and delivering sustainable transport:
- Support the greater use of sustainable transport and travel and promote the use of public transport, walking and cycling;
 - provide accessible, safe and attractive facilities for pedestrians and cyclists, suitable for all abilities and ages which link to and contribute to the enhancement of existing networks;
 - reinforce the implementation of 20mph zones outside main routes in residential areas and ensure that pedestrians and cyclists have priority;
 - minimise the environmental impact of traffic likely to be generated by the development on residential areas and other sensitive uses, such as schools, care homes and hospitals;
 - secure appropriate provision for on-site parking and manoeuvring, including safe, covered cycle storage, cycle parking and other facilities (such as showers, bike cages and lockers) and the provision of electric vehicle charging infrastructure, where appropriate; and
 - secure appropriate measures to support the greater use of public transport networks and facilities, including the width of carriageways and infrastructure such as bus stops and laybys.
- 6.34 Policy CS36 (Pollution and Risk) also provides some protection through stating that *'Development proposals likely to give rise to pollution to ... air ... will be permitted where it can be*

demonstrated that: all practical measures have been taken to minimise potential risk and harm to public health and safety, property and the built and natural environment ...'

- 6.35 Based on this information it is concluded that the Wirral Core Strategy will not result in likely significant effects on the Mersey Narrows & North Wirral Foreshore pSPA/pRamsar due to deterioration in air quality.

Renewable Energy

Appropriate Assessment

- 6.36 HRA Screening at Preferred Options Stage identified that, should the Core Strategy include wind turbine construction, a pathway exists through the construction of onshore/offshore turbines to disrupt flight paths and displace qualifying bird species. Disturbance issues associated with maintenance activities were also identified. The Submission Draft Core Strategy includes numerous references to encouraging energy efficiency and the use and development of renewable, decentralised and low carbon energy within the Wirral (e.g. Policy CS43 - Design, Heritage and Amenity). However, impacts from wind turbine developments depend greatly on the siting of the turbines and no specific sites have yet been identified. There is certainly no specific policy commitment to wind turbines in the Submission Draft Core Strategy.

Conclusion

- 6.37 With reference to all of the above, including protection measures already in place within the Core Strategy and the single outstanding recommendation with regard to identification of key areas of 'supporting habitat' as a strategic exercise, it can be concluded that none of the policies contained within the Wirral Submission Draft Core Strategy will have an adverse effect on the integrity of the Mersey Narrows and North Wirral Foreshore pSPA/pRamsar. However, it is noted that further assessments will need to be undertaken in relation to site selection for development as well as more detailed assessments in relation to specific projects at a later stage to ensure that site integrity is maintained.

7 Liverpool Bay SPA

Introduction

- 7.1 The Liverpool Bay SPA is an approximately 198,000ha maritime site located in the Irish Sea, straddling the English and Welsh borders. The site has exposed mudflats and sandbanks in places, although the site extends up to approximately 20km from the shoreline and thus most of the area of the SPA/pRamsar site is relatively shallow water up to 20m deep. It is contiguous with a number of other European sites, including the Ribble and Alt Estuaries SPA and Ramsar site, Mersey Narrows and North Wirral Foreshore pSPA and pRamsar site, and Mersey Estuary SPA and Ramsar site.

Reasons for Designation

- 7.2 Liverpool Bay SPA was designated from a pSPA to SPA in July 2010. Liverpool Bay has been identified by Natural England and CCW as qualifying for SPA status under the following Stage 1 guidelines:
- Liverpool Bay regularly supports over 1% of the GB population of one species listed on Annex I of the EC Directive on the Conservation of Wild Birds (79/409/EEC): red-throated diver (*Gavia stellata*). The mean peak count of overwintering red-throated divers within the SPA boundary over the period 2001/02 – 2005/06 was 922 individuals: or 5.4% of GB's total estimated overwintering population.
 - Liverpool Bay regularly supports more than 1% of the biogeographical population of one regularly occurring migratory species: common scoter (*Melanitta nigra*). The mean peak overwintering common scoter population of 54,675 individuals between 2001/02 – 2005/06 is an estimated 58% of the GB population.
 - The site also supports more than 20,000 waterbirds in the non-breeding season with a mean peak average over 2001/02 – 2005/06 of at least 55,597, with at least 80,346 in winter 2001/02.

Historic Trends and Current Pressures

- 7.3 With the site encompassing approximately 198,000 hectares and a range of estuarine and maritime habitat, the Liverpool Bay SPA is subject to a wide range of pressures of varying spatial scope and human activity. Perhaps the most direct way to establish the proposed site's recent changes in health / ecological status is through the changing environmental pressures upon the Irish Sea.
- 7.4 The industrial revolution of the 19th century led to the Irish Sea being used to dispose liquid waste, including sewage and unwanted by-products of industrial processes (including mining, manufacturing, nuclear waste reprocessing and energy generation). This improved in the latter half of the 20th century, and sewage and other waste are no longer dumped offshore in an uncontrolled manner. While Liverpool Bay is hypernutrified, there is no evidence of harmful algal blooms or de-oxygenation of seawater (Environment Agency, pers. comm.).
- 7.5 Some of the main existing environmental pressures on the Irish Sea relevant to the nature conservation objectives of the Liverpool Bay SPA and pRamsar site are:

- disturbance of sediment releasing legacy heavy metal pollution (lead, cadmium, arsenic and other poisons) that is bound into the sediment;
- pollution via rivers and drains by both treated sewerage and untreated runoff containing inorganic chemicals and organic compounds from everyday domestic products, which 'may combine together in ways that make it difficult to predict their ultimate effect of the marine environment... Some may remain indefinitely in the seawater, the seabed, or the flesh, fat and oil of sea creatures';
- pollution via commercial shipping by chemical or noise pollution and the dumping of litter at sea;
- damage of marine benthic habitat directly from fishing methods;
- damage of marine benthic habitat directly or indirectly from aggregate extraction;
- 'coastal squeeze' (a type of coastal habitat loss) from land reclamation and coastal flood defences and drainage used in order to farm or develop coastal land, and from erosion and sea level rise;
- loss or damage of marine benthic habitat directly and indirectly (through changed sedimentation/deposition patterns) as a result of navigational dredging in order to accommodate large vessels – e.g. into the ports of Liverpool;
- harm to wildlife (especially birds) or habitat loss due to increasing proposals/demand for offshore wind turbines; and
- pollution, direct kills, litter or loss of habitat as a result of water-based recreation and related development along the foreshore (Wildlife Trust, 2006).

Key Pressures from Wirral

- 7.6 The following potential impacts of the Core Strategy upon Liverpool Bay SPA were identified during the summary screening detailed in Appendix 1. These are:
- waste water discharges;
 - dock, port and channel construction, maintenance shipping and dredging;
 - recreational activities; and
 - renewable energy.

Appropriate Assessment

Recreational Activities

Appropriate Assessment

- 7.7 Since Liverpool Bay is immediately adjacent (seawards) to the Mersey Narrows & North Wirral Foreshore pSPA/pRamsar site and Dee Estuary SAC and the recreational impact pathways are very similar as for the Dee Estuary SPA/Ramsar site and Mersey Narrows & North Wirral Foreshore, extensive text on this impact pathway has not been repeated in this Chapter as it has effectively already been covered in previous Chapters.
- 7.8 The only potential impact on Liverpool Bay SPA through increased recreation would be through an increase in the use of small boats for fishing or recreation. Both red-throated diver and

common scoter are highly sensitive to noise and visual disturbance, boat movements, and general activity⁸². Disturbance can cause birds to cease feeding or fly away. This could result in an increase in their energy requirements at their present (disturbed) feeding sites, or they may move to an alternative less favoured feeding or roosting site. Such a response affects energy budgets and food intake rates, and possibly survival. Overwintering birds, which are frequently subject to harsh weather conditions and must lay down fat to survive, are therefore particularly sensitive to disturbance. However, currently most vessel activity is restricted to well-established areas which the birds already tend to avoid and it is likely that any increased activity would be concentrated in the same areas. It is also considered unlikely that any increase in numbers of small boats would be large enough to have an adverse effect on the integrity of the Natura 2000 site.

- 7.9 Liverpool Bay holds various fish of commercial importance, and extraction of the red-throated diver's main fish prey, as either target and/or bycatch species, or through recreational fishing could impact on the population. Entanglement in static fishing nets is also an important cause of death for red-throated divers in the UK waters, although the extent of this impact in Liverpool Bay is not known.

Recommendations for amendments to policy made in Preferred Options HRA (2010)

- 7.10 To address this issue, the 2010 HRA of the Preferred Options made similar recommendations to those already discussed in relation to the Dee Estuary. It is considered that, as with the Dee Estuary, the amendments that the Council has made to Policies CS2, CS30 and CS33 would provide an adequate policy framework to protect the Liverpool Bay SPA.

Water Quality

Appropriate Assessment

- 7.11 Liverpool Bay SPA lies adjacent to the mouths of the Mersey and Dee Estuaries. Therefore, policies encouraging housing, employment and industrial growth on the Wirral have the potential to contribute to a deterioration in water quality entering Liverpool Bay SPA via the Mersey and Dee. This could arise through domestic sewage and industrial effluent, exacerbating historic trends and existing pressures described above. Meols STW discharges onto the North Wirral coast via a long sea outfall directly into Liverpool Bay SPA.
- 7.12 With respect to waste water discharge, non-toxic contamination through nutrient loading, organic loading and changes to the thermal regime could impact on prey species and distribution. The sensitivity of the prey species of both red-throated diver and common scoter to non-toxic contamination is considered moderate. As benthic feeders, common scoter are closely associated with the availability and condition of their shallow sandbank habitat. As such they are considered highly sensitive to its physical loss and smothering and any adverse impact on benthic communities. .
- 7.13 The diverse invertebrate community which lives in the intertidal areas is sensitive to changes in water quality as well as water levels therefore, any impacts on water quality due to developments on the Wirral, as well as those in the surrounding areas of Halton, Liverpool, West Cheshire and Chester and North Wales could also have an adverse impact on the integrity of the site through a reduction in prey availability for the qualifying bird species, in-combination with development proposed within the Wirral Core Strategy.

⁸² Natural England and Countryside Council for Wales (September 2009) *Liverpool Bay / Bae Lerpwl pSPA Conservation Objectives from Natural England and CCW, September 2009* http://www.naturalengland.org.uk/Images/LivBay-consobj_tcm6-15189.pdf

Recommendations for amendment to policy

- 7.14 To address this issue, the 2010 HRA of the Preferred Options made similar recommendations to those already discussed in relation to the Dee Estuary. It is considered that, as with the Dee Estuary, the amendments that the Council has made to Policies CS4 – CS9 and CS44 would provide an adequate policy framework to protect the Liverpool Bay SPA site.

Dock, Port and Channel Construction, Maintenance, Shipping and Dredging

Appropriate Assessment

- 7.15 Although no port developments are proposed within the Liverpool Bay SPA site, new port/dock developments on the Mersey and potential increases in levels of shipping could have indirect impacts on the qualifying features of Liverpool Bay SPA through disturbance of substrates which could result in circulation of synthetic chemical pollutants and heavy metals, leading to potential harm to benthic communities, aquatic invertebrates and habitats required by qualifying bird species. Furthermore greater shipping freight has the potential for increased pollution through fuel emissions/ accidental spillage.
- 7.16 With regards to greater shipping freight in the Mersey Estuary and surrounding waters and the potential for pollution through fuel emissions/accidental spillages, it should be noted that oil pollution is a continual threat to all inshore marine habitats, and is particularly pronounced in the Mersey Estuary due to its enclosed and sheltered nature. Risks include small leaks, spills and discharges, as well as the possibility of a major accident.
- 7.17 Large oil and chemical spills affecting shallow sandbank habitats can have a detrimental effect on bird populations as it can affect their food sources (as can physical removal and decontamination of spills, although bioremediation methods may alleviate such effects) and also the birds directly, especially during their moulting times when they are far less mobile. Sensitivity to non-synthetic compounds is therefore considered to be high. Oil on the feathers of birds could lead to loss of insulation, reduced buoyancy and possibly drowning. The possibility of a pollution event, however, has been considered and the overall assessment of exposure is considered to be low. This is a combination of 'normal' toxic contamination in the SPA plus the low risk of a catastrophic event.
- 7.18 Increased port activities and levels of shipping resulting from proposals for the Port of Liverpool and the Manchester Ship Canal have the potential to result in in-combination effects on Liverpool Bay SPA. However, shipping is heavily regulated so levels of activity which have the potential to result in detrimental impacts on Natura 2000 sites are highly unlikely to be approved.

Recommendations for amendment to policy made in Preferred Options HRA (2010)

- 7.19 As with the Dee Estuary the recommendations made in the 2010 Preferred Options HRA are addressed through Policy CS16 (Criteria for Port-Related Development) states that '*Port and marine-related development will be permitted within the existing port estates at Birkenhead and Eastham; at Twelve Quays; along the Tranmere waterfront at Cammell Lairds; and along the Bromborough Coast*' but also states that any proposals must '*have no adverse impact on water quality or on designated European Sites or their supporting habitats.*' The supporting text for this policy expands upon those recommendations.

Renewable Energy

Appropriate Assessment

- 7.20 HRA Screening at Preferred Options Stage identified that, should the Core Strategy include wind turbine construction, a pathway exists through the construction of onshore/offshore turbines to disrupt flight paths and displace qualifying bird species. Disturbance issues associated with maintenance activities were also identified. The Submission Draft Core Strategy includes numerous references to encouraging energy efficiency and the use and development of renewable, decentralised and low carbon energy within the Wirral (e.g. Policy CS43 - Design, Heritage and Amenity). However, impacts from wind turbine developments depend greatly on the siting of the turbines and no specific sites have yet been identified. There is certainly no specific policy commitment to wind turbines in the Submission Draft Core Strategy.

Conclusion

- 7.21 With reference to all of the above, including protection measures already in place within the Core Strategy it can be concluded that none of the policies contained within the Wirral Submission Draft Core Strategy will have an adverse effect on the integrity of Liverpool Bay SPA. However, it is noted that further assessments will need to be undertaken in relation to site selection for development as well as more detailed assessments in relation to specific projects at a later stage to ensure that site integrity is maintained.

8 Sefton Coast SAC

Introduction

- 8.1 Located to the north of Liverpool, the Sefton Coast SAC (approximately 4,560ha) consists of a mosaic of sand dune communities comprising a range of ages from embryonic (i.e. dune formation) to more established communities. A number of other habitats are also present, including lagoons, estuaries and riverine environments, but also scrub, heath and coniferous woodland.

Reasons for Designation

- 8.2 The Sefton Coast qualifies as an SAC for both habitats and species. Firstly, the site contains the Habitats Directive Annex I habitats of:

- embryonic shifting sand dunes: considered rare, as its total extent in the United Kingdom is estimated to be less than 1,000 hectares – the Sefton Coast SAC is considered to be one of the best areas in the United Kingdom;
- shifting dunes along the shoreline with marram *Ammophila arenaria* (“white dunes”): the Sefton Coast SAC is considered to be one of the best areas in the United Kingdom;
- fixed dunes with herbaceous vegetation (“grey dunes”): the Sefton Coast SAC is considered to be one of the best areas in the United Kingdom;
- dunes with creeping willow *Salix repens ssp. argentea (Salicion arenariae)*: considered rare, as its total extent in the United Kingdom is estimated to be less than 1,000 hectares – the Sefton Coast SAC is considered to support a significant presence of the species;
- humid dune slacks: the Sefton Coast SAC is considered to be one of the best areas in the United Kingdom; and
- Atlantic decalcified fixed dunes (*Calluno-Ulicetea*): considered rare, as its total extent in the United Kingdom is estimated to be less than 1,000 hectares – the Sefton Coast SAC is considered to support a significant presence.

- 8.3 Secondly, the site contains the Habitats Directive Annex II species petalwort *Petalophyllum ralfsii*, for which it is one of the best areas in the United Kingdom, and great-crested newt *Triturus cristatus*, for which the area is considered to support a significant presence.

Historic Trends and Current Pressures

- 8.4 The dune habitats of the Sefton Coast SAC are dependent upon natural erosive processes. Various human activities that interrupt natural sedimentation and deposition patterns within the Liverpool Bay have had an effect on the wildlife value of these dunes and their existence. Since as early as the 18th century, ‘dredging, river training and coastline hardening have imposed a pattern of accretion and erosion on the shoreline where previous conditions were much more variable’ (Liverpool Hope University College, 2006). More recently, the dunes have been partially stabilised through maintaining their natural vegetation, the planting of pine trees, and artificial sea defences for protecting the developed shorelines. Another compounding influence is that the inland lakes and mosses behind the belt of coastal dunes have been drained and claimed for agricultural production (Liverpool Hope University College, 2006).

- 8.5 The environmental requirements of the Sefton Coast SAC are mainly:
- the need to reduce the fragmentation of habitats, and the impact of fragmentation, to provide stepping stones for the movement of species;
 - the need to counter negative changes to low-nutrient habitats resulting from atmospheric nutrient deposition;
 - the need to manage the continuing coastal erosion at Formby Point which leads to a squeeze on habitats. This management would not constitute formal defences as these would in themselves harm the dune ecosystem, but the management of pine plantations preventing dune roll-back. The dunes require sufficient space that natural processes can maintain the important habitats through roll-back;
 - the need to consider the potential impact of climate change on shorelines, wetlands and dunes;
 - the need to manage abstraction from the underlying aquifer for sources such as golf courses. The aquifer is critical to some features of the site, such as the humid dune slacks and the great crested newts;
 - to manage recreational pressures and direct disturbance to qualifying habitats;
 - the need to develop and maintain management practices which sustain the conservation value of the area; and
 - the need to avoid loss of great-crested newt habitat, and habitats being further fragmented by distance or barriers.

Key potential pressures from Wirral

- 8.6 The following potential impacts of the Core Strategy upon Sefton Coast SAC were identified during the summary screening detailed in Appendix 1. These are:
- waste water discharges; and
 - recreational activities.

Appropriate Assessment

Water Quality

- 8.7 Sefton Coast SAC lies adjacent to the mouth of the Mersey Estuary, therefore any policies within the Core Strategy which could have an impact on water quality within the Mersey could also impact on the Sefton Coast. If there was a significant deterioration in water quality, this could potentially contaminate the foreshore and enter the sensitive dune system. However, this is considered to be a remote possibility and, due to the inherent controls in water quality issues, the protection already provided within the Core Strategy and the distance of the site from the Wirral, this issue is not considered further.

Recreational Activities

- 8.8 It is possible that new residential developments, together with development of transport infrastructure in Wirral have the potential improve accessibility to Sefton Coast SAC for recreational use, thereby exacerbating recreational pressure. A recent study on the recreational

users of Sefton's Natural Coast⁸³ estimated half of the recreational users to be 'local residents' (i.e. residents within the Borough of Sefton) using the site for dog walking/walking/fresh air or visiting the coast. Nature based attractions including visiting the squirrels, bird watching, fishing accounted for approximately 20% of the visitors. The majority of visitors were focused on Formby and Crosby.

- 8.9 Unfortunately the study did not explore where the remaining 50% of visitors came from (i.e. not local residents from Sefton). It would be reasonable to assume a proportion of visitors to the SAC come from the Wirral, but it is likely that this is effectively inconsequential compared to the proportion come from the Borough of Liverpool which is much closer to Sefton Coast, and other adjacent Boroughs outside of Merseyside (e.g within Lancashire). Furthermore residents of Wirral have a choice of coastlines to visit with Mersey Narrows/North Wirral Foreshore and the Dee Estuary SPA/Ramsar/SAC as well as the Mersey Estuary itself providing similar resources. The North Wales coastline is also close by so residents of the Wirral are more likely to use these areas than travel to Sefton Coast SAC.
- 8.10 It is therefore considered very unlikely that development within Wirral would generate sufficient additional visits to the Sefton Coast SAC to cause adverse effect on the integrity of the site from increased recreational activities and that its contribution to any 'in combination' effect is probably inconsequential.

Conclusion

- 8.11 With reference to all of the above, it can be concluded that none of the policies contained within the Wirral Submission Draft Core Strategy will have a adverse effect on the integrity of Sefton Coast SAC. However, it is noted that further assessments will need to be undertaken in relation to site selection for development as well as more detailed assessments in relation to specific projects at a later stage to ensure that site integrity is maintained.

⁸³ England's North West Research Service for Economic Development and Tourism (May 2009) Sefton's Natural Coast Local Users of the Coast (Version 2)

9 Ribble and Alt Estuaries SPA / Ramsar site

Introduction

- 9.1 The Ribble and Alt Estuaries SPA and Ramsar site is approximately 12,360ha, and consists of extensive sand- and mud-flats and, particularly in the Ribble Estuary, large areas of saltmarsh. There are also areas of coastal grazing marsh located behind the sea embankments. The saltmarshes, coastal grazing marshes intertidal sand- and mud-flats all support high densities of grazing wildfowl and are used as high-tide roosts. Important populations of waterbirds occur in winter, including swans, geese, ducks and waders. The highest densities of feeding birds are on the muddier substrates of the Ribble.
- 9.2 The SPA is also of major importance during the spring and autumn migration periods, especially for wader populations moving along the west coast of Britain. The larger expanses of saltmarsh and areas of coastal grazing marsh support breeding birds during the summer, including large concentrations of gulls and terns. These seabirds feed both offshore and inland, outside of the SPA. Several species of waterbird (notably pink-footed goose *Anser brachyrhynchus*) utilise feeding areas on agricultural land outside of the SPA boundary. There is considerable interchange in the movements of wintering birds between this site and Morecambe Bay, the Mersey Estuary, the Dee Estuary and Martin Mere.

Reasons for Designation

- 9.3 The Ribble and Alt Estuaries site is designated as an SPA for its Birds Directive Annex I species, both breeding and over-wintering, and these are:
- 9.4 During the breeding season:
- common tern *Sterna hirundo*: 182 pairs = 1.5% of the breeding population in Great Britain;
 - ruff *Philomachus pugnax*: 1 pair = 9.1% of the breeding population in Great Britain;
- 9.5 Over winter:
- bar-tailed godwit *Limosa lapponica*: 18,958 individuals = 35.8% of the population in Great Britain;
 - Bewick's swan *Cygnus columbianus ssp. bewickii*: 229 individuals = 3.3% of the population in Great Britain;
 - golden plover *Pluvialis apricaria*: 4,277 individuals = 1.7% of the population in Great Britain
 - whooper swan *Cygnus cygnus*: 159 individuals = 2.9% of the population in Great Britain.
- 9.6 It also meets the criteria for SPA designation under Article 2 of the Birds Directive, supporting internationally important populations of lesser black-backed gull *Larus fuscus*, ringed plover *Charadrius hiaticula*, sanderling *Calidris alba*, black-tailed godwit *Limosa limosa ssp. limosa*, dunlin *Calidris alpina alpina*, grey plover *Pluvialis squatarola*, knot *Calidris canutus*, oystercatcher *Haematopus ostralegus*, pink-footed goose *Anser brachyrhynchus*, pintail *Anas acuta*, redshank *Tringa totanus*, sanderling *Calidris alba*, shelduck *Tadorna tadorna*, teal *Anas crecca* and wigeon *Anas penelope*. It also qualifies by regularly supporting up to 29,236 individual seabirds, and, over winter, 301,449 individual waterfowl.

- 9.7 It is additionally designated as a Ramsar site in accordance with Criterion 5 (UN, 2005) for supporting up to 89,576 waterfowl (5-year peak mean 1998/99 – 2002/03), and in accordance with Criterion 6 for supporting internationally important populations of common shelduck *Tadorna tadorna*, black-tailed godwit *Limosa limosa ssp. limosa*, redshank *Tringa totanus*, Eurasian teal *Anas crecca*, northern pintail *Anas acuta* and dunlin *Calidris alpina alpina*.
- 9.8 The Ribble and Alt Estuaries also qualifies as Ramsar as it meets criterion 2 by supporting over 40% of the UK population of Natterjack toad. The Natterjack Toad occurs on the Sefton Coast in seaward dunes between Southport and Hightown. In 2000 it was present on 13 sites (three of which are reintroductions). The breeding population is estimated just over 1000 females.
- 9.9 The largest populations are on Ainsdale Sand Dunes NNR and Ainsdale and Birkdale Sandhills LNR. Natterjacks are absent from much of the dune coast and some breeding sites are relatively isolated (North Merseyside Biodiversity Action Plan, undated).

Historic Trends and Current Pressures

- 9.10 As an estuarine site linked with the Liverpool Bay, this site has been subject to the same changes as described for the Liverpool Bay SPA but additionally its own unique pressures (some similar to those experienced in the Mersey Estuary). The estuaries were largely undisturbed until the 19th century, at which point there was extensive modification and dredging of the river channel for the Port of Preston, as well as landfill and drainage along the shoreline in order to increase agricultural usage of the land. The Ribble Estuary has over the past century experienced 'a general pattern of sediment accretion in the inner Estuary and erosion in outer areas,' but the estuary has begun 'to revert to its natural state... since maintenance of the Ribble Channel for shipping ceased in 1980. There have been dramatic changes in the course of channels in the outer Estuary, and these are expected to continue. Anticipated climatic and sea level changes are likely to exaggerate existing patterns of erosion and accretion, although sea level rise is not expected to cause significant loss of intertidal land in the Ribble' (Ribble Estuary Strategy Steering Group, 1997, p.15).
- 9.11 The Ribble and Alt Estuaries are among 'the most popular holiday destinations in Britain,' with Blackpool as the largest resort and Southport increasing in visitors. Leisure activities include 'watersports such as sailing and windsurfing; fishing and shooting; bird watching; land yachting; and generally relaxing at the coast... enjoyed by both local people and visitors' (Ribble Estuary Strategy Steering Group, 1997, p.10).
- 9.12 Some of the main environmental pressures relevant to the nature conservation objectives of the Ribble and Alt Estuaries SPA / Ramsar site are:
- loss or damage of habitat as a result of increasing off-shore exploration and production activity associated with oil and natural gas;
 - over-grazing of the saltmarshes by cattle-farming;
 - heavy metal pollution (lead, cadmium, arsenic and other poisons) from either industry or disturbance of sediment (legacy pollution bound into the sediment);
 - pollution via rivers by agricultural effluent flowing off fields, 'leading to increased fertility of inshore waters and associated algal blooms and de-oxygenation of seawater, particularly in enclosed bays and estuaries';
 - pollution via rivers and drains by both treated sewerage and untreated runoff containing inorganic chemicals and organic compounds from everyday domestic products, which 'may combine together in ways that make it difficult to predict their ultimate effect of the marine

environment... Some may remain indefinitely in the seawater, the seabed, or the flesh, fat and oil of sea creatures’;

- damage of marine benthic habitat directly from fishing methods;
- damage of marine benthic habitat directly or indirectly from aggregate extraction;
- ‘coastal squeeze’ (a type of coastal habitat loss) from land reclamation and coastal flood defences and drainage used in order to farm or develop coastal land, and from sea level rise;
- harm to wildlife (especially birds) or habitat loss due to increasing proposals/demand for offshore wind turbines;
- pollution, direct kills, litter, disturbance or loss of habitat as a result of water-based recreation or other recreation activity and related development along the foreshore⁸⁴
- that there is disturbance to birds from aircraft, both from Blackpool Airport and from a private testing station
- introduction of non-native species and translocation;
- selective removal of species (e.g. bait digging, wildfowl, fishing) (Wildlife Trust, 2006 and Ribble Estuary Strategy Steering Group, 1997);
- interruption of dune accretion processes leading to over-stabilisation of dunes;
- the spread of rank grasses and scrub, partly caused by a decline in rabbit-grazing, further reducing suitable habitat;
- losses to development, forestry and recreational uses have reduced the area of available habitat;
- fragmentation of habitat has led to isolation of populations;
- creation of permanent water bodies in the dunes has encouraged populations of invertebrates which prey on Natterjack tadpoles and, most seriously, of Common Toads which both predate and suppress the development of Natterjack tadpoles;
- gassing of rabbits, especially on golf courses, can kill Natterjacks using burrows and removes a valuable grazing animal;
- collecting and disturbance of spawn and tadpoles can reduce metamorphic success;
- inappropriate management can cause the loss of low vegetation structure and open ground used by Natterjacks for foraging;
- water abstraction, conifers and scrub lower the water table locally and reduces the number of pools in which Natterjack tadpoles can develop to maturity.

9.13 There is both formal and informal recreation along the Sefton Coast and intensity varies with season, event and attraction. Recreation is much more informal within the Ribble Estuary itself.

Key potential pressures from Wirral

9.14 The following potential impacts of the Core Strategy upon Ribble and Alt Estuaries SPA/Ramsar were identified during the summary screening detailed in Appendix 1. These are:

⁸⁴ Wildlife Trust (2006) – The Wildlife Trust For Lancashire, Manchester And North Merseyside (2006). *Uses and abuses*. [Online]. Available at: <http://www.lancswt.org.uk/Learning%20&%20Discovery/theirishsea/usesandabuses.htm> (accessed 15th June 2009).

- waste water discharges; and
- recreational activities

Appropriate Assessment

Water Quality

Appropriate Assessment

- 9.15 Ribble and Alt Estuaries SPA/Ramsar lies adjacent to the mouth of the Mersey Estuary. Therefore, policies encouraging housing, employment and industrial growth on the Wirral the SPA/Ramsar via the Mersey. This could arise through domestic sewage and industrial effluent, exacerbating historic trends and existing pressures described above. In particular, heavy development along the eastern coast of the Wirral has the potential to impact on water quality through discharges.
- 9.16 With respect to waste water discharge, non-toxic contamination through nutrient loading, organic loading and changes to the thermal regime could impact on prey species and distribution. The diverse invertebrate community which lives in the intertidal areas is sensitive to changes in water quality as well as water levels therefore, any impacts on water quality due to developments on the Wirral, as well as those in the surrounding areas of Halton, Liverpool and West Cheshire and Chester could also have an adverse impact on the integrity of the site through a reduction in prey availability for the qualifying bird species, in-combination with development proposed within the Wirral Core Strategy.

Recommendations for amendment to policy

- 9.17 To address this issue, the 2010 HRA of the Preferred Options made similar recommendations to those already discussed in relation to the Dee Estuary. It is considered that, as with the Dee Estuary, the amendments that the Council has made to Policies CS4 – CS9 and CS44 would provide an adequate policy framework to protect the Ribble & Alt Estuaries SPA/Ramsar site.

Recreational Activities

- 9.18 It is possible that new residential developments, together with development of transport infrastructure in Wirral have the potential to improve accessibility to Ribble and Alt Estuaries SPA/Ramsar for recreational use, thereby exacerbating recreational pressure. However, the residents of Wirral have a choice of coastlines to visit with Mersey Narrows/North Wirral Foreshore and the Dee Estuary SPA/Ramsar/SAC as well as the Mersey Estuary itself providing similar resources. The North Wales coastline is also close by so residents of the Wirral are more likely to use these areas than travel the long distance to Ribble and Alt Estuaries SPA/Ramsar.
- 9.19 It would be reasonable to assume a proportion of visitors to the SPA come from the Wirral, but it is likely that this is effectively inconsequential compared to the proportion come from the City of Liverpool and Sefton Borough which are much closer to the Ribble & Alt Estuaries, and other adjacent Boroughs outside of Merseyside (e.g within Lancashire). The North Wales coastline is also close by so residents of the Wirral are more likely to use these areas than travel to Ribble & Alt Estuaries SPA.
- 9.20 It is therefore considered very unlikely that development within Wirral would generate sufficient additional visits to the Ribble & Alt Estuaries SPA to cause adverse effect on the integrity of the

site from increased recreational activities and that its contribution to any 'in combination' effect is probably inconsequential.

Conclusion

- 9.21 With reference to all of the above, including protection measures already in place within the Core Strategy it can be concluded that none of the policies contained within the Wirral Submission Draft Core Strategy will have a adverse effect on the integrity of the Ribble and Alt Estuaries SPA/Ramsar. However, it is noted that further assessments will need to be undertaken in relation to site selection for development as well as more detailed assessments in relation to specific projects at a later stage to ensure that site integrity is maintained.

10 Berwyn and South Clwyd Mountains SAC

Reasons for Designation

10.1 Berwyn and South Clwyd Mountains qualifies as a SAC for the following Habitats Directive Annex I habitats:

- Blanket bogs;
- Dry heaths;
- Dry grasslands or scrublands on chalk or limestone;
- Very wet mires often identified by an unstable 'quaking' surface;
- Base-rich scree;
- Plants in crevices in base-rich rocks.

Historic Trends and Current Pressures

10.2 The blanket bog, heaths, fens, and grasslands have been threatened by inappropriate agricultural development including drainage, reseeding, application of fertilisers, burning, track construction and the adoption of damaging grazing regimes. These problems have been addressed successfully by means of management agreements with owners and occupiers.

10.3 Local tourist pressure and damage by recreational vehicles can cause erosion problems. This is being addressed by visitor management and wardening as well as positive management works of vegetation reinstatement on eroded areas.

10.4 The environmental pressures upon the Berwyn and South Clwyd Mountains SAC are mainly:

- Damage through erosion and fragmentation to sensitive habitats from recreational vehicles; and
- Associated potential for air quality reduction through increased recreational access.

Key potential pressures from Wirral

10.5 The following potential impacts of the Core Strategy upon Berwyn and South Clwyd Mountains SAC were identified during the summary screening detailed in Appendix 1. These are:

- Air pollution.

Appropriate Assessment

Air Quality

10.6 The main source of combustion that would be associated with Local Plan development is vehicle exhaust emissions which will primarily be deposited within 200m of the source of emission. Although the qualifying habitats within Berwyn and South Clwyd Mountain SAC are sensitive to air pollution, this site lies over 25km to the south-west of the Wirral. The likelihood of an adverse air quality effect, even from a significant point source emitter such as an Energy from Waste

Facility, on a Natura 2000 site more than 10km distant is sufficiently unlikely that the Environment Agency scoping criteria for examining such impacts (as used in their permitting process) scopes out consideration of all Natura 2000 sites situated more than 10km from the source of emissions for all but the largest point-source emitters (e.g. smelting works or major power stations). Therefore, due to the distance and the prevailing wind direction on the Wirral, which is west to east, it is considered that no proposed developments on the Wirral will have a adverse effect on the integrity of Berwyn and South Clwyd Mountain SAC through a deterioration in air quality as a result of any policies within the Wirral Core Strategy. This site is therefore not considered further in this HRA.

Conclusion

- 10.7 With reference to the above, it can be concluded that none of the policies contained within the Wirral Submission Draft Core Strategy will have an adverse effect on the integrity of the Berwyn and South Clwyd Mountain SAC.

11 River Dee and Bala Lake SAC

Reasons for Designation

- 11.1 The River Dee and Bala Lake qualifies as an SAC for both habitats and species. Firstly, the site contains the following Habitats Directive Annex I habitats:
- Water courses of plain to montane levels with the *Ranunculus fluitantis* and *Callitriche-Batrachion* vegetation
- 11.2 Secondly, the site contains the following Habitats Directive Annex II species:
- Atlantic salmon *Salmo salar*
 - Floating water-plantain *Luronium natans*
 - Sea lamprey *Petromyzon marinus*
 - Brook lamprey *Lampetra planeri*
 - River lamprey *Lampetra fluviatilis*
 - Bullhead *Cottus gobio*
 - Otter *Lutra lutra*
- 11.3 The historic trends and current pressures on the site are summarised below.

Historic Trends and Current Pressures

- 11.4 The habitats and species for which the site is designated are dependent on the maintenance of good water quality and suitable flow conditions. Fish species require suitable in-stream habitat and an unobstructed migration route. Otters also require suitable terrestrial habitat to provide cover and adequate populations of prey species. The site and its features have been historically threatened by practices which had an adverse effect on the quality, quantity and pattern of water flows, such as inappropriate flow regulation, excessive abstraction, deteriorating water quality from direct and diffuse pollution, eutrophication and siltation. Degradation of riparian habitats due to engineering works, agricultural practices and invasive plant species have also had localised adverse effects in the past. The Atlantic salmon population has been threatened by excessive exploitation by high sea, estuarine and recreational fisheries. Introduction of non-indigenous species has also been a risk to both fish and plant species.
- 11.5 The environmental pressures upon the River Dee & Bala Lake SAC are mainly:
- Deterioration in water quality and changes in flow rates due to ex-industrial runoff, discharge of treated sewage effluent (which contains elevated nitrates) and agricultural runoff;
 - Risk of excessive abstraction resulting in a decrease in freshwater flows and an increase in sediment loading of water such that dehydration of interest features may occur;
 - Overfishing of Atlantic salmon; and
 - Introduction of invasive species.

Key potential pressures from Wirral

- 11.6 The following potential impacts of the Core Strategy upon River Dee and Bala Lake SAC were identified during the summary screening detailed in Appendix 1. These are:
- Damaging levels of abstraction to supply housing in Wirral when considered in combination with development elsewhere in United Utilities Integrated Resource Zone and development outside the zone that will receive water from the same sources (e.g. abstraction from the River Dee in relation to development in North Wales).

Appropriate Assessment

Water Abstraction

- 11.7 Development proposed within the Core Strategy is likely to result in increased water use, notably as a consequence of housing and business development under submission draft core strategy policies CS4 - CS13, CS18 and CS24.
- 11.8 The adopted United Utilities Water Resource Management Plan (September 2009) indicates that the water available for use in the Integrated Resource Zone is expected to reduce by 24.8 MI/d between 2009/10 and 2014/15. Without water efficiency measures or new resources the initial supply demand balance for the Integrated Resource Zone is calculated to be in deficit by 8 MI/day by 2024/25.
- 11.9 However, further abstraction from the River Dee, or any other European sites beyond the current licensed volumes is not part of United Utilities' intended future supply strategy⁸⁵, which rather depends on a mixture of demand management and increased abstraction from groundwater as follows:
- Construction of a bi-directional pipeline, known as the "West-to-East Link", between Merseyside and North Manchester. This will help United Utilities maintain adequate supplies to Greater Manchester and Merseyside if there is a need to temporarily reduce supply from a major reservoir, for example due to maintenance work or drought conditions;
 - Maintain current leakage levels;
 - Help customers save 9 MI/d by 2014/15 (increasing later on to 12 MI/d), through a base service water efficiency programme;
 - Achieve a water demand reduction of 10 MI/d in a dry year by 2014/15 (increasing to 22 MI/d by 2034/35) as a result of the expected scale of voluntary metering of households; and
 - Further reducing leakage by 23 MI/d by 2034/35.
 - A programme of economic water efficiency measures to save 4 MI/d by 2034/35; and
 - Implementing water source enhancements of 48 MI/d by 2034/35⁸⁶.
- 11.10 In the future as a result of the west-east link, Merseyside (including Wirral) will obtain a much greater proportion of its water supply from Lake District sources. This is likely to reduce the

⁸⁵ Mark Smith of United Utilities North & Central Area Water Asset Management Team confirmed in a personal communication on 27/07/09 that abstraction from the Dee will not exceed the current licensed volume. The current licensed volume was subject to the Environment Agency's Review of Consents process and no reductions were considered necessary. It can therefore be concluded that no adverse effects on the integrity of the River Dee (either alone or 'in combination') will result from the United Utilities abstraction

⁸⁶ Widnes groundwater (22.7 MI/d), Southport groundwater (22.5 MI/d) and Oldham groundwater (2.5 MI/d)

impacts associated with abstraction for housing and industry on the Dee further. It is therefore concluded that, since no increased abstraction from European sites will be required in order to service new development in the Wirral (or elsewhere within the Integrated Supply Zone) that there will be significant effects on the River Dee & Bala Lake SAC through abstraction of water as a result of any policies within the Wirral Core Strategy. Risk of abstraction at inappropriate times of the year (such as periods of low flow) will be prevented by the Environment Agency's licensing regime and Review of Consents process.

11.11 This issue is therefore not considered further in this HRA.

Conclusion

11.12 With reference to the above, it can be concluded that none of the policies contained within the Wirral Submission Draft Core Strategy will have a adverse effect on the integrity of the River Dee and Bala Lake SAC.

12 River Eden SAC

Reasons for Designation

12.1 The River Eden in the Lake District qualifies as an SAC for both habitats and species. Firstly, the site contains the following Habitats Directive Annex I habitats:

- Oligotrophic to mesotrophic standing waters with vegetation of the *Littorelletea uniflorae* and/or of the *Isoëto-Nanojuncetea*
- Watercourses of plain to montane levels with the *Ranunculion fluitantis* and *Callitriche-Batrachion* vegetation
- Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (Alno-Padion, Alnion incanae, Salicion albae)

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

- White-clawed crayfish *Austropotamobius pallipes*
- Sea lamprey *Petromyzon marinus*
- Brook lamprey *Lampetra planeri*
- River lamprey *Lampetra fluviatilis*
- Atlantic salmon *Salmo salar*
- Bullhead *Cottus gobio*
- Otter *Lutra lutra*

12.3 The historic trends and current pressures on the site are summarised below.

Historic Trends and Current Pressures

12.4 The maintenance of breeding and nursery areas for the species on this site depends on the habitat quality of streams and their margins. Many of the streams within the site suffer from overgrazing of riverbanks and nutrient run-off. This is being addressed by a number of measures, including a conservation strategy with actions to address river quality issues, and a partnership approach to funding habitat improvements. The water-crowfoot communities as well as the species are sensitive to water quality, particularly eutrophication.

12.5 Practices associated with sheep-dipping pose a potential threat at this site, and are currently under investigation. Much of the alluvial forest cover is fragmented and/or in poor condition. It is hoped to address this through management agreements or Woodland Grant Schemes with individual owners.

12.6 The habitats and species for which the site is designated are dependent on the maintenance of good water quality and suitable flow conditions. Fish species require suitable in-stream habitat and an unobstructed migration route. Otters also require suitable terrestrial habitat to provide

cover and adequate populations of prey species. The site and its features have been historically threatened by practices which had an adverse effect on the quality, quantity and pattern of water flows, such as inappropriate flow regulation, excessive abstraction, deteriorating water quality from direct and diffuse pollution, eutrophication and siltation. Degradation of riparian habitats due to engineering works, agricultural practices and invasive plant species have also had localised adverse effects in the past. The Atlantic salmon population has been threatened by excessive exploitation by high sea, estuarine and recreational fisheries. Introduction of non-indigenous species has also been a risk to both fish and plant species.

12.7 The environmental pressures upon the River Eden SAC are mainly:

- Deterioration in water quality and changes in flow rates due to agricultural runoff and discharge of treated sewage effluent (which contains elevated nitrates);
- Risk of excessive abstraction resulting in a decrease in freshwater flows and an increase in sediment loading of water such that dehydration of interest features may occur;
- Overfishing; and
- Introduction of invasive species.

Key potential pressures from Wirral

12.8 The following potential impacts of the Core Strategy upon River Eden SAC were identified during the summary screening detailed in Appendix 1. These are:

- Damaging levels of abstraction to supply housing in Wirral when considered in combination with development elsewhere in United Utilities Integrated Resource Zone and development outside the zone that will receive water from the same sources.

Appropriate Assessment

Water Abstraction

12.9 Traditionally, the water supply for Merseyside comes from the River Dee and Welsh sources, while that for Greater Manchester comes from the Lake District (particularly Haweswater which is within the catchment of the River Eden). However, construction of a bi-directional pipeline, known as the "West-to-East Link", between Merseyside and North Manchester will enable greater flexibility of supply such that there will no longer be a strong split between water sources and that in the future, a much greater proportion of the water supply for the Wirral will come from Lake District sources.

12.10 However, it has been confirmed by United Utilities that one of the main reasons for the existence of the new west-east link is in response to expected reductions in the licensed abstractions from Haweswater and other Lake District sources resulting from the Environment Agency's Review of Consents process. As such, abstraction from these sources is already being revised to ensure no adverse effect on the River Eden SAC or other sensitive sites in the Lake District.

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- 12.11 Due to the above, it is concluded that there will be no significant impacts on the integrity of the River Eden SAC through abstraction of water as a result of any policies relating to development within the Wirral Core Strategy.

Conclusion

- 12.12 With reference to the above, it can be concluded that, since no increased abstraction from the River Eden SAC will be required in order to service new development in Wirral (or elsewhere within the Integrated Supply Zone), none of the policies contained within the Wirral Submission Draft Core Strategy will have a adverse effect on the integrity of the River Eden SAC.

13 Martin Mere SPA and Ramsar

Introduction

- 13.1 Martin Mere SPA and Ramsar (119.89 ha) is located north of Ormskirk in West Lancashire, north west England, approximately 20km north of Wirral. However, the outstanding importance of Martin Mere is as a refuge for its large and diverse wintering, passage and breeding bird community.
- 13.2 It occupies part of a former lake and mire that extended over some 1,300 ha of the Lancashire Coastal Plain during the 17th century. In 1972 the Wildfowl and Wetlands Trust purchased 147 hectares of the former Holcrofts Farm, consisting mainly of rough damp pasture, with the primary aim of providing grazing and roosting opportunities for wildfowl. Since acquisition the rough grazed pastures have been transformed by means of positive management into a wildfowl refuge of international importance. Areas of open water with associated muddy margins have been created, whilst maintaining seasonally flooded marsh and reed swamp habitats via water level control. In September 2002, an additional 63 hectares of land were purchased on the southern most part of the refuge at Woodend Farm, with the aid of the Heritage Lottery Fund, to restore arable land to a variety of wetland habitats including seasonally flooded grassland, reedbed, wet woodland and open water habitats.
- 13.3 The complex now comprises open water, seasonally flooded marsh and damp, neutral hay meadows overlying deep peat. It includes a wildfowl refuge of international importance, with a large and diverse wintering, passage and breeding bird community. In particular, there are significant wintering populations of Bewick's swan (*Cygnus columbianus bewickii*) and whooper swan (*Cygnus Cygnus*), pink-footed goose (*Anser brachyrhynchus*) and pintail (*Anas acuta*). There is considerable movement of wintering birds between this site and the nearby Ribble and Alt Estuaries SPA.

Reasons for Designation

- 13.4 This site qualifies for SPA under Article 4.1 of the Directive (79/409/EEC) by supporting populations of European importance of the following over wintering birds listed on Annex I of the Directive:
- Bewick's swan, 449 individuals representing at least 6.4% of the wintering population in Great Britain (5 year peak mean 1991/2 - 1995/6);
 - whooper swan 621 individuals representing at least 11.3% of the wintering population in Great Britain (5 year peak mean 1991/2 - 1995/6)
- 13.5 This site also qualifies under Article 4.2 of the Directive (79/409/EEC) by supporting populations of European importance of the following over wintering migratory species:
- pink-footed goose, 25,779 individuals representing at least 11.5% of the wintering Eastern Greenland/Iceland/UK population (5 year peak mean 1991/2 - 1995/6)

- pintail 978 individuals representing at least 1.6% of the wintering North western Europe population (5 year peak mean 1991/2 - 1995/6)

13.6 The assemblage of birds present makes the site a wetland of international importance. The area qualifies under Article 4.2 of the Directive (79/409/EEC) by regularly supporting at least 20,000 waterfowl. Over winter, the area regularly supports 46,196 individual waterfowl (5 year peak mean 1991/2 - 1995/6) including: pochard (*Aythya farina*), mallard (*Anas platyrhynchos*), teal (*Anas crecca*), wigeon (*Anas penelope*), pintail pink-footed goose (*Anser brachyrhynchus*), whooper swan, and bewick's swan.

13.7 It is additionally designated as a Ramsar site in accordance with Criterion 5 (UN, 2005) for supporting up to 25,306 waterfowl (5-year peak mean 1998/99 – 2002/03) in winter, and in accordance with Criterion 6 for supporting internationally important populations of pink-footed goose *Anser brachyrhynchus*, Bewick's swan *Cygnus columbianus* ssp. *bewickii*, whooper swan *Cygnus cygnus*, Eurasian wigeon *Anas penelope* and northern pintail *Anas acuta*.

Historic Trends and Existing Pressures

13.8 Since the site's designation as a Wetland of International Importance under the Ramsar Convention and as a Special Protection Area in 1985 there has been a gradual increase in the usage of the mere by certain species of wildfowl and wading birds as a direct consequence of positive management. The site is geared towards attracting visitors, with a number of hides from which the Mere and its birds may be viewed. In addition to the wild species for which it is designated, the site holds a collection of about 1,500 captive birds of 125 species from around the world, as well as a number of other visitor attractions. This is because the site is a Wildfowl and Wetlands Trust reserve.

13.9 The environmental pressures experienced by Martin Mere in terms of its bird community are likely to be those common to all reedbed habitat. The refuge is vulnerable to the following:

- direct loss of characteristic species as a result of nutrient enrichment from agricultural fertilisers and run-off;
- loss of reedbed due to weakening of stems through poor growth conditions;
- natural succession to woodland through lack of active management;
- changes in farming practice. grazing management is largely dependent upon cattle from surrounding farms;
- reduced water level by surface and ground water abstractions or agricultural drainage, which causes the habitat to dry out and begin succession towards 'alder/willow carr woodland, hastening the overall process of succession towards broadleaved woodland' (Lancashire BAP);
- removal of reeds and other vegetation from whole stretches of watercourses (e.g. neighbouring the site) through routine management of ditches and riverbanks (in some instances);
- erosion of reedbeds due to increased recreational use of waterbodies and waterways (notably canals);

- habitat loss or degradation due to the isolation of reedbeds as a result of losses elsewhere, in turn due to the above or other factors (Lancashire BAP).

13.10 In addition, the following pressures have been documented :

- invasive plant species: Regular herbicide control of trifid burr marigold is necessary in order to prevent this plant from invading lake/scape margins to the detriment of bird populations;
- water borne disease that could affect wildfowl: water levels on the Mere are controlled to maintain optimum levels throughout the winter period, then lowered progressively in summer to expose marginal mud and the underlying damp pastures and maintain a mosaic of shallow pools. Ditches are regularly cut and dredged and all areas of pasture are positively managed under a Countryside Stewardship Scheme. Nutrients brought in with the water supply from the surrounding arable farmland and inadequate sewage treatment adds considerably to the large deposits of guano from wintering waterfowl. This results in the refuge being highly eutrophic with extremely poor water quality conditions and creates the possible risk of water borne diseases which could affect waterfowl, although no such outbreaks have been recorded. The Wildlife Trust have started to address this issue with the creation of reedbed water filtration systems and a series of settlement lagoons helps to reduce suspended solids of effluent water arising from waterfowl areas; and
- due to the eutrophication (described above) Martin Mere is also experiencing water quality issues.

Key Pressures from Wirral

13.11 The only potential pathway in which development within Wirral could lead to effects on Martin Mere SPA and Ramsar sites is through development of wind turbines, depending on the location of the turbines and flight paths of qualifying bird species at Martin Mere.

Appropriate Assessment

Renewable Energy

13.12 Wirral is located approximately 20km south of Martin Mere SPA and Ramsar site. It is possible that the construction of wind turbines (both onshore and offshore) within Merseyside has the potential to displace the flight path of qualifying bird species, depending on their location. The Core Strategy contains numerous references to promotion of renewable energy (e.g. Policy CS43 - Design, Heritage and Amenity). HRA Screening at Preferred Options Stage identified that, should the Core Strategy include wind turbine construction, a pathway exists through the construction of onshore/offshore turbines to disrupt flight paths and displace qualifying bird species. Disturbance issues associated with maintenance activities were also identified. The Submission Draft Core Strategy includes numerous references to encouraging energy efficiency and the use and development of renewable, decentralised and low carbon energy within the Wirral (e.g. Policy CS43 - Design, Heritage and Amenity). However, impacts from wind turbine developments depend greatly on the siting of the turbines and no specific sites have yet been identified. There is certainly no specific policy commitment to wind turbines in the Submission Draft Core Strategy.

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- 13.13 HRA Screening identified that, should this include wind turbine construction, a pathway exists through the construction of onshore/offshore turbines to disrupt flight paths and displace qualifying bird species. Disturbance issues associated with maintenance activities were also identified. However, impacts from wind turbine developments depend greatly on the siting of the turbines and no specific sites have yet been identified. There is certainly no specific policy commitment to wind turbines.

Conclusion

- 13.14 With reference to the above, it can be concluded that, since there is no policy commitment to develop wind farms within the Wirral Borough, none of the policies contained within the Wirral Submission Draft Core Strategy will have an adverse effect on the integrity of Martin Mere SAC.

14 Conclusion

- 14.1 It was possible to conclude that no adverse effects would result on all European sites considered, largely due to amendments made in the Submission Draft Core Strategy in response to the 2010 Preferred Options HRA report.
- 14.2 However, with regard to the issue of loss of off-site supporting habitat, it is recommended that one residual recommendation from the 2010 Preferred Options HRA is considered for action at a strategic district-wide (or Merseyside-wide) scale when developing the Site Allocations DPD or equivalent – the 2010 HRA recommended a commitment to identify all important areas of supporting habitat and to assess any impacts on these areas, and thereby potential impacts on qualifying species, prior to permitting any future development. It is recognised that a commitment to undertake such an exercise at a district-wide scale prior to permitting future development may not be realistic, and that such matters can be deferred to individual planning applications and their associated environmental investigations.

Overall conclusion

- 14.3 With this single residual amendment in place it can be concluded that a sufficient policy framework existed to enable the avoidance or mitigation of adverse effects on European sites.

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Appendix 1 – Policy Screening Table

Policy	HRA Screening decision
<p>Policy CS1 - Presumption in Favour of Sustainable Development When considering development proposals the Council will take a positive approach that reflects that presumption in favour of sustainable development contained in the National Planning Policy Framework(4). The Council will always work pro-actively with applicants jointly to find solutions which mean that proposals can be approved wherever possible, and to secure development that improves the economic, social and environmental conditions in the area.</p> <p>Planning applications that accord with the policies in this Core Strategy will be approved without delay, unless material considerations including, where relevant, policies in neighbourhood plans, indicate otherwise. Where there are no policies relevant to the application or relevant policies are out-of-date at the time of making the decision then the Council will grant planning permission unless material considerations indicate otherwise, taking into account whether:</p> <ol style="list-style-type: none"> 1. any adverse impacts of granting planning permission would significantly and demonstrably outweigh the benefits when assessed against the policies in the National Planning Policy Framework take as a whole; or 2. specific policies in that Framework indicate that development should be restricted. 	<p>Screened out – the National Planning Policy Framework explicitly excludes development affecting European sites from the <i>'presumption in favour of sustainable development'</i>.</p>
<p>Policy CS2 - Broad Spatial Strategy The Local Planning Authority will pursue a strategy of urban regeneration and environmental enhancement, to ensure that full and effective use is made of land within the urban areas; neglected, unused or derelict land or buildings are brought into use; the need for new services is minimised by promoting the use of spare capacity in existing services; and new development provides positive benefits for local communities and the environment.</p> <p>The first priority will be to focus job, housing and population growth to areas in greatest need of physical, social, economic and environmental regeneration, particularly within the older urban</p>	<p>Screened in for further discussion in the report, since the strategy includes delivery of housing, employment, tourism development and other development that could involve likely significant effects on European sites.</p>

Policy	HRA Screening decision
<p>areas of east Wirral. Medium to higher density development will normally be permitted within these areas and will be expected to make a positive contribution to local character; make the most efficient and viable use of land, infrastructure and services; support a greater pace of regeneration, if the market can support it; and deliver the scale of transformation necessary to support a self-sustaining programme of regeneration.</p> <p>Medium to higher density housing development will also be permitted on urban sites within an easy walking distance of an existing town, district or local centre or a high-frequency public transport corridor and will be expected to make a positive contribution to local character; support local centres and neighbourhood services; reduce the need to travel; provide local housing and/or employment to meet identified needs; and promote a sustainable pattern of development.</p> <p>Outside these areas, only smaller scale, lower-density development will normally be permitted, to maintain and enhance local character to ensure that a sustainable pattern of development continues to be promoted and a higher level of housing and employment growth continues to be supported in the most accessible locations and within areas of greatest need.</p> <p>The primary focus for new jobs to support the economic revitalisation of the Borough will be the Mersey Waters Enterprise Zone and its surrounding industrial and commercial hinterland; Birkenhead Town Centre, including Hamilton Square and Woodside; the industrial and commercial areas along the A41 Corridor in Tranmere; Wirral International Business Park and the Unilever factory and research complex at Port Sunlight; and the existing employment areas at Moreton, Upton and Prenton; where jobs will be accessible by a choice of means of transport to the greatest number of residents.</p> <p>Port and marine-related facilities will continue to be promoted at Twelve Quays, West Float, Cammell Lairds and at the Manchester Ship Canal at Eastham to reflect their continued strategic importance for marine engineering, cargo handling and freight movements; and the opportunity to maximise the potential for off-road transport by rail and water and contribute towards a sub-regional SuperPort.</p> <p>Borough-wide facilities and services will first be directed to the most accessible locations in and around Birkenhead Town Centre. Secondary and district-level facilities and services operating over a more local catchment will first be directed to the larger</p>	

Policy	HRA Screening decision
<p>existing centres of Bromborough Village, Heswall, Hoylake, Liscard, Moreton, Prenton (Woodchurch Road) and West Kirby and then to other accessible sites that will be well-served by public transport.</p> <p>Tourism investment will be targeted to support regeneration in Birkenhead; provide improvements within the coastal resorts of New Brighton, Hoylake and West Kirby and along the Mersey coastline; and to improve public access to the coast and countryside subject to the protection of European Sites and their supporting habitats.</p> <p>The focus within rural areas will be on strengthening and diversifying the agricultural economy; re-using existing buildings and previously developed land providing rural services within established settlements; supporting the beneficial use of best and most versatile agricultural land; providing for local food production and food security; and outdoor sport and recreation; subject to national Green Belt controls.</p> <p>Development in line with these priorities should, wherever possible and relevant, contribute to addressing identified physical, social, economic or environmental problems; promote the re-use of buildings of local quality and previously developed land; improve housing and living conditions; promote environmental improvements; preserve and enhance local character and distinctiveness, including visual amenity, biodiversity, landscape and heritage; protect and/or contribute to a linked network of green infrastructure and an appropriate level of provision for indoor and outdoor sport and recreation; reduce emissions; meet an identified local need; and promote sustainable design and construction, subject to the local priorities set out in Policies CS4 to CS11.</p>	
<p>Policy CS3 - Green Belt A Green Belt will be maintained in Wirral to keep land permanently open in order to assist in urban regeneration by encouraging the recycling of derelict and other urban land; prevent neighbouring towns from merging into one another; prevent urban sprawl; and safeguard the countryside from encroachment. Inappropriate development, as defined in national policy, will not be approved except in very special circumstances, unless the potential harm to the Green Belt is clearly outweighed by other considerations. Appropriate uses that will enhance the beneficial use of the Green Belt, including agriculture and</p>	<p>Screened out – no pathway of impact linking this particularly policy to European sites</p>

Policy	HRA Screening decision
<p>opportunities for outdoor sport and outdoor recreation, will be permitted where they will retain the openness of the Green Belt, retain and enhance landscapes, visual amenity and biodiversity, meet the priorities set out in Policy CS11 and the requirements of Policy CS42.</p>	
<p>Policy CS4 - Priorities for Wallasey The overall strategy to promote sustainable development in Settlement Area 1 will be to:</p> <ol style="list-style-type: none"> 1. Maintain attractive residential areas with good access to Birkenhead, Liverpool and the M53 Motorway; 2. Support integration with the new city neighbourhood at East Float while maintaining a clear interface between the residential suburbs and the commercial areas to the south in Settlement Area 2; 3. Maintain and enhance the facilities provided by the urban coastal resort of New Brighton; 4. Support market renewal to reduce the number of vacant properties and previously developed sites in and around Liscard, Seacombe, Egremont and New Brighton and tackle worklessness and low incomes; 5. Safeguard and enhance the vitality and viability of Liscard as the main convenience and comparison retail, office and service centre for the Area; 6. Safeguard and enhance the vitality and viability of the local centres at New Brighton (Victoria Road and Seabank Road), Seacombe (Poulton Road) and Wallasey Village as the focus for neighbourhood level shops, services and community facilities to serve everyday needs; 7. Maintain the industrial areas at Alexandra Road and Cross Lane for small and medium scale industrial and commercial activities to provide additional local employment, subject to controlling the impact of flood risk at Cross Lane; 8. Monitor and manage traffic flows to maximise highway efficiency, promote sustainable transport and manage the impact of noise from road transport along routes to New Brighton, Liscard, Wallasey Village and the Kingsway Tunnel; 9. Preserve and enhance the character and appearance of the Conservation Areas at Magazines and Wellington Road and the setting of other designated and un-designated heritage assets, including the listed buildings at Fort Perch Rock and Lighthouse; 10. Maintain and enhance the open aspect of the coastline; the national and international importance of the inter-tidal foreshores, part of which is in 	<p>Screened in for further discussion in the report, since the strategy includes delivery of housing, employment, tourism development and other development that could involve likely significant effects on European sites.</p>

Policy	HRA Screening decision
<p>unfavourable recovering condition; and the facilities and open spaces associated with the coastal promenades between Seacombe Ferry and North Wirral Coastal Park;</p> <p>11. Maintain and improve the provision of open space, to increase the number and quality of sports pitches, allotments, and natural and semi-natural greenspace with biodiversity value, and strengthen the provision of green infrastructure, without compromising other open space functions;</p> <p>12. Reduce flood risks along the coast; from the Birket and its tributaries; and from surface water; and address any local limitations in the supply of water, which may need to be upgraded after the first five years; and/or disposal of wastewater; and</p> <p>13. Maintain the physical separation and distinctiveness of Wallasey and Leasowe.</p>	
<p>Policy CS5 - Priorities for the Commercial Core of Birkenhead</p> <p>The overall strategy to promote sustainable development in Settlement Area 2 will be to:</p> <ol style="list-style-type: none"> 1. Establish a new city neighbourhood at East Float and around Birkenhead Town Centre, to secure major economic growth, jobs and training alongside investment in significant levels of new high quality housing and employment and the provision of supporting leisure, retail, community, health and education uses in line with Policy CS12; 2. Safeguard and enhance the vitality and viability of Birkenhead Town Centre as the Borough's principal focus for retail, office and town centre uses, including services for leisure, entertainment, culture, health and education and other uses of Borough-wide significance that attract large numbers of people; 3. Maintain and enhance specialist port-related employment and activities, alongside support for the manufacturing, logistics, maritime, offshore renewable energy and heavy engineering sectors, at Cammell Lairds, Twelve Quays and West Float, as part of a wider sub-regional SuperPort; 4. Support implementation of the International Trade Centre at West Float; 5. Promote the physical enhancement and economic regeneration of the surrounding commercial hinterlands in Seacombe, Bidston, Birkenhead, Tranmere and Rock Ferry for small and medium scale industrial and commercial activities and services; 6. Support integration with East Float and access to employment and training from within the surrounding areas in Bidston, Birkenhead, Leasowe, Liscard, Rock Ferry, Seacombe and Tranmere; 7. Focus regeneration to preserve and enhance the character and appearance of the Conservation Area at Hamilton Square, to secure a long-term mixed-use 	<p>Screened in for further discussion in the report, since the strategy includes delivery of housing, employment, tourism development and other development that could involve likely significant effects on European sites.</p>

Policy	HRA Screening decision
<p>commercial future for the designated Area; and the setting of other designated and un-designated heritage assets, including the listed buildings and ancient monument at Birkenhead Priory;</p> <p>8. Use the scale of new development within the Area to significantly reduce the amount of vacant and under-used previously developed land and support the delivery of strategic renewable energy infrastructure including district heating;</p> <p>9. Establish a transport strategy to monitor and manage traffic flows to maximise highway efficiency and promote sustainable transport throughout the Area; manage the impact of transport noise; and address air quality issues at Tranmere;</p> <p>10. Maintain strong transport links and freight connections from the industrial areas and docklands to the M53 Motorway and promote the greater use of rail and water for freight movements to further support national and international trade;</p> <p>11. Strengthen the provision of public transport to serve the new city neighbourhood and the provision of signed cycle routes within the Area; to link East Float to Leasowe and Wallasey, improve cycle access to Birkenhead and provide safe cycle links across the docks;</p> <p>12. Establish a linked framework of green and blue infrastructure throughout the Area; including a new public realm within the dockland waterways at East Float; with enhanced access to Hamilton Square Conservation Area, Bidston Moss and open space in adjoining Areas; and along the coast between Seacombe Promenade, Twelve Quays, Woodside and Tranmere, with open views of the Liverpool waterfront; and</p> <p>13. Address the need for flood resilient design; reduce tidal, river and other flood risks; local limitations in the supply of water, particularly around the docks; and the provision of additional facilities for the treatment and disposal of wastewater.</p>	
<p>Policy CS6 - Priorities for Suburban Birkenhead</p> <p>The overall strategy to promote sustainable development in Settlement Area 3 will be to:</p> <ol style="list-style-type: none"> 1. Maintain attractive residential areas with good access to Birkenhead, Liverpool and the M53 Motorway; 2. Support market renewal to reduce the number of vacant properties and previously developed sites in Birkenhead, Tranmere and Rock Ferry; 3. Focus additional local improvements and tackle worklessness and low incomes in areas of greatest need in Beechwood, Bidston, Claughton, Noctorum, Oxtton and Prenton; 4. Support integration with the new city neighbourhood at East Float, while maintaining a clear interface between the residential suburbs and the commercial 	<p>Screened in for further discussion in the report, since the strategy includes delivery of housing, employment, tourism development and other development that could involve likely significant effects on European sites.</p>

Policy	HRA Screening decision
<p>areas to the north and east in Settlement Area 2;</p> <p>5. Safeguard and enhance the vitality and viability of Prenton (Woodchurch Road) as the main focus for district-level shops, offices, services and community facilities;</p> <p>6. Safeguard and enhance the vitality and viability of the local centres at Claughton, Laird Street, Oxton Village, Borough Road (Prenton Park), Tranmere Urban Village and Dacre Hill, as the focus for neighbourhood level shops, services and community facilities to serve everyday needs;</p> <p>7. Maintain North Cheshire Trading Estate for small and medium scale industrial and commercial activities to provide additional local employment;</p> <p>8. Preserve and enhance the character and appearance of the Conservation Areas and Historic Parks and Gardens at Bidston Village; Birkenhead Park; Flaybrick Cemetery; Oxton Village; Clifton Park; Rock Park and Mountwood and the setting of other designated and un-designated heritage assets;</p> <p>9. Maintain and enhance the character of the other older residential areas, particularly along the Noctorum Ridge, including the landscape character of Bidston Hill and the Wirral Ladies Golf Course;</p> <p>10. Maintain and enhance the national and international importance of the intertidal foreshore at Rock Park;</p> <p>11. Maintain and improve open space, to strengthen the provision of green infrastructure; increase the amount of recreational open space and the number and quality of outdoor sports facilities including sports pitches; and natural and semi-natural greenspace with biodiversity value;</p> <p>12. Reduce flood risk along the coast at Rock Park, along the Fender Valley and from surface water and address any local limitations on the supply of water, which may need to be upgraded after the first five years; and/or disposal of wastewater;</p> <p>13. Monitor and manage traffic flows to maximise highway efficiency, promote sustainable transport and manage the impact of traffic noise along the A552 Woodchurch Road;</p> <p>14. Support greater use of the Bidston-Wrexham 'Borderlands' railway line; and</p> <p>15. Maintain the physical separation from the Mid-Wirral settlements of Moreton, Upton and Woodchurch.</p>	
<p>Policy CS7 - Priorities for Bebington, Bromborough and Eastham</p>	<p>Screened in for further discussion in the report, since the strategy</p>

Policy	HRA Screening decision
<p>The overall strategy to promote sustainable development in Settlement Area 4 will be to:</p> <ol style="list-style-type: none"> 1. Maintain attractive residential areas with good access to Birkenhead, Liverpool, Ellesmere Port, Chester and the M53 Motorway; 2. Maximise the economic contribution of Wirral International Business Park at Bromborough and the Unilever Complex at Port Sunlight for large and medium scale business, manufacturing, digital, bio-medical, advanced technology, research and development and storage and distribution; and the dock estate and Manchester Ship Canal at Eastham as a low carbon inland transport corridor, for port-related storage, processing and distribution uses, waterborne freight and rail transport; 3. Safeguard and enhance the vitality and viability of Bromborough Village as the main focus for district-level shops, offices, services and community facilities; 4. Safeguard and enhance the vitality and viability of the local centres at New Ferry, Lower Bebington and Eastham (Mill Park Drive) for neighbourhood level shops, services and community facilities to serve everyday needs; 5. Focus local improvements and tackle worklessness and low incomes within the residential estates at New Ferry, Mill Park and Bromborough Rake; 6. Preserve and enhance the character and appearance of the Conservation Areas at Port Sunlight, Bromborough Pool, Bromborough Village and Eastham Village and the setting of other designated and un-designated heritage assets, including the need to safeguard against the gradual erosion of the outstanding quality of the character and setting of Port Sunlight Conservation Area; 7. Protect the provision of high quality open space and playing fields; and facilities that can provide for needs from within adjoining Areas; while addressing the need for additional facilities for children and young people 8. Maintain and enhance the national and international importance of the intertidal foreshores and the wooded, natural and semi-natural character and biodiversity value of the western and southern fringes of the Settlement Area 9. Secure improved pedestrian and cycle access from the residential areas, to the north and to and along the Mersey coastline, subject to the impact on coastal nature conservation; 10. Reduce the risk of flooding associated with the Mersey coast, Bromborough Pool, the Dibbinsdale Brook and its tributaries, and surface water; and from coastal erosion at New Ferry; 11. Address local limitations in the supply of water to Spital, Port Sunlight and Bromborough Pool and/or the disposal of wastewater and the provision of 	<p>includes delivery of housing, employment, tourism development and other development that could involve likely significant effects on European sites.</p>

Policy	HRA Screening decision
<p>additional facilities for the treatment and disposal of wastewater at the Bromborough Waste Water Treatment Works;</p> <p>12. Monitor and manage traffic flows to maximise highway efficiency along the A41 and on routes to the M53 Motorway; promote sustainable transport; manage the impact of transport noise along the A41; address the impact of HGVs on Eastham Village; and address air quality issues at Eastham;</p> <p>13. Take account of the flight paths associated with Liverpool John Lennon Airport; and</p> <p>14. Maintain the physical separation and local distinctiveness of Eastham Village and Storeton; and the physical separation with the urban areas in Ellesmere Port.</p>	
<p>Policy CS8 - Priorities for Leasowe, Moreton, Upton, Greasby and Woodchurch</p> <p>The overall strategy to promote sustainable development in Settlement Area 5 will be to:</p> <ol style="list-style-type: none"> 1. Maintain attractive residential areas with good access to Birkenhead, Liverpool and the M53 Motorway; 2. Maximise the economic contribution of the industrial complexes at Leasowe, Moreton and Upton for food, bio-medical, research and development, advanced manufacturing and small and medium scale business activities, to maintain accessible local employment opportunities; 3. Safeguard and enhance the vitality and viability of Moreton Town Centre as the main convenience and comparison retail, office and service centre for the Area; 4. Safeguard and enhance the vitality and viability of the local centres at Upton and Greasby, as the focus for neighbourhood level shops, services and community facilities to serve everyday needs; 5. Focus local improvements in areas of greatest need in Leasowe, Moreton, Upton and Woodchurch to tackle worklessness and low incomes; 6. Maintain and enhance public access to and along the river corridors associated with the Birket, Fender and Arrowe Brook; the woodland setting of Upton; and access to North Wirral Coastal Park subject to Policy CS11; 7. Increase the local provision of allotments and natural and semi-natural greenspace to increase local biodiversity; improve the unfavourable condition of Meols Meadows SSSI; and protect facilities that can provide for needs from within adjoining 	<p>Screened in for further discussion in the report, since the strategy includes delivery of housing, employment, tourism development and other development that could involve likely significant effects on European sites.</p>

Policy	HRA Screening decision
<p>Areas;</p> <p>8. Reduce tidal, river and other flood risks associated with the low-lying north Wirral coastal plain; the Birket and Fender valleys; Arrowe Brook; Greasby Brook; and surface water; and maintain existing flood defences;</p> <p>9. Maintain and enhance the national and international nature conservation value of the intertidal foreshores to the north of the Area and their supporting habitats;</p> <p>10. Address any local limitations on water supply and/or the disposal of wastewater and take account of the capacity of the North Wirral Wastewater Treatment Works;</p> <p>11. Monitor and manage traffic flows to maximise highway efficiency on routes to and through Moreton Town Centre, along Saughall Massie Road and at Arrowe Park; promote sustainable transport; address traffic noise at Moreton and along the M53 Motorway; and the impact of traffic on the level crossing at Leasowe Station; and</p> <p>12. Maintain the physical separation between Leasowe and Wallasey; Moreton, Upton and Woodchurch and Birkenhead; Moreton and Hoylake; and the distinctiveness of the remaining rural villages at Frankby, Saughall Massie and Landican.</p>	
<p>Policy CS9 - Priorities for Hoylake and West Kirby</p> <p>The overall strategy to promote sustainable development in Settlement Area 6 will be to:</p> <ol style="list-style-type: none"> 1. Maintain attractive residential areas with good access to Birkenhead, Liverpool and Chester; 2. Safeguard and enhance the vitality and viability of West Kirby as the main convenience and comparison retail, office and service centre for the Area; 3. Safeguard and enhance the vitality and viability of Hoylake as the focus for district-level shops, offices, services and community facilities; 4. Maintain Carr Lane Industrial Estate for small and medium scale industrial and commercial activities to provide additional local employment; 5. Maintain and enhance facilities for visitors, including provision for leisure, tourism, golf, coastal recreation and water sports and the open spaces associated with the coastal promenades and North Wirral Coastal Park, while maintaining and enhancing the national and international nature conservation value of the intertidal foreshores and their supporting habitats, the Hilbre Islands and the Victorian and Edwardian heritage of the coastal resorts; 6. Tackle worklessness and low incomes at Greenbank Road, West Kirby; 	<p>Screened in for further discussion in the report, since the strategy includes delivery of housing, employment, tourism development and other development that could involve likely significant effects on European sites.</p>

Policy	HRA Screening decision
<p>7. Preserve and enhance the character and appearance of the Conservation Areas at Hoylake, Caldy and West Kirby and the setting of other designated and un-designated heritage assets; the woodland setting of Caldy and Newton; the visual and biodiversity importance of the natural open coastline; and open (including hilltop) views across the Dee Estuary to North Wales;</p> <p>8. Reduce tidal, river and other flood risks associated with the coastal waterfronts, the low-lying north Wirral coastal plain and surface water;</p> <p>9. Monitor and manage traffic flows to maximise highway efficiency on routes to Hoylake and West Kirby; promote sustainable transport; and address the impact of pedestrian and vehicular traffic on the rail crossings at Carr Lane and between Meols and Hoylake;</p> <p>10. Improve cycle links between West Kirby and Greasby and between West Kirby and Meols to Three Lanes End;</p> <p>11. Address any local limitations on the supply and disposal of waste and surface water and take account of the capacity of the North Wirral Wastewater Treatment Works; and</p> <p>12. Maintain the physical separation between Newton and Greasby; Meols and Moreton; and the distinctiveness of Frankby Village, Hoylake and West Kirby.</p>	
<p>Policy CS10 - Priorities for Irby, Thingwall, Pensby, Heswall and Gayton</p> <p>The overall strategy to promote sustainable development in Settlement Area 7 will be to:</p> <ol style="list-style-type: none"> 1. Maintain attractive residential areas with good access to Birkenhead, Liverpool, Chester and North Wales; 2. Safeguard and enhance the vitality and viability of Heswall as the main convenience and comparison retail, office and service centre for the Area; 3. Safeguard and enhance the vitality and viability of Irby Village as the focus for neighbourhood level shops, services and community facilities to serve everyday needs; 4. Preserve and enhance the character and appearance of the Conservation Areas at Heswall Lower Village and Gayton and the setting of other designated and un-designated heritage assets; 5. Maintain and enhance access to the coast and to the major natural and semi-natural open spaces at Heswall Dales, Thurstaston Common, Arrowe Country Park and Wirral Way, while maintaining and enhancing the national and international importance of the foreshore and their value for landscape, biodiversity and earth science; 	<p>Screened in for further discussion in the report, since the strategy includes delivery of housing, employment, tourism development and other development that could involve likely significant effects on European sites.</p>

Policy	HRA Screening decision
<p>6. Increase the provision of allotments and facilities for children and young people and outdoor sports, including playing fields, to meet local needs;</p> <p>7. Reduce the risk of flooding from the Arrowe Brook in Irby and surface water and address local limitations on the disposal of wastewater;</p> <p>8. Monitor and manage traffic flows to promote sustainable transport; and maximise highway efficiency on routes through Heswall Town Centre and towards Birkenhead and the M53 Motorway;</p> <p>9. Support greater use of the Bidston-Wrexham 'Borderlands' railway line; and</p> <p>10. Maintain the physical separation and local distinctiveness of Irby, Barnston, Thurstaston and Landican.</p>	
<p>Policy CS11 - Priorities for the Rural Areas</p> <p>The overall strategy to promote sustainable development in Settlement Area 8 will be to:</p> <p>1. Preserve and enhance the openness and rural character of the Area and the separation and distinctiveness of the urban and rural settlements;</p> <p>2. Safeguard the beneficial and productive use of best and most versatile agricultural land for food production subject to the impact on landscape, heritage and biodiversity;</p> <p>3. Maintain the social and economic contribution of existing key facilities such as hospitals, schools, village shops and public houses, including the potential for new employment in medical services and bio-sciences including research, education and manufacturing, accommodation for families and carers and other uses which support health care at Clatterbridge Hospital;</p> <p>4. Preserve and enhance the character and appearance of the Conservation Areas at Barnston, Eastham Village, Frankby, Gayton, Saughall Massie, Thornton Hough and Thurstaston; the setting of other designated and un-designated heritage assets; and the rural character of the smaller settlements at Brimstage, Raby and Storeton;</p> <p>5. Conserve, enhance and restore the natural beauty, visual amenity and landscape character of the Area in line with the findings of the Wirral Landscape Character Assessment and Cheshire Historic Landscape Characterisation Study;</p> <p>6. Maintain and enhance the natural and semi-natural character of the undeveloped coastline; the national and international importance of the inter-tidal foreshores and their supporting habitats; and the biodiversity value of local nature reserves,</p>	<p>Screened in for further discussion in the report, since the strategy includes delivery of housing, employment, tourism development and other development that could involve likely significant effects on European sites.</p>

Policy	HRA Screening decision
<p>dune systems, lowland heath, woodlands, hedgerows, river corridors, ponds, wetland and farmland habitats, including any linkages with the surrounding urban areas;</p> <p>7. Support improved woodland management, woodland creation and, where feasible, the production of biomass to support the production of renewable energy;</p> <p>8. Minimise the visual and operational impact of urban services on local character, landscape and biodiversity;</p> <p>9. Maintain and enhance access from the adjoining Settlement Areas to the major open spaces and country parks at Arrowe Country Park, Dibbinsdale Local Nature Reserve, Eastham Country Park, North Wirral Coastal Park, Royden Park, Thurstaston Common and Wirral Country Park for leisure, recreation and tourism subject to the impact on landscape, heritage and biodiversity;</p> <p>10. Monitor and manage traffic flows to promote sustainable transport; maximise highway efficiency on routes to Birkenhead and the M53 Motorway, at Arrowe Park, Barnston Village and Clatterbridge; and minimise the impact on the natural environment;</p> <p>11. Support greater use of the Bidston-Wrexham 'Borderlands' railway line including provision for park and ride at Bidston;</p> <p>12. Address the impact of pedestrian and vehicular traffic on the rail crossings between Moreton and Meols and at Storeton;</p> <p>13. Reduce tidal, river and other flood risks associated with river corridors and the low-lying North Wirral coastal plain; and</p> <p>14. Address any local limitations on the supply of water and/or the disposal of wastewater; and the provision of additional facilities for the treatment and disposal of wastewater at the North Wirral Wastewater Treatment Works.</p>	
<p>Policy CS12 - Wirral Waters</p> <p>The Council will support the delivery of large-scale, high-density, mixed-use, commercial-led development within the Birkenhead Dock Estate at East Float, West Float and Bidston Dock, to support the economic growth and regeneration of the wider sub-region.</p> <p>Development at East Float will provide for the following overall amount of mixed-use development:</p> <p>up to 15,200 dwellings</p> <p>up to 429,800 square metres for offices including research and development, subject to</p>	<p>Screened in for further discussion in the report, since the strategy includes delivery of housing, employment, tourism development and other development that could involve likely significant effects on European sites.</p>

Policy	HRA Screening decision
<p>measures to reduce the impact on Liverpool City Centre up to 102,500 square metres for cultural, leisure, amenity and hotel uses and up to 66,900 square metres for retail uses, subject to the delivery of additional homes and jobs to prevent harm to existing centres</p> <p>Development at West Float will primarily provide for industrial, employment and port-related activities, including the delivery of an International Trade Centre of up to 228,300 square metres and other associated supporting facilities.</p> <p>Development at Bidston Dock will provide for complimentary development that will further support the economic revitalisation of the area, without causing harm to existing centres or facilities.</p> <p>The precise timetable for delivery is yet to be determined but is expected to extend beyond the period of this Core Strategy.</p> <p>Detailed planning applications for each element of proposed development at East Float, West Float and Bidston Dock will be required to:</p> <hr/> <ol style="list-style-type: none"> 1. amend and/or update the wider master plan for the area; 2. where relevant, contribute to the provision of affordable housing in line with Policy CS22; 3. develop and update a green infrastructure strategy for the area and secure appropriate provision within and around the site; 4. develop and update a strategy to address flood risk, wastewater network and water supply constraints and secure measures to minimise water demand; 5. incorporate low carbon initiatives to minimise energy demand and maximise the use of low carbon and/or renewable energy; 6. identify and secure appropriate facilities for waste management including waste minimisation and recycling, to serve the development proposed; 7. develop and update the public transport and access strategy for the area and include measures that will ensure full integration with the surrounding areas, including the historic grid-iron street layout and Hamilton Square Conservation Area; 8. ensure that the impact of any tall buildings will not cause harm to the setting or views from Hamilton Square Conservation Area; 	

Policy	HRA Screening decision
<p>9. address the need to secure appropriate access to social infrastructure for health, education and recreation and enhanced employment and training opportunities for existing local residents;</p> <p>10. amend and update the cumulative transport assessment for existing and proposed development within the area;</p> <p>11. update the environmental information baseline to enable the Council to complete an updated Habitats Regulations Assessment Report;</p> <p>12. monitor and maintain the structural condition of the dock walls and lock gates;</p> <p>13. meet the requirements of Policy CS42.</p>	
<p>Policy CS13 - Employment Land Requirement A minimum of 217 hectares of land will be required to accommodate new employment development for B1, B2 and B8 uses between 2012 and 2028, including land within the port estates.</p> <p>Deliverable sites to meet these requirements will be allocated in a site-specific Local Plan. Priority will be given to sites that are 'market ready' for development, able to accommodate the priority sectors identified in Policy CS14 and provide employment and training for people in areas of greatest need, in line with the strategic priorities identified in the Broad Spatial Strategy (Policy CS2).</p>	<p>Screened in for further discussion in the report, since the delivery of employment land could involve likely significant effects on European sites.</p>
<p>Policy CS14 - Priority Sectors The Council will, in particular, support development that will provide for: higher quality, large, medium and small scale office space in Birkenhead; the regeneration of traditional employment areas to offer premises that modern companies need, particularly in the hinterland surrounding Wirral Waters; greener growth, including construction and supply chain facilities for offshore wind and the low carbon economy; high quality premises for key employment sectors including food; research and development; advanced technology and manufacturing; life sciences and biomedical; creative and digital; and financial and professional services; digital infrastructure to support economic development; flexible managed and non-managed business space to meet the diverse needs of start-up, micro and small and medium size enterprises; and the provision of additional employment in accessible locations in west Wirral.</p>	<p>Screened out – policy only discusses the type of development the Plan will particularly support and gives no information on quantum or location except in the broadest terms.</p>

Policy	HRA Screening decision
<p>Sites to meet these and any other identified requirements will be allocated in a site-specific Local Plan.</p>	
<p>Policy CS15 - Criteria for Employment Development</p> <p>New employment development to provide new or additional floorspace for B1, B2, B8 and other similar uses, including conversions and changes of use, will be permitted where proposals can be demonstrated to:</p> <hr/> <ol style="list-style-type: none"> 1. make effective use of existing infrastructure and contribute to the enhancement of an existing employment area; and/or 2. provide for priority sectors or activities identified in Policy CS14; and/or 3. assist in enhancing access to jobs and training for local residents, particularly within areas of greatest need; and 4. minimise the impact on surrounding uses and protect residential amenity, in terms of light, noise, dust, odour, traffic and other disturbance; and 5. meet the requirements of Policy CS42. <p>Visually intrusive activities or those involving the handling of wind-blown materials will, in the absence of other more effective control measures, normally be required to carry out all operations, including loading, within a building.</p> <p>New office development should first be directed towards existing centres in accordance with Policy CS29 and then to existing employment areas and other locations with easy access to high frequency public transport corridors, unless a proven need to co-locate with an existing facility can be demonstrated.</p>	<p>Screened out – this is a development management policy that identifies the criteria with which development proposals will need to comply, rather than specifically promoting or delivering a particular quantum or location of development.</p> <hr/>
<p>Policy CS16 - Criteria for Port-Related Development</p> <p>Port and marine-related development will be permitted within the existing port estates at Birkenhead and Eastham; at Twelve Quays; along the Tranmere waterfront at Cammell Lairds; and along the Bromborough Coast; where the proposals will:</p> <ol style="list-style-type: none"> 1. be well-related to the Strategic Freight Network; 	<p>Screened out – this is a development management policy that identifies the criteria with which development proposals will need to comply, rather than specifically promoting or delivering a particular quantum or location of development.</p> <hr/>

Policy	HRA Screening decision
<p>2. make effective use of existing infrastructure;</p> <p>3. contribute towards the reduction of greenhouse gas emissions, through the more efficient use of rail and water transport;</p> <p>4. minimise the environmental impact on residential areas, including routing protocols for traffic to and from the development;</p> <p>5. have no adverse impact on water quality or on designated European Sites or their supporting habitats;</p> <p>6. assist in enhancing access to jobs for local residents, particularly within areas of greatest need; and</p> <p>7. meet the requirements of Policy CS42. Sites for new port-related development will be identified in a site-specific Local Plan.</p>	
<p>Policy CS17 - Protection of Employment Land</p> <p>Land will be safeguarded within existing employment areas to maintain local employment and provide a range and choice of sites and premises in terms of quality, accessibility, type and size to meet the priorities identified in Policy CS2 and Policies CS4 to CS11.</p> <p>Alternative uses will only be acceptable on land designated for B1, B2 or B8 uses where:</p> <ol style="list-style-type: none"> 1. the site would not be suitable for the priority sectors identified in Policy CS14; and 2. the site has been continuously marketed for employment uses at realistic prices for a period of at least two years and there is no reasonable prospect that the site will be re-used for employment uses; 3. an ongoing supply of available, suitable, developable land, sufficient to meet the needs identified in Policy CS13 would still be retained; and 4. the uses proposed are compatible with the character of the surrounding area, would not restrict the operation of existing employment uses, would contribute toward establishing a more sustainable pattern of development and would meet the requirements of Policy CS42; and 5. in the case of residential development, that additional housing is needed to demonstrate an ongoing 5-year housing land supply, in line with Policy CS19; and 6. in the case of main town centre uses, that the proposal has been subject to an impact and sequential test under national policy and meets the requirements of Policy CS29; or 7. the development is necessary to secure additional employment development that would not otherwise be viable to provide and criteria 4, 5 and/or 6 (above) would also be met. 	<p>Screened out – this is a development management policy that aims to prevent existing employment land from being lost to conflicting development, rather than actively promoting development.</p>

Policy	HRA Screening decision
<p>Priority will be given to the protection of sites that score highly against the criteria set out in the Wirral Employment Land and Premises Study and are able to provide employment and training for people in areas of greatest need.</p>	
<p>Policy CS18 - Housing Requirement A minimum of at least 12,500 net additional dwellings, including affordable and specialist housing, will be provided for between 2003 and 2028, equivalent to an annual average requirement of 500 net new dwellings over the period to 2028. Sites to meet this requirement will be allocated in a future site-specific Local Plan.</p>	<p>Screened in for further discussion in the report, since the delivery of housing could involve likely significant effects on European sites.</p>
<p>Policy CS19 - Housing Implementation Plan The Council will deliver an ongoing five-year supply of suitable, available and deliverable housing sites, including provision for specialist housing and for Gypsies and Travellers, by:</p> <ol style="list-style-type: none"> 1. granting planning permission and allocating land for new housing development in line with the Policies in this Core Strategy; 2. keeping Table 20.1 and Table 20.2 under annual review; and 3. undertaking a complete review of the ongoing housing land supply at least every five years. <p>The Council will seek to identify additional sites for development and grant planning permission for suitable sites in line with the Broad Spatial Strategy (Policy CS2) in the following order of search:</p> <ol style="list-style-type: none"> 1. previously developed sites within areas of greatest need; 2. previously developed sites within easy walking distance of existing centres and along high-frequency public transport corridors; 3. previously developed sites elsewhere within the existing urban area; and 4. previously undeveloped sites within the urban area, subject to Policy CS30. Planning permission will be granted for previously un-developed sites within the urban area, subject to Policy CS21, where the supply of previously developed land would not be adequate to maintain 	<p>Screened out – this policy is concerned with certainty of housing supply rather than the scale/location of housing.</p>

Policy	HRA Screening decision
<p>an ongoing five-year housing land supply.</p>	
<p>Policy CS20 - Housing Contingencies If new housing does not come forward at Wirral Waters within the first five years to 2018 and alternative sites sufficient to provide an ongoing five-year supply between 2018 and 2023 have not obtained planning permission, the Council will undertake a review of the Borough's ongoing housing land supply to seek additional developable sites within the existing urban area and then, if sufficient developable sites cannot be identified within the existing urban area, by considering the need to identify sites for housing development within the Green Belt sufficient to maintain an ongoing five year supply of deliverable housing land over the remainder of the plan period to 2028. Sites in the Green Belt will only be considered where:</p> <p>they are required to maintain an ongoing five year supply of deliverable housing land; the site is no longer considered to perform a Green Belt function; the site would follow clearly defined boundaries, using physical features that are readily recognisable and likely to be permanent, without compromising the integrity of the surrounding landscape; the site would be well-related to an existing Settlement Area in terms of setting, visual impact, infrastructure, access to services and a choice of means of transport; the development would not compromise the local priorities set out in Policies CS4 to CS11; and the development would be consistent with wider sub-regional priorities for continued regeneration at the core of the Liverpool City Region.</p> <p>Sites required to meet Policy CS20 will be allocated in a site-specific Local Plan.</p>	<p>Screened out – although this policy could potentially lead to likely significant effects, depending on how it is developed in the future, it cannot be meaningfully assessed at this stage since it is entirely non-specific with regard to the quantum or location of development/sites. HRA will therefore be required when actual sites are brought forward in the site-specific Local Plan.</p>
<p>Policy CS21 - Criteria for New Housing Development New housing development, including extensions, conversions and changes of use, will be permitted where the proposals can be demonstrated to:</p> <ol style="list-style-type: none"> 1. form part of a sustainable residential community, well-integrated with the surrounding urban area with good access to local services including open space and recreation, shops, schools and health services by a choice of means of transport; 2. not place additional constraints on the ongoing viable and safe operation of adjoining land 	<p>Screened out – this is a development management policy that identifies the criteria with which development proposals will need to comply, rather than specifically promoting or delivering a particular quantum or location of development.</p>

Policy	HRA Screening decision
<p>uses and will secure an acceptable level of amenity for future residential occupiers in terms of light, noise and other disturbance;</p> <p>3. maintain adequate separation distances between adjacent properties to preserve residential amenity, prevent overlooking and complement the character of development within the surrounding area;</p> <p>4. not compromise an overriding need for the site to be retained for an alternative designated use;</p> <p>5. achieve water efficiency standards equivalent to Levels 3 and 4 of the Code for Sustainable Homes (2009) and where viable contribute towards the provision of Zero Carbon development;</p> <p>6. meet the requirements for affordable housing under Policy CS22; and</p> <p>7. meet the requirements of Policy CS42.</p>	
<p>Policy CS22 - Affordable Housing Requirements</p> <p>Proposals for new market housing of 5 dwellings or above will normally be required to provide affordable housing on-site at the following rates:</p> <p>within areas of greatest need 10 per cent</p> <p>outside areas of greatest need 20 per cent</p> <p>A reduced level of provision will be approved where an independently verified site-specific assessment has been submitted to demonstrate that the site would not be viable for housing development at the rate specified.</p> <p>The rate of affordable housing required will be subject to annual review to take account of changes in market conditions over time and may be altered incrementally up or down, following public consultation, to reflect changes in nationally published data for house prices, build costs and alternative use values, up to a maximum target of 40 per cent, subject to the impact on the viability of development and housing need.</p> <p>The dwelling types and tenures provided under Policy CS22 will be required to meet the needs identified in the latest adopted Housing Market Assessment for the Borough taking account of the impact of Welfare Reform and be designed to meet the most up-to-date quality standards required by the Homes and Communities Agency to facilitate their potential transfer to an appropriate Registered Social Landlord.</p>	<p>Screened out – the proportion of ‘affordable housing’ will not be relevant to consideration of impacts on European sites</p>

Policy	HRA Screening decision
<p>Affordable housing provided under Policy CS22 will normally be secured through an appropriate legal agreement.</p> <p>Where affordable housing would be viable but the Council is satisfied that on-site provision would not be practicable or appropriate, development will be permitted subject to a legal agreement or suitable planning condition to secure the necessary affordable housing provision on an alternative site or through a financial contribution.</p>	
<p>Policy CS23 - Criteria for Specialist Housing Proposals for the development of specialist housing will be permitted where it can be demonstrated that the proposal would:</p> <ol style="list-style-type: none"> 1. meet the requirements of Policy CS21; 2. be easily accessible in terms of distance and gradient by people of different ages and abilities by foot and/or wheelchair to local shops, accessible public open space and public transport in line with the expected needs of the prospective residents; 3. secure adequate private amenity space within the curtilage of the development; 4. not result in an over-concentration of sheltered or supported housing that would have a detrimental cumulative impact on the character of the surrounding area or lead to individual family homes being surrounded by specialist housing; and 5. access to appropriate specialist support services will be available within the locality. <p>Sites considered to be appropriate for specialist housing may be included in a future site-specific Local Plan.</p>	<p>Screened out – this is a development management policy that identifies the criteria with which development proposals will need to comply, rather than specifically promoting or delivering a particular quantum or location of development.</p>
<p>Policy CS24 - Gypsies and Travellers Permanent and/or temporary pitches for Gypsies and Travellers will be permitted where it can be demonstrated that:</p> <ol style="list-style-type: none"> 1. the requirements of Policy CS21 will be met; 2. safe and convenient access will be provided for the manoeuvring, parking and storage of caravans and other vehicles into and within the site, without causing nuisance or danger to adjoining uses; 3. there is adequate provision for safe children's play; 4. the site is capable of being served by an adequate water and energy supply, water treatment and waste collection infrastructure; 	<p>Screened in – gypsy and traveller sites are unlikely to lead to a significant effect in themselves but they are screened in for collective further consideration alongside development policies generally.</p>

Policy	HRA Screening decision
<p>5. in the case of temporary permissions, that the site will be restored by the applicant to a condition consistent with the character of the surrounding area.</p> <p>Provision for transit sites and for Travelling Showpeople will also be considered in accordance with these criteria.</p> <p>Sites for Travelling Showpeople will also need to make appropriate provision for the storage, maintenance and testing of equipment, where required, without creating unacceptable nuisance; a risk to the health and safety of residents or neighbours; or visual intrusion within the wider landscape.</p> <p>Sites to provide an ongoing five-year supply of deliverable sites to meet assessed requirements will be allocated in a site-specific Local Plan.</p>	
<p>Policy CS25 - Hierarchy of Retail Centres</p> <p>The following network of centres will be used to guide the distribution of main town centre uses and other uses that are likely to attract a significant number of people for day-to-day activities, subject to Policies CS26 to CS29:</p> <p>1. Sub-Regional Centre</p> <p>The Borough's main comparison shopping destination and the primary focus for retail, office, leisure, service, cultural and tourist development and facilities and other main town centre uses of Borough wide significance - suitable for A1 retailing up to sub-regional scale:</p> <p>Birkenhead Town Centre (including Grange Road West, Oxton Road and Argyle Street)</p> <p>2. Town Centres</p> <p>The main focus for development and investment in shops, services and leisure and community uses outside Birkenhead - suitable for A1 retail units of up to 2,500 square metres (net):</p> <p>Heswall Liscard</p>	<p>Screened out – this policy does not present any impact pathway relating to European sites since the hierarchy of retail centres will not influence impacts.</p>

Policy	HRA Screening decision
<p>Moreton West Kirby</p> <p>3. District Centres The focus for district level shops, services and community facilities at a level above local centres - suitable for A1 retail units of up to 1,500 square metres (net): Bromborough Village Hoylake Woodchurch Road (Prenton)</p> <p>4. Local Centres The focus for neighbourhood level shops and services to serve everyday needs - suitable for A1 retail units of up to 280 square metres (net): Borough Road (Prenton Park) Claughton Village Dacre Hill Eastham (Mill Park Drive/New Chester Road) Greasby (Arrowe Road/Mill Lane) Irby Village Laird Street Lower Bebington New Ferry Oxton Village Seacombe (Poulton Road) New Brighton (Seabank Road) Tranmere Urban Village Upton Village New Brighton (Victoria Road) Wallasey Village</p> <p>The boundary to each of these centres, including sites for new development and primary and secondary frontages, will be defined in a site-specific Local Plan.</p>	
<p>Policy CS26 - Criteria for Development within Existing Centres Development for A1, A2, A3, A4, A5, B1, C1, D1, D2 and other main town centre uses(10), including new build, extensions and changes of use, will be permitted within the centres listed in Policy CS25 and within smaller shopping parades where they can be demonstrated to be:</p> <ol style="list-style-type: none"> 1. appropriate in scale to the relative position of each centre in the hierarchy outlined in Policy CS25; 2. consistent with the local priorities identified in Policies CS4 to CS11; 3. maintain an appropriate street-level retail frontage; and 	<p>Screened out – this is a development management policy that identifies the criteria with which development proposals will need to comply, rather than specifically promoting or delivering a particular quantum or location of development.</p>

Policy	HRA Screening decision
<p>4. meet the requirements of Policy CS42.</p> <p>Proposals for uses that will sell food or drink, including sweets, for consumption off the premises will be required to include measures for litter control and street cleansing, including the provision and installation of at least one public litter bin, in accordance with Policy CS45. Proposals for food and drink (A3, A4 and A5) uses must also comply with Policy CS27.</p> <p>Proposals exceeding the floorspace guidelines for A1 uses in town, district and local centres in Policy CS25, will be balanced against:</p> <p>the impact on the economic and physical regeneration of the area, including the impact on areas of greatest need; the impact on valued facilities and services and the community's ability to meet its day-to-day needs; the level of accessibility by a choice of means of transport; the potential for additional linked trips and the generation of additional footfall within the centre; the impact on the environmental quality of the centre, vacancy levels and residential amenity; and the wider implications for compliance with Policy CS42 and Policy CS43.</p> <p>Proposals exceeding the floorspace guidelines will be approved where the benefits of permitting the development are considered to outweigh any adverse impacts, including the impact on the vitality and viability on any nearby centre within or outside the Borough. Residential development will normally be permitted outside street-level retail frontages, on upper floors and on backland sites, provided that an acceptable level of amenity can be secured for future residents in accordance with Policy CS21.</p> <p>Outside the centres listed in Policy CS25, alternative uses will be permitted within street-level retail frontages where:</p> <p>the property has been vacant and continuously marketed for compatible uses at the values prevailing in the centre for a period of at least two years and there is no reasonable prospect of reuse for compatible purposes; and the loss of the retail unit would not undermine the function and character of the centre or parade or result in the creation of a 'dead frontage' in an otherwise active parade of shops; and</p>	

Policy	HRA Screening decision
<p>the design of the frontage would enhance the street scene.</p> <p>Within the centres listed in Policy CS25, alternative uses will only be permitted within street-level retail frontages as part of a formally adopted planned contraction of the centre.</p>	
<p>Policy CS27 - Food and Drink Uses in Existing Centres and Parades Proposals for food and drink outlets and uses related to the night-time economy will be permitted within the centres listed in Policy CS25 or within a smaller shopping parade, where there are no unresolved amenity, traffic or safety issues relating to existing similar uses within the surrounding area and it can be demonstrated that the proposal will:</p> <ol style="list-style-type: none"> 1. contribute positively to local environmental quality, including the experience for visitors and users of the area; 2. not have an adverse effect on the character and function of the centre or on residential amenity through an over-concentration and/or clustering of food and drink uses, having regard to: <ul style="list-style-type: none"> the existing number of food and drink uses in the area; their proximity to each other; the nature of other surrounding uses; the function of the centre or parade; the number of shops and other uses remaining to serve the community; vacancy rates; the condition of the unit; and any wider social, health and/or economic benefits or disbenefits. 3. include appropriate measures to mitigate the impact of odours, noise and litter to safeguard local amenity; 4. contribute positively to the visual appearance of the area during opening and non-opening hours; 5. not have an adverse impact on the free flow of traffic or on highway and pedestrian safety; and 	<p>Screened out – there is no impact pathway linking this policy to European sites</p>

Policy	HRA Screening decision
6. incorporate appropriate measures for preventing crime and disorder.	
<p>Policy CS28 - Retail Impact Assessments Proposals for new retail, leisure or office floorspace, including extensions, changes of use and proposals to vary or remove conditions in respect of the range of goods sold, in edge or out-of-centre locations outside the network of centres in Policy CS25 will be required to submit an impact assessment where the following thresholds are exceeded:</p> <p>Convenience goods retail floorspace: 200 square metres (gross) Non-bulky comparison goods retail floorspace: 460 square meters (gross) Bulky comparison goods retail floorspace: 929 square metres (gross)</p>	<p>Screened out – there is no impact pathway linking this policy to European sites</p>
<p>Policy CS29 - Criteria for Out-of-Centre and Edge-of-Centre Facilities New floorspace for A1, A2, A3, A4, A5, B1, C1, D1, D2 and other main town centre uses(12) outside the centres listed in Policy CS25, including changes of use, extensions to existing floorspace and proposals to vary or remove conditions in respect of the range of goods sold, will be permitted where it can be demonstrated that:</p> <ol style="list-style-type: none"> 1. no alternative, suitable sites are available within or at the edge of centre listed in Policy CS25; and 2. the facilities would enhance and complement the range and quality of facilities provided in existing centres; and 3. an impact assessment submitted in accordance with Policy CS28 demonstrates that the new floorspace or variation of condition would not have a significant adverse effect on the vitality and viability of a centre listed in Policy CS25 or designated in the adopted Local Plan of an adjacent authority or on any existing, committed or planned public or private investment within them; and 4. the proposal will enhance access to jobs and training for local residents, particularly within areas of greatest need; and 5. the proposal meets the requirements of Policy CS42. 	<p>Screened out – this is a development management policy that identifies the criteria with which development proposals will need to comply, rather than specifically promoting or delivering a particular quantum or location of development.</p>

Policy	HRA Screening decision
<p>Edge-of-centre proposals must be of a scale appropriate to the size of the centre and its role in the hierarchy identified in Policy CS25 and must demonstrate how the proposal will be connected to the centre, encourage linked trips and enhance the vitality and viability of the centre.</p> <p>Planning conditions will be used to control the type and mix of retail floorspace; range of goods sold; size of units; number of operators per unit; and the quantum of gross and net floorspace permitted, to ensure that the impact on existing centres is minimised.</p>	
<p>Policy CS30 - Requirements for Green Infrastructure New development will be required to contribute towards the provision, protection and enhancement of green infrastructure, to reflect the physical characteristics of the site; the type and function of the development proposed; and the character of the surrounding area, to secure multi-functional benefits which will, where relevant:</p> <ol style="list-style-type: none"> 1. provide for landscaping and amenity and maintain and enhance existing landscape features, such as trees, woodlands and hedges; 2. protect and enhance public rights of way, green networks and access to local facilities such as shops, schools, open space and public transport; 3. protect and provide land for recreation in line with Policy CS31 and Policy CS32; 4. contribute towards net gains for nature and the enhancement of ecological networks and preserve and enhance the setting of any biodiversity and geodiversity assets in line with Policy CS33; 5. protect, conserve and wherever possible enhance landscape character, consistent with the landscape guidelines contained within the Wirral Landscape Character Assessment and the local priorities identified in Policies CS4 to CS11; 6. provide for the sustainable management of surface water and the maintenance of effective flood defences, land drainage infrastructure and river corridors in line with Policy CS34 and Policy CS35, including improvements to water quality and watercourse profiles, where relevant; 7. assist in mitigating and adapting to the impacts of climate change on people and the environment, including urban cooling and carbon storage; and 8. support health and wellbeing and provide for a sustainable pattern of development, 	<p>Screened out – there is no impact pathway linking this policy to European sites</p>

Policy	HRA Screening decision
particularly within areas of greatest need.	
<p>Policy CS31 - Recreational Land and Buildings The Council will regulate the provision of recreational open space on the basis of the following standards: publicly accessible open space - 2.4 hectares for every thousand people public and private sports pitches and playing fields (including ATPs) - 1.0 hectare for every thousand people other public and private outdoor sports facilities (excluding golf courses) - 0.5 hectares for every thousand people public and private allotments - 0.22 hectares for every thousand people</p> <p>No residential household should be further than 400 metres walking distance from a larger publicly accessible open space of 1.5 hectares or above. Smaller publicly accessible open spaces will be retained to serve areas falling outside the catchment of a larger publicly accessible open space, to ensure that no residential household is further than 200 metres walking distance from a publicly accessible open space.</p> <p>Sites for specific protection will be identified in a site-specific Local Plan. Land and buildings used for sport and recreation will be protected from incompatible development unless it can be demonstrated that:</p> <ol style="list-style-type: none"> 1. the site is genuinely surplus and is not required for any other recreational purpose; and 2. the site has been continuously marketed for recreational uses at realistic prices for a period of at least two years and there is no reasonable prospect that the site will be re-used for recreational use; and 3. the site does not need to be retained undeveloped for any other intrinsic or designated value, including landscape character, heritage, biodiversity, drainage requirements or flood defence; or 4. the facility will be replaced with an equivalent or better facility, capable of serving the same local community and criterion 3 (above) would also be met. <p>Replacement facilities will be secured by an appropriate planning condition and/or legal agreement, including provision for ongoing maintenance.</p>	<p>Screened out – there is no impact pathway linking this policy to European sites</p>

Policy	HRA Screening decision
<p>Policy CS32 - Recreational Open Space in New Housing Developments New family housing developments of 36 dwellings or more (either individually or cumulatively) that would be further than 400 metres from an existing publicly accessible open space of 1.5 hectares or above will be required to provide additional publicly accessible open space at 60 square metres for every new home constructed and make provision for safe children's play.</p> <p>Provision will be secured by an appropriate planning condition and/or legal agreement, in negotiation with the Council's Parks and Countryside Service, including provision for ongoing maintenance.</p>	<p>Screened out – there is no impact pathway linking this policy to European sites</p>
<p>Policy CS33 - Biodiversity and Geodiversity The Council will seek to protect and enhance the natural environmental assets of the Borough, including designated biodiversity and geodiversity sites; priority habitats and species; ancient woodland; and aged or veteran trees found outside ancient woodland; and wherever possible provide net gains in biodiversity and establish coherent ecological networks.</p> <p>Development proposals likely to affect a biodiversity or geodiversity asset should be accompanied by an ecological assessment that will:</p> <p>evaluate the value and extent of the assets on or within the vicinity of the development site including their position in the hierarchy of international, national and local sites; assess the likely expected impact of the development on the features of biodiversity or geodiversity identified; and evaluate the options and opportunities available to enhance the value of the assets and contribute towards wider ecological networks.</p> <p>Development that could have an individual or in combination effect on a European Site or its supporting habitat, within or outside of the Borough, must provide sufficient information to enable compliance with the Habitats Regulations.</p> <p>Development will be permitted where the applicant can demonstrate that:</p> <ol style="list-style-type: none"> 1. the identified assets can be incorporated and enhanced within the layout of the development without any harm or net loss to biodiversity or geodiversity or 	<p>Screened out – there is no impact pathway linking this policy to European sites</p>

Policy	HRA Screening decision
<p>without any adverse effect on a Site of Special Scientific Interest; or</p> <ol style="list-style-type: none"> 2. adequate on-site or off-site mitigation can be provided that will secure a net gain to biodiversity or geodiversity; and 3. adequate provision has been secured for appropriate ongoing maintenance and enhancement of biodiversity or geodiversity interests. <p>Sites identified for specific protection, including any necessary mitigation for the impact on European Sites and their supporting habitats, will be identified in a site-specific Local Plan.</p>	
<p>Policy CS34 - Flood Risk and Coast Protection</p> <p>The Council will follow a risk-based approach to the location of new development, both in terms of the allocation of sites in a site-specific Local Plan and the consideration of planning applications. In determining planning applications and allocating land for development the Council will apply the national sequential approach drawing on the latest available Environment Agency mapping data, strategic and site-specific flood risk assessments and other local strategies and advice from the Environment Agency.</p> <p>Development will not be permitted or land allocated where it would:</p> <ol style="list-style-type: none"> 1. be subject to an unacceptable risk of flooding, with the acceptability of any risk being determined having regard to the impact of climate change and: <ul style="list-style-type: none"> the likely frequency of a flood event; the likely depth and velocity of any flood waters; the vulnerability of the use; the potential impacts on any users of the development, including any vulnerable users or occupiers; and the potential impacts on any buildings and other structures. 2. increase the risk of flooding elsewhere; 3. result in an unacceptable maintenance liability in terms of dealing with flood-related issues or obstruct land adjacent to water courses or flood defences required for access and/or maintenance purposes; or 	<p>Screened out – there is no impact pathway linking this policy to European sites as this identifies the constraints placed on development in areas of flood risk/changes to flood defences, rather than promoting development.</p>

Policy	HRA Screening decision
<p>4. require unduly complicated or burdensome emergency planning procedures.</p> <p>The Council will seek to reduce flood risk on individual sites through flood resilient design and on site flood risk management measures. Structures and other features that help to reduce the risk of flooding or mitigate its impacts will be protected. Their loss, alteration or replacement will only be permitted where there would be no increase in flood risk.</p> <p>Where the exception test is to be applied, consideration of wider sustainability benefits will include the extent to which development contributes to the Broad Spatial Strategy, alongside a site specific flood risk assessment demonstrating that the development will be safe for its lifetime, will not increase flood risk elsewhere and where possible reduces overall flood risk.</p> <p>Proposals for new coastal protection and sea defence works will only be permitted in line with the recommendations of the adopted Shoreline Management Plan and emerging Wirral Coastal Strategy and where sufficient evidence is provided to demonstrate that there will be no adverse effects on coastal processes.</p> <p>Areas identified for specific protection for flood defence or coast protection will be identified in a site-specific Local Plan.</p>	
<p>Policy CS35 - Drainage Management</p> <p>Development will be permitted when it contributes to all the following sustainable water management objectives:</p> <ol style="list-style-type: none"> 1. improving the capacity of the existing sewer system, where necessary; 2. the reduction of surface flooding; 3. managing surface water in a sustainable, effective and appropriate way; and 4. incorporating measures that will prevent a detrimental impact on the water environment through changes to water chemistry or resource. <p>Development will only be permitted where the necessary surface water drainage, foul drainage and sewage treatment capacity is available or where additional capacity will be provided in time to serve any individual phase of the development without unacceptably reducing the level of service to existing users or causing harm to the environment based on the advice from the appropriate utilities provider.</p>	<p>Screened out – there is no impact pathway linking this policy to European sites</p>

Policy	HRA Screening decision
<p>The discharge of surface water to combined drainage systems will be regulated in accordance with requirements set out in the adopted Surface Water Management Plan for the area or required by the utility provider.</p> <p>The Council will support the provision of new, improved or expanded infrastructure that is required to meet the needs of the Broad Spatial Strategy, subject to Policy CS42.</p>	
<p>Policy CS36 - Pollution and Risk Development proposals likely to give rise to pollution to soil, air or water or from insects, noise or artificial light or increase the risk of accident hazard will be permitted where it can be demonstrated that:</p> <p>all practical measures have been taken to minimise potential risk and harm to public health and safety, property and the built and natural environment; all practical measures have been taken to minimise pollution levels and mitigate the impacts of the pollution; and they will not cause unacceptable harm to the general amenity of neighbouring uses, either individually or cumulatively, or prejudice the delivery of the Broad Spatial Strategy (Policy CS2).</p> <p>Development proposals will not be permitted if they will result in an unacceptable increase in the risk of major accidents or impose significant restrictions on the continued operation of licenced processes or would lead to an existing use being classified as a statutory nuisance.</p>	<p>Screened out – there is no impact pathway linking this policy to European sites</p>
<p>Policy CS37 - Contamination and Instability Development proposals likely to affect land known or suspected to be unstable or contaminated must be supported by an appropriate contamination or ground stability assessment that identifies; the nature, level and extent of contamination or instability; the implications of contamination or instability for the development of the site and risk to human</p>	<p>Screened out – there is no impact pathway linking this policy to European sites</p>

Policy	HRA Screening decision
<p>health, the natural environment, buildings and other property, including water bodies and water courses; where a significant risk exists, a viable method of remediation which will safeguard users or occupiers of the proposed development, neighbouring land uses and the environment and will make the land suitable for the use proposed.</p> <p>Planning conditions or legal agreement will be used to secure the provision of sufficient information to develop and implement a suitable remediation strategy prior to development or as part of an agreed, phased programme.</p> <p>Development proposals within areas likely to be affected by coastal erosion will only be permitted where erosion or landslip are not likely to occur during the lifetime of the development.</p>	
<p>Policy CS38 - Minerals Facilities for the exploration, extraction, storage, processing and distribution of minerals will be permitted where it can be demonstrated that:</p> <ol style="list-style-type: none"> 1. there is a demonstrable need and market demand for the mineral; 2. the proposal would not undermine the greater use of alternative, secondary or recycled materials; 3. the operations permitted will not have an unacceptable adverse impact on the natural, water or historic environment, amenity or on human health; 4. adequate provision for the mitigation of any negative impacts will be secured; 5. sensitive environmental restoration and aftercare of sites will be secured at the earliest opportunity, to a standard and manner consistent with the character, setting and landscape of the surrounding area; and 6. the proposals will comply with the requirements of Policy CS42. Facilities for the landing, storage, processing and distribution of minerals including marine-won sand and gravel will be directed towards existing facilities and to land within the port estates to maximise the use of sustainable transport by rail and water. <p>Land that should be safeguarded will be included in a site-specific Local Plan.</p>	<p>Screened out – minerals development could lead to likely significant effects on European sites but this policy sets out the criteria against which proposals will be evaluated rather than proposing/promoting any minerals development. The criteria include not having an unacceptable adverse impact on the natural environment.</p>

Policy	HRA Screening decision
<p>Policy CS39 - Waste Management New waste management development will be permitted in accordance with the spatial strategy, policy criteria and site allocations for new waste management development set out in the Joint Waste Local Plan for Merseyside and Halton (2012 to 2027). Proposals that would support improvements in the minimisation, collection, re-use and recycling of waste generated at existing facilities will normally be supported subject to Policy CS42.</p> <p>All new development will be required to ensure that safe and adequate on-site provision is made for the storage, collection, recycling and management of waste and litter likely to be generated by the development.</p>	<p>Screened out on the basis that waste development proposals across Merseyside are being dealt with through a separate Joint Waste Plan which has already been subject to HRA on its own account.</p>
<p>Policy CS40 - Transport Requirements New development will be permitted where the proposals can be demonstrated to:</p> <ol style="list-style-type: none"> 1. support the greater use of sustainable transport and travel and promote the use of public transport, walking and cycling; 2. be designed and laid out in a manner which is appropriate for the type and volume of traffic likely to use and service the development, including pedestrians, cyclists, cars, HGVs and other delivery vehicles, coaches and waste collection vehicles; 3. secure appropriate measures to ensure highway safety, such as sight lines and visibility splays, road crossings and traffic management; 4. provide accessible, safe and attractive facilities for pedestrians and cyclists, suitable for all abilities and ages which link to and contribute to the enhancement of existing networks; 5. reinforce the implementation of 20mph zones outside main routes in residential areas and ensure that pedestrians and cyclists have priority; 6. minimise the environmental impact of traffic likely to be generated by the development on residential areas and other sensitive uses, such as schools, care homes and hospitals; 7. secure appropriate provision for on-site parking and manoeuvring, including safe, covered cycle storage, cycle parking and other facilities (such as showers, bike cages and lockers) and the provision of electric vehicle charging infrastructure, where appropriate; 	<p>Screened out – this is a development management policy that identifies the criteria with which development proposals will need to comply, rather than specifically promoting or delivering a particular quantum or location of development.</p>

Policy	HRA Screening decision
<p>8. secure appropriate measures to support the greater use of public transport networks and facilities, including the width of carriageways and infrastructure such as bus stops and laybys;</p> <p>9. not compromise safeguarded sites or alignments for future road, rail or active travel provision;</p> <p>10. not result in severe cumulative impacts on the safe and efficient operation of the highway and wider transport network; and</p> <p>11. comply with the requirements of Policy CS42.</p> <p>A Transport Assessment and Travel Plan and/or personal travel planning programme must be prepared and submitted alongside any planning application that generates significant amounts of movement, with the implementation of any measures identified secured before the development is completed and operational.</p> <p>Developments resulting in a material increase or significant change in the character of traffic using a rail crossing will only be permitted with the agreement of Network Rail.</p> <p>The provision of facilities or measures required to comply with Policy CS40 will be secured through appropriate planning conditions and legal agreements.</p>	
<p>Policy CS41 - Transport Schemes</p> <p>Measures to improve traffic management and highway safety, including minor highway improvements and enhanced provision for public transport, walking and cycling will normally be permitted subject to Policy CS42.</p> <p>Land should, in addition, be safeguarded to facilitate the delivery of the following transport schemes:</p> <ol style="list-style-type: none"> 1. schemes to promote regeneration and economic growth and support improved access to the ports and Birkenhead Town Centre; 2. schemes to support the delivery and integration of Wirral Waters and the Mersey Waters Enterprise Zone with the surrounding areas; 3. schemes to facilitate the greater use of public transport and to support the more efficient use of the rail network; 4. schemes to support greater use of walking and cycling; and 5. the protection of routes that may be critical in developing future transport infrastructure. 	<p>Screened out since this policy is concerned only with safeguarding the land identified for road schemes, while no specifics are provided for each scheme. Details of those schemes (and associated) HRA will be brought forward as part of specific proposals/planning applications.</p>

Policy	HRA Screening decision
Detailed requirements will be included in a site-specific Local Plan.	
<p>Policy CS42 - Development Management New development including extensions, conversions and changes of use will be permitted where it can be demonstrated that the proposals will:</p> <ol style="list-style-type: none"> 1. support the delivery of the Spatial Vision, Spatial Objectives and Broad Spatial Strategy (Policy CS2); 2. address the priorities for individual Settlement Areas contained within Policies CS4 to CS11; 3. contribute towards the provision of appropriate green infrastructure, biodiversity and the protection of land needed for recreation subject to Policies CS30 to CS33; 4. meet the requirements for design, heritage and amenity set out within Policy CS43; 5. minimise flood risk from all sources, subject to Policy CS34; 6. take full account of the need to reduce the risk of major accidents and minimise pollution subject to Policy CS36; 7. provide for the proper consideration of potential contamination and instability, subject to Policy CS37; 8. make appropriate provision for on-site waste management subject to Policy CS39; 9. secure appropriate provision for transport and accessibility in accordance with Policy CS40; 10. provide appropriate developer contributions in accordance with Policy CS45; 11. take full account of notified airport safety zones for the operation of Liverpool John Lennon Airport, Hawarden Aerodrome and the Wallasey Beacon and the impact on utilities and pipelines and their safeguarding zones; 12. have no significant adverse impact on health and wellbeing; 13. comply with the legal requirements associated with the protection of European Sites and their supporting habitat, together with the provision of any relevant on-site or off-site mitigation; and 14. the proposals can be adequately served by essential local infrastructure in accordance with Policy CS44. <p>Further advice and guidance on measures that can be taken to secure compliance with Policy CS42 will be set out in relevant Supplementary Planning Documents.</p>	<p>Screened out – there is no impact pathway linking this policy to European sites</p>

Policy	HRA Screening decision
<p>Policy CS43 - Design, Heritage and Amenity All new development will be expected to enhance the character, quality and distinctiveness of the area in which it is located and relate well to surrounding property and land uses and the natural and historic environment. Design solutions will be permitted that will, where relevant:</p> <ol style="list-style-type: none"> 1. preserve existing buildings of local character; 2. preserve and enhance the character, integrity and setting of identified heritage and biodiversity assets and safeguard the future of heritage at risk; 3. take full account of any formally adopted area-specific design or density controls, master plans, character appraisals or area-specific management plans; 4. protect and provide unifying features of design such as gate piers, landscaping, walls, boundary fences and the nature, quality and type of materials; 5. prevent over-development and ensure that the density, height, scale, massing, siting and visual impact of any buildings or structures and the provision of landscaping and private amenity open space will be appropriate to the character, grain and layout of the surrounding area; 6. preserve important views into and out of the area; 7. maintain and enhance the architectural detailing and elevational treatment of main frontages and prominent elevations and align entrances to buildings with active frontages in the public realm; 8. preserve the outlook, privacy, light and amenity of existing and future occupiers by preventing overlooking or overshadowing and by maintaining an appropriate separation between habitable rooms and between habitable rooms and blank elevations; 9. minimise the opportunity for noise and other disturbance to future occupiers and adjoining uses; 10. secure an appropriate boundary between public and private areas, increase natural surveillance and reduce or prevent the opportunity for crime and anti-social behaviour; 11. provide for lifetime needs by allowing people of different ages and abilities to move around without difficulty; 12. orientate development to maximise passive solar gain, natural ventilation and facilitate the micro-generation of renewable energy, where the energy generated can be used at source; 13. incorporate sustainable construction techniques and a fabric first approach to support mitigation and adaptation to climate change; energy and water conservation; and provision for low carbon energy and heat; 	<p>Screened out – there is no impact pathway linking this policy to European sites</p>

Policy	HRA Screening decision
<p>14. improve the energy efficiency of existing buildings;</p> <p>15. ensure that extensions to existing property will match or complement the design and materials of the existing buildings and avoid a terracing effect between separate buildings; and</p> <p>16. provide underground service ducts to enable future connections for cable telecommunications and district heating networks where available.</p> <p>Temporary buildings or structures, where justified, will only be permitted in unobtrusive locations and for a period not exceeding three years.</p> <p>Applications for radio and telecommunications apparatus must also demonstrate that the apparatus proposed cannot be located on an existing building or that an existing mast cannot be shared; that the proposal is the minimum consistent with the efficient operation of the network; and is designed and located to minimise its visual impact on the surrounding area.</p>	

Policy	HRA Screening decision
<p>Policy CS44 - Phasing and Infrastructure</p> <p>Planning permission for development will be refused where:</p> <p>utilities or other infrastructure providers indicate that existing or proposed infrastructure would not be capable of supporting the scale or nature of the development proposed without significant environmental or other harm; and</p> <p>there is no prospect of the issue being resolved within the period of planning permission.</p> <p>Where necessary, development will be phased by an appropriate planning condition and legal agreement, until the infrastructure required has been provided and is operational.</p>	<p>Screened out – there is no impact pathway linking this policy to European sites</p>
<p>Policy CS45 - Developer Contributions</p> <p>The Council will seek to ensure that developers make reasonable provision for developer contributions relating to the quality, scale and nature of the development proposed, to mitigate the impact of that development. In doing so, the Council will seek to ensure that a scheme is made acceptable in planning terms and achieves the objectives of sustainable development.</p> <p>Planning conditions and/or legal agreements will in particular be sought to address requirements that will where relevant include:</p> <p>affordable housing required under Policy CS22;</p> <p>the provision and installation of a public litter bin required under Policy CS26;</p> <p>the provision of new or replacement of green infrastructure required under Policy CS30;</p> <p>flood alleviation, water management, pollution and contamination required under Policies CS34 to CS37;</p> <p>highway and transport works required under Policy CS40, including through agreements under</p>	<p>Screened out – there is no impact pathway linking this policy to European sites</p>

Policy	HRA Screening decision
<p>the Highways Acts;</p> <p>measures to promote access to jobs and training for local residents;</p> <p>the ongoing maintenance of the measures or facilities as required by the proposal; and</p> <p>any other essential mitigation identified through the development management process under the application of Policy CS42.</p> <p>Development will need to be phased to ensure that the measures or facilities are provided at an appropriate point before the development is occupied.</p> <p>Where a Community Infrastructure Levy Charging Schedule has been adopted, developer contributions will also be sought through a tariff for off-site improvements to include provision for:</p> <p>district-wide highway network management and sustainable travel initiatives;</p> <p>the enhancement of district-level open spaces and green infrastructure, including parks, sports facilities, countryside recreation sites and Local Nature Reserves;</p> <p>district-level flood alleviation, coast protection and drainage capacity improvements;</p> <p>infrastructure for low carbon energy and heat distribution;</p> <p>town, district and local centre and public realm improvements;</p> <p>wider area mitigation required to ensure compliance with the findings of the Core Strategy Habitats Regulations Assessment; and</p> <p>cross-boundary infrastructure, if a need is identified within the plan period.</p>	