

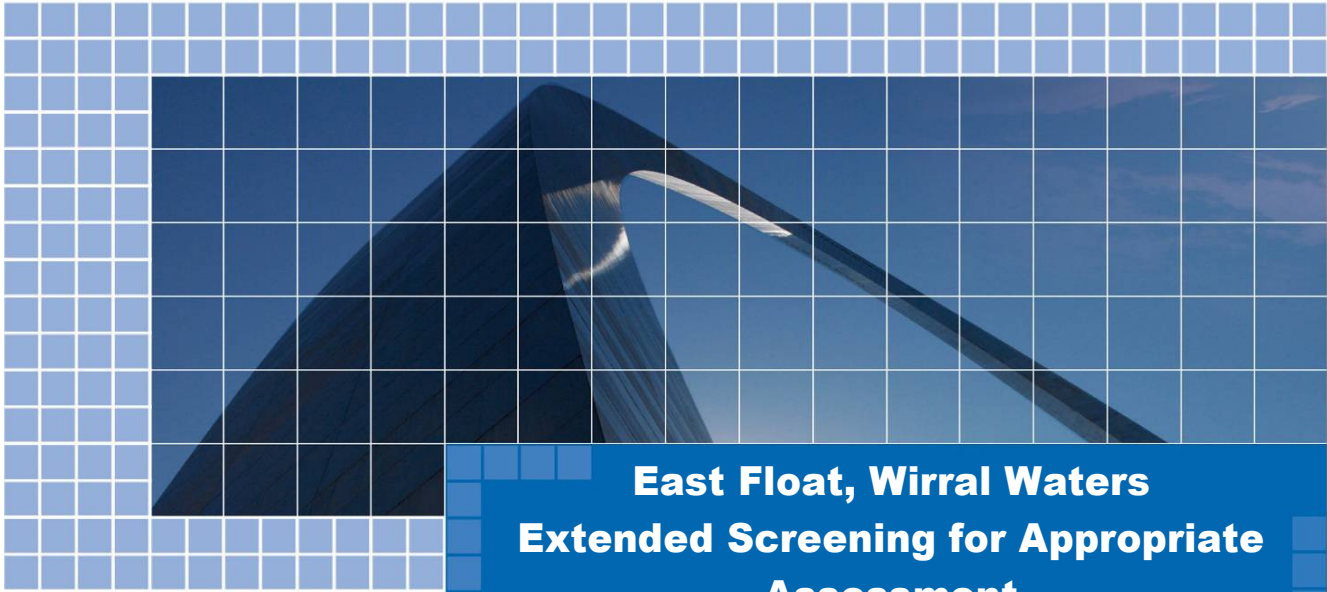


**Wirral Waters**

East Float Outline Planning Application

# Appropriate Assessment Screening Letter

February 2010




**East Float, Wirral Waters  
Extended Screening for Appropriate  
Assessment**

Peel Land and Property (Ports) Limited

February 2010

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# 1 Introduction

## 1.1 PURPOSE OF THIS REPORT

1.1.1 This document sets out the results of a screening exercise in accordance with the Habitats Regulations<sup>1</sup> and the EU Habitats Directive<sup>2</sup>. It has been prepared to help inform the Habitats Regulations Assessment Screening document for East Float, for which the outline planning application was submitted to Wirral Metropolitan Borough Council (WMBC) in December 2009. However, the preparation of the documents is the responsibility of WMBC.

1.1.2 Our approach is based on the EU document '*Assessment of plans and projects significantly affecting Natura 2000 sites: Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC*' prepared by Oxford Brookes University for European Commission Environment DG and published by European Commission Environment DG, 2001.

1.1.3 Habitats Regulations Assessment is an assessment of the potential effects of a proposed project or plan, either a development plan document (DPD) or a supplementary planning document (SPD) on one or more sites of international nature conservation importance (hereafter referred to as Natura 2000 sites). Projects and plans can only be permitted where the 'competent authority' (in this case, WMBC) is satisfied that there will be no adverse effects on the integrity of the relevant nature sites.

1.1.4 These sites of international nature conservation importance are the network of Natura 2000 sites. The Natura 2000 sites are of exceptional importance in respect of rare, endangered or vulnerable natural habitats and species within the European Community. Natura 2000 sites include Special Protection Areas (SPAs) designated under the EU 'Wild Birds' Directive and Special Areas of Conservation (SACs) designated under the EU '*Habitats' Directive and Offshore Marine Sites*' (OMSs).

1.1.5 The UK Government's Planning Policy Statement 9 (PPS9) '*Biodiversity and Geological Conservation*' states that Ramsar sites should be taken to be part of the Natura 2000 network and treated accordingly (para 6, PPS9, ODPM, 2005). Ramsar sites are wetlands of international importance, designated under the International Wetlands Convention, which took place at Ramsar, Iran. PPS9 also states that proposed sites should be treated in the same way as Natura 2000 sites for all practical purposes, including for Habitats Regulations Assessment. WSP have followed this Government guidance, and in this document have used the term 'Natura 2000 sites' to refer to all these designations and proposed designations.

1.1.6 Stage 1 of the Habitats Regulations Assessment process is the screening of proposed plans or projects for significant effects. If there are none, then no further steps need to be taken. Where significant effects seem likely, a more detailed Appropriate Assessment of the proposed plan or projects is necessary. This process will often establish mitigation measures or alternatives, which can offset all significant adverse effects and enable the plan or project to go forward. Where this is not the case, other more stringent measures need to be considered. This report extends the screening stage slightly to include consideration of the potential for mitigation or avoidance measures that will avoid the need for a more detailed assessment. This is considered appropriate given that the scheme is at outline stage and will be a phased development, taking decades to complete.

## 1.2 DESCRIPTION OF THE PROJECT

1.2.1 The proposed boundary of East Float (hereafter referred to as the Site) is shown on **Figure 1.2**. The Site covers approximately 56 hectares and is located approximately 1.1km north of Birkenhead Central Rail Station and 2.9 km south of Wallasey Village Rail Station. The location of the Site within the wider context is illustrated in **Figure 1.1** with the boundary of the Site illustrated in **Figure 1.2**. Aerial photography of the Site is reproduced in **Figure 1.3**. Birkenhead Town Centre, Birkenhead Park and Bidston Hill are all located to the south, with the River Mersey and Liverpool waterfront to the east.

1.2.2 The southern part of the Site is occupied by warehouse / transit sheds and offices, which are located either side of Vittoria Dock. The main warehouse / shed structures are occupied by Denholme Handling, Robert Smith Steels, and Atlantic Steel. The area surrounding the buildings is mainly hardstanding and used for storage of

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<sup>1</sup> The Conservation (Natural Habitats & c Regulations) 1994 as amended.

<sup>2</sup> The European Communities Council Directive 92/43/EEC, 1992 on the conservation of natural habitats and of wild fauna and flora.

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materials with areas of informal vegetation on the perimeters. A business park, which appears to be used as office spaces is located in the southeastern corner of the Site and comprises 25 units and associated car parking. A large proportion of the Site is dominated by the East Float waterbody.

1.2.3 The planning application as submitted to the WMBC in December 2010 describes the Proposed Development as follows:

*'Outline application for mixed use development comprising a maximum of: 13,521 residential units (Class C3 Use), 416,000 sq m office, workshop and R&D floorspace (Class B1), 60,000 sq m retail uses (Class A1 retail, A2 financial and professional services, A3 restaurants and cafes, A4 bars and A5 hot food takeaways), 38,000 sq m hotel and conference facilities (Class C1), 100,000 sq m of culture, education, leisure, community and flexible floorspace (Class D1 and D2), car and cycle parking, structural landscaping, formation of public spaces and associated infrastructure and public realm works (all matters reserved).'*

1.2.4 The planning application was supported by an Environmental Statement which has been prepared to comply with the *Town and Country Planning (Environmental Impact Assessment) (England and Wales) Regulations 1999* (as amended). The Environmental Impact Assessment has been based upon a series of fixed parameter plans for the 'City Structure' and a series of urban quarters. In addition to the parameter plans, a series of development principles have been outlined were also been used to inform the EIA. The parameter plans outline spatial elements which are fixed and other spatial elements which may vary as the scheme design progresses through the design process and towards future detailed reserved matters submissions. The degree to which those elements will be subject to variation was outlined within the parameter plans and development principles and they have been referred to as 'tolerances'.

**Table 1.1: East Float Maximum Quantum of Uses across the Site**

Use	Maximum (m <sup>2</sup> )
Residential units (Class C3 Use)	13,521 units (774,000sqm equivalent)
Office, workshop and R&D floorspace (Class B1)	422,757 sq m
Retail Uses (Class A1 retail, A2 financial and professional services, A3 restaurants and cafes, A4 bars and A5 hot food takeaways)	60,000 sq m
Hotel and conferencing facilities (Class C1)	38,000 sq m
Culture, education, leisure, community and flexible floorspace (Class D1 and D2)	100,000 sq m
<b>Total Floorspace</b>	<b>1,394,757</b>

### 1.3 IDENTIFYING NATURA 2000 SITES

1.3.1 Following a review of the Natura 2000 sites in the local area, the following SACs, SPAs, Ramsar sites, potential SPA and proposed Ramsar sites have been identified within 10km of the proposed Site, a distance adopted to enable potential issues around recreational use of sites to be considered. The majority of sites are within 7km.

- Dee Estuary SAC – located approximately 4.2km north west of the site;
- Mersey Estuary Ramsar site – located approximately 3km south east of the site;
- Mersey Estuary SPA – located approximately 3.5km south east of the site;
- Ribble and Alt Estuaries Ramsar – located approximately 6.8km north east of the site;
- Ribble and Alt Estuaries SPA – located approximately 6.8km north east of the site;
- Sefton Coast SAC – located approximately 6.8km north east of the site; and
- Mersey Narrows and North Wirral Foreshore proposed Ramsar and potential SPA – located 550m north of the site

1.3.2 The above sites are summarised in the **Table 1.2** below.

**Table 1.2: Summary of designations within 10km of the site which are relevant for Appropriate Assessment**

Name of Designation	Type of Designation	Reason for Designation	Approximate Distance from site
Dee Estuary	SAC	Mudflats and sandflats not covered by seawater at low tide, representative of pioneer glasswort <i>Salicornia</i> spp. Saltmarsh and Atlantic salt meadows <i>Glauco-Puccinellietalia maritimae</i> .	4.2km north west
Mersey Estuary	Ramsar	Intertidal flats and saltmarshes provide feeding and roosting sites for large and internationally important populations of waterfowl. During the winter,	3km south east
	SPA	The site is of major importance for duck and waders. The site is also important during spring and autumn migration periods, particularly for wader populations moving along the west coast of Britain. Species include Common shelduck, <i>Tadorna tadorna</i> , Black-tailed godwit, <i>Limosa limosa islandica</i> , Common redshank, <i>Tringa totanus tetanus</i> , Eurasian teal, <i>Anas crecca</i> , Northern pintail, <i>Anas acuta</i> , Dunlin and <i>Calidris alpina alpina</i>	3km south east
Ribble and Alt Estuaries	Ramsar	Sand and mud-flats and large areas of saltmarsh. There are also areas of coastal grazing marsh located behind the sea embankments. Species include Common Tern <i>Sterna hirundo</i> , Ruff <i>Philomachus pugnax</i> , Bar-tailed Godwit <i>Limosa lapponica</i> , Bewick's Swan <i>Cygnus columbianus bewickii</i> , Golden Plover <i>Pluvialis apricaria</i> , Whooper Swan <i>Cygnus cygnus</i> , Lesser Black-backed Gull <i>Larus fuscus</i> , Ringed Plover <i>Charadrius hiaticula</i> , Sanderling <i>Calidris alba</i> , Black-tailed Godwit <i>Limosa limosa islandica</i> , Dunlin <i>Calidris alpina alpina</i> , Grey Plover <i>Pluvialis squatarola</i> , Knot <i>Calidris canutus</i> , Oystercatcher <i>Haematopus ostralegus</i> , Pink-footed Goose <i>Anser brachyrhynchus</i> , Pintail <i>Anas acuta</i> , Redshank <i>Tringa totanus</i> , Sanderling <i>Calidris alba</i> , Shelduck <i>Tadorna tadorna</i> , Teal <i>Anas crecca</i> and Wigeon <i>Anas penelope</i> .	6.8km north east
	SPA		6.8km north east
Sefton Coast	SAC	Tidal rivers, estuaries, mud flats, sand flats, lagoons, coastal dunes and sand beaches. Designated for embryonic shifting dunes, shifting dunes along the shoreline with <i>Ammophila arenaria</i> (white dunes), fixed dunes with herbaceous vegetation (grey dunes), dunes with <i>Salix repens</i> ssp. <i>Argentea</i> , and humid dune stacks. Species include grass <i>Leymus arenarius</i> , sea-holly <i>Eryngium maritimum</i> , cat's-ear <i>Hypochaeris radicata</i> , common restharrow <i>Ononis repens</i> , grey hair-grass <i>Corynephorus canescens</i> , and creeping willow <i>Salix repens</i> ssp. <i>Argentea</i> .	6.8km north east
Mersey Narrows and North Wirral Foreshore	Potential SPA	The site regularly supports internationally important populations of:	550m north
		<ul style="list-style-type: none"> <li>■ Rare or vulnerable bird species (Annex 1 species) such as: <ul style="list-style-type: none"> <li>○ Common tern (<i>Sterna hirundo</i>);</li> <li>○ Bar-tailed godwit (<i>Limosa lapponica</i>).</li> </ul> </li> </ul>	



Name of Designation	Type of Designation	Reason for Designation	Approximate Distance from site
	Proposed Ramsar	<ul style="list-style-type: none"> <li>■ Migratory bird species such as:               <ul style="list-style-type: none"> <li>○ Knot (<i>Calidris canutus</i>);</li> <li>○ Redshank (<i>Tringa totanus</i>);</li> <li>○ Turnstone (<i>Arenaria interpres</i>)</li> </ul> </li> </ul> <p>The site also supports regularly over 20,000 waterbirds, including outside the breeding season:</p> <ul style="list-style-type: none"> <li>■ Cormorant (<i>Phalacrocorax carbo</i>);</li> <li>■ Oystercatcher (<i>Haematopus ostralega</i>);</li> <li>■ Grey Plover (<i>Pluvialis squatarola</i>);</li> <li>■ Sanderling (<i>Calidris alba</i>);</li> <li>■ Knot (<i>Calidris canutus</i>);</li> <li>■ Dunlin (<i>Calidris alpina alpina</i>);</li> <li>■ Bar-tailed godwit (<i>Limosa lapponica</i>);</li> <li>■ Redshank (<i>Tringa totanus</i>); and</li> <li>■ Turnstone (<i>Arenaria interpres</i>).</li> </ul> <p>Other species of interest include smew (<i>Mergellus albellus</i>) and golden plover (<i>Pluvialis apricaria</i>) especially in winter, and ruff (<i>Philomachus pugnax</i>).</p> <p>The site is a wetland of international importance because:</p> <ul style="list-style-type: none"> <li>■ It regularly supports 20,000 or more waterbirds (Criterion 5);</li> <li>■ It regularly supports 1% of the populations of the following waterbird species or sub-species in any season (Criterion 6);               <ul style="list-style-type: none"> <li>○ Knot (<i>Calidris canutus</i>)</li> <li>○ Redshank (<i>Tringa totanus</i>)</li> <li>○ Turnstone (<i>Arenaria interpres</i>)</li> </ul> </li> </ul> <p>The site also supports nationally important winter numbers of cormorant (<i>Phalacrocorax carbo</i>), oystercatcher (<i>Haematopus ostralegus</i>), grey plover (<i>Pluvialis squatarola</i>), Sanderling (<i>Calidris alba</i>), dunlin (<i>Calidris alpina</i>) and bar-tailed godwit (<i>Limosa lapponica</i>). It also supports a nationally important breeding colony of common terns (<i>Sterna hirundo</i>).</p>	550m north

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## 1.4 POTENTIAL EFFECTS

1.4.1 The following impacts have been identified based on WSP's experience of undertaking similar work and a recent screening exercise undertaken for another outline application in the area for a mixed use development known as North Bank East (Planning Application OUT/2009/5110):

- Potential impacts associated with changes to air quality as a result of road traffic generated by the Proposed Development;
- Potential impacts associated with infiltration through groundwater and surface water into the River Mersey/Estuary;
- Potential for increased recreational pressure; and
- Potential for impact on flight lines associated with tall buildings and lighting.

1.4.2 The range of effects that should be considered was discussed as part of a workshop held by the applicant at the site in October 2009.

1.4.3 As part of the assessment, consultation was undertaken with Natural England to agree the methodology adopted and to identify their key concerns with regards to the impact of the proposed development on air quality at the designated sites. The consultation confirmed that the main impact of concern is likely to be traffic generated by the development and that the greatest impact will be on those designated sites located closest to the development site.

1.4.4 Consultation was also undertaken with Natural England and the Cheshire & Wirral Ornithological Society to obtain data to inform the assessment of potential impacts on flight lines.

1.4.5 Mersey Forest was contacted to discuss work on a Merseyside wide study it is undertaking on Green Infrastructure provision in the area.

1.4.6 Section 2 of this report considers each of these issues in turn and a conclusion follows in Section 3.

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## 2 Assessing Potential Effects

### 2.1 POTENTIAL IMPACTS ASSOCIATED WITH CHANGES TO AIR QUALITY AS A RESULT OF ROAD TRAFFIC GENERATED BY THE PROPOSED DEVELOPMENT

#### Introduction

2.1.1 Air pollution can be detrimental to the health and productivity of a range of ecosystems, particularly on Natura 2000 sites. Impacts can arise either directly through the deposition of pollutants onto plant surfaces, or indirectly, by altering the characteristics of soils on which vegetation and organisms may feed.

2.1.2 The key pollutants of concern are as follows:

- Nitrogen Oxides (NO<sub>x</sub>) - Comprised of nitric oxide (NO) and nitrogen dioxide (NO<sub>2</sub>). Produced largely by combustion processes, with road transport being the main source in the vicinity of the Site. High levels of NO<sub>x</sub> affect the growth of vegetation and the deposition of derivatives (e.g. nitrates) can contribute to eutrophication and acidification;
- Ozone (O<sub>3</sub>) - Although not directly produced by human activities, Ozone is a secondary pollutant that is formed during chemical reactions between other pollutants (notably NO<sub>x</sub> and Volatile Organic Compounds). At high concentrations, Ozone can damage plants and crops and reduce productivity;
- Sulphur Dioxide (SO<sub>2</sub>) - Produced by combustion processes which use sulphur rich fuels and therefore a common by-product of industrial processes (e.g. power stations). At high concentrations SO<sub>2</sub> can affect rates of photosynthesis and the deposition of derivatives (e.g. sulphates) can also contribute to acidification; and
- Ammonia (NH<sub>3</sub>) - Ammonia is a naturally occurring pollutant that is primarily formed during the breakdown of animal wastes. Agriculture is therefore the main source of ammonia in the atmosphere; however, a small amount also comes from road transport. Ammonia can also contribute to the acidification and eutrophication of ecosystems.

2.1.3 The Proposed Development has the potential to generate emissions to air during both the site preparation, earthworks and construction and operational phases.

#### Approach to the Assessment

2.1.4 This section considers the potential impact of the emissions generated by the Proposed Development on air quality at those Designated Sites identified in paragraph 1.3.1 and summarised in Table 1.2. It includes an assessment of emissions during the site preparation, earthworks and construction phase and the operational phase.

2.1.5 To complete the assessment the following tasks have been carried out:

- Consultation with Natural England;
- A review of information available for each of the identified designated sites (including information from the NJCC website, Nature on the Map and the Design Manual for Roads and Bridges [DMRB]) to confirm the reasons for designation of the above sites and their sensitivity to air quality;
- Review of available traffic data generated by the Proposed Development; and
- Assessment of the potential impact of road traffic following the methodology outlined in the DMRB, Volume 11, Section 3, Part 1, Appendix F.

2.1.6 A brief discussion of the potential impacts for each phase and their effects on nearby designated sites is summarised below along with a more detailed discussion on the methodology adopted for the assessment.

#### Potential Impacts

##### *Site Preparation, Earthworks and Construction Phase*

2.1.7 During this phase, activities undertaken within the Proposed Development Site may give rise to emissions to air, most notably through the generation of dust and particulate matter. Such emissions can result in a range of detrimental impacts to plants and vegetation. For example, the deposition of particles on leaves can have a “smothering” effect and can interfere with plant processes including photosynthesis, respiration and transpiration.

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Similarly, deposition can cause direct damage to vegetation, for example through shading or abrasion of the leaf surface.

2.1.8 Dust comprises particles typically in the size range 1-75 micrometres ( $\mu\text{m}$ ) in aerodynamic diameter and is created through the action of crushing and abrasive forces on materials. Due to their weight, the larger particles of dust fall out of the atmosphere relatively quickly and are therefore deposited close to the point of emission. Smaller particles (e.g. PM10 - which comprises particles less than  $10\mu\text{m}$  in diameter) may remain suspended in the air for longer periods of time and therefore have the potential to be transported over greater distances, although this will also depend on local wind speed and turbulence.

2.1.9 It is generally considered that the greatest impacts will occur within 200 metres of the point of generation. Beyond this distance the impact is likely to be minimal. As there are no Natura 2000 sites located within 200 metres of the Proposed Development Site boundary, it is considered unlikely that they will be affected by activities taking place during the site preparation, earthworks and construction phase.

2.1.10 Exhaust emissions from construction vehicles may also have an impact on local air quality both on the development site and adjacent to the routes used by these vehicles to access the development site. However, impacts are likely to be limited to the areas within 200 metres of the roads. Depending on the load that each construction vehicle carries, there is also the potential for emissions of fugitive dust to occur; thereby increasing levels of dust deposition in the areas immediately adjacent to the main haulage routes.

2.1.11 However, it is assumed that all construction vehicles will be appropriately covered/sheeted and will be cleaned as necessary through the use of water-bowsers and/or wheel washers, which will minimise such emissions (matters that can be appropriately controlled through a planning condition). Furthermore, the Development Specification for the East Float Planning Application (December 2009) included a number of principles which will help to reduce the impact of construction traffic. They include:

- The opportunity to transport materials by water, thereby reducing the number of construction vehicles required;
- The development of a routing agreement for all HGV movements, which should minimise the passage of construction vehicles along sensitive roads and unsuitable junctions; and
- The encouragement of construction staff to travel to work via more sustainable, non-car methods.

2.1.12 Taking all of the above into consideration, it is considered unlikely that any of the identified Natura 2000 sites will be affected by emissions from construction traffic. Therefore, it can be assumed that the Proposed Development would have a negligible impact on air quality at the nearby Natura 2000 sites and no further assessment is required.

#### *Operational Phase*

##### Road Traffic Emissions


2.1.13 Once operational, the Proposed Development will result in the generation of additional road traffic on the local road network and potentially the redistribution of existing traffic. Exhaust emissions associated with these vehicles will have an effect on local pollutant concentrations. Where Natura 2000 sites are located near to roads/areas that are likely to experience a significant change in road traffic volume and/or composition, the increase in pollutants may have a detrimental effect on sensitive ecosystems.

2.1.14 With regards to road traffic, the main pollutant of concern is oxides of nitrogen (NO<sub>x</sub>). Whilst road traffic emissions may also result in an increase in the level of particles, NH<sub>3</sub>, heavy metals and salts, the respective contributions are generally smaller and fall out of suspension close to the point of generation (i.e. in the immediate vicinity of the road).

2.1.15 As previously identified, there are currently eight existing or proposed Natura 2000 sites within a 10km radius of the Proposed Development. In order to determine which of these sites are sensitive to air pollution, and would therefore be adversely affected by an increase in local pollutant concentrations, a review of information regarding the habitats present at each of these sites and the reasons for their designation was carried out. As part of this review, specific consideration was given to information available from the Joint Nature Conservation Committee (JNCC), the summary of sites included in the DMRB guidance and the on-line UK Air Pollution Information System (APIS). Consultation was also undertaken with Natural England to agree the assessment methodology and to identify those ecosystems sensitive to air pollution.

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2.1.16 The review confirmed that all of the Natura 2000 sites have the potential to be affected to some extent by air pollution, although those sites where dune systems and salt marshes were present were considered most sensitive. These would include the Dee Estuary SAC, the Sefton Coast SAC and the Alt and Ribble estuaries SPA.

2.1.17 The DMRB guidance suggests that the effect of road traffic emissions on local air quality quickly reduces with distance from the road and beyond a distance of 200 metres the contribution of road traffic emissions can be considered negligible. An extract from Section 3, Part 1 Air Quality, Annex C is provided in Appendix A To this document. This extract includes a graphical representation of the relationship between the atmospheric emissions from traffic and distance from the centre of the road.

2.1.18 Paragraph 3.14 of the DMRB guidance confirms that further assessment is only required where a designated site is located within 200 metres of a road is likely to experience a significant change in traffic volume or composition as a result of the Development proposals. The significance of the change is determined by comparison with the following criteria:

- Change in Annual Average Daily Traffic (AADT) flow of 1000 movements or more;
- Change in HGV flows by 200 AADT or more;
- Change in daily average speed of 10km/hr or more;
- Change in peak hour speeds of 20km/hr or more; and
- Change in road alignment of 5 metres or more.

2.1.19 Following confirmation of the Natura 2000 sites that were sensitive to air pollution, a review of local mapping data was carried out to identify which of the sites were located within 200 metres of a main road that was likely to meet the above criteria. The transport consultants (Savill Bird and Axon) confirmed that as a result of East Float, none of the main roads within the vicinity of the identified Natura 2000 sites would meet the above criteria, and in fact a number of the roads would actually experience a reduction in traffic flows as a result of the Proposed Development. In line with the DMRB guidance, it can therefore be assumed that the Proposed Development would have a negligible impact on air quality at the nearby Natura 2000 sites and no further assessment is required.

#### Notes and Limitations

2.1.20 It is understood that the Proposed Development is likely to be completed in 2050. However, at the current time it is not possible to accurately forecast the potential growth of traffic on the local road network or the associated vehicle emission rates so far into the future. This assessment therefore considered traffic forecasts for the years 2015, when approximately one third of the Development is expected to be in operation, and 2030, when approximately two thirds of the Development is expected to be in operation. Whilst the Development may continue to generate traffic post 2030, it is anticipated that more sustainable modes of transport will be in regular use by this time and the impact of road traffic generated by the scheme will be low.

#### Point Source Emissions


2.1.21 Industrial emission sources may also have a detrimental impact on local pollutant concentrations, if emissions of relevant pollutants are emitted in significant quantities. However, it is understood that no large scale industrial processes are proposed as part of the Proposed Development that will require consideration within this assessment. Whilst provision may be made for the use of biomass/combined heat and power (CHP), at the current time detailed information relating to the size, type, location or number of such units is not available.

2.1.22 It is assumed that the air quality at the nearby Natura 2000 sites will be taken into account during the design and permitting of the biomass/CHP plant such that the impacts to air will be minimised and therefore no further assessment is required.

## **2.2 POTENTIAL IMPACTS ASSOCIATED WITH INFILTRATION THROUGH GROUNDWATER AND SURFACE WATER INTO THE RIVER MERSEY/ESTUARY**

2.2.1 The potential effects of physical contaminants on the Protected Sites within the Mersey Estuary (in particular Mersey Narrows and North Wirral Foreshore proposed Ramsar and potential SPA) were effectively considered during the environmental assessment for the Twelve Quays development. This was considered further (and at great length) during the construction process when there was a need to obtain discharge consents for the substantial quantities of water used to pump sand into Wallasey Dock and to deal with groundwater displaced from the contaminant containing sediments within Wallasey Dock.

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2.2.2 During normal dock operations significant volumes of water are impounded into the dock system via the old passage from Wallasey Dock. This water is 'recycled' back to the Mersey via the Alfred Basin, Alfred River Entrance and associated sluices, into the massive water body of the Mersey. During the earlier studies it was shown that the diluting effect of this process rendered insignificant any effects from the existing contaminants, construction operations or the disturbance of sediments as a result of construction activity. In terms of the uncontaminated sediment load, it should be noted that, at worst, the same volume of sediment will be discharged into the Mersey as is impounded from it. In reality the quantity discharged is less as some will settle out within the dock system during the gradual transit of the impounded water through the dock system. The effects of sedimentation and contamination to the sensitive designations have been considered insignificant and all construction works at East Float will follow a code of construction practice. Prior to the commencement of the Proposed Development, a site investigation scheme shall be undertaken to provide information for a detailed assessment of the risk to all receptors that may be affected, including those off site. The site investigation scheme will also establish any requirements for longer-term monitoring of pollutant linkages, maintenance and arrangements for contingency action. It is concluded that further assessment is not required therefore required as sufficient safeguards can be put in place.

## **2.3 POTENTIAL FOR INCREASED RECREATIONAL PRESSURE**

### **Introduction**

2.3.1 The key issue arising from the Proposed Development will be an increase in permanent and temporary populations in and around the area through the introduction of a new residential areas and potential for visitor and tourist attraction to the mixed use waterfront location from the wider region. The maximum number of residential units planned for the site is 13,521. Assuming there are an average number of 2.05 persons per dwelling, the Proposed Development has the potential to accommodate about 27,700 people. Across the North West region 17.1% of people take part in regular sport and recreation<sup>3</sup> (including formal sports) The Proposed Development will therefore give rise to a maximum of 4,740 people that will be seeking regular exercise and may therefore visit Natural Green Spaces on a regular basis. This represents a worst case scenario given that the figure includes formal sport and it makes no allowance for the fact that not all of the population will be new to the area. Equally it could be argued that participation rates in outdoor activities may increase as the population becomes more aware of the benefits of a healthy lifestyle.

2.3.2 A proportion of the total number of new residents, tourists and visitors are likely to pursue recreational activity on nearby areas of green open space. These areas include Natura 2000 sites, which contain habitats or species that may be receptive to disturbance from increases in recreational pressure, e.g. populations of breeding birds. Based on this increase in population, there is the potential for increased recreational pressure on Natura 2000 sites to arise.

2.3.3 All of the Natura 2000 sites in the area are located within the estuaries of the Mersey, Dee, Ribble and Alt, which are surrounded by large urban areas including Liverpool, Birkenhead and Chester. Estuaries are highly valuable environmental assets as they sustain a diverse range of habitats that support a variety of species. As a result, estuaries may be particularly susceptible to recreational pressures due to their highly sensitive environment.

2.3.4 All of the Natura 2000 sites within the area are accessible to the public in some form. They have implemented management plans that aim to protect these sensitive environments from visitors.

2.3.5 An increase in informal recreation such as walking and cycling could have a number of negative impacts, trampling being the most prevalent. This damages and kills plants, displaces soil organic horizons, and compacts soils. Repetitive trampling is a long term but localised problem and can physically change the function of ecosystems. Human intrusion into wildlife habitat is another impact that can occur. This can lead to disturbance of animal species both directly and through damaged habitats.

### **Approach to the Assessment**

2.3.6 The assessment focussed on the Natura 2000 sites listed in Section 1.3 of this report. (**Appendix B** contains more details of these sites such as designation, current uses and management).


2.3.7 The approach to this part of the assessment is based on the following key tasks:

- Considering the extent to which Natura 2000 sites are already used for recreational activity and whether or not there are any issues associated with such uses;

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<sup>3</sup> Active People Survey 2008/09, Sport England 2008

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- Considering the availability of Alternative Natural Green Spaces – both existing and planned, which might help take the pressure of Natura 2000 sites;
  - Identifying opportunities to introduce avoidance and mitigation measures to help avoid any potential problems associated with recreational pressure.

### **Potential Impacts**

2.3.8 As noted in paragraph 2.3.1 above, the Proposed Development will give rise to an estimated 4,740 people that will be seeking regular exercise and may therefore visit Natural Green Spaces on a regular basis.

2.3.9 An overview of Natura 2000 sites and green spaces is provided below followed by some general comments about the potential Impacts of the Proposed Development, allowing for the anticipated increase in population. Please also refer to **Appendix B**.

#### *Dee Estuary SAC*

2.3.10 The Dee estuary SAC is located approximately 4.2km from the Site. The River Dee at Chester is a popular area for recreation. Activities available include river cruises, and riverside entertainment. Canoeing and fishing are popular sporting activities that can be found taking place along the various stretches of the River Dee.

2.3.11 At low spring tides, over ninety percent of the estuary dries out, exposing vast areas of mudflats and sand flats. These are home to thousands of invertebrates which are a rich source of food for birds and fish. During the winter months, The Dee Estuary is home for 120,000 waders and wildfowl, making it a highly important wetland site for birds. The Estuary is an important breeding area for coastal fish species and is a crucial connection for fish that have their breeding grounds in the River Dee.

2.3.12 At present, river based recreational activities are managed in order to reduce the impact on the environment. For example, canoeing has been almost completely banned from the Welsh section of the River Dee. Canoeing is now only permitted on one 100 metre long rapid less than a mile upstream of Llangollen.

#### *Mersey Estuary Ramsar Site*

2.3.13 The Mersey Estuary Ramsar site is located approximately 3km to the southeast of the Site. The River is busy and used for a number of recreation activities including water sports, sand yachting, sea angling, and walking and cycling along coastal paths. The Estuary is also an important educational tool and transportation route for ships.

2.3.14 In recent years there has been a striking increase in fish species. The numbers of larger and healthier cod and whiting caught in the Mersey has significantly improved. Fish that were once rare are now commonly found in the River Mersey, whilst bass are now returning to the river.

2.3.15 At present, the level of use for recreational purposes is quite significant. Permits are needed for angling and sailing. Recreational activities are causing few problems at the moment but in the future, conflicts between users of the Estuary for leisure are likely to increase. Measures will need to be implemented to resolve such variance.

#### *Mersey Estuary SPA*

2.3.16 The Mersey Estuary SPA is located approximately 3.5km southeast of the Site. Informal recreation activities such as walking and cycling are common around this area due to the existing footpaths and country parks.

2.3.17 At present, a management plan is in place (Mersey Estuary Management Plan). This concentrates on the preservation of wildlife and sea defences. It also aims to improve tourist infrastructure, access, and provide path maintenance. The monitoring of visitor numbers is seen as vital here. Currently, there are no significant problems arising as a result of recreational activities however, in the future, an increase in visitors may produce adverse effects.


#### *Ribble and Alt Estuaries Ramsar*

2.3.18 Ribble and Alt Estuaries Ramsar site is located approximately 6.8km northeast of the Site and occupies a stretch of coastline between the Mersey estuary and Morecambe Bay. The tidal flats and saltmarsh at this site support internationally important populations of waterfowl in winter. The sand dunes support vegetation and amphibian populations of international importance.

2.3.19 Tourism is very popular in the area. There is intensive recreational use of the northern beaches (Southport & Ainsdale) where traditional activities are concentrated. Such activities include beach car parking and, during the

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summer months, numerous large-scale events. Elsewhere, recreation is more informal and less intensive. There are footpaths along the estuaries and angling is a popular sport.

2.3.20 At present, there is a management plan in place (Ribble Estuary Shoreline Management Plan) which aims to reduce visitor pressure so that the environment is protected enjoyment and understanding of the area it is enhanced. Currently, recreational activities are not causing a problem in the area as they are mostly controlled by agreement.

#### *Ribble and Alt Estuaries SPA*

2.3.21 The Ribble and Alt Estuaries SPA is located approximately 6.8km north east of the Site. The estuary provides an important link in the chain of wetland sites in Western Europe. It supports over 100,000 ducks, geese and swans. In the winter, the site is home to around 150,000 waders and is an internationally important refuge for 16 bird species. Wildfowling also takes place on much of the reserve which has led to an increase in the number of birds visiting the site.

2.3.22 The area is popular for informal recreation and public footpaths are present. The Lancashire Coastal Way runs along the northern bank of the estuary. The northern bank can also be accessed via Route 62 of the Sustrans National Cycle Network. Angling is also popular in the area.

2.3.23 At present, the site is heavily managed and an action plan (The Ribble Estuary NNR Management Plan) is in place. Facilities for bird watching on the estuary have always been limited due to limited access and lack of vantage points. An RSPB centre at Fairhaven Lake, Lytham, has been established to combat this problem as has the creation of a RSPB run reserve at Marshside.

2.3.24 Further developments are planned in the very near future. Natural England will aim to develop the footpath network around the estuary where this is not likely to cause any damage to nature conservation interest. The establishment of the North-West Coastal Trail (funded by the NW Development Agency) is likely to increase numbers of people using the estuary footpaths. Currently, recreational activities do not appear to be causing a problem in the area.

#### *Sefton Coast SAC*

2.3.25 Sefton Coast SAC is located approximately 6.8km north east of the Site. The area is internationally important for its rare species of wildlife including natterjack toads, sand lizards and red squirrels. The Sefton Coast is one of Europe's major bird watching locations with over 300 species of bird. The RSPB's Marshside Nature Reserve is one of the most important places in the country for wintering wildfowl with the number of birds on the reserve often exceeding 40,000.

2.3.26 This area is popular for informal recreation, particularly walking and bird watching. Cycling, horseriding and parakiting are also very popular. A network of footpaths, bridleways and cycle routes pass through the woodlands and into the sand dunes making the Sefton Coast highly accessible by cycle and foot.

2.3.27 At present there is a management plan in place (Sefton Coast Partnership Integrated Coastal Zone Management) which looks at reducing recreational pressure. Impacts that arise as a result of recreation can directly affect coastal processes. Trampling of sandunes is a significant problem here and an increase in visitor numbers is likely to contribute to further degradation of the sandunes.

#### *Mersey Narrows and North Wirral Foreshore*

2.3.28 Mersey Narrows and North Wirral Foreshore potential SPA and Ramsar sites are located 550m north of the Site. At present, there are no details available on recreational use. The Seaforth part of the site lies within the Seaforth Docks area. It comprises two lagoons: a shallow salt-water lagoon which functions as a settlement lagoon for water pumped from the River Mersey into the Seaforth Docks and a freshwater lagoon separated from the saltwater lagoon by a wide bund. A strip of saltmarsh flanks the western edge of the saltwater lagoon. Effectively there is no public access to the site. The site is dependent on pumping operations which could limit inundation, and could be vulnerable to future management and pumping regime changes within the dock complex. The North Wirral Foreshore part of the site comprises mostly intertidal flats with some rocky outcrops and shingle banks, and contains a number of man-made structures including groynes, jetties and breakwaters. Possible sources of vulnerability could include low-level recreation pressures but it is not considered to be attractive as Natural Green Space.

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### *Other Green Spaces*

2.3.29 Aside from the sites mentioned above, there are numerous public parks and other green spaces within a 10 km area of the Site which can be used for recreational purposes. There are over 1,500 hectares of public open space and parks in the Wirral, including country parks, coastal parks, lakes, play areas and gardens. It is likely that a high number of residents will visit these areas, principally those within a short distance of the Site.

2.3.30 The former Bidston Moss landfill site is an example of a recreational area that is within walking distance of the Site. It is located to the northwest of the Site and is 68ha in size. Bidston Moss has been developed into community woodland managed by the Forestry Commission and is now classified as a Site of Specific Biological Importance. Walking and cycling routes have been introduced in addition to a mountain bike track located on the higher slopes of Bidston Moss. A large fishing pond has been developed, and informal recreation such as dog walking is popular. Not only is Bidston Moss available for recreational purposes, it is an important educational tool for local schoolchildren who regularly visit. Bidston Moss has received major investment but is understood to be severely under-used for recreation and suffers vandalism and anti social behaviour due to the lack of security, activity and natural surveillance.

2.3.31 Birkenhead Park is the nearest public park to the site and again, is within walking distance. The park was Britain's first publicly funded Municipal Park and is registered Grade 1 in English Heritage's Register of Historic Parks and Gardens. The park is popular for informal recreation but also holds formal recreation activities on a weekly basis. These activities include health walks, bike riding for beginners and organised sporting events.

2.3.32 Wirral Country Park was the first designated country park in Britain. It is based on a former railway line which ran from West Kirby to Hooton. Wirral Country Park is popular with walkers, cyclists and horse riders. A 12-mile footpath/cycle route (the Wirral Way) and a 10 mile separate bridal path pass through the length of the park. The site also has a Visitor Centre at Thurstaston, with car parking, toilets, picnic and barbecue areas, and nature trails.

2.3.33 The outline application also includes major proposals for the provision of green infrastructure, including Sky City Park and wetland areas.

The Strategic Regeneration Framework for Wirral Waters identifies opportunities for significant improvements to green infrastructure in the locality, including the opportunity to reconnect Bidston and the River Birkett corridor in the west, to the River Mersey 'City Reaches' in the east, Birkenhead Park and town in the south and Seacombe and Wallasey to the north. Detailed open space provision would be determined at a later design stage.

### **Avoiding Potential Effects**

2.3.34 In terms of mitigation, the key measures recommended by Natural England are:

- the provision of Alternative Natural Greenspace for residential developments and/or
- improvements to existing Natura 2000 sites to increase their visitor capacity and manage/avoid potential negative effects.


2.3.35 The Development Specification for the planning application (December 2009) identifies the potential for a tariff/levy approach to the provision of off-site green infrastructure in the region of £1,000 per residential unit or per 100 sqm of office and retail space. The overall figure could be more than £16m over the lifetime of the development. The Development Specification suggests limiting the use of the contribution to a defined geographical area that corresponds to the Strategic Development Area (which covers the whole of the Wirral Waters development) so there would be scope for the funds to help with improvement/management of Natura 2000 sites adjacent to the development and other areas, this could include support to the preparation and implementation of management plans for the Mersey Narrows and North Wirral Foreshore prospective SPA and the Float.

2.3.36 A sub-regional study of green infrastructure needs in Merseyside is also being undertaken (by Mersey Forest). This is a cross – boundary study looking at future Green Infrastructure needs and provision. A draft for the framework is due by the end of March 2010. This clearly provides the opportunity for the recreational needs of this development and developments across the Merseyside Area (including Liverpool Waters) to be identified and planned for.

2.3.37 As outlined above the Proposed Development will develop over a 30-40 year timescale and numerous phases, providing the scope for monitoring and further remedial action to be implemented if necessary, e.g. contributions towards management of specific Natura 2000 sites.

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2.3.38 There are extensive areas of existing natural green space in the immediate area including Birkenhead Park and Bidston Moss which are likely to attract high numbers of residents, reducing visitor numbers and associated disturbance impacts at the Natura 2000 sites. There are also many attractive green spaces in the wider area such as Wirral Country Park, which offer the opportunity for similar popular recreational activities e.g. walking, cycling, and angling.

2.3.39 There are also emerging proposals that are likely to secure an equitable distribution of high quality green infrastructure to meet local needs for natural greenspace through the sub-regional study.

## **2.4 POTENTIAL FOR IMPACT ON FLIGHT LINES ASSOCIATED WITH TALL BUILDINGS AND LIGHTING.**

### **Introduction**

2.4.1 This section assesses the potential effect of the Proposed Development on migratory and resident bird populations associated within the network of Natura 2000 sites in proximity to the Site. Particular consideration reference has been given to potential building massing associated with the proposed high-rise buildings within Sky City and an assessment of the associated loss of bird movement corridors across the Wirral. Specific issues associated with lighting are also considered.

2.4.2 Modern buildings, particularly where there is a predominance of glass, can and often do represent significant barriers to bird movement. Collisions or bird strike have been attributed to the inability of bird species to detect and avoid glass, and the associated 'beacon' effect of increased artificial lighting at night, whereby flocks or individual birds can become disorientated by well-lit buildings. This 'beacon effect' can be exacerbated by low cloud or fog. Wading birds, such as those present within the Natura 2000 sites network are perhaps more susceptible to these issues as their feeding activity is more likely to take place at night and so there is more potential for them to be affected by artificial light.

### **Approach to the Assessment**

2.4.3 The assessment has been desk-based. Where possible the assessment has utilised available information, gained through discussion with Natural England and the Cheshire & Wirral Ornithological Society.

2.4.4 Consideration is given to potential impacts of tall buildings on migration flyways, potential impacts of tall buildings on movements between Natura 2000 sites and specific issues relating to lighting.

2.4.5 Where practicable, mitigation measures to minimise or eliminate the disturbance to bird movement are proposed for consideration at future design stages.

### **Potential Impacts on Migration Flyways and Movement Between Natura 2000 Sites**


2.4.6 Incidences of bird strike (i.e. collision of flying birds with buildings resulting in either injury or death) are attributed to the inability of flying birds to identify and observe buildings, particularly where there is a predominance or high percentage of glass frontage. Two main factors have been identified as causing daytime bird strike being linked with either 'fly through', where the bird can visualise a clear and unobstructed flight path through glass structures or 'mirroring' where the reflection of the sky or vegetation glass is perceived as open habitat.

2.4.7 Bird strike occurs at all heights although a greater proportion of collisions occurs at lower levels, most likely attributed to higher levels of bird activity at these levels by smaller passerine birds, and the more pronounced mirroring effect of semi-natural vegetation at these heights.

2.4.8 The development of East Float, the wider Wirral Waters development and Liverpool Waters will represent a significant change to the current townscape of the area. The East Float Development will comprise four quarters creating a balance of tall landmark buildings, medium height and low level buildings. The incorporation of soft landscaping, including standard trees and other street furniture will link ground level development with areas of open water.

2.4.9 Of particular relevance to the potential impact on flight lines is the development of the Sky City, which will form the main tall building cluster within the Proposed Development. This quarter will comprise a mix of residential and commercial buildings developed in a stepped spiral along two parallel land parcels with buildings extending from a maximum of 42m on the forward eastern flank, increasing to a maximum height of 126m at the western turning point. The maximum overall height of the rear eastern flank will be 226m.

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2.4.10 Other quarters are envisaged as having a lesser effect on bird movement with operational heights ranging from 21m at the water's edge to a maximum height of 87.5m at the western edge of the Proposed Development. Those existing buildings to be retained include the Grain Warehouses and the Hydraulic Tower, with building height designed to ensure these areas are integrated into the scheme.

2.4.11 The wider landscape within the Wirral is predominantly low-lying, dominated by a mix of residential and light industrial development associated with the settlements of Bebington, Birkenhead and Wallasey to the east with more open space, agricultural land and smaller developments to the west.

#### *Natura 2000 sites*

2.4.12 The Natura 2000 sites within the vicinity of the Proposed Development typically qualify under Articles 4.1 and 4.2 of the EC Bird Directive (79/409/EEC) by regularly supporting resident, passage and overwintering bird populations of European importance. Particular importance is attributed to over-wintering migratory species from the Eastern Atlantic, Northeastern Canada, Northwestern/Northeastern Europe and Western Siberia amongst others.

2.4.13 The Proposed Development will not represent a direct impact, in terms of habitat loss, on those Natura 2000 sites identified above. Similarly it is not anticipated that the Proposed Development would represent a tangible or significant impact on established long-distance migration flyways, in recognition of the comparatively small Site when assessed at the wider landscape scale and in recognition of the proximity of other, more significant urban developments both immediately adjacent to the Site and in the wider region.

2.4.14 Due to their historical importance for trade and industry, a significant number of the UK's estuarine habitats are associated with significant existing urban development, including the Mersey, Dee, Humber and Severn. Migrating bird populations are consequently considered as being acclimatised to urban glow. Birds also orientate themselves through a combination of inherent directional flight and navigation using visual signs. They may in fact utilise these urban conurbations as landscape features to find favoured wintering grounds within wider migration flyways<sup>4</sup>.

2.4.15 Although it has been considered that the Proposed Development will not represent a tangible or significant impact on established long-distance international migration flyways, the potential for local flight lines to be impacted is considered to be of potential significance. In particular, the potential for increased bird strike of wading birds and waterfowl moving between feeding and resting grounds has been considered further below.

2.4.16 The Proposed Development will represent a locally significant change in the form and design of the existing built environment, both in terms of physical massing and specific issues pertaining to the development of high buildings. New developments, within areas of high flight activity, can create obstacles to favoured flight paths resulting in collision or bird strike. Furthermore, night flying birds are susceptible to the 'beacon effect' described earlier.

2.4.17 Wintering bird surveys have been undertaken within the wider Wirral Waters site to inform the supporting EIAs of the Northbank East and East Float planning applications. This survey, has established that the Site does not support significant numbers of locally important populations, with only relatively small numbers of cormorant (*Phalacrocorax carbo*) recorded. Similarly no significant flocks of other notable species (such as those species which make up the designation of the Natura 2000 sites) were recorded.

2.4.18 Consultation with the Cheshire & Wirral Ornithological Society confirmed that there is regular bird movement between feeding and resting grounds in both North Wirral and the Mersey Narrows, these areas being identified as a potential joint SPA. Movement between these areas and the Mersey Estuary pSPA has been recorded albeit at a lower level. Furthermore, no important and/or regular pathways were provided in the vicinity of the Site.

2.4.19 Although flight lines are highly variable, depending on a range of environmental factors (such as prevailing wind direction, wind speed and temperature), it is considered from the information provided that the Proposed Development would not represent a significant barrier to favoured flight lines within the Natura 2000 sites network, and consequently the effect of bird collisions, disturbance or diversion are not assessed as being of significance to important bird populations or the long-term integrity of the Natura 2000 sites.


2.4.20 Furthermore it is considered that the phased development of the Proposed Development, which is envisaged to be undertaken over a 30-40 year period (anticipated development timeframes being from 2015-2050 inclusive) will allow both resident and migratory bird populations to adapt to the development of the Site without tangible impacts on either long-distance migration or inter-site movement.

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<sup>4</sup> Bird Migration, Thomas Alerstam, Cambridge University Press, 1997

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2.4.21 Following a review of the available information and an assessment of the Proposed Development in respect to the Natura 2000 sites it is considered that the Proposed Development will not represent a tangible impact on important populations of either resident or migrating birds.

2.4.22 Notwithstanding this further mitigation measures have been identified, which if included have the potential to reduce the incidences of bird strike or disorientation associated with increased lighting during both construction and operation of the East Float scheme.

*Suggested Mitigation to Avoid Bird Strike*

2.4.23 A number of potential visual screen systems can be employed to reduce the likelihood of bird strike. Many of these can be incorporated at the detailed design stage and include careful consideration of site layout and other aesthetic enhancements to buildings to increase visual 'noise'.

2.4.24 Site layout can be designed to minimise the mirroring effect of soft landscaping, either by providing pronounced visual obstacles, such as physical screens or by planting vegetation in close proximity to glass walls to reduce reflection and also minimising potential strike distances.

2.4.25 Further measures to minimise bird strike include the provision of louvered screens, patterned, angled or reduced reflectivity glass. These measures are perhaps more appropriate where there is an increased likelihood of bird strike, for example where there is a pronounced change in building height or where buildings are located adjacent to green space or open water which might attract these species. These measures can be readily adopted as design features to enhance the overall architectural value of the site. Specific case study examples can be provided on request or viewed within the Bird-Safe Building Guidelines published by the New York City Audubon Society (2007).

**Potential impacts associated with lighting**

2.4.26 In addition to the potential for direct collisions during the day, increased light levels associated with the built environment have also been attributed to the disorientation of migrating and night-flying birds.

2.4.27 The significance of the potential effects of lighting is dependant upon the number and sensitivity of receptors. An assessment of the site to inform the Environmental Scoping for the East Float development confirmed that the proposed development is located within a typically urban setting, with resultant light spill and glow associated with street lights and residential developments. Furthermore in proximity to the scheme higher light levels were noted within the Twelve Quays ferry terminal and high powered floodlighting within the existing East Float docks. Furthermore it was considered that there are no 'intrinsically' dark landscapes within the immediate surrounding area.

2.4.28 At a wider scale the existing conurbations of Liverpool, Birkenhead, Wallasey and Bebington contribute to continuous well-lit landscapes, with industrial developments on the Wirral and Runcorn identified as particular sources of increased light levels.


2.4.29 Comprehensive lighting strategies will be developed alongside the detailed design and Environmental Statements which will accompany future detailed planning applications. These strategies will be subject to the following:

- Identification of required standards of lighting at the site with respect to BS5489 2003 (and subsidiary documents);
- Compliance with guidance from the Chartered Institute of Building Services Engineers (CIBSE);
- Compliance with limitations outlined within the design guidance sections of 'Guidance Notes for the Reduction of Obtrusive Light', Institute of Lighting Engineers (ILE), 2005;
- Compliance recommendations outlined within 'External lighting for Historic Buildings', English Heritage, 2007; and
- Consultation with Natural England.

2.4.30 Lighting will also be considered as part of the BREEAM Communities process and certification. Recommended suitable controls and considerations will be clearly outlined within the Environmental Statement accompanying detailed applications.

2.4.31 As with bird strike events, the presence of well-lit high level buildings can represent an obstacle to night-flying birds which can become attracted to areas of increased light, often referred to as the 'beacon effect'. Low lying cloud or fog can further exacerbate this effect.

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2.4.32 The overall effects of lighting associated with the Proposed Development were considered insignificant as part of the EIA which supported the planning application for East Float. Subsequent consultation with Natural England confirmed this view (letter received from Natural England, 23rd November 2009, ref: NW.09/10.239). Based on the evidence above it has been considered likely that the Proposed Development will not represent a tangible impact on important bird populations, nor will the scheme represent a likely effect on the integrity of the Natura 2000 sites identified.

*Suggested Mitigation - Lighting*

2.4.33 Studies within the United States have confirmed that initiatives to reduce light levels in tall buildings, either by turning off internal lights or reducing the use of perimeter or 'architectural' lighting, can help to reduce bird collisions. Programs implemented in both New York and Chicago<sup>5</sup> have resulted in significant reductions in bird mortality (over 80% reduction in one case study). The implementation of a '*lights-out strategy*' may further reduce potential impacts on bird movements within the vicinity of the site. The means of implementing and policing such a strategy in the UK could be explored as part of the detailed consents process.

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<sup>5</sup> [http://www.cityofchicago.org/Environment/BirdMigration/sub/lights\\_out\\_chicago.html](http://www.cityofchicago.org/Environment/BirdMigration/sub/lights_out_chicago.html)

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## 3 Conclusions

3.1.1 Key conclusions from this report are summarised below:

### **Air Quality**

3.1.2 In terms of dust and particulate matter associated with construction activities and emissions from construction traffic, all potential impacts on the integrity of the Natura 2000 sites are considered insignificant based on the maximum disposition distances associated with the range of pollutants considered.

3.1.3 In terms of pollutants associated with any additional road traffic emissions (from 2015 to 2030), all potential impacts on the integrity of the Natura 2000 sites are considered insignificant based on an assessment of traffic data against DMRB data. In terms of point source emissions associated with biomass and CHP, it has been assumed that these will be designed to ensure impacts to the integrity of the Natura 2000 sites are minimised.

### **Infiltration through groundwater and surface water into the River Mersey/estuary**

3.1.4 The potential effects of physical contaminants on the Protected Sites within the Mersey Estuary (in particular Mersey Narrows and North Wirral Foreshore proposed Ramsar and potential SPA) were effectively considered during the environmental assessment for the Twelve Quays development and subsequent detailed work outlined in Section 2.2 of this report.

3.1.5 Prior to the commencement of the Proposed Development, a site investigation scheme shall be undertaken to provide information for a detailed assessment of the risk to all receptors that may be affected, including those off site. The site investigation scheme will also establish any requirements for longer-term monitoring of pollutant linkages, maintenance and arrangements for contingency action. It is concluded that further assessment is not required therefore required as sufficient safeguards can be put in place.

### **Recreation**

3.1.6 The Natura 2000 network within 10km of the Proposed Development already provides a recreational function without significant harm to their conservation objectives. There is also a significant network of other greenspaces in the area. The Mersey wide study of Green Infrastructure may identify further opportunities for the provision of Alternative Natural Greenspace.

3.1.7 The Proposed Development provides the opportunity to enhance Bidston Moss as a source of Alternative Natural Greenspace. The wider Wirral Waters development provides opportunities to reconnect Bidston and the River Birkett corridor in the west, to the River Mersey 'City Reaches' in the east, Birkenhead Park and town in the south and Seacombe and Wallasey to the north. Enhancing green infrastructure in this way could help relieve pressure on European sites.

3.1.8 The Proposed Development also provides the opportunity to contribute towards the development of a Management Plan for the prospective SPA (the closest site to the development) and also potential for developer contributions towards the management of Natura 2000 sites in the wider area and the provision of Alternative Natural Greenspace.


### **Migration Flyways and Movement between Natura 2000 Sites and Lighting**

3.1.9 It is not anticipated that the Proposed Development would represent a tangible or significant impact on established long-distance migration flyways, in recognition of the comparatively small Site when assessed at the wider landscape scale and in recognition of the proximity of other, more significant urban developments both immediately adjacent to the Site and in the wider region.

3.1.10 The overall effects of lighting associated with the Proposed Development were considered insignificant as part of the EIA which supported the planning application for East Float. Subsequent consultation with Natural England confirmed this view (letter received from Natural England, 23rd November 2009, ref: NW.09/10.239). Based on the evidence above it has been considered likely that the Proposed Development will not represent a tangible impact on important bird populations, nor will the scheme represent a likely effect on the integrity of the Natura 2000 sites identified.

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3.1.11 Although flight lines are highly variable, depending on a range of environmental factors (such as prevailing wind direction, wind speed and temperature), it is considered from the information provided that the Proposed Development would not represent a significant barrier to favoured flight lines within the Natura 2000 sites network, and consequently the effect of bird collisions, disturbance or diversion are not assessed as being of significance to important bird populations or the long-term integrity of the Natura 2000 sites.

3.1.12 Furthermore it is considered that the phased development of the Proposed Development, which is envisaged to be undertaken over a 30-40 year period (anticipated development timeframes being from 2015-2050 inclusive) will allow both resident and migratory bird populations to adapt to the development of the Site without tangible impacts on either long-distance migration or inter-site movement.

3.1.13 Additional opportunities for mitigation have been identified that could be implemented as the scheme progresses, measures to minimise bird strike include the provision of louvered screens, patterned, angled or reduced reflectivity glass. .

3.1.14 The implementation of a '*lights-out strategy*' may further reduce potential impacts on bird movements within the vicinity of the site. The means of implementing and policing such a strategy in the UK could be explored as part of the detailed consents process.

### **Overall Conclusion**

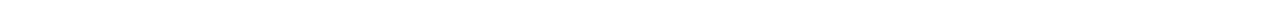
3.1.15 On the basis of the information provided in this report it is concluded that the development is not likely to have a significant effect on the sites considered in this report either alone or in combination with other plans or projects and no adverse effect on the integrity of the Natura 2000 sites will occur as a result of the proposal. Accordingly it is considered that no "appropriate assessment" is required to be made under Regulations 48, 49 and 54 of the Conservation (Natural Habitats & c.) Regulations before the Council decides to undertake, or give any consent, permission or other authorisation for this project.

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**APPENDIX A: EXTRACT FROM DMRB VOLUME 11**



**APPENDIX B: OVERVIEW OF PROTECTED SITES AND SUMMARY OF RECREATIONAL ISSUES**

SITE NAME	SUMMARY OF ISSUES
<p>Dee Estuary SAC – located approximately 4.2km north west of the site;</p>	<p>Is the site open to the public?</p> <p>Yes</p>
	<p>If so, What activities take place?</p> <p>The Chester section of the riverbank is a popular recreation area, it includes a bandstand, benches, boat cruises and two bridges. The first is the Queen's Park Suspension Bridge, the only exclusively pedestrian bridge across the river in Chester. The second is the venerable Old Dee Bridge. This is a road bridge.</p> <p>Canoeing used to be a popular sport on the Dee. However, recent disputes with the fishing community ended with the canoeing being almost completely banned from the Welsh section of river. Canoeing is now only permitted on one 100 metre long rapid less than a mile upstream of Llangollen. Some flat sections far downstream in England also allow canoes. Despite this ban, in an act of public defiance, many canoeists continue to use the river from other access points. Each July the popular Chester Raft Race is held on the River Dee in aid of charity.</p> <p>Fishing is very popular along the Dee. The river is known for a mixed fishery with Salmon and trout fishing. These are found mostly in the upper waters with a good coarse fishery in the lower reaches. A major pollution incident occurred along the middle reaches late in 1990s. This caused serious and extensive damage to the fishery which took until recently to recover.</p> <p>The Dee Estuary offers many opportunities for recreation and wildlife. A coastal cycle path will provide a link from existing cycleways to sites of interest such as Wepre Riverside, Flint Point and Point of Ayr. Meanwhile, in partnership with BHP, Flintshire Countryside Service manage the SSSI Dune systems at the mouth of the Dee Estuary to protect rare estuary wildlife and habitats.</p>
	<p>Are there any restrictions on access?</p> <p>See comments above in relation to canoeing.</p>
	<p>Does the site have a Management Plan and if so what does it say about access?</p> <p>Yes- updated December 2009. Very generic with nothing explicit about access.</p>
	<p>Does the site have a Warden?</p> <p>There is a Dee Estuary Voluntary Warden Scheme concerned with bird life conservation.</p>
	<p>Who manages the site?</p> <p>Flintshire Countryside Service et al</p>
	<p>Is access/recreational activity causing any problems at the moment?</p> <p>See comments re fishing and canoeing</p>
<p>Mersey Estuary Ramsar site – located approximately 3km south east of the site;</p>	<p>Is the site open to the public?</p> <p>Yes</p>
	<p>If so, What activities take place?</p> <p>Environmental education/ interpretation Livestock grazing Non-consumptive recreation Scientific research Sport hunting Tourism Transportation/navigation</p> <p>As the waters become cleaner, more people are likely to be attracted to water-based recreational activities including sailing, canoeing, windsurfing and angling.</p> <p>There is a network of footpaths in the upper estuary, with the potential to extend public access. There is also the potential for greater integration of the footpath network, and improved accessibility design.</p>



	<p>Facilities provided Partial footpath network. New access points, routes and country parks have been opened recently.</p> <p>Seasonality All year with main concentrations during the summer from a catchment of 2 million people.</p> <p>Both public sector and non-governmental organisations are involved in interpretation and education at the site.</p> <p>There are many water sports activities in the estuary with a range of sailing clubs in the area including Mersey Sport in Queen Docks and clubs in Liverpool and Birkenhead. Windsurfing, rowing, canoeing and scuba diving (at Liverpool's' Duke's and Salthouse Docks) are all catered for.</p> <p>For the past 25 years the Mersey River Festival has taken place in June. It features a range of activities on the river and ashore including the colourful Parade of Sail, one of the most exciting sights of the year. The Festival has also hosted the start and finish of the Tall Ships Races.</p> <p>In recent years there has been a striking increase in the numbers of larger and healthier cod and whiting caught in the Mersey. Flat fish such as plaice, dab, thornback rays and founder were once rare but these days are commonly found while bass are now returning to the river. Dogfish, mackerel and even tope are also found in the Mersey, feeding on shrimp and whitebait. There has also been a return of Salmon to the Mersey and they have now been spotted spawning in the head waters near Derbyshire.</p> <p>Freshwater fish such as roach, dace and chub are now able to survive in sections of the Mersey and its tributaries.</p> <p>Popular sites for anglers include Harrison Drive at New Brighton and Otterspool on the Liverpool side. A number of clubs also organize sea angling in Liverpool Bay while the Warrington and Sankey Canals are popular with freshwater anglers.</p> <p>The estuary is also popular with birdwatchers. Most of the inner Estuary is designated as a Site of Special Scientific Interest (SSSI) as well as being a Ramsar site and Special Protection Area. In addition, Sefton's natural coast is a Special Area of Conservation (SAC) under the European Habitats Directive.</p> <p>There are a vast array of species which assemble during autumn and winter and together with the other estuaries of the North West, this is the second most important location the world for migratory birds.</p> <p>The area is also popular with walkers and cyclists: the choice ranges from modern and Victorian promenades to woodland walks, open heath and miles of sandy, open beaches. A feature of the urban stretch of the estuary is the series of broad concrete promenades that offer unlimited river and seafront access for both walkers and cyclists.</p>
	<p>Are there any restrictions on access?</p> <p>Those sailing should check with the appropriate individual local authority for any current requirements (e.g. permits, insurance)</p> <p>Anglers should ensure that they have a permit where required.</p>
	<p>Does the site have a Management Plan and if so what does it say about access?</p> <p>Yes- the Mersey Estuary Management Plan (MEMP).</p> <p>Access for tourism, recreation and leisure activities are to be improved and encouraged- whilst making sure that any sports activities are safe. The only areas where there is no access to the public is in areas where it is unsafe- such as where riverbanks are unstable or where maritime or commercial operations make access hazardous. In these areas MW are working with local authorities to find alternative routes.</p> <p>In the future Conflicts between users of the Estuary for leisure are likely to increase, and partners will have to get involved in resolving disputes, for example, by implementing measures to avoid congestion</p> <p>(See below for more details on MEMP)</p>
	<p>Does the site have a Warden?</p>



	<p>The annual Mersey Estuary Forum takes an overview of the regeneration and development taking place around the estuary ensuring that development fits with the aims of the MEMP.</p>
	<p>Who manages the site?</p> <p>For the Ramsar wetland site in particular:          Site Designations Manager, Natural England, Sites and Surveillance Team, Northminster House, Northminster Road, Peterborough, PE1 1UA, UK</p>
	<p>Is access/recreational activity causing any problems at the moment?</p> <p>No problems at the moment- increase in tourism and leisure may cause conflict in the future.</p>
<p>Mersey Estuary SPA – located approximately 3.5km south east of the site;</p>	<p>Is the site open to the public?</p> <p>Yes</p>
	<p>If so, What activities take place?</p> <p>Nature conservation.          Tourism (country parks and footpaths) Catchment of 2M people and concentrations during the summer.          Bait collection.          Grazing.          Hunting.</p>
	<p>Are there any restrictions on access?</p> <p>Those sailing should check with the appropriate individual local authority for any current requirements (e.g. permits, insurance)</p> <p>Angler should ensure that they have a permit where required.</p>
	<p>Does the site have a Management Plan and if so what does it say about access?</p> <p>Special Protection Areas (SPAs) are the most important sites for bird life in this country. They are classified under the EU Birds Directive which aims to provide increased protection and management for areas that are important for the breeding, feeding, wintering or migration of rare and vulnerable species of birds.</p> <p>Mersey Estuary Management Plan:</p> <ul style="list-style-type: none"> <li>• The landscape of the open coast, which is important wildlife habitat and sea defences – must be further preserved or improved and opened up for informal recreation, such as walking. (Many parts of the Estuary zone are excellent for bird watching and walking).</li> <li>• Those parts of the Estuary that currently have 'little to boast about' are recognized as still having potential; they could be opened up to greater informal and low impact tourism which is compatible with environmental and recreational policies.</li> <li>• The Wirral North Shore has provided a ranger service for many years, and the MEMP calls for the service to be extended along the entire estuary shore (although nature conservation and safety issues will preclude access to certain areas). This is now evident in other areas such as Sefton where coast and countryside rangers are managing sites, helping visitors etc. and at Halton where a pilot waterfront maintenance team has acted as a point of information/contact for the general public.</li> <li>• An important related aim of the plan is to improve the tourist and visitor infrastructure along the shores. Improved signposting, path maintenance, and the agreement of access rights or rights of way (especially to fill in gaps in the footpath network), the provision of car parking and toilets, public transport links and refreshment facilities will all encourage people to use footpaths in the longer term. In addition, the plan recognises the need to create new routes to connect the riverside with inland paths and communities.</li> <li>• Plan is clear that visitor numbers will need to be monitored in order to manage environmental impact.</li> </ul>
	<p>Does the site have a Warden?</p> <p>The annual Mersey Estuary Forum takes an overview of the regeneration and development taking place around the estuary ensuring that development fits with the aims of the MEMP.</p>
	<p>Who manages the site?</p> <p>As above          Site Designations Manager, English Nature, Sites and Surveillance Team,</p>



	<p>Thus the MEMP highlights the importance of coordination between all parties involved in the Mersey and its tributaries. Links between local river initiatives including The Mersey Basin Campaign's local action partnerships (Action Mersey Estuary and Action Wirral Rivers) are especially vital.</p> <p>The MEMP highlights the key considerations for new development proposals, stressing that these should only be allowed where there is an adequate water supply and facilities for its treatment and disposal. Appropriate measures should also be taken to prevent groundwater pollution.</p>
	<p>Is access/recreational activity causing any problems at the moment?</p> <p>No problems at the moment- increase in tourism and leisure may cause conflict in the future.</p>
<p>Ribble and Alt Estuaries Ramsar – located approximately 6.8km north east of the site</p>	<p>Is the site open to the public?</p> <p>Yes</p> <p>If so, What activities take place?</p> <p>Aesthetic Archaeological/historical site Environmental education/ interpretation Fisheries production Livestock grazing Non-consumptive recreation Scientific research Sport fishing Sport hunting Tourism Transportation/navigation</p> <ul style="list-style-type: none"> <li>• Infrastructure developments: There are caravan parks adjacent to the site at Formby and moorings in the Alt. No major expansion anticipated.</li> <li>• Land-based recreation: There is intensive recreational use of the northern beaches (Southport &amp; Ainsdale) where traditional activities are concentrated. These include beach car parking, and, during the summer months several large-scale events. Elsewhere, recreation is more informal and less intensive - but all beach activities on the Sefton Coast are managed by the Beach Management Plan. The golf courses are heavily used; Royal Birkdale hosted the British Open Golf Championship in 1998.</li> <li>• Water-based recreation: Mainly a summer activity based on the beach at Southport. Becoming more common but has, in the past, included pleasure trips on hovercraft.</li> <li>• Airborne recreation: Some disturbance in winter months by micro-lights, particularly to pink-footed goose populations.</li> <li>• Wildfowling: Occurs on extensive areas of the Ribble including the NNR. Usually controlled by agreement.</li> </ul> <p>Are there any restrictions on access?</p> <p>Does not seem to be any particular restrictions in place. (see SPA below)</p> <p>Does the site have a Management Plan and if so what does it say about access?</p> <p>The Ribble Estuary has been designated a Site of Special Scientific Interest since 1966 and is now covered by the Environment Agency's Ribble Estuary Site of Special Scientific Interest A Site of Special Scientific Interest or SSSI is a conservation designation denoting a protected area in the United Kingdom. SSSIs are the basic building block of site-based nature conservation legislation and most other legal nature/geological conservation designations in Great Britain are based... "National Nature Reserve".</p> <p>Ribble Estuary Shoreline Management Plan</p> <p>Management of visitor pressure so that the environment is protected and people's enjoyment and understanding of it is enhanced.</p> <p>Nothing specific about access.</p> <p>(See Ribble Estuary Management Plan below)</p> <p>Does the site have a Warden?</p>



	<p>No warden apparent.</p>
<p>Ribble and Alt Estuaries SPA – located approximately 6.8km north east of the site;</p>	<p>Who manages the site?</p> <p>Site Designations Manager, Natural England, Sites and Surveillance Team, Northminster House, Northminster Road, Peterborough, PE1 1UA, UK</p>
	<p>Is access/recreational activity causing any problems at the moment?</p> <p>No- activities usually controlled by agreement.</p> <p>Is the site open to the public?</p> <p>Yes</p> <p>If so, What activities take place?</p> <p>The aesthetics of the site attract walkers. A public footpath, from which views can be obtained, skirts the whole of the estuary (see map). Access onto the saltmarsh is permitted from the embankment between Crossens and Hundred End.</p> <p>Recreation, fishing, wildfowling and farming all take place within the estuary in balance with the wildlife interest.</p> <p>The estuary provides an important link in the chain of wetland sites in western Europe, supporting over 100,000 ducks, geese and swans. In the winter the site is home to around 150,000 waders and is an internationally important refuge for 16 bird species.</p> <p>In the summer the saltmarshes support large numbers of breeding birds including black-headed gull, herring gull, lesser black-backed gull, common tern and redshank. Skylark, meadow pipit and linnet nest in significant numbers on the grazing marsh.</p> <p>Management of the site involves grazing the saltmarsh with cattle and sheep to maintain the short sward on which wintering wildfowl (especially wigeon and pink-footed geese) depend.</p> <p>The main area of saltmarsh is grazed by over 700 cattle from April to September, forming one of the largest single herds of cattle in the UK. Wildfowling also takes place on much of the reserve and improved management of this activity has contributed to the increase in the number of birds visiting the site.</p> <p>The best times to visit the site are in autumn and winter, to see the wintering birds.</p> <p>The reserve is 7 km west of Preston and includes land on both sides of the Ribble Estuary: as far as Lytham, on the northern bank, and Crossens (near Marshside), on the southern bank.</p> <p>By car, access is via minor roads from the A584 (northern bank) and A59 (southern bank). The two most accessible car parks are at Lytham, and on the Marshside coastal road.</p> <p>The nearest train stations are in Preston, Lytham and Southport (5 km to the south west) served by Northern Rail. Local bus services are provided by Stagecoach Northwest.</p> <p>A major trail, the Lancashire Coastal Way runs along the northern bank of the estuary. The northern bank can also be accessed via Route 62 of the Sustrans National Cycle Network.</p> <p>Are there any restrictions on access?</p> <p>Tidal saltmarshes can be dangerous places; the tide and weather conditions can change quickly. Visitors are instructed to try not to disturb the birds. The best and safest vantage points at high tide are the Coast Road at Southport/Marshside and the promenade at Lytham St Anne's.</p> <p>Also due to the fragility of the saltmarsh and mudflats, access to the site is restricted to public rights of way</p> <p>Does the site have a Warden?</p> <p>RSPB Warden</p>



	<p>Who manages the site?</p> <p>The Ribble Coast and Wetlands Regional Park partnership comprises a range of organisations which reflect the local conservation, governmental and community interests. The membership is listed below</p> <ul style="list-style-type: none"> <li>• Action Ribble Estuary</li> <li>• British Waterways</li> <li>• Environment Agency</li> <li>• Fylde Borough Council</li> <li>• Groundwork Lancashire West</li> <li>• Lancashire and Blackpool Tourism Board</li> <li>• Lancashire County Council</li> <li>• Lancashire Economic Partnership</li> <li>• Martin Mere Wetlands Centre WWT</li> <li>• Mersey Basin Campaign</li> <li>• Natural England</li> <li>• North West Development Agency</li> <li>• Preston City Council</li> <li>• Rural Futures</li> <li>• South Ribble Borough Council</li> <li>• Sefton Metropolitan Borough Council</li> <li>• The Forestry Commission</li> <li>• The Royal Society for the Protection of Birds</li> <li>• The Wildlife Trust for Lancashire, Manchester and North Merseyside</li> <li>• West Lancashire Borough Council</li> </ul>
	<p>Is access/recreational activity causing any problems at the moment?</p>
	<p>There doesn't seem to be any problems at the moment.</p>
<p>Sefton Coast SAC – located approximately 6.8km north east of the site; and</p>	<p>Is the site open to the public?</p> <p>Yes</p> <p>If so, What activities take place?</p> <p>Walkers and birdwatchers visit the coast. The area is internationally important for its rare species of wildlife including natterjack toads, sand lizards and red squirrels so tame they can even be fed by hand. It is also one of Europe's major birdwatching locations and to date more than 300 different bird species have been recorded. The RSPB's Marshside Nature Reserve is one of the most important places in the country for wintering wildfowl with the number of birds on the reserve often exceeding 40,000.</p> <p>Sefton also has Award Winning beaches (<a href="http://www.seasideawards.org.uk">www.seasideawards.org.uk</a>)</p> <p>A network of footpaths, bridleways and cycle ways weave their way through the woodlands and into the dunes making the coast a very accessible place to visit.</p> <p>There are several cycle paths in and around Sefton the most notable of these being the Trans-Pennine Trail which starts/ends at Southport and stretches across the country to Hill and Hornsea on the east coast.</p> <p>There are two main areas for Horse Riding on the Sefton Coast, Ainsdale Beach and Formby Point.</p> <p>Ainsdale Beach has designated areas for Horse Riding. The riding can be accessed through Shore Road at Ainsdale. The beach at Ainsdale is multi-use with several different activities taking place there, so some degree of compromise is necessary.</p> <p>Formby Point has designated bridleways and access to the beach. The Bridleways run from the National Trust Property at Victoria Road to Sefton Council's Lifeboat Road site.</p> <p>Parakarting is fast becoming a very popular activity on the Sefton Coast. An area at Ainsdale Beach has been designated for parakarting. A permit is required to parakart on this area which can be obtained, free of charge, from the Coast and Countryside Service.</p> <p>Swimming and paddling in the sea is a popular pastime especially during the summer heatwaves. Beaches at Ainsdale and Southport are designated as a bathing beach.</p>



	<p>The Sefton Coastal Footpath stretches the length of the coast from Waterloo to Crossens.</p> <p>Are there any restrictions on access?</p> <p>Only in terms of safety (see above for recommendations)</p> <p>Does the site have a Management Plan and if so what does it say about access?</p> <p>Sefton Coast Partnership Integrated Coastal Zone Management (ICZM)  (<a href="http://www.seftoncoast.org.uk/pdf/iczmplan20062011.pdf">http://www.seftoncoast.org.uk/pdf/iczmplan20062011.pdf</a>)  No.8, p22.</p> <p>Sefton coast partnership:</p> <p>Impacts that act directly upon coastal processes include unsustainable and/or unmanaged coastal recreation, aggregate extraction, land reclamation and change of land use. These impacts act on a relatively local scale, e.g. several metres of trampled dunes, and their results can often be seen very quickly. Many of these impacts can be quickly and easily controlled with proper management and policies.</p> <p>Does the site have a Warden?</p> <p>Reserve Warden  RSPB Warden</p> <p>Who manages the site?</p> <p>Is access/recreational activity causing any problems at the moment?</p>
<p>Mersey Narrows and North Wirral Foreshore proposed Ramsar and potential SPA – located 550m north of the site</p>	<p>Mersey Narrows and North Wirral Foreshore potential SPA and Ramsar sites are located 550m north of the site. At present, there are no details available on recreational use. These are likely to be available upon designation. The Seaforth part of the site lies within the Seaforth Docks area. It comprises two lagoons: a shallow salt-water lagoon which functions as a settlement lagoon for water pumped from the River Mersey into the Seaforth Docks and a freshwater lagoon separated from the saltwater lagoon by a wide bund. A strip of saltmarsh flanks the western edge of the saltwater lagoon. Effectively there is no public access to the site. The site is dependent on pumping operations which could limit inundation, and could be vulnerable to future management and pumping regime changes within the dock complex. The North Wirral Foreshore part of the site comprises mostly intertidal flats with some rocky outcrops and shingle banks, and contains a number of man-made structures including groynes, jetties and breakwaters. Possible sources of vulnerability could include low-level recreation pressures but it is not considered to be attractive as Natural Green Space.</p>