NON-TECHNICAL SUMMARY

INTRODUCTION

WASTE MANAGEMENT PLAN REVIEW

The current Waste Management Plan for the North West Region was published in 2002, and identified the need for periodic review including a Full Review in 2005. The reviewed plan therefore sets out the arrangements for the management of controlled wastes over the period 2006 to 2020.

This includes identifying capacity needs, potential sites and/or siting criteria, and the services needed for the collection, treatment and disposal of the wastes, including municipal wastes, commercial and industrial wastes, construction, demolition and excavation wastes, packaging wastes and agricultural wastes.

NORTH WEST REGION

District councils have a statutory responsibility under Article 23 of the Waste and Contaminated Land (NI) Order 1997 to prepare a Waste Management Plan setting out arrangements for the management of wastes arising or situated within its district.

The North West Group represents a voluntary grouping of seven local authorities who formed a grouping expressly for waste planning purposes. The councils comprising this group and the areas, see Figure ES.1 below include, in alphabetical order:

- Ballymoney Borough Council
- Coleraine Borough Council
- Derry City Council
- Limavady Borough Council
- Magherafelt District Council
- Moyle District Council
- Strabane District Council

Figure ES.1 North West Region Waste Management Group (NWRWMG)

The North West Region Waste Management Group published a Waste Management Plan, which was adopted by its constituent councils in 2002. A copy of this Plan can be viewed or downloaded from www.northwestwasteplan.org.

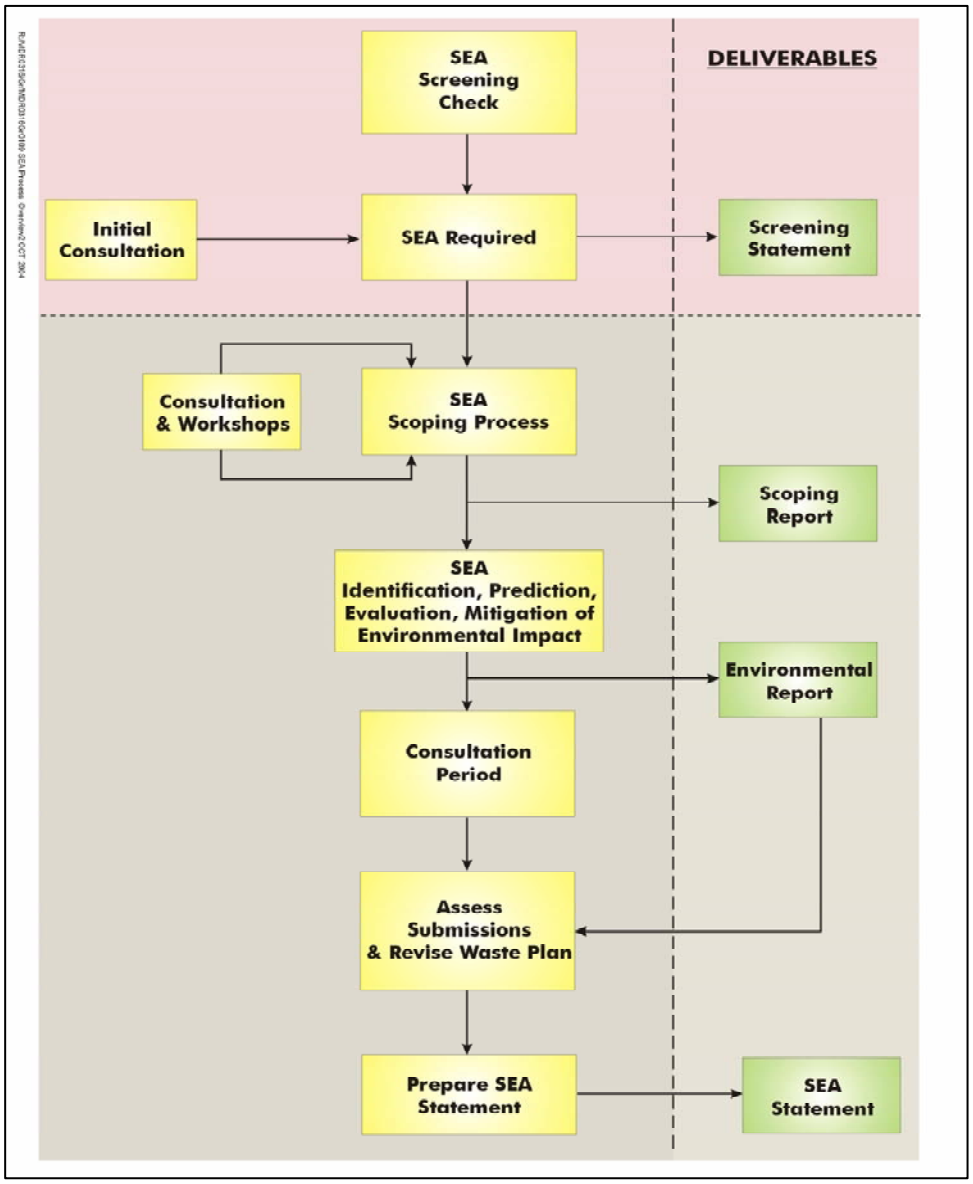
STRATEGIC ENVIRONMENTAL ASSESSMENT

The EU Directive 2001/42/EC on the Assessment of Effects of Certain Plans and Programmes on the Environment (the 'SEA Directive') came into force in the UK on 20 July 2004 through the Environmental Assessment of Plans and Programmes Regulations (Northern Ireland) 2004.

SEA extends the assessment of environmental impacts from individual projects to the broader perspective of regional or district level plans. Plans and programmes which require environmental assessment are defined in Article 3 of the Directive, which includes plans or programmmes for waste management.

SEA is a systematic process for evaluating at the earliest appropriate stage, the environmental quality, and consequences, of plans or programmes and to ensure that any environmental consequences are assessed during their preparation and before they are adopted. The process requires collecting information, defining alternatives, identifying environmental effects, developing mitigation measures and revising proposals in the light of predicted environmental effects as shown in Figure ES.2 below.

Figure ES.2 SEA Process



The Environmental Assessment of Plans and Programmes Regulations (Northern Ireland) 2004 states that all plans or programmes 'not adopted or submitted to the legislative procedure for adoption before 22 July 2006' require a Strategic Environmental Assessment (SEA).

Plans and programmes which require environmental assessment are defined in Article 3 of the Directive, which includes plans or programmmes for waste management. Therefore, the review of the North West Region Waste Management Plan will require a Strategic Environmental Assessment (SEA).

WASTE MANAGEMENT PLAN OBJECTIVES

As stated previously, the current North West Region Waste Management Plan identified the need for periodic review and a Full Review of the Waste Management Plan to take place in 2005. This review is also necessary to incorporate recent policy and legislative developments, including the new Northern Ireland Waste Management Strategy: Towards Resource Management published in March 2006, the introduction of the Northern Landfill Allowance Scheme (NILAS) which introduced landfill diversion targets for biodegradable municipal waste and the introduction of the Animal By-Products Regulations (NI) 2003 which places requirements on the treatment of kitchen, food and catering wastes.

The key overarching aims of the review of the North West Waste Management Plan are:

- To comply with statutory targets and obligations.
- To comply with the NIWMS policy measures and targets.
- To shift from a waste management to a resource management approach through the waste hierarchy:
  - Waste Prevention
  - Materials Recovery
  - Energy Recovery
  - Disposal

This is to be achieved through the following objectives:

1. To develop an integrated network of facilities to meet the needs of the region.
2. To minimise the amount of waste produced within the region.
3. To maximise resource efficiency.
4. To minimise environmental impacts.
5. To ensure that the identified facilities and services are in place in time to enable district councils to meet their statutory targets and obligation.
6. To encourage regional self sufficiency, as far as is practicable and economical, within the North West region.
7. To ensure that the actions and measures identified in the Plan are:
   - Deliverable, with respect to timescales for implementation; and
   - Practical, building upon existing services and facilities within the region.
8. To identify and manage risks (financial, planning and contractual) in a systematic manner, to ensure that risks lie with those parties best placed to manage them effectively.
9. To adopt a regional approach to the sharing of targets to ensure that North West as a whole is able to meet its targets, with individual action and targets agreed for each Council, taking into account demographic factors, including spread of population and associated costs for the provision of services

RELEVANT PLANS AND PROGRAMMES

The SEA Directive requires that the Environment Report should include information on the plan's relationship with other relevant plans and programmes. This process identifies the policy context within which the Waste Management Plan operates and the constraints and targets that this context imposes on it. This process considers relevant:

- International Plans and Programmes;
- National Plans and Programmes;
- Regional Plans and Programmes; and
- Local Plans and Programmes.

EXISTING AND FUTURE BASELINE CONDITIONS

INTRODUCTION

The SEA Directive states that the Environmental Report should provide information on:

- "the relevant aspects of the current state of the environment and the likely evolution thereof without implementation of the plan" and the "environmental characteristics of the areas likely to be significantly affected" (Annex I (b) (c))
- "any existing environmental problems which are relevant to the plan or programme including, in particular, those relating to any areas of a particular environmental importance, such as areas designated pursuant to Directives 79/409/EEC and 92/43/EEC (Annex I (c)).

In order to accurately predict and understand the environmental impact that the updated North West Region Waste Management Plan will have on both the physical and human environment, it is necessary to first describe the current environment. Therefore, establishing the environmental baseline is an important part of both the SEA and Waste Management Plan development process.

Soils, Geology and Hydrogeology

Soils

The DANI Soil Survey in Northern Ireland has identified 308 different soil series (each over 50 hectares in area) in Northern Ireland, developed from 97 soil parent materials. Free draining soil types, such as shallow rocky soils make up 9% of the land area, Brown Earths comprise 13% and Podzols 4%. Poorly draining soils or Gleys comprise 56% of the soil types in Northern Ireland, Peat 14% and 4% is comprised of organic alluvium, lake deposits and other alluvial deposits.

Drift Geology

The drift geology of the North West region is predominantly overlain by Glacial Till (or Boulder Clay) which is characterised by 'drumlins' or a 'basket of eggs topography'. The west of the region around the location of the Sperrin mountains is charcterised by Glacial Outwash sands and gravels laid down close to or beneath an icesheet. There are also significant deposits of these materials in the east of the region to the north of Ballymena. An area of glacial lake deposits exists to the north of the region around Coleraine.

Solid Geology

The solid geology of the North West region is extensively underlain by metamorphic and igneous rock formations. Sedimentary rocks also underlie the region on a more local scale. These strata are also dissected by a major group of regional faults trending South West to North East.

Hydrogeology

The west of the North West region, and an area to the east of the region around Ballymoney, are underlain by aquifers regarded as least permeable (non-aquifers) and do not contain groundwater in exploitable quantities. The aquifers in the centre and to the east of the region are defined as moderately permeable and generally therefore as aquifers that contain fractured or potentially fractured rocks which do not have a high primary permeability, or other formations of variable permeability.

Landscape

Landscape recognised as being of distinctive character and special scenic value have been designated as Areas of Outstanding Natural Beauty (AONB). This designation is designed to protect and enhance the quality of each area and to promote their enjoyment by the public. There are nine of these areas in Northern Ireland, with three sites located in the North West region.

Nature Conservation and Biodiversity

There are a wide variety of natural habitats within the North West region, protected by a range of designations. Some of these designations recognise sites of international importance, for example, Ramsar Sites, including Garry Bog, Lough Foyle and Ballynahone Bog and Special Protection Areas (SPAs), such as Sheep Island SPA and Lough Foyle SPA. There are also a number of Special Areas of Conservation (SACs) within the North West region. Other sites of nature conservation importance, namely National Nature Reserves (NNRs), and Areas of Special Scientific Interest (ASSI) are also found within the North West region.

The Giant's Causeway and Causeway Coast was inscribed as a World Heritage Site by UNESCO in 1986 recognising the outstanding universal value of the site as per the World Heritage Convention. The site occupies 70 ha of land and 160 ha of sea and is located in Moyle District Council to the north of the North West Group.

Further information on these designations is available at: http://www.ehsni.gov.uk/natural/designated/area_interest.shtml.

Air Quality

Air Quality monitoring in Northern Ireland is currently carried out by the Department of the Environment and District Councils. The Department of the Environment has a multi-pollutant monitoring station in Belfast monitoring sulphur dioxide, carbon monoxide, ozone, nitrogen oxides and particulates (PM_{10}). It also monitors particulate carbon, particulate nitrate and particulate sulphate as well as carrying out bacteriological sampling and particle counts. The Department of the Environment also has hydrocarbon units and sulphur dioxide monitors in Belfast as well as ozone and particulate (PM_{10}) monitors in rural locations. Monitoring of poly-aromatic hydrocarbons (PAHs) by the Department of the Environment also takes place in Lisburn and Belfast.

In addition to these sites, monitoring is also undertaken by District Councils, which includes the monitoring of sulphur dioxide, smoke and nitrogen dioxide. This data is integrated into the national government air quality network, which allows analysis and comparison in a national context. This air quality information is available at: http://www.airquality.co.uk.

Water Quality

The Water Management Unit (WMU) of the Environment and Heritage Service has responsibility for the protection of the aquatic environment. This is achieved through: water quality monitoring, preparing water quality management plans, controlling effluent discharges and taking action to combat or minimise the effects of pollution. The WMU holds baseline water quality information on aquatic environments and this information, which contains baseline information for both Northern Ireland and the North West region, is available at: http://www.ehsni.gov.uk/environment/waterManage/quality/quality.shtml

Built Heritage

The Built Heritage Unit of Environment and Heritage Service holds information on archaeological sites, historic monuments and buildings, industrial remains, designated historic

landscapes and features of the shore and sea-bed. Information on historic buildings in Northern Ireland and in the North West region is available at: http://www.ehsni.gov.uk/built/mbr/buildings_database/build.asp

Built Heritage also holds information on approximately 15,000 sites and monuments including Mesolithic Camp Sites and preserved Bronze Age Landscapes. This information is held on the Northern Ireland Sites and Monuments Record, and is available at: http://www.ehsni.gov.uk/built/mbr/monuments_database/mons.asp.

Climate

Climate change in Northern Ireland, caused by increased emissions of Greenhouse Gases, is likely to cause warmer wetter winters with drier summers, as predicted by climate models prepared by the UK Climate Impacts Programme (UK CIP). The frequency of extreme weather events and the timing of natural events may alter due to climate change.

The key findings of a Scoping Study carried out for the Department of the Environment (DOE) looking at the likely impacts of climate change in Northern Ireland is available at: http://www.ehsni.gov.uk/environment/climatechange/air-climatechange.shtml#cc.

Households

In 2005/06 there were 122,954 households in the North West region.

Human Health

The Northern Ireland Census 2001 reports that 70.3% of the population of the North West region described themselves as having “Good Health”, 19.2% as having “Fairly Good Health” and 10.5% as “Not Good Health”.

Wastes Management

The key waste management indicators for the North West region are shown on Table ES 1.

Table ES 1 Key Waste Management Indicators

Key Waste Management Indicators						
	1999/00	2001	2002	2003	2004/05	2005/06
Household Waste						
No of Households[1]	108,393	110,798	113,448	115,999	120,543	122,390
% Growth rate in occupied housing nos.	-	2.2%	2.3%	2.2%	3.9%	1.5%
Household waste (tpa)[2]	152,430	155,796	174,135	166,521	166,357	163,869
Household waste growth rate	-	2.2%	11.8%	-4.4%	-0.1%	-1.5%
Waste per household (tpa)	1.41	1.41	1.53	1.43	1.38	1.34
Recovery[3] rate of household waste (%)	2.5%	4.1%	4.3%	9.9%	19.3%	27.6%
Municipal Waste						
Municipal Waste (tpa)	211,126	200,539	205,103	190,067	190,195	190,741
Municipal waste growth (%)	-	-5.1%	2.3%	-7.4%	0.1%	0.3%
Municipal waste landfilled			197,292	173,389	157,169	141,119
Biodegradable Municipal Waste Landfilled			140,109	124,252	113,158	95,481

Note

1. No of households taken from The Rate Collection Agency for year ending December 2000, December 2001, March 2002 and March 2003. Figures from 2004/05 have been taken from Housing Statistics- Northern Ireland Housing Bulletin, Department of Social Development. Figures from 2005/06 have been taken from WasteDataFlow.
2. tpa= tonnes per annum
3. Recovery refers to household waste recycling and composting
4. Shaded area- information not available
5. Includes only C&I waste collected by Councils

ENVIRONMENTAL ISSUES AND PROBLEMS

Schedule 2 of the Northern Ireland and UK Regulations requires that the Strategic Environmental Assessment includes a description of environmental problems, in particular those relating to any areas of environmental importance. The potential environmental problems considered in this SEA as a result of the implementation of the North West Region Waste Management Plan include:

- **Management Options:**
  - Waste Prevention
  - Materials Recovery
  - Energy Recovery
  - Disposal
- **External Factors:**
  - Growth in Population and Household Numbers
  - Fly-Tipping and Illegal Dumping of Waste

- Waste Transported In & Out of the Region (including Cross Border movement)

- **Environmental Issues:**
  - Groundwater and Surface Water Pollution
  - Soil Contamination
  - Air Pollution
  - Protection of Landscape, Biodiversity, Built and Natural Heritage
  - Climate Change

LIKELY EVOLUTION OF THE ENVIRONMENT WITHOUT THE NORTH WEST REGION WASTE MANAGEMENT PLAN

The SEA Directive requires that the likely evolution of the environment without the implementation of the Waste Management Plan be considered. Without the implementation of the North West Region Waste Management Plan it is likely that there would be detrimental impacts to the environment including biodiversity, water, air, human health and population resulting from waste management that would not be controlled. The North West Region Waste Management Plan is also a means of ensuring sustainable waste management is delivered in the North West region, with a focus on environmental protection.

SEA FRAMEWORK

Developing environmental objectives are a useful tool in measuring the environmental performance of the plan in question. The SEA Directive does not specifically require the use of objectives and indicators in the SEA process but they are a recognised and widely used method in which the environmental performance of the Waste Management Plan may be measured.

The thirteen environmental objectives developed for the North West Region Waste Management Plan are listed below and have been developed taking into consideration legislative requirements, along with the plans and programmes that have been identified as having an influence on the North West Region Waste Management Plan. These objectives are:

Resource Usage

1. **Waste Prevention** – to reduce the quantity of materials produced.
2. **Materials Recovery –** to maximise recycling and composting.
3. **Energy Recovery** – promote the recovery of energy through recovery of residual waste.
4. **Disposal** – to reduce the quantity of residual materials disposed of to landfill.

Environmental Impacts

5. **Surface and Groundwater** - to reduce the environmental impacts.
6. **Soil** - to reduce the environmental impacts.
7. **Air** - to reduce the environmental impacts.
8. **Landscape** - to reduce the environmental impacts.
9. **Flora and fauna** - to reduce the environmental impacts.
10. **Cultural heritage** - to reduce the environmental impacts.
11. **Climate Change** - to reduce greenhouse gas emissions.
12. **Public Involvement and Education** - to provide opportunities for participation through recycling and composting schemes.
13. **Human Beings** - to reduce the risks.

These objectives have been tested for compatibility with the Waste Management Plan objectives and have been found to be largely compatible.

MUNICIPAL WASTE – THE PREFERRED SCENARIO

INTRODUCTION

The scenario set out in the Waste Management Plan for municipal waste represents the Best Practicable Environmental Option (BPEO) for the management of that waste stream within the Region. In determining the preferred BPEO scenarion, a range of options/scenarios were considered.

DECISION CRITERIA

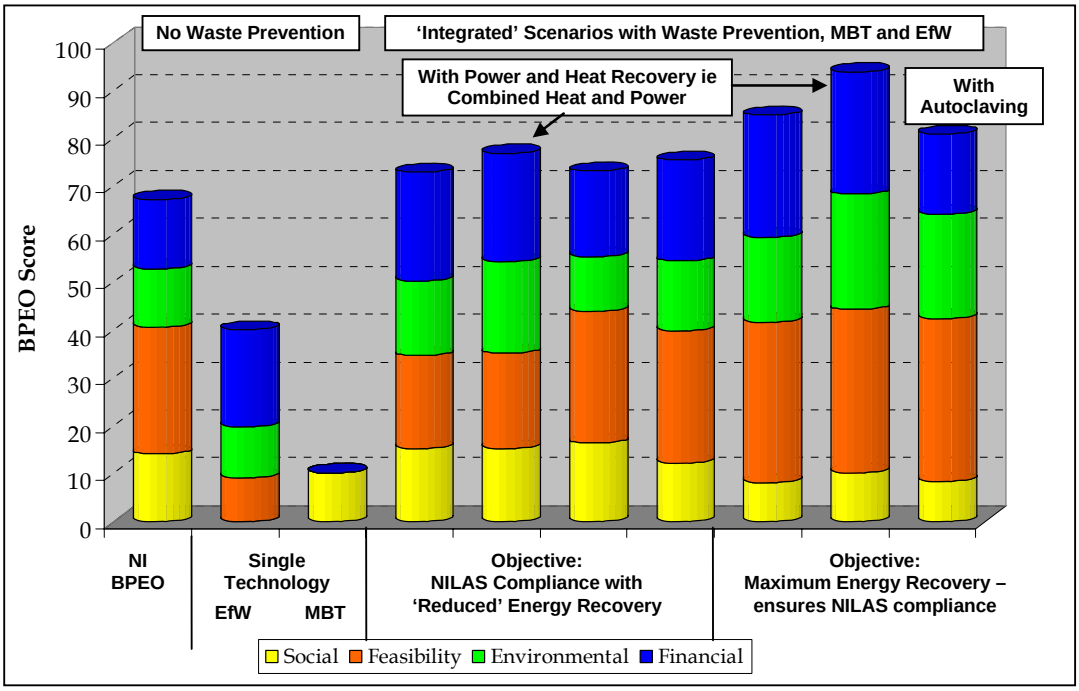
Each of the scenarios were assessed against a number of decision criteria. These criteria were divided into four categories: environmental, financial, social and feasibility, each with a number of sub-criteria, as detailed below.

- **Environmental Criteria:** Resource Depletion, Air Acidification, Greenhouse Gas Emissions, Landtake, Extent of Water Pollution
- **Financial Criteria:** Financial Costs
- **Social Criteria:** Health Effects, Employment, Public Acceptability, Risk of Accidents, Producer Responsibility, Local Amenity, Social Equity
- **Feasibility Criteria:** Technical Feasibility, Practical Feasibility, Flexibility, Existing Facilities, Compliance with Policy

RESULTS OF THE TECHNICAL ASSESSMENT

A summary of the results of the Technical Assessment carried out are illustrated in Figure ES.3 below. This summarises the results of the assessment against each of the criteria set out in the section above (environmental, financial, social and feasibility).

Figure ES.3 Scenario Assessment Summary



Note: This summary does not illustrate the 'Do Nothing' scenario.

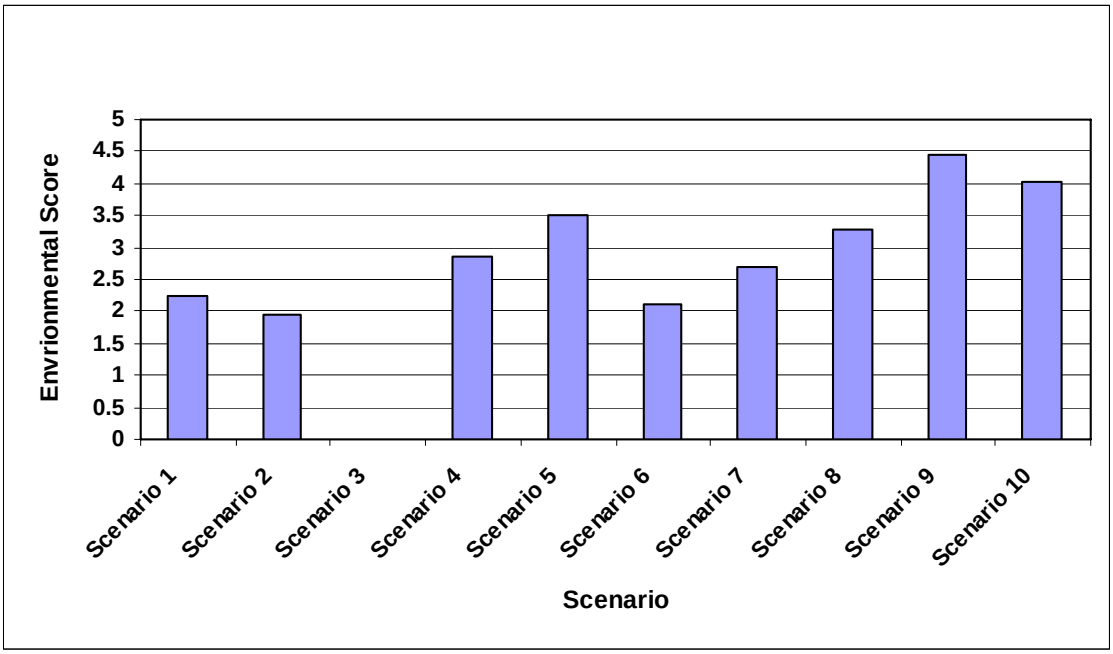
ASSESSMENT OF ENVIRONMENTAL EFFECTS

The environmental effects of the alternative scenarios were assessed and compared as part of the Technical Assessment, against the following criteria:

- Resource Depletion
- Air Acidification
- Greenhouse Gas Emissions
- Landtake
- Extent of Water Pollution.

Each of the five factors above were assessed and scores for environmental impact assigned to each waste management scenario being considered. These scores were then aggregated to produce an overall score that determined the most favourable environmental option from these scenarios. The results of the environmental assessment are illustrated in Figure ES.4 below, and indicate that Scenario 9 as the most favourable environmental option.

Figure ES.4 Environmental Assessment Results



IDENTIFICATION OF PREFERRED SCENARIO

The feedback from a public consultation exercise on the proposed modifications to the Waste Management Plan, together with input from the Group and constituent councils, allowed the Best Practicable Environmental Option for municipal waste within the Region to be identified. This represents the preferred scenario for the management of municipal waste and is defined as follows:

- ***Waste Prevention*** – limiting annual waste growth to:
  - 1.5% up to 2010
  - 1.0% from 2010 to 2013
  - 0.5% from 2013 to 2020
- ***Materials Recovery*** – a 3 bin system for the separate collection of dry recyclables, organic waste (garden and food wastes) and residual waste for all households – where practicable and appropriate, with recycling and composting rates (through source separate collection) of at least:
  - 30% by 2010
  - 35% by 2013
  - 40% by 2020
- ***Energy Recovery and Residual Waste Treatment*** – the mix of technologies to include Mechanical Biological Treatment (MBT), with the objectives of:
  - **Additional materials recovery,** which coupled with the amounts to be collected through source separated collections, combine to meet the Strategy targets of 35%, 40% and 45% by 2010, 2013 and 2020 respectively.

- **Reduction in biodegradability** – to meet statutory BMW landfill diversion and NILAS targets.
- **Energy Recovery** - through the production of a fuel for the generation of both electricity and heat – to maximise the value of the waste as a resource in accordance with the Waste Hierarchy to reduce reliance on fossil fuels and to comply with the objectives set for the Plan.

ASSESSMENT OF THE WASTE MANAGEMENT PLAN

INTRODUCTION

This Chapter assesses the potential environmental effects associated with the implementation of the Waste Management Plan, as required in Schedule 2 of the Environmental Assessment of Plans and Programmes Regulations (Northern Ireland) 2004. A twofold approach has been adopted, which includes assessment of:

- The Waste Management Plan Measures; and
- The Waste Management Plan Objectives.

ENVIRONMENTAL ASSESSMENT OF WASTE MANAGEMENT PLAN MEASURES

The measures set out in the Waste Management Plan are based on the principle of the Waste Management Hierarchy, and include the identification of preferred scenarios and technology mixes to meet the relevant statutory and policy objectives for a range of waste streams. These measures have been assessed within the context of the Waste Hierarchy, and in terms of their potential environmental benefits and impacts. Each of the following aspects have been assessed as positive in terms of its overall impact, in relation to the current approach to managing wastes within the region:

- Waste Prevention
- Materials Recovery
- Energy Recovery
- Landfill.

ENVIRONMENTAL ASSESSMENT OF WASTE MANAGEMENT OBJECTIVES

Each of the objectives set within the Waste Management Plan have been assessed in terms of their potential environmental affects, determining if each has a positive, negative, neutral or uncertain impact on each of the following environmental receptors:

- Soils, Geology and Hydrogeology
- Landscape
- Nature Conservation and Biodiversity

- Air Quality
- Water Quality
- Cultural Heritage
- Energy Usage
- Climate
- Population
- Human Health

This results of this assessment determined that each objective of the Waste Management Plan has a broadly positive or neutral impact on the environment.

PROPOSALS FOR MONITORING

Article 10 of the SEA Directive requires that monitoring of the environmental performance of the implementation of Waste Management Plan be carried out, in order to determine at an early stage any unforeseen environmental impacts so that remedial action can then be taken. Monitoring is carried out by reporting on a set of indicators, which enable positive and negative impacts on the environment to be measured. They have been developed to show changes that would be attributable to the implementation of the Waste Management Plan. Monitoring of the significant environmental effects is also useful to inform future planning and decision making.

MONITORING OF THE WASTE MANAGEMENT PLAN

The following monitoring and review programme is proposed to be carried out in the Waste Management Plan, carried out by individual District Councils:

- Monitoring a number of Key Performance Indicators (KPI's)
- Completing the WasteDataFlow returns online on a quarterly basis;
- Validating the data used;
- Checking overall performance against planned levels; and
- Identifying issues of concern, and implement corrective actions, where required, should performance fall significantly behind planned levels.

MONITORING THE ENVIRONMENTAL PERFORMANCE OF THE WASTE MANAGEMENT PLAN

Monitoring of the likely significant impacts of the implementation of the Waste Management Plan is to be carried out by reporting on a set of indicators, identified below, which enables positive and negative impacts on the environment attributable to the Waste Management Plan to be measured.

- ***Resource Usage:***
  - **Waste Prevention** – measured by the 'absence' in the quantity of wastes reported in the North West Region.
  - **Materials Recovery** – measured by the percentage of waste reported as recycled and composted in the North West Region.
  - **Energy Recovery** – measured by the percentage of waste recovered, and quantified as the quantity of coal or oil displaced as wastes are recovered to produce a fuel.
  - **Disposal** – measured by the percentage of waste reported as disposed of to landfill.
- ***Environmental Impacts:***
  - **Surface and Groundwater** – monitored by the number of relevant reported water pollution incidents attributable to waste facilities in the North West Region.
  - **Soil, Geology & Hydrogeology** – monitored by the area of land contaminated or impacted due to waste activities, and the area of land restored to beneficial use.
  - **Air Quality** – monitored by periodic dust and gaseous monitored in the vicinity of waste management facilities in the North West Region.
  - **Landscape** – considered on a site specific basis for new or planned facilities in the North West Region.
  - **Flora and Fauna** – considered on a site specific basis for new or planned facilities in the North West Region.
  - **Cultural Heritage** – considered on a site specific basis for new or planned facilities in the North West Region.
  - **Climate Change** – monitored by estimating Greenhouse Gas emissions that will be produced through the implementation of the North West Waste Management Plan.
  - **Public Involvement & Education** – measured by participation rates in recycling and composting schemes within the North West Region.
  - **Human Beings** – monitored by the number of reported Health & Safety incidents and by emissions from waste management facilities.