

MUNICIPAL WASTE STRATEGY FOR GWYNEDD SUMMARY DOCUMENT

INTRODUCTION

This document summarises Gwynedd Council's draft strategy for dealing with municipal waste over the coming years. (Fuller details can be found in the main draft strategy document and its appendices.) Municipal waste is usually defined as all waste under the control of a local authority, and includes all waste collected from households; litter collected in bins, by street sweeping and by beach cleansing; waste delivered to council recycling points; municipal parks and garden wastes; waste delivered to household waste recycling centres; flytipped waste and abandoned vehicles on public ground, and commercial waste collected where local authority agreements are in place.

The management of municipal waste is one of the most important and challenging environmental issues facing Wales. The need for change, together with future plans for a sustainable municipal waste management system, is identified in the National Waste Strategy for Wales ('Wise about Waste'), published in June 2002. It is essential that each local authority in Wales prepare its own detailed plans for managing municipal wastes in line with the Welsh Assembly Government's strategy, endorsed by the Welsh Local Government Association.

It is the aspiration of both the Welsh Assembly Government and the Welsh Local Government Association, that in the future, municipal wastes in Wales will be managed in ways that not only protect the environment and human health but also provide economic and social benefits. To this end Gwynedd Council has prepared a Municipal Waste Management Strategy, which hopefully will contribute significantly to meeting this aspiration and ensure that Municipal Waste is managed in a sustainable manner.

Fundamental to the management of municipal waste in the future is the need to reduce our reliance on landfill as the preferred option for dealing with societies unwanted materials. A situation whereby recycling, composting and other methods of extracting beneficial use are the preferred options for managing our waste is required.

A major requirement in the future will be to reduce the quantities of biodegradable municipal waste (BMW) being landfilled. The legal framework for management of biodegradable waste is provided by the EU Landfill Directive, which sets out a strict timetable and mandatory targets for reductions in landfilling Biodegradable Municipal Waste (BMW). These targets have now been translated by the Assembly Government into maximum allowable tonnages of BMW that each Authority in Wales can landfill.

The Assembly Government has issued Guidance on what issues should be included within the Municipal Waste Management Strategy. These include: -

- Identification of the Best Practicable Environmental Option for long-term management of municipal waste.
- A strategy for reducing the growth in municipal waste arisings (waste minimisation)
- Plans for dealing with certain wastes, including hazardous and difficult wastes
- Inclusion of statutory recycling plans
- Plans for partnership working with the community and voluntary sector and private businesses.
- Consultation with all stakeholders

- Identification of the likely costs of managing waste in line with the Strategy

Gwynedd's Municipal Waste Strategy has been developed in line with the Assembly Government's requirements, and includes all of the aspects identified as being important for delivery of more sustainable waste management in Gwynedd.

TARGETS

The Welsh Assembly Government's statutory and non-statutory landfill diversion, recycling and recovery targets, together with the Landfill Directive, provide a framework for identifying a future waste management strategy for Gwynedd. The targets to be achieved are as follows:

'Wise about Waste' – the National Waste Strategy for Wales (2002) (Welsh Assembly Government) sets out minimum recycling and composting targets for each local authority to deliver:

- *By 2003/04 achieve at least 15% recycling/composting, with a minimum of 5% composting (with only compost derived from source segregated materials counting) and 5% recycling*
- *By 2006/07 achieve at least 25% recycling/composting, with a minimum of 10% composting (with only compost derived from source segregated materials counting) and 10% recycling*
- *By 2009/10 achieve at least 40% recycling/composting, with a minimum of 15% composting (with only compost derived from source segregated materials counting) and 15% recycling*

Recycling and composting requirements for the target years are set out in the table below. These requirements have been used in the option development process.

Year	Recycling (tonnes)	Composting (tonnes)
2006/7	13,256	8,837
2009/10	24,218	14,531

The EC Landfill Directive sets mandatory targets which, for the UK, require the following:

- *By 2010 to reduce BMW landfilled to 75% (by weight) of that produced in 1995*
- *By 2013 to reduce BMW landfilled to 50% (by weight) of that produced in 1995*
- *By 2020 to reduce BMW landfilled to 35% (by weight) of that produced in 1995.*

Based on the guidance from WAG on implementation of the Waste and Emissions Trading (WET) Bill, Gwynedd will need to reduce total BMW to landfill to the following tonnages:

2010: 28,945 tonnes
 2013: 19,244 tonnes
 2020: 13,471 tonnes

CURRENT PERFORMANCE

Over the past few years, Gwynedd Council has implemented a range of recycling and composting schemes that have resulted in significant improvements in the council's recycling and composting performance.

Gwynedd's recycling and composting levels for 2003/4 are shown below: -

Recycling:	11.27 %
Composting	5.87 %

Current levels have been achieved through provision of 60 bring banks, a kerbside recycling service to 74% of domestic properties, sorting of bulky waste items, sorting of waste at 3 HWRC (CA) sites and community skips, a glass recycling service to businesses and composting of parks waste. The effect of promoting home composting cannot currently be taken into account when calculating composting figures.

The Authority in fact exceeded its recycling/composting targets for 2003/04.

WAYS OF DEALING WITH WASTE

Waste Reduction (inc Home Composting)

The reduction of household waste at source. Home composting is a common form of waste reduction where organic matter (from both kitchen and garden) is aerobically degraded to form a garden soil improver. Other forms of reduction include:

- Not buying products that are 'over-packaged' (buy loose instead).
- Re-using plastic carrier bags from supermarkets.
- Buying milk in re-usable containers
- Repairing broken equipment for re-use, rather than discarding.

Waste reduction is the most important type of waste treatment as it reduces the amount of waste that must be handled. This reduces the overall cost of managing waste.

Recycling

The separation of recyclable materials from the waste stream is possible in two main ways - by the householder taking the material to a 'bring' site and depositing it in purpose made containers, or by the local authority arranging to collect the material from the household. Both methods can lead to the material being sent straight to a re-processor or via a Materials Reclamation Facility (MRF) for further sorting before despatch to the re-processor.

Recycling of a wide range of materials is possible including; newspapers and magazines, cardboard packaging, cans, glass containers, plastic containers, textiles and shoes, books and green garden waste.

Centralised Composting

The most common methods of composting are windrow, forced aeration and in vessel. Over the last few years, interest has grown in both the process and the technology associated to the processing of biodegradable materials. Properly controlled composting generates sufficient heat to kill seeds and pathogens, significantly reduces the moisture content and reduces the volume and weight by over 30%.

Windrow and forced aeration of green and organic materials are well proven processes. Suitable end products are produced for supply to commercial and residential markets. The composting of

municipal waste is at present being developed although the problems of contamination have still to be addressed.

Incineration with Energy Recovery

Incineration is the controlled burning of waste at high temperatures. Combustion reduces the waste to 10% of its original volume and 25% of its original weight. Energy from Waste (EfW) plants would reduce fossil fuel usage. Once the waste has been burned and the energy extracted for beneficial use, much of the residue can also be recycled. Metals can be reused and the ash utilised to produce construction materials and materials for use in the chemical industries.

Gasification / Pyrolysis with energy recovery

Both pyrolysis and gasification turn wastes into energy rich fuels by heating the waste under controlled conditions. Whereas incineration fully converts the input waste into energy and ash, these processes deliberately limit the conversion so that combustion does not take place directly. Instead, they convert the waste into valuable intermediates that can be further processed for materials recycling or energy recovery.

Gasification is the breakdown of hydrocarbons into a syngas and an inert residue (char) by carefully controlling the amount of oxygen present.

Pyrolysis is the thermal degradation of waste in the absence of air to produce char, pyrolysis oil and syngas.

The syngas is used as a fuel for spark ignition engines and gas turbines to generate electricity.

Anaerobic digestion

Anaerobic Digestion involves the controlled degradation of biological waste in the absence of air. Anaerobic Digestion produces a methane rich biogas, which can be burnt to recover energy, and a solid digestate that can be turned into a soil enhancer by further aerobic composting. The technology is well proven for farm waste and sewage sludge and a large number of sites elsewhere in Europe treat biodegradable municipal waste. Anaerobic digestion can treat mixed waste, however it is better to separate the municipal waste either through separate collections or by separating waste in a materials recycling facility prior to digestion.

Mechanical Biological Treatment (MBT / BMT)

Mechanical Biological Treatment is a term that refers to waste treatment facilities that combine elements of recycling, composting (biostabilisation) and energy recovery. Depending on the configuration of the plant, MBT facilities can generate materials for recycling, a stabilized biological product suitable as a soil enhancer following further treatment and a fuel product (RDF). The RDF can either be combusted on site to generate electricity and heat or used as an alternative fuel to replace fossil fuels in power stations, cement kilns and other combustion facilities. MBT is a relatively new technology in the UK, however there are a number of facilities operating elsewhere in Europe.

GENERIC OPTIONS DEVELOPMENT

Targets arising from 'Wise About Waste' and the Landfill Directive can be met (or exceeded) by various methods and levels of recycling, composting, recovery and landfill, and therefore a range of options has been developed.

The preferred option should ideally incorporate¹:

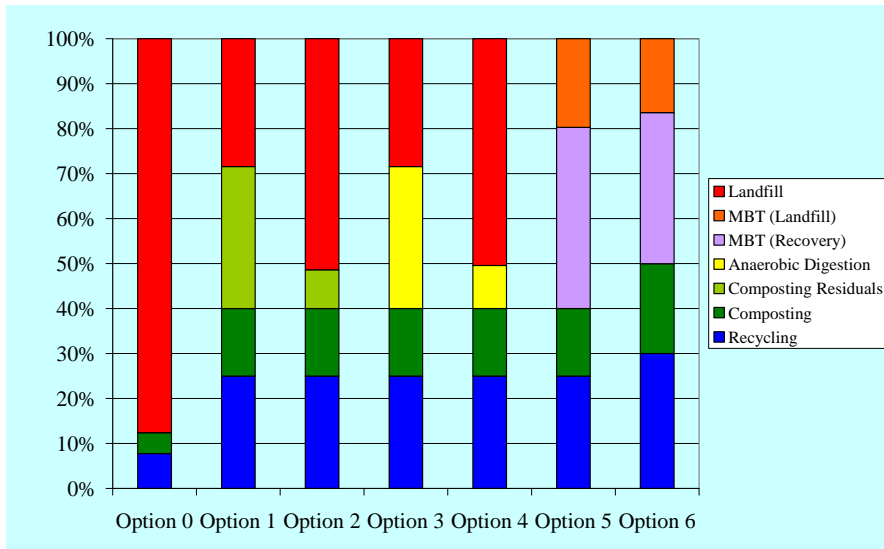
- An end to growth in municipal waste;
- High rates of recycling and composting;
- Greatly reduced reliance on landfill;
- Facilities for treating and disposing of waste as an alternative to landfill;
- The Proximity principle;
- Principles of affordability and deliverability;
- The Best Practicable Environmental Option.

Each of the generic options developed comprise a mixture of bring recycling, kerbside recycling, household waste recycling centres, waste treatment and waste disposal. The following generic waste management options have been considered.

Option 0: Baseline recycling and composting levels (2002/03) with residual waste to landfill
Option 1: Meet WAG targets, all biodegradable residuals to in-vessel composting, residuals to landfill
Option 2: Meet WAG targets, sufficient residuals to in-vessel composting to meet LFD targets, residuals to landfill
Option 3: Meet WAG targets, all biodegradable residuals to Anaerobic Digestion, residuals to landfill
Option 4: Meet WAG targets, sufficient residuals to Anaerobic Digestion to meet Landfill Directive targets, residuals to landfill
Option 5: Meet WAG targets, all residuals to Mechanical Biological Treatment
Option 6: Exceed WAG targets, all residuals to Mechanical Biological Treatment

The performance of each of the options in terms of % recycling, %composting, %diversion and % landfill is set out in graphical form in the following diagram: -

¹ Guidance on Municipal Waste Management Strategies in Wales. WAG. August 2002.



Detailed analysis has been carried out on each of these generic options, together with consideration of practical factors, to identify the relative benefits for future management of municipal waste in Gwynedd. The result of this analysis identifies Option 1 and Option 5 as the preferred options, and further details are set out below.

Option 1: Meet WAG targets, all biodegradable residuals to in-vessel composting, residuals to landfill

This option represents the minimum required performance through recycling and composting of source segregated materials to achieve the recycling and composting targets for 2003/04, 2006/07 and 2009/10. To achieve the Landfill Directive targets additional biodegradable waste will be sent for composting, with the remainder to landfill.

This option, which is the preferred option for Gwynedd will utilise the existing DANO drums, currently owned by the Council, to prepare and separate the residual waste prior to composting of the biodegradable fraction.

The compost product after suitable treatment and refining should be suitable as an agricultural or forestry growing medium.

Option 5: Meet WAG targets, all residuals to Mechanical Biological Treatment

This option represents the minimum required performance through recycling and composting of source segregated materials to achieve the recycling and composting targets for 2003/04, 2006/07 and 2009/10. To achieve the Landfill Directive targets additional biodegradable waste will need to be sent to a regional Mechanical Biological Treatment (MBT) facility. It is assumed that the regional MBT plant will incorporate an element of RDF (Refuse-Derived Fuel) production and Energy from Waste (EfW) from treatment of the RDF.

Option 5 is based on development of a Regional facility for treatment of residual waste. Should such a facility be built in the future then the Council may consider reappraising the preferred option for managing municipal waste, and could consider the option of sending residual waste from the North of the County to the Regional facility.

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FUTURE MSW MANAGEMENT – THE PREFERRED OPTION FOR GWYNEDD

The preferred strategy is based on Generic Option 1 and will include the following individual elements:

Expansion of recycling and reuse schemes for municipal waste such that the waste strategy targets for each of the target years of 2003/04, 2006/07 and 2009/10 are met. All residual waste, in the absence of a suitable Regional facility, will be treated at one or two in-county residual treatment facilities.

This strategy will comprise a number of key elements, as follows:

- A continual and visible programme of waste education and awareness raising to ensure that everyone who lives and works in Gwynedd is aware of the need to increase recycling and composting of waste.
- A programme of waste minimisation initiatives including continued promotion of home composting, schemes for re-use of furniture and electrical goods, support to real nappy campaigns and other initiatives that help to reduce the quantity of municipal waste produced.
- Expansion of the number of bring facilities, to ensure that all residents have a reasonably convenient means to recycle their waste.
- Continued introduction of the kerbside collection of dry recyclable and organic (compostable) materials. It will be necessary to extend the services over the period up to 2009/10 in order to achieve the level of diversion required to meet the targets.
- Enhancement of the Household Waste and Recycling Centre (HWRC), sometimes known as Civic Amenity Sites, provision across the County to facilitate improved access to the principal population centres and increased diversion of materials for recycling and reuse.
- Continued development of waste handling and treatment facilities to include the following:
 - Provision of a Materials Recycling Facility (MRF) to deal with recyclable materials diverted at the kerbside and at HWRCs.
 - Development of an in-vessel composting facility for the treatment of segregated organic materials (including green waste and organic kitchen wastes). This is likely to be required to be in place to meet the 2006/07 and 2009/10 composting targets of 10% and 15%, respectively.
- The continued use of small-scale farm-based open windrow composting for green waste. Open windrow techniques will also be required for further maturation of the product from the in-vessel facility.
- Securing sufficient waste handling capacity within a residual treatment facility, likely to be in-vessel composting

The expected number of facilities to deliver the preferred strategy is as follows:

- **90 + bring facilities**
- **2 Material Recycling Facilities**
- **7 Household Waste Recycling Centres (CA sites), plus ‘satellite’ facilities**
- **3 Open Windrow Composting facilities**
- **2 In-vessel composting plants**
- **2 Residual treatment facilities**

A number of these facilities are already provided, however additional facilities will be required in order to achieve the required levels of recycling, composting and diversion of waste from landfill.

It should be noted that there will be a need for the disposal to landfill of some wastes over the full duration of the strategy. The quantity of waste sent to landfill will reduce significantly up to 2010 and beyond. Future landfill capacity will therefore need to be secured.

There will also be a need to consider the contractual framework for delivery of the strategy, and this is further addressed in the main document.

Further information is given below on some of the key elements.

Education and Awareness Raising

There will be a continuing need for awareness raising, to keep recycling and waste minimisation in the public eye. Current work with schools will continue and expand, and where appropriate, will link into the Council’s ‘Green Schools’ programme.

Waste Minimisation

The principal activities will be promotion of home composting, and co-operation with community schemes involved in re-use schemes for furniture and electrical goods. A community support programme to encourage people to compost at home is envisaged, not only to provide advice on composting methods, but to encourage the practice of home composting in preference to the service to collect kitchen and garden waste that will be provided by the Council.

Bring Facilities

At present, there are 60 bring sites in Gwynedd, where residents can sort and deposit materials like paper, cans, glass, textiles, books etc. This level of provision equates to 1 bring site per 980 households, whilst increasing the number of bring sites to 90 would equate to 1 bring site per 650 households – better than “good practice” recommendations of 1 bring site for every 750 households. The majority of the additional bring facilities would be located in more remote rural areas where it might not be practical to provide a kerbside service, so ensuring that all residents have access to a recycling service. It is envisaged that these additional bring facilities would be linked to communal refuse collection points.

Material Recycling Facilities

Some materials, such as plastics, need sorting into different types in preparation for recycling, whilst some materials including cardboard and plastic need baling in order to reduce their bulk. A 'clean' materials recycling facility, dealing with materials segregated at source, would enable the development of collection, sorting and baling systems for materials such as plastics and cardboard which are not currently recycled, and would assist in reducing haulage costs to re-processors. It is envisaged that one materials recycling facility will be developed in the north of Gwynedd to deal with recyclates from Arfon and part of Dwyfor, whilst a second facility will be provided to deal with recyclates collected from Meirionnydd and the remainder of the Dwyfor area.

Household Waste Recycling Centres

Household waste recycling centres are facilities where residents can take old items of furniture, garden waste etc. Experience has shown that a high level of recycling (over 50%) can be achieved at such centres. There are currently 3 household waste recycling centres available in Gwynedd, which is below the normal level of provision. Work has been done on the development of a draft plan to increase on the number of household waste recycling centres and associated satellites located to avoid any resident of Gwynedd from having to travel an unreasonable distance to use one of the centres. The recycling of a substantial part of the waste expected to be received at the expanded number of household waste recycling centres makes an important contribution to meeting the recycling targets.

In-vessel Composting Plants

In order to meet the composting targets in the WAG's waste strategy, and requirements in the Landfill Directive to reduce the amount of biodegradable waste sent to landfill, it will be necessary to compost kitchen and garden waste. After the last 'foot and mouth' outbreak, concerns were raised about the ability of open windrow composting systems to kill off pathogens etc. As a result, centralised composting of kitchen and garden waste will be done in carefully controlled in-vessel systems. To avoid transporting the feedstock and the final compost product over large distances, it is envisaged that 2 in-vessel composting plants will be used – one to serve the northern half of Gwynedd, and one to serve the southern half.

Residual Treatment Facilities

The draft strategy envisages that the facilities provided will enable the WAG recycling and composting targets to be met. However, there are onerous requirements arising from the Landfill Directive to achieve a substantial reduction in the quantity of biodegradable municipal waste (BMW) sent to landfill. Meeting recycling and composting targets will result in the diversion of 40% of the municipal waste generated, but there is a need to treat the biodegradable content of the remaining 60% of the waste in order to achieve the required reduction in the quantity of BMW sent to landfill. Failure to comply with this requirement will invoke a substantial financial penalty – recently set at £200 per tonne. It is envisaged that the two waste pulverisors owned by the Council will have a role to play in dealing with the residual waste. These pulverisors mechanically break down the waste and separate it into 2 streams – a coarse stream and a fine stream. The fine waste stream is primarily biodegradable waste, and it is intended to treat the residual fine waste stream by composting to produce a soil improver product. Removal of biodegradable waste in this way will enable the BMW diversion targets up to 2020 to be met.

FACILITY REQUIREMENTS AND CAPACITIES

Predicted tonnage requirements and facility capacities for Option 1, the preferred strategy and Option 5, the alternative option are outlined in Table 1 and Table 2 below:

	Household Waste Recycling Centres	Material Recycling Facilities	Composting (In-vessel and OW)	In-Vessel Composting Residual Waste	Landfill
2006	18,512	9,293	8,898	-	66,277
2009	20,497	15,026	14,641	-	58,122
2010	21,064	17,626	15,852	31,290	28,237
2013	22,401	18,744	16,858	32,939	29,726
2020	23,184	19,400	17,448	33,626	30,346

Table 1 – Predicted Waste Treatment Capacity (tonnes per annum) for Option 1 (Preferred Waste Management Option)

	Household Waste Recycling Centres	Material Recycling Facilities	Composting (In-vessel and OW)	Residual MBT	Landfill
2006	18,512	9,293	8,898	-	66,277
2009	20,497	15,026	14,641	-	58,122
2010	21,064	17,626	15,852	59,527	-
2013	22,401	18,744	16,858	62,665	-
2020	23,184	19,400	17,448	63,972	-

Table 2 – Predicted Waste Treatment Capacity (tonnes per annum) for Option 5 (Regional MBT Option)

Within Gwynedd, the number of facilities required will be dictated largely by the geography, of the area rather than the treatment capacity requirements.

An estimate of the likely number of facilities for Options 1 and 5 is given below in Table 3

	Likely number of facilities				
	MRF	HWRC	OW Composting	In-Vessel Composting	Residual Treatment
Option 1	2	7	3	2	2 in county
Option 5	2	7	3	2	1 in county

Comment [SGL1]: Insert foot note to mention regional facility

Table 3 – Likely number of waste facilities for Options 1 and 5

OTHER FACTORS

Waste Minimisation

Waste Minimisation is at the top of the waste Hierarchy. The Council fully supports the need for waste minimisation and is keen to promote suitable waste minimisation initiatives. Education and the promotion of awareness about waste management issues are particularly important if waste producers including the public are to adopt more sustainable waste management practices.

A proposed Waste Minimisation Plan incorporating education and awareness raising is presented in the Technical Appendix document (Appendix 9).

Community Involvement

The Voluntary and Community sector can play a substantive role in recycling and waste minimisation, and can bring an extensive range of skills and experience that are not always available in the private sector. Information on how the Council proposes to involve the community sector in municipal waste management can be found in the Technical Appendix document (Appendix 16).

Litter Plan

Gwynedd County Council has prepared a draft Litter Plan as part of this strategy and this is presented in the Technical Appendix document (Appendix 17). The draft Plan includes details of cleansing policies, strategies and services currently provided by the County Council to address the problem of litter across the County. The draft Litter Plan includes proposals for future attention, and has been incorporated into work on developing the 'Tidy Gwynedd' plan, which forms part of the Council's current service delivery plan.

Wastes of Special Importance

Municipal wastes include a number of wastes of special importance for which there is specific legislation. There are current or proposed E C Directives or Regulations for a range of wastes including automotive vehicles, domestic refrigerators and freezers, electrical equipment, batteries, tyres, asbestos and household chemicals.

The National Waste Strategy for Wales promotes measures for the separate collection of household hazardous wastes, to improve the management of resources and reduce the hazardousness of residual municipal waste. To ensure that wastes of special importance in Gwynedd are dealt with in a sustainable manner the council has produced an Action Plan for Managing Wastes of Special Importance. Further details can be found in the Technical Appendix document (Appendix 13).

Future Changes

The field of waste management has become one of rapid and continuous change. Given the current pace of development and change, it is quite possible that new regulatory requirements will be introduced over the coming years that cannot now be anticipated. As a result, it will be necessary to carry out regular reviews and updates of the strategy.

In addition, it can be expected that arrangements for collection, handling and treatment of waste will need to be reviewed, to comply with increasingly onerous requirements and targets, and to provide a cost-effective and integrated municipal waste management service.

Consultation

Public consultation is an important element of the decision making process when choices are being made by public bodies relating to areas of waste management over which they have a degree of control. This applies particularly to the management of municipal wastes.

The Council intends to consult on the Waste Strategy in September 2004, with a final document being developed by December 2004.

COSTS

It is difficult to accurately assess the costs arising from putting arrangements in place to meet the targets that are shown in this draft strategy. Diverting waste away from landfill through recycling, composting etc will lead to an increase over current costs, but fiscal and other measures are expected in the longer term to result in landfilling being seen as an expensive option in economic and environmental terms.

The recycling and composting market is expanding rapidly, and there is currently some price instability associated with recycling and composting equipment. The costs of plant and equipment will only be accurately known close to the time of purchase, but in order to develop comparative costs between the various generic options considered in developing the strategy, indicative capital costs had to be adopted. Examples of these indicative costs are given below: -

- additional bring facilities (each) £1,000
- household waste recycling centre (each) £200,000
- In-vessel composting facility, kitchen and garden waste (each) £600,000
- Materials Recycling Facility (each) £1,000,000
- Facility to deal with residual waste £4,000,000

Using indicative development and operating costs, together with the predicted tonnage of waste to be dealt with between now and 2020, gave the following comparative costs for the options considered: -

Option	0	1	2	3	4	5	6
Cost per tonne (£/t)	£114.87	£98.04	£101.28	£101.37	£103.45	£108.30	£103.25

It is emphasised that these are indicative costs only; the actual costs associated with construction of the required waste facilities will depend on a range of factors that cannot be accurately assessed at this time.

However, it is worth noting that Option 1, which is the preferred strategy, has the lowest cost per tonne. It should also be noted that Option 0, which is the 'do nothing' or stay as at present scenario, is the most expensive option.

Development of the facilities required to deal with municipal waste in Gwynedd will clearly involve a substantial sum of money, which could put a considerable strain on the Council's financial resources. As a result, it will be necessary to work towards getting grant aid towards the costs.

IMPLEMENTATION PLAN

The WAG targets for 2006/07 and 2009/10 have been noted earlier in this document. To meet those targets, work will need to be carried out to the following implementation plan: -

1. Installation of additional bring facilities – from 2005 to 2008
2. Expansion of kerbside scheme to collect dry recyclables – 2005 and 2006
3. Expansion of kerbside scheme to collect green waste – 2005 and 2006
4. Set up network of household waste recycling centres – from 2005 to 2008
5. First Materials Recycling Facility to become operational – early 2006
6. In-vessel composting facilities to become operational – one in 2007 and other in 2008
7. Expand kerbside collection of green waste to include kitchen waste – 2007 and 2008
8. Second Materials Recycling Facility to become operational - 2007
9. Plant for treatment of residual waste to become operational – 2010
10. Enhancement of commercial waste recycling schemes – continuous

However, there is currently some concern about availability of landfill capacity in northern Gwynedd in the short to medium term. Reducing the amount of waste sent to landfill in the short term may as a result have to take priority over meeting recycling and composting targets for 2006/07. Giving priority to reducing the amount of waste sent to landfill in the northern part of Gwynedd could result in an implementation plan on the following lines: -

1. Installation of additional bring facilities – from 2005 to 2008
2. Expansion of kerbside scheme to collect dry recyclables – 2005 and 2006
3. Expansion of kerbside scheme to collect green waste – 2005 and 2006
4. Set up network of household waste recycling centres – from 2005 to 2009
5. First Materials Recycling Facility to become operational – early 2006
6. Plant for treatment of residual waste to become operational - 2007
7. Northern in-vessel composting facility to become operational – 2007
8. Southern in-vessel composting facility to become operational - 2008
9. Expand kerbside collection of green waste to include kitchen waste – 2007 and 2008
10. Second Materials Recycling Facility to become operational - 2009
11. Enhancement of commercial waste recycling schemes – continuous

CONCLUSION

The waste strategy review has shown that the recycling, composting and Landfill Directive targets for Gwynedd can be met through improvements and additions to the existing waste collection and management infrastructure, including:

- Expansion of kerbside collection schemes to additional areas, covering approximately 90% of households
- Increased numbers of dry recyclable materials collected through kerbside collection, to include plastics and cardboard

- Introduction of green waste collections to 80% of households, expanded to include kitchen waste at a future date.
- Additional 30 or so bring banks, with the majority to be located in more rural areas
- Increase number of Household Waste Recycling Centres to 7 and make improvements to encourage greater segregation of waste for recycling and composting
- Establish 2 Material Recycling Facilities to sort and bulk recycled material
- Establish at least one waste facility for treatment of residual waste

The number of facilities shown above is considered realistic but may need to be reviewed in light of developing experience of geographical effects and operational factors.

Costs will be an issue, and it is unlikely that the draft strategy can be implemented without continued support from WAG, and the availability of grant funding to assist with the development of facilities.

However, the draft waste strategy shows how targets for recycling, composting, and diversion of BMW may be met, at the same time as working to the principles of the waste hierarchy, and also to the proximity principle. The strategy retains a degree of flexibility, whilst identifying a cost-competitive option for the management of municipal waste in Gwynedd.