

---

## APPENDIX 1 – REFERENCES

AGMA (2006) – Association of Greater Manchester Authorities (2006). *Greater Manchester Local Transport Plan 2 2006/07 – 2010/11*. [Online]. May 2006. Available from: <http://www.gmltp.co.uk/pdfs/2006/gmltp2.pdf> (accessed 4th December 2007).

DCLG (2006) – Department for Communities and Local Government (2006). *Planning for the Protection of European Sites: Appropriate Assessment*. [Online]. Available from: <http://www.communities.gov.uk/index.asp?id=1502244> (accessed 22<sup>nd</sup> September 2007).

Department of the Environment, Transport and the Regions (DETR) (2000a) *Controlling and mitigating the environmental effects of minerals extraction in England. Mineral Planning Guidance Note 11, consultation paper*. DETR, London.

Department of the Environment, Transport and the Regions (DETR) (2000c) *Review and assessment: pollutant specific guidance. LAQM.TG4(00)*. DETR, London. ISBN 1 851 12387 3.

Department of the Environment, Transport and the Regions (DETR), Environment Agency and Institute of Environmental Health (2000d.) *Guidelines for environmental risk assessment and management (revised departmental guidance)*. The Stationary Office, London. ISBN 0 11753 551 6.

Design Manual for Roads and Bridges (2007) *Vol 11(3) (HA 207/07) Annex F Assessment of Designated Sites*

Design Manual for Roads and Bridges (2008) *Interim Advice Note 110/08 Assessment of Implications (of Highways Plans and Projects) on European Sites (Including Appropriate Assessment) (for inclusion in DMRB Vol 11(4) (HA219)*.

DoE (1994) – Department of the Environment (1994). *Planning Policy Guidance Note 9 (PPG9): Nature Conservation*. Published in October 1994.

Dodd A.M., Cleary B.E., Dawkins J.S., Byron H.J., Palframan L.J. and Williams G.M. (2007). *The Appropriate Assessment of spatial plans in England: a guide to why, when and how to do it*. Sandy, UK: The RSPB.

Dore, C., Goodwin, J., Watterson, J., Murrells, T., Passant, N., Hobson, M., Haight, K., Baggott, S., Pye, S., Coleman, P. and King, K. (2003). *UK Emissions of Air Pollutants 1970 to 2001*. Abingdon, UK: AEA Technology.

EC (1979) – European Council (1979). *Council Directive of 2 April 1979 on the conservation of wild birds (79/409/EEC)*. [Online]. (Updated 1<sup>st</sup> May 2004). Available from: [http://europa.eu.int/eur-lex/en/consleg/pdf/1979/en\\_1979L0409\\_do\\_001.pdf](http://europa.eu.int/eur-lex/en/consleg/pdf/1979/en_1979L0409_do_001.pdf) [accessed 21<sup>st</sup> July 2007].

EC (1992a) – European Council (1992a). *Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora*. [Online]. (Updated 22<sup>nd</sup> July 1992). Available from: <http://eurex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:31992L0043:EN:HTML> (accessed 21<sup>st</sup> September 2007).

EC (1992b) – European Council (1992b). *Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora: Annex I, Natural habitat types of community interest whose conservation requires the designation of Special Areas of Conservation*. [Online]. (Updated 24<sup>th</sup> April 2002). Available from: [http://ec.europa.eu/environment/nature/nature\\_conservation/eu\\_enlargement/2004/habitats/annexi\\_en.pdf](http://ec.europa.eu/environment/nature/nature_conservation/eu_enlargement/2004/habitats/annexi_en.pdf) (accessed 21<sup>st</sup> July 2007).

EC (1992c) – European Council (1992c). *Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora: Annex II, Animal and plant species of community interest whose conservation requires the designation of Special Areas of Conservation*. [Online]. (Updated 24<sup>th</sup> April 2002). Available from: [http://ec.europa.eu/environment/nature/nature\\_conservation/eu\\_enlargement/2004/habitats/annexii\\_en.pdf](http://ec.europa.eu/environment/nature/nature_conservation/eu_enlargement/2004/habitats/annexii_en.pdf) (accessed 21<sup>st</sup> July 2007).

EC (2001a) – European Commission (2001a). *Council Directive 2001/42/EC of 27 June 2001 on the assessment of the effects of certain plans and programmes on the environment*. [Online]. (Updated 27<sup>th</sup> June 2001). Available from: [http://ec.europa.eu/environment/eia/full-legal-text/0142\\_en.pdf](http://ec.europa.eu/environment/eia/full-legal-text/0142_en.pdf) (accessed 4<sup>th</sup> October 2007).

ECJ (2004) Case C-127/02: *Landelijke Vereniging tot Behoud van de Waddenzee, Nederlandse Vereniging tot Bescherming van Vogels vs. Staatssecretaris van Landbouw, Natuurbeheer en Visserij* (the Waddenzee ruling).

Environment Agency (2004a) *Monitoring of particulate matter in ambient air around waste facilities Technical Guidance Document (Monitoring) M17* (March 2004)

Environment Agency (2004b) *Guidance on Assessment of Risk on Landfill Sites* (May 2004)

Environment Agency (2004c) *Habitats Directive Work Instruction (Appendix 6): Further Guidance applying the Habitat Regulations to Waste Management Facilities*

Environment Agency (2007) Chapter 4, The Environmental Permitting (England and Wales) Regulations 2007 Draft Standard rules seventeen – composting in open windrows Available from [\[http://www.environment-agency.gov.uk/commondata/acrobat/sr17\\_1854142.pdf\]](http://www.environment-agency.gov.uk/commondata/acrobat/sr17_1854142.pdf) (Accessed April, 2008)

JNCC (2006a) – Joint Nature Conservation Committee (2006b). *Council Directive 92/43/EEC on the Conservation of natural habitats and of wild fauna and flora*. [Online]. Available from: <http://www.jncc.gov.uk/page-1374> [accessed 19<sup>th</sup> July 2007].

JNCC (2006b) – Joint Nature Conservation Committee (2006b). *Council Directive 79/409/EEC on the conservation of wild birds*. [Online]. Available from: <http://www.jncc.gov.uk/page-1373> [accessed 19<sup>th</sup> July 2007].

JNCC (2006c) – Joint Nature Conservation Committee (2006c). *The Convention on Wetlands of International Importance especially as Waterfowl Habitat*. [Online]. Available from: <http://www.jncc.gov.uk/page-1369> [accessed 19<sup>th</sup> July 2007].

JNCC (2006d) – Joint Nature Conservation Committee (2006d). *Manchester Mosses*. (Version 2.1) [Online]. (Updated 17<sup>th</sup> May 2006). Available from: <http://www.jncc.gov.uk/protectedsites/SACselection/SAC.asp?EUCODE=UK0030200> (accessed 20<sup>th</sup> July 2007).

JNCC (2006e) – Joint Nature Conservation Committee (2006e). *Rochdale Canal, Standard Natura 2000 Data Form*. (Version 2.1) [Online]. (Updated 17<sup>th</sup> May 2006). Available from: <http://www.jncc.gov.uk/ProtectedSites/SACselection/n2kforms/UK0030266.pdf> (accessed 17<sup>th</sup> July 2007).

JNCC (2006f) – Joint Nature Conservation Committee (2006f). *South Pennine Moors* (Version 2.1) [online]. (Updated 17<sup>th</sup> May 2006). Available from: <http://www.jncc.gov.uk/ProtectedSites/SACselection/n2kforms/UK0030280.pdf> (accessed 20<sup>th</sup> October 2007).

JNCC (2006g) – Joint Nature Conservation Committee (2006g). *Peak District Moors (South Pennine Moors Phase 1)*. (Version 2.1) [Online]. (Updated 17<sup>th</sup> May 2006). Available from: <http://www.jncc.gov.uk/pdf/SPA/UK9007021.pdf> (accessed 20<sup>th</sup> October 2007).

JNCC (2006h) – Joint Nature Conservation Committee (2006h). *South Pennine Moors* (Version 1.1). [Online]. (Updated 5<sup>th</sup> May 2006). Available from: <http://www.jncc.gov.uk/pdf/SPA/UK9007022.pdf> (accessed 20<sup>th</sup> October 2007).

JNCC (2006i) – JOINT NATURE CONSERVATION COMMITTEE (2006i). *Rixton Clay Pits*. (Version 2.1) [Online]. (Updated 17<sup>th</sup> May 2006). Available from: <http://www.jncc.gov.uk/ProtectedSites/SACselection/n2kforms/UK0030265.pdf> (accessed 20<sup>th</sup> July 2007).

JNCC (2006j) – Joint Nature Conservation Committee (2006j). *Ramsar Information Sheet UK11060: Rostherne Mere*. (Version 3.0) [Online]. (Updated 5<sup>th</sup> May 2006). Available from: <http://www.jncc.gov.uk/pdf/RIS/UK11060.pdf> (accessed 17<sup>th</sup> July 2007).

JNCC (2006k) – Joint Nature Conservation Committee (2006k). *Mersey Estuary, Standard Natura 2000 Data Form*. (Version 1.1) [Online]. (Updated 5<sup>th</sup> May 2006). Available from: <http://www.jncc.gov.uk/pdf/SPA/UK9005131.pdf> (accessed 17<sup>th</sup> July 2007).

JNCC (2006l) – Joint Nature Conservation Committee (2006l). *Ramsar Information Sheet UK11041: Mersey Estuary*. (Version 3.0) [Online]. (Updated 5<sup>th</sup> May 2006). Available from: <http://www.jncc.gov.uk/pdf/RIS/UK11041.pdf> (accessed 17<sup>th</sup> July 2007).

Langston, W.J., Chesman, B.S. and Burt, G.R. (2006). Characterisation of European Marine Sites. Mersey Estuary SPA. [Online]. *Marine Biological Association of the United Kingdom. Occasional Publications 18*, 185pp. Available at: [www.mba.ac.uk/nmbl/publications/occpub/pdf/occ\\_pub\\_18.pdf](http://www.mba.ac.uk/nmbl/publications/occpub/pdf/occ_pub_18.pdf) (accessed 18<sup>th</sup> July 2007).

Manchester City Council (1995). *Unitary Development Plan*. [Online]. Available from: [http://www.planningportal.gov.uk/wps/portal/?PpAction=select\\_document&select\\_type\\_id=101&select\\_object\\_id=1090430622467](http://www.planningportal.gov.uk/wps/portal/?PpAction=select_document&select_type_id=101&select_object_id=1090430622467) (accessed 17<sup>th</sup> December 2007).

Mersey Basin Campaign (2004). *River Mersey*. [Online]. Available at: [www.merseybasin.org.uk/information.asp?page=1&pagesize=5&confirmed=1&id=0&docid=57](http://www.merseybasin.org.uk/information.asp?page=1&pagesize=5&confirmed=1&id=0&docid=57) (accessed 18<sup>th</sup> July 2007).

Natural England (2007a). *Conservation objectives and definitions of favourable condition for designated features of interest: Mersey Narrows and North Wirral Foreshore*. [CD]. Habitat Regulation Assessment Guidance CD. Natural England, July 2007.

Natural England (2007b). *Conservation objectives for Natura 2000 sites*. [CD]. Habitat Regulation Assessment Guidance CD. Natural England, July 2007.

North West Regional Assembly (2008). *The North West of England Plan – regional Spatial Strategy to 2021 (September 2008)*

ODPM (2004) – Office of the Deputy Prime Minister (2004). *Planning and Compulsory Purchase Act 2004 (c.5)*. 13<sup>th</sup> May 2004. [Online]. Available at: [http://www.opsi.gov.uk/ACTS/acts2004/pdf/ukpga\\_20040005\\_en.pdf](http://www.opsi.gov.uk/ACTS/acts2004/pdf/ukpga_20040005_en.pdf) (accessed 4<sup>th</sup> December 2007).

ODPM (2005) – Office of the Deputy Prime Minister (2005). *Planning Policy Statement 9: Biodiversity and Geological Conservation*. Norwich, UK; TSO.

Oldham MBC (2006) – Oldham Metropolitan Borough Council (2006). *Oldham Metropolitan Borough Unitary Development Plan*. Adopted 14 July 2006. [Online]. Available from: <http://www.oldham.gov.uk/living/planbuildmatters/planning-udp.htm> (accessed 17<sup>th</sup> December 2007).

Rochdale MBC (2006) – Rochdale Metropolitan Borough Council (2006). *Unitary Development Plan 2006*. Adopted June 2006. [Online]. Available from: [http://www.cartoplus.co.uk/rochdale/text/00\\_cont.htm](http://www.cartoplus.co.uk/rochdale/text/00_cont.htm) (accessed 17th December 2007).

Salford City Council (2006). *City of Salford Unitary Development Plan 2004-2016*. Adopted 21<sup>st</sup> June 2006. [Online]. Available from: <http://www.salford.gov.uk/living/planning/udp.htm> (accessed 3rd December 2007).

Scott Wilson *et al.* 2006 – Scott Wilson, Levett-Therivel, Treweek Environmental Consultants and Land Use Consultants (2006). *Appropriate Assessment of Plans*. [Online]. Available from: <http://www.levett-therivel.fsworld.co.uk/aa.pdf> [Accessed 23<sup>rd</sup> July 2007].

Stockport MBC (2006) – Stockport Metropolitan Borough Council (2006). *Stockport Unitary Development Plan (UDP) Review*. [Online]. Available from: <http://www.stockport.gov.uk/content/environment/planningbuildingpolicy/developmentplanning/udp/?a=5441> (accessed 3rd December 2007).

Tameside MBC (2004) - Trafford Metropolitan Borough Council (2004). *Tameside Unitary Development Plan*. Adopted 17th November 2004. [Online]. Available from: <http://www.cartoplus.co.uk/tameside/text/00cont.htm> (accessed 17th December 2007).

Trafford MBC (2006) - Trafford Metropolitan Borough Council (2006). *Trafford Unitary Development Plan*. Adopted 19 June 2006. [Online]. Available from: <http://udp.trafford.gov.uk/> (accessed 3rd December 2007).

Warrington Borough Council (2006). *Warrington Unitary Development Plan - January 2006*. [Online]. Available from: [http://www.warrington.gov.uk/news/udp/interactive/interactive2/plan\\_index.asp](http://www.warrington.gov.uk/news/udp/interactive/interactive2/plan_index.asp) (accessed 3rd December 2007).

Webb A., McSorley C.A., Dean B.J., Reid J.B., Cranswick P.A., Smith L. and Hall, C. (2004a). *An assessment of the numbers and distributions of inshore aggregations of waterbirds using Liverpool Bay during the non-breeding season in support of possible SPA identification*. Unpublished JNCC Report, No. 373 (January 2004). [Online]. Available from: <http://www.jncc.gov.uk/page-3810> (accessed 20<sup>th</sup> July 2007).

Webb A., McSorley C.A., Dean B.J. and Reid J.B. (2004b). *Recommendations for the selection of, and boundary options for, an SPA in Liverpool Bay*. Unpublished JNCC Report, No. 388 (January 2004). [Online]. Available from: <http://www.jncc.gov.uk/pdf/jncc388.pdf> (accessed 20<sup>th</sup> July 2007).

Wigan Council (2006). *Wigan Unitary Development Plan: Replacement Plan with Proposed Modifications*. [Online]. Available from:

<http://www.cartoplus.co.uk/wigan/intro.htm> (accessed 3rd December 2007).

Wigan MBC WDA (2006) – Wigan Metropolitan Borough Council Waste Disposal Authority (2006). *Wigan Municipal Solid Waste Management Strategy*. Adopted October 2006. [Online]. Available at:  
<http://www.wigan.gov.uk/NR/rdonlyres/A9343E99-5576-46A8-9B62-ED454219F8E3/0/WasteStrategy.pdf> (accessed 16th December 2007).

The Wildlife Trusts (2000). *Great Crested Newt (*Triturus cristatus*)*. [online]. <<http://www.wildlifetrust.org.uk/urbanwt/ecorecord/bap/html/gcnewt.htm>> (accessed 23<sup>rd</sup> July 2007).

Wildlife Trust (2006) – The Wildlife Trust For Lancashire, Manchester And North Merseyside (2006). *Uses and abuses*. [Online]. Available at:  
<http://www.lancswt.org.uk/Learning%20&%20Discovery/theirishsea/usesandabuses.htm> (accessed 8th August 2007).

Wirral MBC (2001) – Wirral Metropolitan Borough Council (2001). *Consultations on proposed designation of North Wirral Foreshore SSSI and Mersey Narrows SSSI as a potential Special Protection Area and proposed Ramsar site*. [Online]. Environment and Planning Strategy Select Committee – 29<sup>th</sup> October 2001. Available from:  
[http://www.wirral.gov.uk/minute/public/envped011029rep02\\_3275.pdf](http://www.wirral.gov.uk/minute/public/envped011029rep02_3275.pdf) (accessed 27<sup>th</sup> July 2007).

Conservation (Natural Habitats, &c.) (Amendment) Regulations 2007. Adopted 21st August 2007.

**PAGE INTENTIONALLY BLANK**

## APPENDIX 2 – KEY PRINCIPLES UNDERPINNING THE PROPOSED METHODOLOGY

Principle	Rationale
Build upon existing information	Existing information is to be used wherever possible. This includes information gathered as part of the SA of the emerging LDF and information held by Natural England, the Environment Agency, AGMA, and others (e.g. other local authorities, wildlife NGOs).
Consult with Natural England, the Environment Agency and other stakeholders	There is to be continued consultation with both Natural England and the Environment Agency for the duration of the HRA, including throughout the screening stage. Information held by them is to be utilised and any comments on the HRA process and findings are to be addressed.
Ensure a proportionate HRA/AA	The level of detail addressed in the HRA is to reflect the level of detail in the JWDPD (i.e. that the HRA is proportionate). With this in mind, the HRA is to focus on information and impacts considered appropriate to the local level.
Keep the process as simple as possible	The process is to be kept as simple as possible while ensuring an objective and rigorous HRA in compliance with the Habitats Directive, Habitat Regulations 2007 and emerging best practice. Decision making will be clear and justifiable, and will be based on a principle of 'common sense' wherever possible.
Work in effective partnership	As there is currently limited experience in undertaking plan-level HRA, it will be particularly important to work in partnership with key stakeholders including the Council itself, Natural England, the Environment Agency and others to ensure that the HRA takes account of different ideas and allow stakeholders to get involved. Also through such partnership, account is to be taken of emerging guidance, lessons learned from other projects, and the requirements of the stakeholders.
Conformity with key legislation and guidance	Account is to be taken of relevant legislation and emerging guidance, including The Habitats Directive (92/43/EEC), The Habitats Regulations 2007, Draft DCLG guidance, EC guidance on The Habitats Directive, The Birds Directive (79/409/EEC), and EN Habitat Regulation Guidance Notes.
Ensure a clear audit trail	The HRA process and findings are to be clearly documented in order to ensure an audit trail.

**PAGE INTENTIONALLY BLANK**

## APPENDIX 3: KEY PROCESSES AND POTENTIAL CAUSES OF IMPACT OF RESIDUAL WASTE DISPOSAL FACILITIES CONSIDERED IN SA STAGE 2 ISSUES AND OPTIONS REPORT

Waste Facility Category	Description	Assumptions	Potential Source of Impact	Recommended Buffer zone required <sup>1</sup>
Residual waste Disposal (Landfill / Landraise)	Landfill is the controlled deposit of waste to land. Often mineral workings and extraction sites are used as landfills, providing a means to restore the land. However where such 'holes in the ground' are not available, it is possible to deposit waste onto the ground surface and build up a waste disposal site i.e. landraising.	Any new facilities would be <ul style="list-style-type: none"> <li>open air;</li> <li>deal with both inert and 'putrescible' (liable to undergo decomposition) waste; and</li> <li>may contain hazardous or controlled waste.</li> </ul>	<ul style="list-style-type: none"> <li>landfill gas;</li> <li>landfill gas flare emissions;</li> <li>leachate;</li> <li>surface water contamination;</li> <li>dust;</li> <li>litter;</li> <li>noise and vibration;</li> <li>gulls, corvids and rats;</li> <li>traffic generation; and</li> <li>physical encroachment.</li> </ul>	2km or  5km where facility may to attract gulls/corvids and SPA, pSPA, Ramsar or European site vulnerable to disturbance or predation by these pests  Additional consideration to hydraulic connections

<sup>1</sup> Based on Environment Agency (2004) *Habitats Directive Work Instruction (Appendix 6): Further Guidance applying the Habitat Regulations to Waste Management Facilities*

## APPENDIX 4: AIR AS A PATHWAYS THROUGH WHICH THE GM JWDPD COULD POTENTIALLY LEAD TO SIGNIFICANT EFFECTS UPON THE EUROPEAN SITES

### Important Anthropogenic Air Pollutants

#### 1. Oxides of Nitrogen (NO<sub>x</sub>)

These are formed during high temperature combustion processes from the oxidation of nitrogen in the air. An increase in the deposition of nitrogen from the atmosphere to soils is generally regarded to lead to an increase in soil fertility, which can have a serious deleterious effect on the quality of semi-natural, nitrogen-limited terrestrial habitats. High NO<sub>x</sub> levels can also have direct effects on plants.

The main sources of NO<sub>x</sub> in the UK are (Dore *et al.* 2003):

- road and other transport (approximately 47%, rising in urban areas);
- public power generation using fossil fuels (22%);
- combustion in industrial processes (14%); and
- domestic and commercial sources (4%), e.g. commercial boilers in schools, hospitals etc.

Traffic generated by large waste facilities therefore have the potential to contribute NO<sub>x</sub> levels. Oxides of Nitrogen are also emitted from landfill gas flare/ENERGY RECOVERY FACILITY emissions.

NO<sub>x</sub> is the pollutant of most concern for sensitive vegetation near roads. The First EU Daughter Directive set a Limit Value for NO<sub>x</sub> for the protection of vegetation (an annual mean of 30 µg/m<sup>3</sup>) to be met by 2001. This value was based on the work of the UNECE and WHO, and has been incorporated into the UK Air Quality Limit Value Regulations 2001. The policy of the UK statutory nature conservation agencies is to apply the 30 µg/m<sup>3</sup> criterion in internationally designated conservation sites and SSSIs on a precautionary basis (DMRB, 2007).

Critical loads for the deposition of nitrogen, which represent the exposure below which there should be no significant harmful effects on sensitive elements of the ecosystem (according to current knowledge), have been established for certain habitats dependent on low nitrogen levels. Critical loads are expressed in deposition units of kg N ha<sup>-1</sup> year<sup>-1</sup>.

#### 2. Sulphur dioxide (SO<sub>2</sub>)

This is an acidic gas that combines with water vapour in the atmosphere to produce acid rain. Both wet and dry depositions have been implicated in the damage and destruction of vegetation and in the degradation of soils and watercourses.

The main sources of SO<sub>2</sub> are (Dore *et al.* 2003):

- public power generation using fossil fuels (69%);
- combustion in industrial processes (13%);
- domestic and commercial sources (4%);
- non-road transport sources (3%); and
- road transport (<1%).

Sulphur oxides are emitted by landfill gas flare/ENERGY RECOVERY FACILITY emissions as well as traffic generated by large waste facilities. Major SO<sub>2</sub> problems now only tend to occur in cities in which coal is still widely used for domestic heating, in heavy industry and in power stations.

### **3. Dust (e.g. PM<sub>10</sub>)**

Dust can be associated with waste managing/processing activities where waste materials such as soil or demolition wastes are screened or graded, or where combustion takes place.

If present in sufficient quantities dust can smother vegetation, preventing light penetration to the chloroplasts and blocking stomata thus interrupting photosynthesis, transpiration, growth rate and set seed etc. In prolonged cases, death can result

Little work has been done on relative sensitivity of different species, but lichens and bryophytes are thought to be particularly sensitive (Farmer 1993). Dust size and chemical composition is important as smaller particles can enter or block stomata and thus interfere with gas exchange.

Dust with a toxic component may have effects over a wide area and at low levels. This could be a particular issue for scrap metal recovery sites, waste transfer stations, or special waste processing activities.

Dust can harm invertebrates indirectly by eliminating their habitat or food plants or making them effectively unavailable, and directly through being toxic or causing mechanical damage.

Building materials (e.g. cement, lime) may be alkali in nature. Dust from such sources may adversely affect acid habitats (e.g. heathland) (Environment Agency, 2004c).

### **4. Ammonia (NH<sub>3</sub>)**

This is probably the major source of nitrogen deposition to many wildlife sites, and is mainly agricultural or industrial in origin. The reaction products of ammonium has the potential to acidify soil (DMRB, 2007)

Ammonia emissions from road vehicles (from petrol-driven vehicles fitted with catalytic converters and heavy duty vehicles fitted with selective catalytic reduction), although small in a national context, can lead to significant additional deposition of nitrogen to vegetation in immediate vicinity of roads (typically within 10 m) (DMRB, 2007).

## **5. Low-level ozone (O<sub>3</sub>)**

This is unlike the other pollutants mentioned, in that it is not emitted directly into the atmosphere, but is a secondary pollutant produced by a complex reaction between nitrogen dioxide (NO<sub>2</sub>), hydrocarbons and sunlight. Ozone is toxic to plants but concentrations tend to be lower close to a road as it is scavenged by nitric oxide emitted by vehicles. As emissions of NO<sub>x</sub> decrease in the future, ozone concentrations are expected to increase in urban areas and adjacent to roads and may pose an increased threat to vegetation in these areas. The reaction products of NO<sub>x</sub>, SO<sub>2</sub> and NH<sub>3</sub> (nitrate, sulphate and ammonium) have the potential to acidify the soil unless mineral weathering, chemical or microbial processes within the soil or liming can neutralise the acid (DMRB, 2007).

## **Potential Sources of Air Pollution from Waste Sites**

### **Landfill Gas**

Landfill gas is produced by organic waste decomposing under anaerobic conditions in a landfill. The waste is covered and compressed mechanically and by the weight of the material that is deposited from above. This material prevents oxygen from accessing the waste and anaerobic microbes thrive. Landfill gas typically has methane concentrations of approximately 50%.

Migration of landfill gas outside the perimeter of landfill sites taking biodegradable waste can occur where sites have been inadequately engineered. In such circumstances the gas will exclude oxygen from the soil and lead to the exposure and possible death of plants and soil fauna. Such effects are unlikely beyond a 0.5km radius (Environment Agency, 2004c).

### **Landfill Gas Flare and CHP Emissions**

A landfill gas flare (or utilisation engine) will produce an emission of exhaust gases such as SO<sub>x</sub>, NO<sub>x</sub>, unburnt hydrocarbons, CO, HCl, etc. The volume of exhaust gases is likely to be small in comparison to other combustion facilities and at a distance of >1km from the European site may well be inconsequential. At closer distances than this, or where there is doubt (due to the scale of the activity, the background air quality or any constraints in dispersion caused by topography, etc) the tests within Appendix 7 (and IPPC Guidance note H1) should be applied (Environment Agency, 2004c).

### **Bioaerosols, Airborn Microbes and Fungus**

A bioaerosol is a biological aerosol. These particles are very small and range in size from less than one micrometer one hundred micrometers. Air often contains tiny organisms such as fungi, bacteria, mycotoxins and viruses. None of these organisms live in the air but may be attached to other small particles such as dried residues from water droplets, dust or soil. Groups of the small organisms clump up and enhance survival while airborne. Due to evaporation of water, bacterial cells usually die when they become airborne but under high humidity conditions bioaerosol levels are increased. Fungal cells such as spores, moulds and yeast can be active at low humidity levels and high or low temperatures. Bioaerosols react to air currents and move quickly or slowly depending on the environment. Bioaerosols

are impacted by gravity but due to their size air density and air currents play a large role in their movement.

Bioaerosols can be generated through open air windrow composting, and mechanical biological treatment within enclosed (built) waste management and recycling centres. Airborne fungus and bacteria could cause damaging effects on plant and animal species. Controls of airborne microbes and Fungus can include:

- damping down of materials to prevent dusts;
- shredding, turning, screening undertaken when wind speeds are not too high; and
- locating the site at a suitable distance from sensitive receptors.

The Environment Agency (2007) Chapter 4, The Environmental Permitting (England and Wales) Regulations 2007 states that in order to grant a permit for the composting in open windrows, no part of the site may be located within 1 kilometre of a European Designated Site.

### ***Traffic Emissions***

Air pollutants resulting from traffic can have an effect on vegetation. Concentrations of pollutants in air and deposition of particles can damage vegetation directly or affect plant health and productivity. Deposition of pollutants to the ground and vegetation can alter the characteristics of the soil, affecting the pH and nitrogen availability that can then affect plant health, productivity and species composition. Increased greenhouse gas emissions on a global scale can affect the global climate, such that the ability of existing species to tolerate local conditions can change (DMRB, 2007).

Small quantities of heavy metals released during combustion and from vehicle wear and tear, may accumulate in soils near the road. However, such emissions cannot be reliably quantified or the negative ecological effects determined (DMRB, 2007).

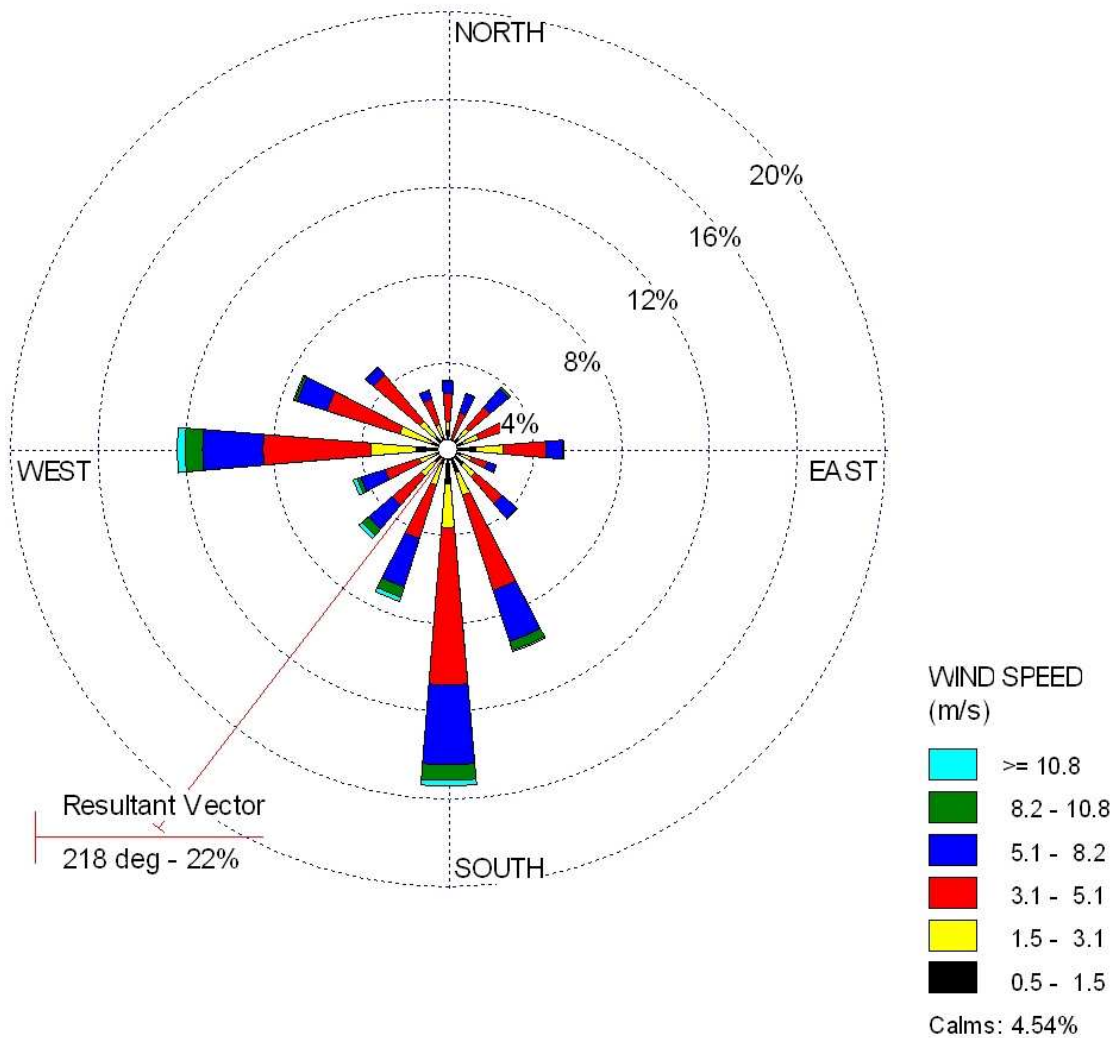
### ***Dust***

Dust can be associated with activities where waste materials such as soil or demolition wastes are screened or graded, or where combustion takes place. Waste facility categories that may generate dust include thermal treatment emissions, open air windrow composting, open waste management and recycling facilities.

Effects of dust will depend on the prevailing wind direction and the transport distance is related to particle size:

- Large particles (>30um) will mostly deposit within 100m of the source;
- Intermediate particles (10-30um) are likely to travel up to 200 - 500m; and
- Smaller particles (<10um) can travel up to 1km from the source. (DETR 2000c).

## APPENDIX 5: WIND ROSE DIAGRAM FOR GREATER MANCHESTER, (2005)



## APPENDIX 6: WATER FLOW AND QUALITY AS A PATHWAYS THROUGH WHICH THE JWDPD COULD POTENTIALLY LEAD TO SIGNIFICANT EFFECTS UPON EUROPEAN SITES

Through its Review of Consents process, the Environment Agency has identified diffuse pollution to be a major factor in causing unfavourable conservation status of European sites, including rivers, wetlands and estuaries/maritime sites. The quality of the water that feeds European sites is an important determinant of the nature of their habitats and the species they support. Poor water quality can have a range of environmental impacts. Sources of environmental impacts are described below.

### *Toxic Chemicals*

At high levels, toxic chemicals and metals can result in immediate death of aquatic life, and can have detrimental effects even at lower levels, including increased vulnerability to disease and changes in wildlife behaviour.

### *Nutrients and Organic Matter*

Eutrophication, the enrichment of plant nutrients in water, increases plant growth and consequently results in oxygen depletion. Algal blooms, which commonly result from eutrophication, increase turbidity and decrease light penetration. The decomposition of organic wastes which often accompanies eutrophication deoxygenates water further, augmenting the oxygen depleting effects of eutrophication. In the marine environment, nitrogen is the limiting plant nutrient and so eutrophication is associated with discharges containing available nitrogen.

### *Pesticides*

Some pesticides, industrial chemicals, and components of sewage effluent are suspected to interfere with the functioning of the endocrine system, possibly having negative effects on the reproduction and development of aquatic life. Some male fish in UK rivers, for example, have demonstrated the physiological symptoms expected of oestrogen-mimicking chemicals - symptoms which have been linked to exposure to female hormones (synthetic and natural) in sewage effluent.

### *Urbanisation*

Water quality may be indirectly altered as a result of urbanisation, for instance through:

- trans-basin water transfers introducing water of different chemical characteristics;
- pollution through water runoff from hard surfaces carrying oils, heavy metals and/or de-icing compounds;
- waste-water treatment effluent introducing water of different chemical characteristics;
- pollution from waste-water treatment effluent carrying increased pollutant loads;
- waste-water effluent carrying increased nutrient load, increasing the risk of eutrophication; and

- diffuse pollution resulting from land management and development.

### Sources of Surface/Groundwater Pollution from Waste Sites

The sources of surface/groundwater pollution from waste sites comprise:

#### *Leachate*

Leachate can escape from waste sites by leakage through a barrier / containment system; break out through a cap, or overtopping containment. If it enters surface or groundwater it can pollute those waters and be transported down gradient. It can cause toxic effects and nutrient enrichment (Environment Agency, 2004c).

Leachate is normally associated with landfill sites, but can also be generated from open air windrow composting.

#### *Surface Water Run off*

Surface water may become contaminated by contact with waste and leachate, construction materials, or chemicals used on site (fuels, pesticides, etc). The resulting water may be toxic, nutrient rich, or may carry a load of suspended solids that could lead to siltation. The physical passage of water may lead to scouring and erosion. While these effects can be dispersed throughout the downstream water catchment, they will be most visibly manifested within tens of metres to a few hundred metres of the site (Environment Agency, 2004c).

A risk of water contamination exists through runoff from waste vehicles and loading bays/transfer areas in all five waste facility categories. Surface water management systems should be installed at all waste sites, with the aim of segregating 'clean, uncontaminated water' from potentially contaminated water. The contaminated water should be subject to appropriate treatment (on site or via sewer), prior to release to the environment. The manner of all discharges may need to be controlled to prevent erosion or siltation (Environment Agency, 2004c).

## APPENDIX 7: OTHER PATHWAYS THROUGH WHICH THE JWDPD COULD POTENTIALLY LEAD TO SIGNIFICANT EFFECTS UPON THE EUROPEAN SITES

The following potential impacts may arise from waste facilities and could result in adverse effects on the integrity of a European Sites.

### *Physical Disturbance*

This will be an issue where the waste activity directly impinges on a European Site. To cover for this eventuality, waste sites located adjacent to European Sites are considered to have the potential for physical disturbance.

Damage may occur through access to monitoring points or in litter collection. Physical damage may also be associated by rare accidents such as explosions of landfill gas, and for emergency access etc (Environment Agency, 2004c).

At present, designated rivers and canals (e.g. Rochdale Canal SAC) are not being considered for the transportation of waste to potential new waste sites. However should designated rivers and canals be used for the transportation of waste to waste sites, there is likely to be physical damage to qualifying features within the site due to increase in boat movements, and/or risk of accidental pollution.

### *Gulls, Corvids and Rats*

Vermin is usually associated with landfill sites. However other types of waste management facility which deal with domestic/biodegradable or putrescible waste also have the potential to attract vermin.

Gulls, corvids and rats are attracted to sites which provide a source of food, heat, standing water and disturbed soils. Some Waste Transfer Stations, composting facilities, civic amenity sites and other similar activities are less likely to attract birds and rodents, but may do so where a population already exists in the surrounding area (Gabrey 1997).

Gulls, particularly larger species will predate the eggs and young of nesting birds. Dense colonies of breeding birds are likely to be particularly attractive to predators. The disturbance effect of gulls roosting or loafing in the vicinity of a landfill site may also deter other birds from nesting. The risk of predation will depend on the species involved. Terns are particularly sensitive. The evidence for breeding waders is less clear. If a proposed site is within a few kilometres of a breeding site of a qualifying SPA species, an appropriate assessment is likely to be necessary (Environment Agency 2004c).

Rodents may also eat the eggs of ground nesting birds, but these impacts are only likely to occur over a short distance.

### *Litter*

Litter can be expected to arise at all sites, except those handling solely inert wastes or specific industrial wastes. The amount of litter will depend on the handling of waste (compaction, degree of enclosure) and the prevailing wind direction and strength.

An exceptionally large volume of litter would have to escape to give rise to smothering effects. This would not be acceptable purely on amenity grounds. More significantly perhaps, litter may escape to habitats where the physical access to collect litter could cause disturbance and habitat loss. In such circumstances total containment of litter may be required (Environment Agency, 2004c).

### *Noise and Visual*

Disturbance from noise or visual intrusion is likely to be most relevant if the location of the waste activity or access routes are within or immediately adjacent to an SPA or certain SACs (e.g. those designated for bat species), though impacts have been reported up to 1km away due to more intense sources such as busy highways (Reijnen et al 1997).

Disturbance from construction or operational activities may cause sensitive birds and mammals to deviate from their normal, preferred behaviour. It is difficult to make generalisations about the likely effects of disturbance because a wide range of factors are involved and different species react differently. For this reason, the capacity of the relevant habitats to support the qualifying species (that are affected by disturbance) should be assessed, rather than the effect on individual species numbers.

The information on the effects of noise on wildlife is very limited and in the case of birds most of the studies relate to the effects of road traffic noise. It is likely that the effects will depend on the type and timing of disturbance and the proximity of the sources to the sensitive populations. It is thought that some birds adjust to long-term continuous noise levels or movement and those unpredictable or erratic noise events are more likely to cause disturbance.

Other factors that could influence responses to noise could be:

- the proximity of alternative roosting / resting / feeding areas;
- the time of year (vulnerability may increase during particular periods such as the breeding season, or the autumn/winter migration);
- during hard weather conditions when birds require more food than normal to balance energy budgets.

There is little doubt that environmental noise levels can have an effect on wildlife and that the effects are almost certainly dependent upon the type of noise and species exposed. One way to establish the effect of a particular activity is to compare wildlife populations etc. on parts of the European site affected by noise with other parts of the site. However, great care must be taken to eliminate other potential influences such as availability of food, cover, visual or other human impacts.

## APPENDIX 8 – OTHER RELEVANT PLANS AND POLICIES, WITH SOME POTENTIAL IMPACTS AND POLICIES SET OUT TO MITIGATE FOR THEM

Note – this list is not exhaustive, but serves to represent those relevant policies and plans at the local and regional levels, some of which are under review.

Policies are pre-fixed with an ‘I’ to identify policies that may have a combined Impact on a European Site, or a ‘M’ to identify policies that act as Mitigation for impacts on a European Site. Mitigation policies are in green text to aid identification.

Key relevant policies/strategies	Relevant potential impact (I) / mitigation (M)
<p><b>The North West Plan: Submitted Draft Regional Spatial Strategy (RSS)</b></p>	
<p><u>L4 - Regional housing provision:</u> 411,160 new dwellings 2003-2021:</p> <ul style="list-style-type: none"> <li>• Manchester – 63,000 total (3,500 annual average)</li> <li>• Salford – 28,800 (1,600)</li> <li>• Wigan – 16,200 (900)</li> <li>• Tameside – 13,500 (750)</li> <li>• Bury – 10,800 (600)</li> <li>• Bolton – 9,200 (511)</li> <li>• Stockport – 8,100 (450)</li> <li>• Trafford – 7,740 (430)</li> <li>• Oldham – 7,200 (400)</li> <li>• Rochdale – 7,200 (400)</li> </ul> <p><u>EM3 - Green infrastructure:</u> Identify, promote and deliver multi-purpose networks of greenspace, and integrate within existing and new development</p> <p><u>RT1 - The regional public transport framework:</u> Improve links within and between the city regions and regional towns and cities, ensure that public transport provides a credible alternative to use of the private car. In terms of the highway network, emphasis is on making best use of existing infrastructure, together with targeted investment in major road improvements. The importance of the region’s airports and ports as gateways is also recognised. Important transport corridors:</p>	<p><b>I</b> Increased population and increased recreational pressure on relevant sites)</p> <p><b>M</b> Provision of green infrastructure can help offset recreational pressure on European sites</p> <p><b>I</b> Increased population, increased traffic on the stretch of the M62 next to the Manchester Mosses SAC</p> <p><b>M</b> Public transport provision, combined with highway demand management measures and a shift of freight from road to other modes can help alleviate traffic on the M62, alongside other non-car modes (e.g. cycling)</p> <p><b>I</b> Increased sewerage</p> <p><b>M</b> Phasing development to reflect water and sewerage capacity can offset adverse effects to water quality</p> <p><b>I</b> New employment land and/or inter-modal freight terminal at Newton-le-Willows (i.e. Parkside) increasing overall risk of accidental spills into watercourses (direct or through drainage)</p>

Key relevant policies/strategies	Relevant potential impact (I) / mitigation (M)
<ul style="list-style-type: none"> <li>• The South / Yorkshire / North East – Manchester – Preston – Blackpool</li> <li>• Liverpool – Manchester – Sheffield / East Midlands / East of England</li> <li>• Liverpool – Warrington – Manchester – Leeds / York / Hull / Newcastle</li> <li>• London &amp; South East – Preston / Manchester / Liverpool / Chester</li> <li>• Links to/from Manchester airport</li> <li>• And between:</li> <li>• Manchester and: Chester; East Lancashire; Altrincham to Northwich; Ashton; Bolton; Burnley; Bury; Oldham to Rochdale; Manchester Airport; Rochdale; Stockport to Macclesfield; Wigan; Leyland through Chorley to Preston; and Preston through Lancaster to Barrow</li> <li>• Manchester Airport and Stockport</li> <li>• Rochdale and: Burnley; Bury to Bolton; and Leeds City Region</li> <li>• Stockport and: Ashton under Lyne; and Crewe</li> <li>• Warrington and: Manchester; and Wigan</li> <li>• Wigan and: St Helens to Liverpool</li> </ul> <p><u>RT2 - Management and maintenance of the highway network:</u> Framework for the management and maintenance of the Regional Highway Network</p> <p><u>RT5 - A regional framework for the management of freight transport:</u> Transfer and distribution of freight</p> <p><u>W2 - Broad locations for regionally significant economic development:</u> Economic developments in the following relevant locations:</p> <ul style="list-style-type: none"> <li>• Regional Investment Sites (meeting requirements of the region’s key growth sectors identified by the NW Regional Development Agency) – Greater Manchester Western Gateway, East Manchester, southeast of Rochdale (reserve site)</li> <li>• Knowledge (-based sectors) nuclei sites which require specific links to the region’s Higher Education Institutions, research and development facilities, existing knowledge-based industries and major hospitals – Central Manchester arc of opportunity, South Manchester (reserve site)</li> <li>• Inter-modal freight terminals facilitating the transfer of freight from road to rail and/or water (Policy RT5) – South West Greater Manchester with rail access and potential access to the Manchester Ship Canal</li> </ul>	<p><b>I</b> Increase/intensification of development modifying watercourse and/or increasing surface water runoff</p> <p><b>M</b> Sustainable drainage measures can offset adverse effects to water quality and surface flow</p>

Key relevant policies/strategies	Relevant potential impact (I) / mitigation (M)
<p>W3 - Supply of sub-regional and local employment land: 1,707ha required between 2005-2021 in the NW; 1,226ha in Greater Manchester</p> <p><u>EM5 - Integrated Water Management:</u> Assist in achieving integrated water management and delivery of the EU Water Framework Directive (WFD). Plans/strategies should protect the quantity and quality of surface, ground and coastal waters and manage flood risk</p> <p><u>EM7 - Minerals Extraction:</u> Plans/strategies to supply a range of minerals to meet the region's apportionments of land-won aggregates and requirements of national planning guidance</p>	
<p><b>Greater Manchester Municipal Waste Management Strategy – Review 2006/7 (adopted April 2007)</b></p>	
<p><u>Proposed Waste Management Targets/Objectives:</u></p> <ul style="list-style-type: none"> <li>• Reduction of 50% in non-household municipal waste</li> <li>• Recycling and composting 20% household waste in 2005/6, 33% in 2010, &gt;50% in 2020</li> <li>• Implementation of residual waste treatment processes with use of refuse derived fuels; retain and optimise the use of Bolton Thermal Recovery Facility (TRF) throughout the life of the strategy</li> <li>• Landfill of biologically active residues not to exceed quantities permitted under Landfill Allowance Trading Scheme (LATS)</li> </ul>	<p>Main environmental impacts of municipal waste management include:</p> <ul style="list-style-type: none"> <li>• Climate change</li> <li>• Air pollution</li> <li>• Water pollution</li> <li>• Land contamination</li> <li>• Biodiversity and ecological degradation</li> <li>• Public health</li> <li>• Public amenity</li> <li>• Resource efficiency</li> <li>• Transport</li> </ul>
<p><b>Wigan Municipal Solid Waste Management Strategy (adopted October 2006)</b></p>	
<p><u>Proposed Waste Management Targets/Objectives:</u></p> <ul style="list-style-type: none"> <li>• Reduce municipal waste growth to 1% by 2010 and to 0% by 2020</li> <li>• Achieve statutory recycling and composting standards for 2005/6</li> <li>• Recycle or compost 25% of waste in the period 2005/6-2009/10, 30% in the period 2010/11-2014/15, 33% in 2015/16, and 50% by 2020</li> <li>• Recover 40% of waste in the period 2005/6-2009/10, 45% in the period 2010/11-2014/15, and 67% in 2015/16</li> </ul>	<p>Main environmental impacts of municipal waste management include:</p> <ul style="list-style-type: none"> <li>• Climate change</li> <li>• Air pollution</li> <li>• Water pollution</li> <li>• Land contamination</li> <li>• Biodiversity and ecological degradation</li> </ul>

Key relevant policies/strategies	Relevant potential impact (I) / mitigation (M)
<ul style="list-style-type: none"> <li>Reduce biodegradable municipal waste landfilled to levels consistent with those set for Wigan by the Secretary of State for the Environment, Food and Rural Affairs, pursuant to section 4 of the Waste and Emissions Trading Act</li> <li>Serve all households with a recycling collection of at least two materials by 2010</li> <li>Increase recycling at Household Waste Recycling Centres (HWRCs) to 60%+ by 2008/09</li> </ul>	<ul style="list-style-type: none"> <li>Public health</li> <li>Public amenity</li> <li>Resource efficiency</li> <li>Transport</li> </ul>
<b>Greater Manchester Local Transport Plan (LTP2)</b>	
<p><u>LTP 6 a, b - Peak traffic flow to Regional centre/other key centres:</u> No increase in peak period vehicle trips into the Regional centre Limit peak period vehicle trips into other key centres to no more than a 1% increase by 2010/11</p> <p><u>LTP8 - Air quality:</u> A review and assessment of air quality due in 2006/07 - will involve improvements to the air quality forecasting model, to improve the way in which the relationship of NOx emissions and NO2 concentrations is modeled.</p> <p>39% reduction in NOx emissions from traffic on local roads from 2004-2011</p> <p><u>LTP9 - Climate change:</u> Limit increase in CO2 emissions to 4.5%</p>	<p>M Noise - Positive effect of cycling &amp; walking dependent on modal shift; N/a; Slightly beneficial</p> <p>M Local air quality - Minor positive impact of bus measures, positive effect of cycling &amp; walking dependent on modal shift, significant positive effect of travel plans, local positive effects of traffic calming; LTP8 - 39% reduction in NOx emissions from traffic on local roads from 2004-2011; Beneficial</p> <p>M Greenhouse gases - Positive effect of cycling &amp; walking dependent on modal shift; LTP9 -limit increase to +4.5% between 2004-2011; Slightly beneficial</p>
<b>Oldham Unitary Development Plan (adopted 14 July 2006) and any subsequent Core Strategy and Local Development Framework (LDF)</b>	
<p><u>NR4 –minerals:</u> The principal minerals of economic value within the Borough are sand, gravel, sandstone and gritstone. Proposals related to these minerals should be appropriately located in relation to residential and other sensitive areas of the borough. The council will not permit any applications which may cause harm to appearance or character of designated wildlife sites, species or habitats protected by law</p>	<p>I Increased population and increased recreational pressure on South Pennine Moors/Peak District Moors)</p> <p>I Increased population, increased traffic on the stretch of the M62 through South Pennine Moors/Peak District</p>

Key relevant policies/strategies	Relevant potential impact (I) / mitigation (M)
<p><u>B1 - Employment land allocation:</u> Allocation of 75.9ha of land for development of business in industry in the Borough.</p> <p><u>H1 - Providing for general housing need:</u> Improve the condition of the existing housing stock and allocate sufficient land to enable 3,595 dwellings to be constructed from 1st July 1994 - 30th June 2001.</p> <p><u>TN2 - The transport network:</u> Operate and monitor a hierarchy of traffic routes, in particular maintain, improve and develop the strategic route network to safely and efficiently accommodate any increased traffic flows over the plan period. Proposals which would prejudice the ability of the strategic route network to accommodate high traffic flows will not normally be permitted.</p> <p><u>OE1 Green Belt</u> assists in safeguarding countryside from encroachment. Essential open sport and recreation facilities (e.g. small stables, golf course, country park) may be permitted.</p> <p><u>NR1 Air Quality</u> The Council will require air quality assessments to be submitted alongside planning applications for the types of developments identified in the Air Quality Action Plan*. Where a development is likely to result in unacceptable levels of pollutants under the objectives set out in the National Air Quality Strategy, the Council will require mitigating measures, or secure changes to the proposal that will make it acceptable, before granting planning permission.</p> <p><u>B1 Business allocation</u> The Council allocates 75.93 Hectares of land in appropriate locations for development to meet the needs of the business and industry in the Borough.</p>	<p>Moors.</p> <p>M Public transport provision, combined with highway demand management measures and a shift of freight from road to other modes can help alleviate traffic on the M62, alongside other non-car modes (e.g. cycling)</p> <p>I Increase in industry within Borough, with prevailing winds may result in cumulative air quality impact on integrity of South Pennine Moors/Peak District Moors.</p> <p>M Air quality assessment will be required for types of development identified in Air Quality Action Plan. This may mitigate air quality impacts</p> <p>M Protection of green belt serving as an ecological 'buffer zone' around the South Pennine Moors/Peak District Moors.</p>
<p><b>Wigan Unitary Development Plan (adopted 2006) and any subsequent Core Strategy and Local Development Framework (LDF)</b></p>	
<p>R1A: Housing Provision (9,040 new dwellings to 2016)</p> <p>R1E: Open Space in New Housing Developments</p>	<p>I Increased population and increased recreational pressure on relevant sites</p> <p>M Provision of open/play space and play equipment can</p>

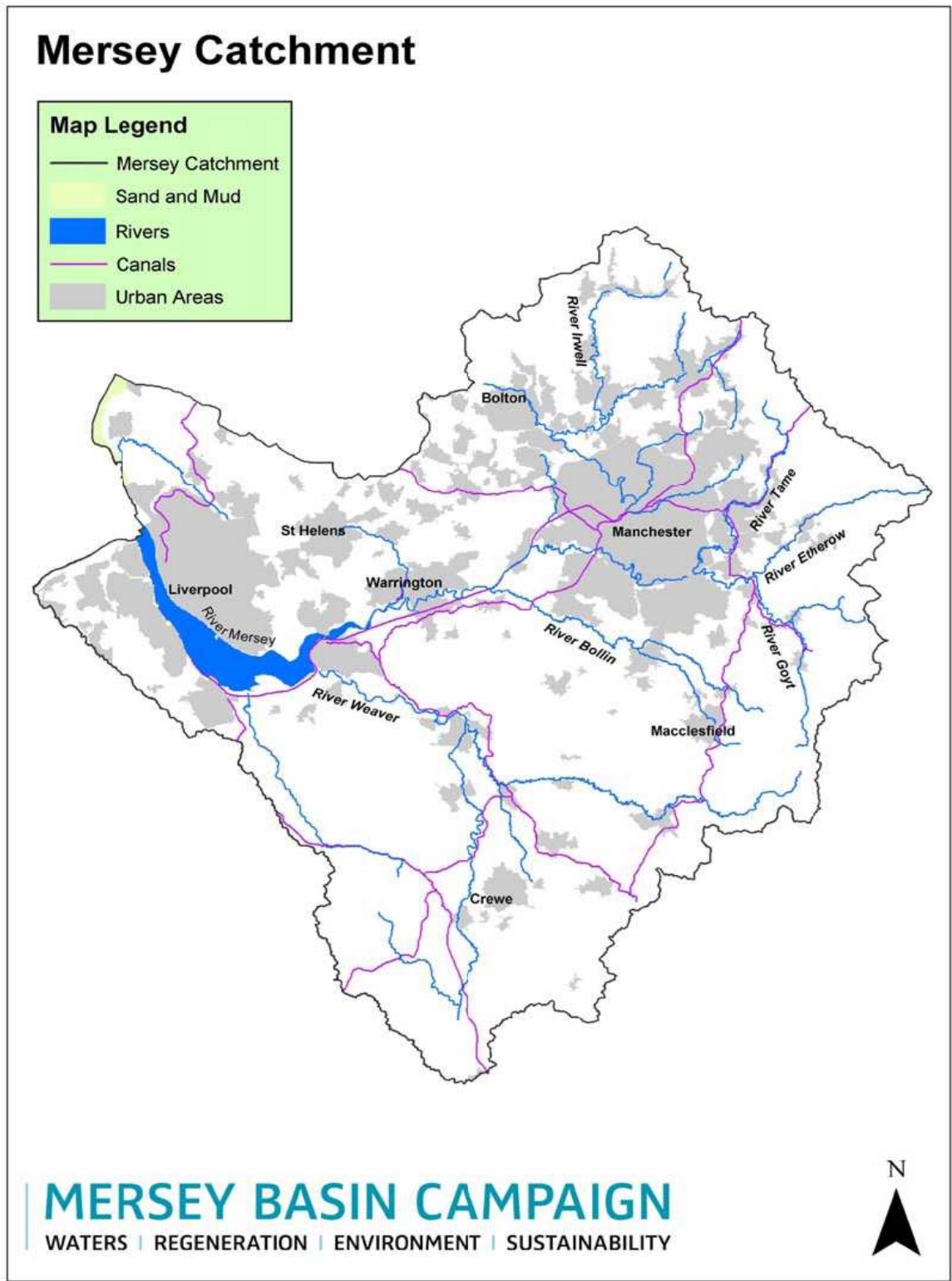
Key relevant policies/strategies	Relevant potential impact (I) / mitigation (M)
<p>R1B: New Housing Sites</p> <p>R1D: The Design of New Residential Development...</p> <p>EM1: Land and Buildings for Employment Uses (259ha to 2016)</p> <p>EV2C: Features of Major Importance for Nature Conservation and Wildlife Corridors</p> <p>EV1A: Land Reclamation and Renewal (Nos. 6 &amp; 9)</p> <p>EV1B: Pollution</p> <p>HOU1: Housing Land (5,320 new dwellings to 2016)</p> <p>HOU4: Open Space Provision in New Housing Developments LUT2: Transport Priorities in Development Control HOU1: Housing Land (not permitted on greenfield sites)</p> <p>EMP1: Employment Development (310ha 1996 to 2016)</p> <p>REP5: Surface Water Run-off and Sustainable Drainage Systems</p> <p>EMP2: Omega South Reg. Investment Sites (130ha) EMP3: Provision of Land for Employment Development (90ha) DCS8: Chapelford Urban Village (92ha)</p> <p>REP6: Surface Water Quality</p> <p>G/M/1 An adequate supply of mineral reserves in appropriate locations will be maintained. Mineral exploration, working, mineral waste disposal or aggregate depots will be permitted only if</p>	<p>help offset recreation pressure on European Sites</p> <p>I Increased population, increased traffic on the stretch of the M62 next to the Manchester Mosses SAC</p> <p>M Promoting better accessibility to non-car transport modes (e.g. walking, cycling and public transport) can help alleviate traffic on the M62</p> <p>I Down Brook / Millingford Brook: increase / intensification of development modifying watercourse and/or increasing surface runoff</p> <p>M Development will not be permitted if there are adverse effects to watercourse corridors</p> <p>I Increased sewerage</p> <p>I New employment land increasing overall risk of accidental spills into watercourses (direct or through drainage)</p> <p>I Down Brook: accidental contamination of watercourses during renewal</p> <p>M Development will not be permitted if it would 'result in unacceptable levels of pollution in watercourses...'</p> <p>I Increased population and increased recreational pressure</p> <p>M Provision of open space, children's play areas and sport and recreation facilities can help offset recreational pressure on European sites</p> <p>I Increased pop'n leading to increased traffic on the stretch of the M62 next to the Manchester Mosses SAC</p> <p>M Prioritisation of non-car transport modes (e.g. walking, cycling and public transport) can help alleviate traffic on the M62</p> <p>I Increased pop'n leading to increase demand on water</p>

Key relevant policies/strategies	Relevant potential impact (I) / mitigation (M)
<p>(h) there will not be an unacceptable effect on ecological, interest within or adjacent to the site</p> <p>(j) There will not be an unacceptable effect on land stability, drainage, water supply or ground water resources</p>	<p>resources</p> <p><b>I</b> Increase / intensification of development or redevelopment modifying watercourse and/or increasing surface water runoff</p> <p><b>M</b> 'Planning permission will not be granted for housing development on greenfield sites'</p> <p><b>M</b> Development will not be allowed where it has an adverse effect on river channel erosion or habitats, and SUDS used where appropriate</p> <p><b>I</b> Increased sewerage</p> <p><b>I</b> New employment land increasing overall risk of accidental spills into watercourses (direct or through drainage)</p> <p><b>M</b> Development will not be allowed if it would adversely affect water quality of water bodies</p>
<p><b>City of Salford Unitary Development Plan 2004-2016 (adopted 21<sup>st</sup> June 2006) and any subsequent Core Strategy and Local Development Framework (LDF)</b></p>	
<p>ST2: Housing Supply (6,360 new dwellings 2004-2016)</p> <p>ST5: Transport Networks</p> <p>DES2: Circulation and Movement</p> <p>EN1 Developing within green belt will generally be considered inappropriate</p> <p>W1 Waste management developments will be encouraged to utilise rail and water transport where possible, to minimise their impact on road congestion, air pollution and climate change.</p> <p>Policy EN 18 Protection of Water Resources Development will not be permitted where it would have an unacceptable impact on surface or ground water in terms of its quality, level or flow. The city council is a partner in the</p>	<p><b>I</b> Increased population leading to increased traffic on the stretch of the M62 next to the Manchester Mosses SAC</p> <p><b>M</b> Prioritisation of non-car transport modes can help alleviate traffic on the M62</p> <p><b>M</b> Protection of green belt serving as an ecological 'buffer zone' around the Manchester Mosses SAC.</p> <p><b>M</b> other (municipal) waste developments minimise traffic generation</p> <p><b>I</b> Use of water (e.g. Manchester Ship Canal) for transportation of waste may increase risk of pollution incident of Mersey Estuary</p>

Key relevant policies/strategies	Relevant potential impact (I) / mitigation (M)
<p>Mersey Basin Campaign, which is working to improve the quality of all rivers, canals, lakes and watercourses to a standard that will at least sustain fish life. When assessing development proposals, the city council will, in consultation with the Environment Agency, pay due consideration to the potential impact(s) on surface and groundwater resources. This includes leachate from contaminated sites and abandoned mine workings, particularly if disturbed.</p>	<p>M Salford City Council will assess impact of all development proposals on water quality, level and flow of Mersey. This will ensure the integrity of the Mersey Estuary SAC/SPA is safeguarded</p>
<p><b>Catchment Flood Management Plans (Draft for Consultation September 2008)</b></p>	
<p>Draft Plans have been produced for:</p> <ul style="list-style-type: none"> <li>• Irwell;</li> <li>• Upper Mersey;</li> <li>• Mersey Estuary; and,</li> <li>• Douglas.</li> </ul> <p>The main aims of the Catchment Flood Management Plans are to:</p> <ul style="list-style-type: none"> <li>• Develop policies and actions for long term management of flood risk within the catchment;</li> <li>• To take into account the impacts of:- <ul style="list-style-type: none"> <li>- Future predicted climate change;</li> <li>- Changes in land use and land management;</li> <li>- Urban growth.</li> </ul> </li> <li>• Contribute to sustainable development;</li> <li>• Assess current and future flood risk from all sources except the sea;</li> <li>• Identify opportunities and constraints for reducing flood risk.</li> </ul>	<p>I Policies developed may conflict with nature conservation objectives of European sites.</p> <p>M Preparation of Strategic Flood Risk Assessments can apply the Sequential Test and Exception Test to land use allocations; and prepare policies for managing flood risk within Local Development Documents.</p>

**PAGE INTENTIONALLY BLANK**

## APPENDIX 9: THE MERSEY ESTUARY CATCHMENT



Source: Mersey Basin Campaign (2004)

**PAGE INTENTIONALLY BLANK**

## APPENDIX 10: SCREENING SUMMARY TABLE

European site	Qualifying features	Vulnerability/pressures	Conservation Objectives	Likely Significant Effects of JWDPD and potential pathways	Other relevant plans and policies	Screening Assessment (are potential JWDPD waste sites Screened In from requiring further HRA Assessment due to potential effects on this European site)
<b>Sites within the plan area</b>						
<p><b>Manchester Mosses SAC</b></p> <p>Wigan</p> <p>172.21ha</p> <p>Comprises three individual sites:</p> <p>Astley &amp; Bedford Mosses SSSI (<b>within plan area</b>)</p> <p>Holcroft Moss SSSI</p> <p>Risley Moss</p>	<p>Annex I habitat:</p> <ul style="list-style-type: none"> <li>Degraded raised bogs still capable of natural regeneration</li> </ul>	<p>Historical loss of habitats due to drainage and infill for agriculture and development. Recent rehabilitation management has increased <i>Sphagnum</i> species.</p> <p>Main pressures:</p> <ul style="list-style-type: none"> <li>Agricultural drainage and increased water abstraction for irrigation in the surrounding land, causing succession towards scrubland and woodland</li> <li>Changes to the maintenance regime of nearby agricultural drainage, causing either</li> </ul>	<ul style="list-style-type: none"> <li>Re-establish peat-forming vegetation with &gt;30% comprising <i>Sphagnum</i> mosses, and the remainder primarily cotton grasses</li> <li>Maintain stagnant and shallow bog water, indicative of anaerobic conditions; the water table should normally be within c.25cm of the surface, equating to the acrotelm</li> <li>Prevent invasion by dominant scrub</li> </ul>	<p>One potential waste site is located within 5km, RW 79.) (See Figures 2 and 5). The site is located 1.3km to the north east of the SAC.</p> <p><b>Surface/Groundwater Pathways</b></p> <p>There are no surface water connections between Manchester Mosses and the potential waste site. However, given the close proximity of the sites, there is potential for ground water connections.</p> <p><b>Air Pathways</b></p> <p>Site RW 79 (1.3km from the site) is located within the 2km buffer zone recommended by EA for</p>	<p><b>Green Belt</b></p> <p>City of Salford UDP: (EN1) protection of Green Belt; Wigan UDP (GB1): A green belt exists around the site serving as an 'ecological buffer'.</p> <p><b>Population Growth</b></p> <p>Increased population potentially leading to increased demand on water abstraction in the district. Also potential increase in traffic on the stretch of the M62 next to the Manchester Mosses SAC: City of Salford UDP ST2; Wigan</p>	<p>Yes, the following potential waste sites are <b>Screened In</b></p> <p>Site RW 79</p>

<sup>2</sup> Design Manual for Roads and Bridges (DMRB) (2007) Vol 11 Section 3 Part 1 Air Quality Annex F Assessment of Designated Sites

European site	Qualifying features	Vulnerability/pressures	Conservation Objectives	Likely Significant Effects of JWDPD and potential pathways	Other relevant plans and policies	Screening Assessment (are potential JWDPD waste sites Screened In from requiring further HRA Assessment due to potential effects on this European site)
SSSI (outside of plan area)		<p>drying out through unsympathetic dredging or waterlogging through complete lack of dredging</p> <ul style="list-style-type: none"> <li>• Impacts on groundwater, including mineral extraction and waste management (landfill)</li> <li>• Afforestation as a result of natural succession</li> <li>• Fly-tipping</li> <li>• Loss of neighbouring peat and mossland habitat due to agricultural drainage, landfill for development, and peat harvesting, both legally and illegally</li> <li>• Damage to mossland habitat due to increased recreational pressure (e.g. paintball)</li> <li>• Loss of <i>Sphagnum</i> species as a result of drying out and increased air pollution, especially as the sites are close to heavy</li> </ul>	<p>or bracken &gt;10% of the mire expanse, unless tree/scrub is essential for other interest features such as nightjar (<i>Caprimulgus europaeus</i>)</p> <ul style="list-style-type: none"> <li>• The re-instatement of an undrained area around the raised bog with appropriate habitat such as fen surrounding the bog for such a distance as hydrological studies recommends</li> </ul>	<p>landfill sites. It therefore has the potential to produce landfill gas, and landfill gas flare emissions. A landfill gas flare will produce an emission of exhaust gases such as SO<sub>x</sub>, NO<sub>x</sub>, unburnt hydrocarbons, CO, HCl, etc. The volume of exhaust gases may be inconsequential at distances less than 2km, however where there is doubt (due to the scale of the activity, the background air quality or any constraints in dispersion caused by topography, etc) the tests within Appendix 6 (and IPPC Guidance note H1) should be applied<sup>1</sup>. Raised and blanket bogs are sensitive to such emissions and prevailing south westerly winds increase this risk.</p> <p><b>Traffic emissions</b> Halcroft Moss abuts the M62. Raised bogs, in</p>	<p>UDP RA1 (Housing Provision); HOU 1(Housing Land).</p> <p><b>Traffic and Transport</b> Salford Unitary Development Plan ST5: Transport Networks and DES2: Circulation and Movement: Prioritisation of non-car transport modes can help alleviate traffic on the M62</p> <p><b>Industry and Resource Use</b> Wigan UDP EMP1(Employment Development): New employment land increasing overall risk of accidental spills into watercourses (direct or through drainage) REP5 Surface Water Run-off and</p>	

European site	Qualifying features	Vulnerability/pressures	Conservation Objectives	Likely Significant Effects of JWDPD and potential pathways	Other relevant plans and policies	Screening Assessment (are potential JWDPD waste sites Screened In from requiring further HRA Assessment due to potential effects on this European site)
		industry		<p>particular Sphagnum species are vulnerable to vehicle emissions<sup>2</sup>. There is likely to be Increased traffic volume from HGV on surrounding roads. Furthermore it is anticipated that the majority of traffic generated by new waste facilities would be travelling within the GM boundary importing/exporting waste.</p> <p>It is unlikely that traffic and resultant emissions arising from these potential waste sites would significantly add to emissions already generated by the adjacent M62.</p> <p><b>Vermin</b> Site RW 79 is located within the 5km buffer zone recommended by EA for landfill sites likely to attract gulls and corvids and sites vulnerable to disturbance by such pests<sup>1</sup>. This may have significant effects on the</p>	<p>Sustainable Drainage Systems Development will not be permitted if it would 'result in unacceptable levels of pollution in watercourses...'</p> <p>MW1 Mineral Workings: The Council will seek to maintain an appropriate contribution to the Regional production of minerals and will seek to minimise the adverse effect of such mineral working.</p>	

European site	Qualifying features	Vulnerability/pressures	Conservation Objectives	Likely Significant Effects of JWDPD and potential pathways	Other relevant plans and policies	Screening Assessment (are potential JWDPD waste sites Screened In from requiring further HRA Assessment due to potential effects on this European site)
				<p>integrity of sites designated for ornithological interest, however should not affect the favourable status of Manchester Mosses SAC where the qualifying feature is raised bog habitat.</p> <p><b>Noise and Vibration</b> Noise impacts occur at most within 1km<sup>1</sup>. As RW79 potential waste site IS located over 1km away, noise is unlikely to be an issue.</p> <p><b>Likely to be Significant Effects</b></p>		
<p><b>Rochdale Canal SAC</b></p> <p>Rochdale, Tameside</p> <p>25.73ha</p> <p>Contains: Rochdale SSSI</p>	<p>Annex II species:</p> <ul style="list-style-type: none"> <li>Floating water-plantain (<i>Luronium natans</i>)</li> </ul>	<ul style="list-style-type: none"> <li>Human disturbance e.g. litter deposition, tipping of rubble, and dredging (except by planned management)</li> <li>Possible impact of future boat movements as the canal is opened up to full navigation</li> </ul>	<ul style="list-style-type: none"> <li>Maintain extent and levels of open water</li> <li>Improve water quality through an absence of pollution and enrichment</li> <li>Maintain mesotrophic water conditions (pH6-8)</li> </ul>	<p>One potential waste site is located within 5km of Rochdale Canal, RW 50 (See Figure 5).</p> <p>RW 50 is located approximately 2.3km from the Rochdale Canal.</p> <p><b>Surface/Groundwater Pathways</b></p>	<p><b>Green Belt</b></p> <p>Large stretches of Rochdale Canal are outside of Green Belt (see Figure 6). There is a presumption that policy will support development on non-Green Belt land. This may result in incremental</p>	<p>No</p>

European site	Qualifying features	Vulnerability/pressures	Conservation Objectives	Likely Significant Effects of JWDPD and potential pathways	Other relevant plans and policies	Screening Assessment (are potential JWDPD waste sites Screened In from requiring further HRA Assessment due to potential effects on this European site)
			<ul style="list-style-type: none"> <li>• Have a species composition that includes frequent records of positive indicator species and no decrease in the distribution of freshwater sponge</li> <li>• Have a species composition that includes no more than occasional records of negative indicator species</li> <li>• Have minimal or an absence of direct evidence of human disturbance</li> </ul>	<p>There are no surface water connections to or from the proposed waste site.</p> <p><b>Air Pathways</b> The Environment Agency recommends that effects of these emissions on European sites within 2km should be considered <sup>1</sup>. RW is over 2km from the Rochdale canal.</p> <p><b>Traffic Emissions</b> A 2km buffer zone is recommended by the EA<sup>1</sup> between waste sites producing landfill gas flare due to potential air pathways. Due to similarities in gas composition the same buffer zone is adopted for sites likely to generate high levels of traffic emissions. The waste site is not located within the recommended 2km buffer zone.</p>	<p>pressure/pollution of Rochdale Canal.</p> <p><b>Population Growth</b> H/2 Land provided for new housing: G/H/1 Housing: Seeks to provide for a net increase in 240 dwellings per annum. An increase in population is likely to result in an increase in traffic/air pollution around Rochdale Canal.</p> <p><b>Industry and Resources Use</b> G/M/1 An adequate supply of mineral reserves in appropriate locations will be maintained. Mineral exploration, working, mineral waste disposal or aggregate depots will be permitted only if (h) there will not be</p>	

European site	Qualifying features	Vulnerability/pressures	Conservation Objectives	Likely Significant Effects of JWDPD and potential pathways	Other relevant plans and policies	Screening Assessment (are potential JWDPD waste sites Screened In from requiring further HRA Assessment due to potential effects on this European site)
				<p><b>Vermin</b> RW 50 has been identified as suitable for landfill within 5km of Rochdale Canal. This has the potential to attract gulls, corvids and rats. With regard to the existing urban setting of Rochdale canal and likely presence of urban fauna, any increase in vermin on this site is unlikely to affect the integrity of Rochdale Canal SAC.</p> <p><b>Not Likely to be Significant Effects</b></p>	<p>an unacceptable effect on ecological, interest within or adjacent to the site</p> <p>(j)There will not be an unacceptable effect on land stability, drainage, water supply or ground water resources</p> <p><b>Tourism and Recreation</b> Rochdale UDP LT/3 Development for Tourism and Leisure: Proposals for new or extended tourist attractions or facilities will include boating and canal activities. Boat movements along the Canal is an existing vulnerability/pressure.</p> <p>LT/7 Rochdale Canal Development proposals will not be</p>	

European site	Qualifying features	Vulnerability/pressures	Conservation Objectives	Likely Significant Effects of JWDPD and potential pathways	Other relevant plans and policies	Screening Assessment (are potential JWDPD waste sites Screened In from requiring further HRA Assessment due to potential effects on this European site)
					<p>permitted that would adversely affect: The nature conservation value of the Canal (as a SSSI and SAC) consistent with policies NE/2 and NE/4.</p> <p>Regeneration G/R/1 Policy will encourage physical regeneration, renewal and redevelopment on areas adjoining Rochdale Canal (Including Rural Sites and Areas) Where consistent with other policies and Proposals of the Plan</p>	

European site	Qualifying features	Vulnerability/pressures	Conservation Objectives	Likely Significant Effects of JWDPD and potential pathways	Other relevant plans and policies	Screening Assessment (are potential JWDPD waste sites Screened In from requiring further HRA Assessment due to potential effects on this European site)
<p><b>South Pennine Moors SAC</b></p> <p>Oldham, Rochdale, Tameside</p> <p>64,983.13ha</p> <p>Contains: Dark Peak SSSI Goyt Valley SSSI Leek Moors SSSI South Pennine Moors SSSI</p>	<p>Annex I habitats:</p> <ul style="list-style-type: none"> <li>European dry heaths</li> <li>Blanket bogs</li> <li>Old sessile oak woods with <i>Ilex</i> and <i>Blechnum</i> in the British Isles</li> <li>Northern Atlantic wet heaths with <i>Erica tetralix</i></li> <li>Transition mires and quaking bogs</li> </ul>	<p>Main pressures on the Annex I habitats:</p> <ul style="list-style-type: none"> <li>Accidental fires causing extensive damage to vegetation - the Peak District National Park Authority (NPA) has produced a strategic fire plan and areas are closed to the public at times of high fire risk</li> <li>Over-grazing by sheep, restricting tree regeneration in woodland areas</li> <li>Invasive rhododendron choking out native woodland flora</li> <li>Atmospheric pollution, which has affected woodland, bog and heath flora</li> <li>Burning for grouse moor management</li> <li>Inappropriate drainage through moor-gripping</li> <li>Trampling and increased recreational</li> </ul>	<ul style="list-style-type: none"> <li>No reduction in area and any consequent fragmentation of blanket bogs</li> <li>Bryophytes (excluding <i>Polytrichum</i> spp., <i>Campylopus</i> spp. and <i>Racomitrium lanuginosum</i> on bare ground) should be abundant and must include <i>Sphagnum</i> spp.</li> <li>Cover of dwarf-shrubs must be greater than 33%, and at least two species of dwarf-shrub species should be widespread and frequent in the sward</li> <li>Little or no bare ground, or bare ground carpeted</li> </ul>	<p>One potential waste site is located within 5km. SA 20 is located approximately 4km to the west. Refer to Figure 5.</p> <p><b>Air Pathways</b> The Environment Agency recommend that effects of these emissions on European sites within 2km should be considered<sup>1</sup>. SA 20 is over 2km from the Rochdale canal.</p> <p><b>Traffic Emissions</b> A 2km buffer zone is recommended by the EA<sup>1</sup> between waste sites producing landfill gas flare due to potential air pathways. Due to similarities in gas composition the same buffer zone is adopted for sites likely to generate high levels of traffic emissions. The waste site is not located within the recommended</p>	<p><b>Green Belt</b> Figure 3 illustrates the green belt designation for Rochdale, Oldham and Tameside. This forms an ecological buffer between South Pennine Moors, and the potential waste sites.</p> <p><b>Population Growth</b> Rochdale UDP H/2 Land provided for new housing: G/H/1 Housing: Seeks to provide for a net increase in 240 dwellings per annum.</p> <p>Oldham UDP H1 providing for general housing need</p> <p><b>Traffic and Transport</b> An increase in</p>	<p>No</p>

European site	Qualifying features	Vulnerability/pressures	Conservation Objectives	Likely Significant Effects of JWDPD and potential pathways	Other relevant plans and policies	Screening Assessment (are potential JWDPD waste sites Screened In from requiring further HRA Assessment due to potential effects on this European site)
		pressure	<p>by <i>Racomitrium lanuginosum</i>, <i>Polytrichum</i> spp, <i>Campylopus</i> spp, crust forming lichens or algal mats</p> <ul style="list-style-type: none"> <li>No erosion, other than very localised instances, associated with human impacts, e.g. drainage, fires, peat extraction, livestock grazing, recreational activities or military training</li> <li>Total cover of graminoids should not exceed 50%, unless <i>Sphagnum</i> spp. are abundant/co-dominant and forming lawns below the grasslands, i.e. in waterlogged</li> </ul>	<p>2km buffer zone.</p> <p><b>Surface/Ground water</b> There are no surface water connections to or from the proposed waste site.</p> <p><b>Vermin</b> Site SA 20 is located within the 5km buffer zone recommended by EA for landfill sites to attract gulls and corvids and sites vulnerable to disturbance by such pests<sup>1</sup>. Gulls and corvids are unlikely to affect the favourable status of Pennine Moor SAC, however are more likely to affect the qualifying bird species of the SPA designation of the same site (described below).</p> <p><b>No Significant Effects are Likely</b></p>	<p>population is likely to result in an increase in traffic/air pollution along M62 which passes through the site.</p> <p><b>Industry and Resource Use</b> Oldham UDP B1 Allocation of 75.9 ha of land development for business and industry Oldham/Rochdale Greenbelt Rochdale UDP GC/EC/1 Employment and Economy; G/R/1 Physical Generation identification of sites suitable for industry.</p> <p>Any air emissions resulting from new industry enhanced by prevailing south westerly winds may result in a cumulative</p>	

European site	Qualifying features	Vulnerability/pressures	Conservation Objectives	Likely Significant Effects of JWDPD and potential pathways	Other relevant plans and policies	Screening Assessment (are potential JWDPD waste sites Screened In from requiring further HRA Assessment due to potential effects on this European site)
			<p>conditions</p> <ul style="list-style-type: none"> <li>• A maximum of 5% of the grazing unit may show signs of current moderate or heavy grazing</li> <li>• Peat abstraction absent</li> </ul>		<p>impact upon the site.</p> <p>Minerals: Tameside UDP MW2/MW9 / Oldham UDP NR4.3, Rochdale UDP G/M/1 Mineral developments will only take place where there will be no unacceptable harm to the water environment, water resources, groundwater levels or groundwater flows, and no unacceptable impact on any site or area designated internationally, nationally or locally for protection of nature conservation interests, and no adverse impact on protected species.</p> <p><b>Tourism and Recreation</b></p>	

European site	Qualifying features	Vulnerability/pressures	Conservation Objectives	Likely Significant Effects of JWDPD and potential pathways	Other relevant plans and policies	Screening Assessment (are potential JWDPD waste sites Screened In from requiring further HRA Assessment due to potential effects on this European site)
					Rochdale MBC LT/3 promotion of tourism pressure on Pennine Edge. This is an existing vulnerability/pressure.	
<p><b>Peak District Moors (South Pennine Moors Phase 1) SPA</b></p> <p>Rochdale, Oldham, Tameside</p> <p>45,301.54ha</p> <p>Contains: Dark Peak SSSI Eastern Peak District Moors SSSI Goyt Valley SSSI Leek Moors</p>	<p>Article 4.1 - breeding season (1990, 1998):</p> <ul style="list-style-type: none"> <li>Short-eared owl (<i>Asio flammeus</i>): &gt;22 pairs (&gt;2.2% of GB breeding population)</li> <li>Merlin (<i>Falco columbarius</i>): &gt;30 pairs (&gt;2.3% of GB breeding population)</li> <li>Golden plover (<i>Pluvialis apricaria</i>): &gt;435 pairs (&gt;1.9% of GB breeding)</li> </ul>	<ul style="list-style-type: none"> <li>Historical damage to habitats through air pollution, high grazing pressure and wildfire burns</li> <li>Habitat erosion and disturbance of breeding birds through recreational activities</li> <li>Habitat damage through fire</li> <li>Agricultural improvement of surrounding areas used by some bird species</li> <li>Over-grazing is now a reducing pressure</li> </ul>	<ul style="list-style-type: none"> <li>No significant displacement of birds attributable to human disturbance in relation to reference level</li> <li>No significant reduction in view-lines in feeding and roosting areas</li> <li>No significant reduction in presence and abundance of prey species in relation to reference level</li> <li>No significant reduction in established reference levels of moorland habitats for breeding birds</li> </ul>	<p>Site SA 20 is identified as suitable for landfill, located approximately 4km west of South Pennine Moors Phase 1 (See Figure 5).</p> <p><b>Air and Traffic</b> A 2km buffer zone is recommended by the EA<sup>1</sup> between waste sites producing landfill gas flare due to potential air pathways. Due to similarities in gas composition the same buffer zone is adopted for sites likely to generate high levels of traffic emissions. The waste site is not located within the recommended 2km buffer zone.</p>	<p><b>Green Belt</b> Figure 3 illustrates the green belt designation for Oldham, Tameside and Stockport. This forms an ecological buffer between South Pennine Moors, and the potential waste sites.</p> <p><b>Population Growth</b> Oldham UDP H1 providing for general housing need. An increase in population is likely to result in traffic increase, and place greater demands on resources (e.g. water</p>	<p>Yes, the following potential waste sites are <b>Screened In</b></p> <p>Site SA 20</p>

European site	Qualifying features	Vulnerability/pressures	Conservation Objectives	Likely Significant Effects of JWDPD and potential pathways	Other relevant plans and policies	Screening Assessment (are potential JWDPD waste sites Screened In from requiring further HRA Assessment due to potential effects on this European site)
SSSI	population)		of qualifying interest – taller vegetation for nesting golden plover, medium to tall ground vegetation for merlin, short to medium ground vegetation for short-eared owl	<p><b>Vermin</b> Site SA 20 is located within the 5km buffer zone recommended by The Environment Agency between landfill sites attracting gulls and corvids and a SPA with breeding qualifying species<sup>1</sup>. Gulls, particularly larger species will predate the eggs and young of nesting birds. Dense colonies of breeding birds are likely to be particularly attractive to predators. The disturbance effect of gulls roosting or loafing in the vicinity of a landfill site may also deter other birds from nesting. Whilst the landfill would be an extension of an existing landfill, the risk of predation for qualifying species would require further assessment.</p> <p><b>Significant Effects are Likely</b></p>	<p>abstraction).</p> <p><b>Traffic and Transport</b> An increase in population is likely to result in an increase in traffic/air pollution along M62 which is located adjacent to the site.</p> <p><b>Industry and Resources Use</b> Oldham UDP B1 Allocation of 75.9 ha of land development for business and industry</p> <p>Any air emissions resulting from new industry enhanced by prevailing south westerly winds may result in a cumulative impact upon the site.</p> <p>Minerals: Tameside UDP MW2/MW9</p>	

European site	Qualifying features	Vulnerability/pressures	Conservation Objectives	Likely Significant Effects of JWDPD and potential pathways	Other relevant plans and policies	Screening Assessment (are potential JWDPD waste sites Screened In from requiring further HRA Assessment due to potential effects on this European site)
					Mineral developments will only take place where there will be no unacceptable harm to the water environment, water resources, groundwater levels or groundwater flows, and no unacceptable impact on any site or area designated internationally, nationally or locally for protection of nature conservation interests, and no adverse impact on protected species	
<b>South Pennine Moors Phase 2 SPA</b>  Rochdale, Oldham, Tameside	Article 4.1: <ul style="list-style-type: none"> <li>• Short-eared owl: 3 pairs (0.3% of GB breeding population)</li> <li>• Merlin: 28 pairs (2.2% of GB breeding)</li> </ul>	<ul style="list-style-type: none"> <li>• Habitat erosion and disturbance of breeding birds through recreational activities</li> <li>• Habitat damage through fire</li> <li>• Agricultural improvement of surrounding areas used</li> </ul>	<ul style="list-style-type: none"> <li>• No significant displacement of birds attributable to human disturbance in relation to reference level</li> <li>• No significant reduction in view-</li> </ul>	No potential waste sites are located within 5km. (See Figure 6)  There are no pathways linking the site to any potential waste management facilities	No potential waste sites identified within 5km of site, or with pathways to site.  No other plans or policies likely to act in combination.	No

European site	Qualifying features	Vulnerability/pressures	Conservation Objectives	Likely Significant Effects of JWDPD and potential pathways	Other relevant plans and policies	Screening Assessment (are potential JWDPD waste sites Screened In from requiring further HRA Assessment due to potential effects on this European site)
20,944.49ha  Contains: South Pennine Moors SSSI	population) <ul style="list-style-type: none"> <li>Golden plover: 292 pairs (1.3% of GB breeding population)</li> </ul> Article 4.2, an internationally important assemblage of breeding birds: <ul style="list-style-type: none"> <li>Common sandpiper (<i>Actitis hypoleucos</i>), dunlin (<i>Calidris alpina</i>), twite (<i>Carduelis flavirostris</i>), snipe (<i>Gallinago gallinago</i>), curlew (<i>Numenius arquata</i>), wheatear (<i>Oenanthe oenanthe</i>),</li> </ul>	by some bird species <ul style="list-style-type: none"> <li>Over-grazing by sheep</li> </ul>	lines in feeding and roosting areas <ul style="list-style-type: none"> <li>No significant reduction in presence and abundance of prey species in relation to reference level</li> <li>No significant reduction in established reference levels of moorland habitats for breeding birds of qualifying interest – taller vegetation for nesting golden plover, medium to tall ground vegetation for merlin, short to medium ground vegetation for short-eared owl</li> </ul>	<b>Not Likely to be Significant Effects</b>		

European site	Qualifying features	Vulnerability/pressures	Conservation Objectives	Likely Significant Effects of JWDPD and potential pathways	Other relevant plans and policies	Screening Assessment (are potential JWDPD waste sites Screened In from requiring further HRA Assessment due to potential effects on this European site)
	whinchat ( <i>Saxicola rubetra</i> ), redshank ( <i>Tringa totanus</i> ), ring ouzel ( <i>Turdus torquatus</i> ), and lapwing ( <i>Vanellus vanellus</i> )					
<b>Sites outside boundaries of the plan area</b>						
<b>Rostherne Mere Ramsar site</b>  79.76 ha	Criterion 1: <ul style="list-style-type: none"> <li>One of the deepest and largest of the meres of the Shropshire-Cheshire Plain, and its shoreline is fringed with common reed <i>Phragmites australis</i></li> </ul> Noteworthy	<ul style="list-style-type: none"> <li>Enrichment or eutrophication resulting in changing plant communities</li> <li>Introduction / invasion of non-native animal species, e.g. fish species, invasive plants (e.g. <i>Crassula helmsii</i>, <i>Impatiens glandulifera</i>)</li> <li>Reduced water levels through abstraction, affecting the natural balance between the differing water qualities</li> </ul>	<ul style="list-style-type: none"> <li>Ensure appropriate water quality and water quantity for the continued existence of the mere</li> <li>Promote the uptake of Agri-environment Schemes to conserve, restore and enhance the mere</li> <li>Discourage</li> </ul>	No sites have been identified as suitable for waste facilities within 5km (See Figure 6)  There are no pathways linking the site to any potential waste management facilities  <b>Not Likely to be Significant Effects</b>	Site is outside of GM boundary  No potential waste sites identified within 5km of site, or with pathways to site.  No other plans or policies likely to act in combination.	No

European site	Qualifying features	Vulnerability/pressures	Conservation Objectives	Likely Significant Effects of JWDPD and potential pathways	Other relevant plans and policies	Screening Assessment (are potential JWDPD waste sites Screened In from requiring further HRA Assessment due to potential effects on this European site)
	species (5 year peak mean 1998/9-2002/3): <ul style="list-style-type: none"> <li>• Cormorant (<i>Phalacrocorax carbo</i>): 273 individuals (1.1% of GB population)</li> <li>• Great bittern (<i>Botaurus stellaris</i>): 1 individual (1% of GB population)</li> <li>• Water rail (<i>Rallus aquaticus</i>): 6 individuals (1.3% of GB population)</li> </ul>	of ground water and surface water <ul style="list-style-type: none"> <li>• Recreational activities - fishing activity, i.e. trampling of vegetation, introduction of fish species and ground-baiting.</li> <li>• Siltation</li> <li>• Agricultural practices in areas surrounding the site, e.g. runoff, drainage</li> <li>• Lack of or inappropriate management leading to drying, scrub encroachment and succession to woodland</li> </ul>	forestry in the area			
<b>Rixton Clay Pits SAC</b>  13.64 ha  Contains: Rixton Clay	Annex II species: <ul style="list-style-type: none"> <li>• Great crested newt (GCN) (<i>Triturus cristatus</i>)</li> </ul>	Dwindling numbers of great crested newts nationally at a rate of 2% of colonies per year. Major causes have been the loss of breeding ponds and surrounding terrestrial	<ul style="list-style-type: none"> <li>• No loss of area from, or fragmentation of, the site</li> <li>• No barriers to newt movement between ponds</li> </ul>	No sites have been identified as suitable for waste facilities within 5km (See Figure 6)  There are no pathways linking the site to any	Site is outside of GM boundary  No potential waste sites identified within 5km of site, or with pathways to site.	No

European site	Qualifying features	Vulnerability/pressures	Conservation Objectives	Likely Significant Effects of JWDPD and potential pathways	Other relevant plans and policies	Screening Assessment (are potential JWDPD waste sites Screened In from requiring further HRA Assessment due to potential effects on this European site)
Pits SSSI		habitat by built development and waterborne pollution from industry and roads  Main pressures: <ul style="list-style-type: none"> <li>• Loss of habitat due to built development, and habitats being further fragmented by distance</li> <li>• Barriers to movement due to built development, and habitats being further fragmented by obstacles</li> <li>• Loss of habitat as a result of natural succession</li> <li>• Significant pollution of habitat from industry and roads</li> <li>• ‘Park-style’ maintenance of terrestrial habitat (e.g. mowing regimes)</li> <li>• Fish stocking of ponds</li> <li>• Landscaping and reclamation of derelict</li> </ul>	<ul style="list-style-type: none"> <li>• No reduction in the number of waterbodies at the site (currently 33)</li> <li>• Prevent levels of pollution that would reduce the viability of the pond as a breeding site (e.g. causes major macrophyte losses); slight pollution is acceptable</li> <li>• Ensure that 75% of the waterbodies hold water throughout the breeding and tadpole development season (February to mid-August)</li> </ul>	potential waste management facilities  <b>Not Likely to be Significant Effects</b>	No other plans or policies likely to act in combination.	

European site	Qualifying features	Vulnerability/pressures	Conservation Objectives	Likely Significant Effects of JWDPD and potential pathways	Other relevant plans and policies	Screening Assessment (are potential JWDPD waste sites Screened In from requiring further HRA Assessment due to potential effects on this European site)
<p><b>Mersey Estuary SPA / Ramsar site</b></p> <p>5023.35 ha</p>	<p>SPA Article 4.1:</p> <ul style="list-style-type: none"> <li>Golden plover: 3,040 individuals (1.2% of GB population)</li> </ul> <p>SPA Article 4.2 - winter:</p> <ul style="list-style-type: none"> <li>Redshank: 4,993 individuals (2.8% of Eastern Atlantic population)</li> <li>Dunlin: 48,789 individuals (3.6% of Northern Siberian / Europe / West African population)</li> <li>Pintail (<i>Anas acuta</i>): 1,169 individuals</li> </ul>	<p>land</p> <p>Historic pollution since 18th century, peaked around 1960, major improvements in water quality since 1985.</p> <p>Main pressures:</p> <ul style="list-style-type: none"> <li>Recirculation of heavy metals (e.g. lead, cadmium, arsenic and other poisons) bound into the sediment</li> <li>Pollution via rivers and drains by treated sewerage and untreated runoff containing inorganic chemicals and organic compounds, which 'may combine together in ways that make it difficult to predict their ultimate effect of the marine environment... Some may remain indefinitely in the [ecosystem]' (Langston</li> </ul>	<ul style="list-style-type: none"> <li>No significant damage to or decrease in the extent of habitat, the vegetation characteristics, or the landscape features important for supporting populations of qualifying species from a reference level, e.g.: <ul style="list-style-type: none"> <li>Grazing of the saltmarsh by suitable stocking levels of livestock to maintain diversity</li> <li>Vegetation height throughout areas used for feeding and roosting</li> </ul> </li> <li>Prevent an increase in obstructions to existing bird</li> </ul>	<ul style="list-style-type: none"> <li>The Mersey Estuary is located almost 20km west of the GM Boundary, and approximately 30km west of any potential waste sites (See Figure 6). Two of the proposed landfill sites (RW79 and SA50) have potential surface water connections to the Mersey Estuary via the Manchester Ship Canal. However, it is considered that due to the distance (approx. 30km) of these sites to the SPA / Ramsar, an effect is unlikely.</li> </ul> <p><b>Not Likely to be Significant Effects</b></p>	<p><b>Water Quality</b></p> <p>Salford City UDP Policy EN 18 Protection of Water Resources</p> <p>Trafford UDP ENV13– River Valley Floodplains</p> <p>Strict pollution prevention controls on Manchester Ship Canal/Mersey Valley will prevent significant pollution downstream into Mersey Estuary.</p> <p><b>Wildlife Corridors</b></p> <p>Trafford UDP ENV10 Wildlife Corridors The Council will seek to consolidate and strengthen the effectiveness of the wildlife corridors including the Mersey Valley and Manchester Ship Canal.</p>	<p>No</p>

European site	Qualifying features	Vulnerability/pressures	Conservation Objectives	Likely Significant Effects of JWDPD and potential pathways	Other relevant plans and policies	Screening Assessment (are potential JWDPD waste sites Screened In from requiring further HRA Assessment due to potential effects on this European site)
	<p>(1.9% of NW European population)</p> <ul style="list-style-type: none"> <li>Shelduck (<i>Tadorna tadorna</i>): 6,746 individuals (2.2% of wintering NW European population)</li> <li>Eurasian teal (<i>Anas crecca</i>): 11,723 individuals (2.9% of NW European population)</li> <li>Wigeon (<i>Anas penelope</i>): 11,886 individuals (4.2% of the GB population)</li> <li>Black-tailed godwit</li> </ul>	<p><i>et al.</i> 2006)</p> <ul style="list-style-type: none"> <li>Pollution from commercial shipping via chemical pollution and the dumping of litter at sea</li> <li>'Coastal squeeze' and physical loss from land reclamation, coastal flood defences, and drainage used in order to develop coastal land, and from sea level rise</li> <li>Loss or physical damage of marine benthic habitat (through changed sedimentation/deposition patterns) as a result of navigational or aggregate dredging</li> <li>Disturbance to birds from increased recreational pressure (e.g. boat or other recreational activity) and wildfowling</li> <li>Introduction of non-native species and translocation</li> </ul>	<p>viewlines</p> <ul style="list-style-type: none"> <li>Prevent significant reduction in numbers, or displacement of, all qualifying species of over-wintering birds from a reference level</li> <li>Maintain presence and abundance of aquatic plants and invertebrates, whereby the populations do not deviate significantly from a reference level</li> </ul>		<p><b>Recreation</b> Trafford UDP ENV8 – River Valleys and Major Watercourses. Development of recreational potential of valleys/major water courses commensurate with wildlife interests</p>	

European site	Qualifying features	Vulnerability/pressures	Conservation Objectives	Likely Significant Effects of JWDPD and potential pathways	Other relevant plans and policies	Screening Assessment (are potential JWDPD waste sites Screened In from requiring further HRA Assessment due to potential effects on this European site)
	<p>(<i>Limosa limosa</i>): 976 individuals (1.6% of the Iceland population)</p> <ul style="list-style-type: none"> <li>• Curlew: 1,300 individuals (1.1% of the GB population)</li> <li>• Grey plover (<i>Pluvialis squatarola</i>): 1,010 individuals (2.3% of the GB population)</li> <li>• Great crested grebe (<i>Podiceps cristatus</i>): 136 individuals (1.4% of the GB population)</li> <li>• Lapwing: 10,544</li> </ul>	<ul style="list-style-type: none"> <li>• Selective removal of species (e.g. bait digging, wildfowl, fishing) (Wildlife Trust 2006; Langston <i>et al.</i> 2006)</li> </ul>				

European site	Qualifying features	Vulnerability/pressures	Conservation Objectives	Likely Significant Effects of JWDPD and potential pathways	Other relevant plans and policies	Screening Assessment (are potential JWDPD waste sites Screened In from requiring further HRA Assessment due to potential effects on this European site)
	<p>individuals (0.7% of the GB population)</p> <ul style="list-style-type: none"> <li>• On passage:</li> <li>• Ringed plover (<i>Charadrius hiaticula</i>): 505 individuals (1.7% of Europe / North African population)</li> <li>• Redshank: 4,513 individuals (3.8% of Eastern Atlantic population)</li> </ul> <p>Ramsar Criterion 5:</p> <ul style="list-style-type: none"> <li>• 89,576 waterfowl (5-year peak mean 1998/99-2002/03)</li> </ul>					

European site	Qualifying features	Vulnerability/pressures	Conservation Objectives	Likely Significant Effects of JWDPD and potential pathways	Other relevant plans and policies	Screening Assessment (are potential JWDPD waste sites Screened In from requiring further HRA Assessment due to potential effects on this European site)
	Ramsar Criterion 6, Internationally important populations of: <ul style="list-style-type: none"> <li>• Shelduck</li> <li>• Black-tailed godwit</li> <li>• Redshank</li> <li>• Eurasian teal</li> <li>• Pintail</li> <li>• Dunlin</li> </ul>					
<b>Mersey Narrows and North Wirral Foreshore pSPA / pRamsar</b>  2089.41 ha  Contains: Mersey Narrows SSSI  Located at mouths of Mersey and	SPA Article 4.1: <ul style="list-style-type: none"> <li>• Common tern (<i>Sterna hirundo</i>): 124 breeding pairs (1.0% of GB population)</li> <li>• Bar-tailed godwit (<i>Limosa lapponica</i>): 537 wintering individuals (1.0% of GB population)</li> </ul>	Historic pollution since 18th century, peaked around 1960, major improvements in water quality since 1985  Main pressures: <ul style="list-style-type: none"> <li>• Disturbance of roosts due to recreational activities ( birds have moved from low tide feeding areas on the foreshore of West Kirby within the Dee Estuary to the Alt Estuary over the high tide period;</li> </ul>	<ul style="list-style-type: none"> <li>• No significant damage to or decrease in extent of the saline lagoon, intertidal sediment communities, and saltmarsh habitats for the important populations of qualifying bird species and waterbird assemblage</li> <li>• Maintain the population attributes of</li> </ul>	See assessment for Mersey Estuary above  <b>Not Likely to be Significant Effects</b>	See policies identified for Mersey Estuary SPA/Ramsar	No

European site	Qualifying features	Vulnerability/pressures	Conservation Objectives	Likely Significant Effects of JWDPD and potential pathways	Other relevant plans and policies	Screening Assessment (are potential JWDPD waste sites Screened In from requiring further HRA Assessment due to potential effects on this European site)
Dee estuary, site areas and boundaries are not available until time of classification	SPA Article 4.2: <ul style="list-style-type: none"> <li>• Knot (<i>Calidris canutus</i>): 10,661 individuals (3.0% of NW European, NE Canadian, Greenland &amp; Icelandic populations)</li> <li>• Redshank: 1,606 individuals (1.1% Eastern Atlantic population)</li> <li>• Turnstone (<i>Arenaria interpres</i>): 1,593, individuals (2.3% Western Palearctic population)</li> </ul> Ramsar Criterion 5:	Wells & Friswell 2001) <ul style="list-style-type: none"> <li>• Recirculation of heavy metals (e.g. lead, cadmium, arsenic and other poisons) bound into the sediment</li> <li>• Pollution via rivers and drains by both treated sewerage and untreated runoff containing inorganic chemicals and organic compounds, which 'may combine together in ways that make it difficult to predict their ultimate effect of the marine environment... Some may remain indefinitely in the [ecosystem]' (Langston <i>et al.</i> 2006)</li> <li>• Pollution from commercial shipping via chemical or noise pollution and the dumping of litter at sea;</li> <li>• Direct damage of marine benthic habitat from fishing methods</li> </ul>	redshank, cormorant ( <i>Phalacrocorax carbo</i> ) and turnstone such that there are no absolute losses >50% of the populations <ul style="list-style-type: none"> <li>• Maintain in favourable condition the wintering knot population, as this is intrinsically linked to the favourable condition of this qualifying feature of the site</li> <li>• Prevent a significant reduction in numbers of all other qualifying species from a reference level</li> <li>• Maintain the presence and abundance of</li> </ul>			

European site	Qualifying features	Vulnerability/pressures	Conservation Objectives	Likely Significant Effects of JWDPD and potential pathways	Other relevant plans and policies	Screening Assessment (are potential JWDPD waste sites Screened In from requiring further HRA Assessment due to potential effects on this European site)
	<ul style="list-style-type: none"> <li>28,841 waterbirds (5-year peak mean 1998/99-2002/03)</li> </ul> <p>Ramsar Criterion 6, Internationally important populations of the above species</p>	<ul style="list-style-type: none"> <li>Damage of marine benthic habitat along the North Wirral Foreshore from aggregate extraction or navigational dredging, particularly anywhere that dredging may be altering erosion / deposition patterns</li> <li>'Coastal squeeze' from land reclamation, coastal flood defences, and drainage used in order to farm or develop coastal land, and from sea level rise</li> <li>Harm to wildlife (especially birds) or habitat loss due to increasing proposals / demand for offshore wind turbines</li> <li>Pollution, direct kills, litter, disturbance or loss of habitat as a result of water-based recreation or other recreation activity and related development</li> </ul>	<p>aquatic plants (including algae) and invertebrates, whereby the populations do not deviate significantly from a reference level</p>			

European site	Qualifying features	Vulnerability/pressures	Conservation Objectives	Likely Significant Effects of JWDPD and potential pathways	Other relevant plans and policies	Screening Assessment (are potential JWDPD waste sites Screened In from requiring further HRA Assessment due to potential effects on this European site)
		along the foreshore (Wildlife Trust 2006) <ul style="list-style-type: none"> <li>• Introduction of non-native species and translocation</li> <li>• Selective removal of species (e.g. bait digging, wildfowl, fishing) (Wildlife Trust 2006; Marine Biological Association 2006)</li> </ul>				
<b>Liverpool Bay pSPA</b>  197,504.24 ha	Qualifies for SPA status as it supports: <ul style="list-style-type: none"> <li>• &gt;1% of GB population of red-throated diver (<i>Gavia stellata</i>) (Annex I species; EC 1992b): 1,405 wintering individuals (28.7% of GB population)</li> <li>• &gt;1% of the biogeographical population</li> </ul>	Long-term improvement in domestic and industrial pollution of waters, increases in agricultural effluent over same period.  Main pressures: <ul style="list-style-type: none"> <li>• Recirculation of heavy metals (e.g. lead, cadmium, arsenic and other poisons) bound into the sediment</li> <li>• Pollution via rivers by agricultural effluent flowing off fields leading to increased fertility of inshore waters and</li> </ul>	None at this stage, but likely to be similar to those for the Mersey Estuary SPA/Ramsar: <ul style="list-style-type: none"> <li>• No significant reduction in numbers or displacement of all qualifying species of over-wintering birds</li> <li>• No significant damage to or decrease in extent of habitat, vegetation characteristics or</li> </ul>	See assessment for Mersey Estuary above  <b>Not Likely to be Significant Effects</b>	See policies identified for Mersey Estuary SPA/Ramsar	No

European site	Qualifying features	Vulnerability/pressures	Conservation Objectives	Likely Significant Effects of JWDPD and potential pathways	Other relevant plans and policies	Screening Assessment (are potential JWDPD waste sites Screened In from requiring further HRA Assessment due to potential effects on this European site)
	<p>of common scoter (<i>Melanitta nigra</i>), a regularly occurring migratory species: 53,454 wintering individuals (3.3% of GB population)</p> <p>Potential qualification under Criterion 5, Ramsar Convention:</p> <ul style="list-style-type: none"> <li>&gt;20,000 waterfowl during the non-breeding season</li> </ul>	<p>associated algal blooms and de-oxygenation of seawater</p> <ul style="list-style-type: none"> <li>Pollution via rivers and drains by both treated sewerage and untreated runoff containing inorganic chemicals and organic compounds, which 'may combine together in ways that make it difficult to predict their ultimate effect of the marine environment... Some may remain indefinitely in the [ecosystem]' (Langston <i>et al.</i> 2006)</li> <li>Pollution from commercial shipping via chemical or noise pollution and the dumping of litter at sea</li> <li>Direct damage of marine benthic habitat from fishing methods and aggregate extraction</li> <li>'Coastal squeeze' from</li> </ul>	<p>landscape features</p> <ul style="list-style-type: none"> <li>Maintain the presence and abundance of prey species, primarily aquatic invertebrates but also aquatic vegetation (including algae)</li> <li>Encourage production and implementation of Shoreline Management Plans to ensure a holistic approach to coastal planning (e.g. dredging, aggregate extraction, coastal defence). The plans should aim to allow natural coastal processes to continue as far as is possible and should discourage new developments</li> </ul>			

European site	Qualifying features	Vulnerability/pressures	Conservation Objectives	Likely Significant Effects of JWDPD and potential pathways	Other relevant plans and policies	Screening Assessment (are potential JWDPD waste sites Screened In from requiring further HRA Assessment due to potential effects on this European site)
		<p>land reclamation, coastal flood defences, drainage used in order to farm or develop coastal land, and from erosion and sea level rise</p> <ul style="list-style-type: none"> <li>• Loss or damage of marine benthic habitat (through changed sedimentation/deposition patterns) as a result of navigational dredging</li> <li>• Harm to wildlife (especially birds) or habitat loss due to increasing proposals/demand for offshore wind turbines</li> <li>• Pollution, direct kills, litter or loss of habitat as a result of water-based recreation and related development along the foreshore (Wildlife Trust 2006)</li> </ul>	<p>which increase the need for future coastal protection</p> <ul style="list-style-type: none"> <li>• Ensure adoption of Estuary Management Plan objectives into statutory local plans and into the activities of estuary managers and users</li> <li>• Encourage sustainable fisheries activities</li> <li>• Promote interpretation to help visitors and local people gain improved understanding of the key nature conservation features within the area</li> <li>• Encourage improvements in water quality by ensuring the development and</li> </ul>			

European site	Qualifying features	Vulnerability/pressures	Conservation Objectives	Likely Significant Effects of JWDPD and potential pathways	Other relevant plans and policies	Screening Assessment (are potential JWDPD waste sites Screened In from requiring further HRA Assessment due to potential effects on this European site)
			implementation of suitable water quality objectives, particularly with respect to the avoidance of unacceptable eutrophication of enclosed and near shore coastal waters <ul style="list-style-type: none"> <li>• Encourage habitat re-creation to ameliorate past losses caused as a direct result of human activities</li> </ul>			