

APPENDIX 8 - RECYCLING PLAN

8.1 INTRODUCTION

This Technical Appendix considers the potential options for achieving the Councils' statutory recycling and composting targets.

Generally, there are four main sources of dry recyclate and biodegradables that can be targeted to help meet recycling and composting targets, these being:

- Household Waste Recycling Centres (CA sites)
- Bring Banks
- Kerbside collections from households
- Kerbside collections from commercial premises

Most Authorities that have implemented recycling and composting plans have found that concentrating on improving separation at CA sites offers a relatively simple and inexpensive means of raising recycling performance. Typically, diversion rates of 50% are easily achievable, with 60% offering a more onerous yet achievable target. A limited number of sites have shown diversion rates of 75% (the site at Welshpool, Powys, for example) however it is felt that this is unlikely to be achievable at all CA sites and as such is not deemed a representative figure.

Bring Banks provide opportunities for households not serviced by kerbside collections to participate in recycling. Diversion rates for bring banks are generally low. It is also unclear how kerbside collection services affect utilisation of bring banks; some Authorities choose to remove banks from kerbside collection areas whilst others maintain or even expand bring bank provision. The limiting factor in increasing bring bank provision is often the ability to find suitable sites.

It is highly unlikely that any Authority in Wales will achieve its diversion targets without implementing kerbside collection of dry recyclables and biodegradables. The preferred design and operation of a kerbside scheme is dependent on a large range of socio-economic and geographical factors. Well designed systems can achieve up to 80% participation and 80% diversion of targeted materials.

Similar to household collections, Authorities may wish to implement kerbside collections of materials from commercial premises; potential options are paper from offices and glass from pubs and restaurants.

This Appendix outlines firstly the current plans proposed by the Council for increasing recycling rates and secondly the findings of a modelling exercise to identify potential options for achieving recycling and composting targets in 2006/7 and 2009/10.

8.2 POTENTIAL OPTIONS FOR IMPROVING RECYCLING & COMPOSTING

8.2.1 Modelling Assumptions

A modelling exercise has been carried out using a software package developed by SLR Consulting for the design and costing of Local Authority recycling and composting plans.

In carrying out the modelling we have made the following assumptions:

- Total number of bring banks by 2006 is 61
- Total number of CA sites is 3
- Skip service waste treated as CA site waste
- Maximum participation rates and diversion rates for kerbside collection set at 80%
- Households targeted for kerbside collection in preference to commercial premises

The total tonnages to be achieved in each of the target years 2006/07 and 2009/10 are as follows:

2006/07:	Recycling – 13,256 tonnes, Composting – 8,837 tonnes
2009/10:	Recycling – 24,218 tonnes, Composting – 14,531 tonnes

The following tonnages have been considered for 2010, representing a situation whereby recycling and composting effort is maximised and subsequently the statutory target of 40% recycling is exceeded.

2010 Recycling - 29,764 tonnes, Composting – 19,843 tonnes

These figures represent a combined composting and recycling rate for 2010 of 50%.

At this point in time, no detailed analysis of collection methodology, vehicle types and costs of implementation has been undertaken. The predicted performance for the target years is presented in Table A4.1 to A4.3

Table A4.1: 2006/07 – Predicted Recycling and Composting Performance
 CA site/Community Skip performance

	Equivalent Total Tonnes in 2006	% diversion in target year	Resulting Tonnes Recycled
Green Waste	4,607	80	3,686
Building Waste	5,163	50	2,582
Wood	1,039	80	831
Cardboard	407	0	0
Paper	381	0	0
Textiles	56	0	0
Metal	3,060	80	2,448
Kitchen Waste	0	0	0
Plastic	0	0	0
Glass	418	0	0
Miscellaneous	3,380	50	1,690
Recoverable Goods	0	80	0
Total	18,512	60.7%	11,237

Note: CA site/Community Skip total includes abandoned vehicles

Bring Site Performance

Equivalent Total Tonnes in 2006	
Brown Glass	0
Green Glass	0
Clear Glass	0
Mixed Glass	251
Aluminium Cans	0
Steel Cans	0
Mixed Cans	162
Textiles	247
Mixed Plastics	0
Newspaper/Magazines	2,997
Total	3,657

Household Waste Collections

Waste Type	Tonnes Available	% Properties Served	Participation Rate	Capture Rate	Total Tonnes Recycled
News & Mags	11,527	70	50	45	1,816
Glass Mixed	5,251	70	45	45	744
Plastic Mixed	0	0	0	0	0
Compostable Kitchen Waste	17,318	70	56	55	3,734
Steel Cans	2,114	70	45	45	300
Aluminium Cans	759	70	45	45	108
Recoverable Goods	0	0	0	0	0
Total					6,701

Commercial Waste Collections

Waste Type	Tonnes Available	% Properties Served	Participation Rate	Capture Rate	Total Tonnes
Glass	381	100	90	90	308
Paper & Card	5,902	100	50	80	2,361

Other Waste Streams

Parks Waste	1,479
Bulky Waste	832

Overall Performance

Total Recycling Performance	17,676
Total Composting Performance	8,898
Required Recycling	13,256
Required Composting	8,837

Table A4.2: 2009 – Predicted Recycling and Composting Performance

CA site/Community Skip performance

Equivalent Total Tonnes in	2009	% diversion in target year	Resulting Tonnes Recycled
Green Waste	5,101	80	4,081
Building Waste	5,717	50	2,858
Wood	1,151	80	921
Cardboard	451	0	0
Paper	422	0	0
Textiles	61	0	0
Metal	3,388	80	2,711
Kitchen Waste	0	0	0
Plastic	0	0	0
Glass	463	0	0
Miscellaneous	3,743	50	1,871
Recoverable Goods	0	80	0
Total	20,497	61.0%	12,442

Note: CA site/Community Skip total includes abandoned vehicles

Bring Site Performance

Equivalent Total Tonnes in	2009
Brown Glass	0
Green Glass	0
Clear Glass	0
Mixed Glass	278
Aluminium Cans	0
Steel Cans	0
Mixed Cans	180
Textiles	273
Mixed Plastics	0
Newspaper/Magazines	3,318
Total	4,049

Household Waste Collections

Waste Type	Tonnes Available	% Properties Served	Participation Rate	Capture Rate	Total Tonnes Recycled
News & Mags	12,764	80	60	60	3,677
Glass Mixed	5,814	80	60	60	1,675
Plastic Mixed	6,082	80	60	60	1,752
Compostable Kitchen Waste	19,175	80	80	74	9,081
Steel Cans	2,341	80	60	60	674
Aluminium Cans	840	80	60	60	242
Recoverable Goods	0	0	0	0	0
Total					17,103

Commercial Waste Collections

Waste Type	Tonnes Available	% Properties Served	Participation Rate	Capture Rate	Total Tonnes
Glass	422	100	90	90	341
Paper & Card	6,535	100	50	80	2,614

Other Waste Streams

Parks Waste	1,479
Bulky Waste	832

Overall Performance

Total Recycling Performance	24,218
Total Composting Performance	14,641

Required Recycling	24,218
Required Composting	14,531

Table A4.3: 2010 – Predicted Recycling and Composting Performance

CA site/Community Skip performance

Equivalent Total Tonnes in	2010	% diversion in target year	Resulting Tonnes Recycled
Green Waste	5,242	90	4,718
Building Waste	5,875	85	4,993
Wood	1,182	90	1,064
Cardboard	463	0	0
Paper	434	0	0
Textiles	63	0	0
Metal	3,482	90	3,134
Kitchen Waste	0	0	0
Plastic	0	0	0
Glass	476	0	0
Miscellaneous	3,846	55	2,115
Recoverable Goods	0	90	0
Total	21,064	76%	16,025

Note: CA site/Community Skip total includes abandoned vehicles

Bring Site Performance

Equivalent Total Tonnes in	2010
Brown Glass	0
Green Glass	0
Clear Glass	0
Mixed Glass	285
Aluminium Cans	0
Steel Cans	0
Mixed Cans	185
Textiles	281
Mixed Plastics	0
Newspaper/Magazines	3,410
Total	4,161

Household Waste Collections

Waste Type	Tonnes Available	% Properties Served	Participation Rate	Capture Rate	Total Tonnes Recycled
News & Mags	13,116	80	67	67	4,781
Glass Mixed	5,975	80	67	67	2,178
Plastic Mixed	6,251	80	67	67	2,278
Compostable Kitchen Waste	19,705	100	70	70	9,655
Steel Cans	2,406	80	67	67	877
Aluminium Cans	864	80	67	67	315
Recoverable Goods	0	0	0	0	0
Total					20,083

Commercial Waste Collections

Waste Type	Tonnes Available	% Properties Served	Participation Rate	Capture Rate	Total Tonnes
Glass	433	100	90	90	351
Paper & Card	6,715	100	50	80	2,686

Other Waste Streams

Parks Waste	1,479
Bulky Waste	832

Overall Performance

Total Recycling Performance	29,764
Total Composting Performance	15,852

Required Recycling	24,803
Required Composting	14,882

8.2.2 Discussion

Modelling has been carried out to identify opportunities for meeting and exceeding the WAG recycling and composting targets. A number of conclusions can be drawn from the results, namely;

- Based on current plans for recycling and composting, it is likely that the recycling targets for 2006/7 will be exceeded
- Improvements in diversion at HWRC/CA sites will be necessary.
- Bring banks will need to be retained.
- Due to low levels of green waste delivered to CA sites⁸ it will be necessary to introduce kerbside collection of putrescible material to achieve 2006/07 WAG targets. It may be possible to achieve the targets by collecting green waste only. However, targeting green waste for household collections can generate additional waste quantities as material is diverted from home composting.
- By 2009/10 it will be necessary to target 80% of properties to achieve the recycling targets. 80% of properties will need to be targeted for collection of putrescibles

An overview of collection requirements for each of the three years is given below (Table A4.4)

Year	CA		Bulky	Parks	Household Collection		Commercial Collections	Total Compost	Total Recycling	Composting rate %	Recycling rate %
	Composted	Recycled			Dry	Putrescibles					
2006	3,686	11,208	832	1,479	2,967	3,734	2,669	8,899	17,676	10.1%	20.0%
2009	4,081	12,410	832	1,479	8,022	9,081	2,955	14,641	24,219	15.0%	24.8%
2010	4,718	15,468	832	1,479	10,428	13,738	3,037	19,935	29,765	19.8%	29.6%

Table A4.4: Overview of recycling and composting performance for target years

8.3 RECYCLING PLANS

Outlined below are proposed plans for achieving recycling and composting targets for each of the target years. These plans will need to be revisited on a regular basis to ensure that the actual required performance is being achieved. Should any one initiative not deliver the required performance then this will need to be compensated for elsewhere. Equally, if an initiative achieves higher performance than expected then this eases the performance required from other collection routes. Material for recycling and composting will derive from a number of sources:

- Bring bank centres
- Household Waste Recycling Centres
- Community Skips
- Street Sweepings
- Bulky Waste

⁸ Green waste is thought to make up only 20% of material delivered to CA sites compared to typical national figure of 35% - 45%.

An outline of current plans to achieve the composting and recycling targets is set out below.

8.3.1 Household Waste Recycling Centres (CA sites)

There are currently three civic amenity sites at Rhwngddwryd near Garn Dolbenmaen, and at the waste disposal sites at Cilgwyn and Harlech. An arrangement is in place with Isle of Anglesey Council and a similar arrangement is being sought with Powys Council for the use of the CA sites at Penhesgyn and Machynlleth, respectively.

The Council is currently considering plans for introduction of additional CA sites together with updating the existing site at Harlech.

8.3.2 Dry recycle kerbside collection

The Council introduced a kerbside collection scheme in 2002, based on use of a 55 litre box and fortnightly collection for paper, cans, glass and textiles. Materials are sorted at the kerbside into separate stillages on dedicated kerbside collection vehicles. The service is currently available to 70% of households, with plans to service almost all urban properties.

8.3.3 Bring Banks

There are currently 61 bring bank sites in Gwynedd, 21 operated by a local community organisation, Antur Waunfawr and a further 40 serviced directly by waste reprocessors as follows:

Paper:	Cheshire Recycling
Glass:	Glass UK through a Regional Agreement
Cans:	Allports, Banks provided by Council, 2 year contract until 31 March 04
Textiles:	Salvation Army

In addition to the above materials, oil and books are collected at CA sites and the transport depot.

8.3.4 Community Skip Service

The Council provides a community skip service to those areas without easy access to a CA site, for disposal of residual household waste. At present the service is only operational in Dwyfor following a major revamp of the service. The service comprises 6 manned sites with 4-6 skips at each site for separate collection of materials. The new service may be extended into the Arfon area

8.3.5 Community Recycling - Antur Waunfawr

Antur Waunfawr is a community based organisation that provides recycling services in Gwynedd including:

- Furniture and white goods reuse
- Office waste paper recycling
- Community bank recycling

The Council has had an informal contract with the organisation since early 1996 comprising provision of a depot operated as an MRF, a lorry and an annual grant. Work is currently being undertaken to determine the viability of relocating recycling operations to a larger facility to allow a greater role in recycling and bulking up of recyclates to gain additional value. A further study is being undertaken to investigate the potential for increasing recovery of bulky waste items. The study is being carried out with Antur Waunfawr, however the conclusions may be transferable to other organisations.

8.3.6 Bulky Waste Separation

All Bulky Waste is taken to a transfer site where it is sorted by hand to recover materials and items for subsequent reprocessing and recycling. A diversion rate of approximately 60% is currently being achieved for the bulky waste through removal of electrical items, furniture and timber.

8.3.7 On-farm composting

At present 3 farm-based sites are taking green waste for composting. The largest, close to Chwilag composts approximately 4,000 tonnes of material each year comprising green waste, road sweepings and fibreboard from bulky waste collections. These sites also take green waste derived from parks and gardens.

The Council is currently planning to introduce the kerbside collection of green waste to a trial area from mid-April 2004.

8.3.8 Commercial Recycling

Recently, the Council has introduced a commercial glass recycling service, and plans to shortly introduce a cardboard recycling service also.