

SOUTHERN WASTE MANAGEMENT PARTNERSHIP

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Armagh



Banbridge



Cookstown



Craigavon



Dungannon



Fermanagh



Newry & Mourne



Omagh

ANNUAL REPORT 2003 & 2003 REVIEW

FINAL REV C

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1.0 INTRODUCTION

This report has been prepared by the Southern Waste Management Partnership (SWaMP) in order to assess the progress that has been made within the sub region towards the implementation of the SWaMP Waste Management Plan.

This report reviews the current waste arisings for 2003 and the first quarter of 2004 and compares them against those stated within the Waste Arising Surveys for NI and the 2002 Annual Report. It also reviews the actions within the Waste Management Plan for the implementation of infrastructure within the Region and assesses the measures that have been set in place to secure contracts for the collection, reprocessing and delivery to end markets of material collected within the SWaMP Region. The report also compares current & projected waste arisings against the Waste Management Strategy targets and WET Act diversion targets and assesses the options available to the group within the confines of the current Waste Management Plan to achieve the annual interim targets set out within the NI Allowances Scheme.

In order to assess the above, various assumptions have been made during the calculation of the projected recovery and diversion rates for the group. It is important that these are taken into account when considering the data within this review.

- The biodegradable fraction of municipal waste accounts for 71% of the total municipal waste arisings;
- The municipal and household waste arisings in the region will have a steady growth rate of 3% between 2003 and 2005. This figure is based on the UK average for waste growth;
- Growth of number of occupied households in the region has been estimated at 2% per Council area per year;
- Estimates of biodegradable municipal waste recovered in the SWaMP Region from 2003 to 2005 have been calculated using a mass balance approach;
- The tonnages from the Civic Amenity Sites are based on the data provided in the KPI sheets and estimates of current performance;
- A tonnage of 0.2 tonnes/bin/year has been assumed for central composting bins for urban areas. A tonnage of 0.09 tonnes/bin/year has been assumed for rural areas as it is assumed that these bins will be collecting kitchen waste only;
- A tonnage of 60 tonnes/bank/year has been assumed for recycling banks, unless otherwise indicated by the Councils.
- A tonnage of 0.125 tonnes/bin/year has been assumed for the mixed dry recyclables bins while a tonnage of 0.09 tonnes/bin/year has been assumed for the mixed dry recyclables boxes;
- In situations where Councils have indicated a borough wide scheme of brown or blue bins, it is assumed that all new builds will be incorporated into the scheme;

2.0 REVIEW OF CURRENT WASTE ARISING

Information for this section of the review has been compiled using the 2003 and first quarter (January to March) 2004 Key Performance Indicator (KPI) Data Sheets, returned from each of the eight local authorities. The KPI data sheets have been presented in Appendix A. The data from 2002 has been obtained from the 2002 annual reports while the data from 1999/2000 and 2001 has been obtained from the Municipal Waste and Waste Industry Survey, carried out as part of the Northern Ireland Waste Arisings Study and the Waste Arisings Study Phase III, Municipal Waste Survey 2002.

2.1 KEY WASTE MANAGEMENT INDICATORS

Key waste management indicators have been presented below to provide an overview of municipal waste management within the SWaMP group between 1999 & 2003.

Key Performance Indicators				
	1999/00	2001	2002	2003
Household Waste				
No of Households ¹	151,284	153,791	158,420	161,547
% Growth rate in occupied household no's	-	1.7%	3.0%	2.0%
Household waste (tpa) ²	203,308	215,683	237,069	239,542
Household waste growth rate	-	6.1%	9.9%	1.0%
Waste per household (tpa)	1.34	1.40	1.50	1.48
Household waste recycled (%)	4.0%	6.0%	6.0%	9.1%
Household waste composted (%)	5.8%	6.9%	8.2%	8.9%
Recovery ³ rate of household waste (%)	9.8%	12.7%	14.2%	18.0%
Municipal Waste				
Municipal waste (tpa)	256,667	279,606	257,997	265,364
Municipal waste growth (%)	-	8.9%	-7.8%	2.9%
Municipal Waste Landfilled			223,828	216,158
Biodegradable Municipal Waste Landfilled			155,845	155,622
C&I Waste (collected by Councils)⁵				
C&I Waste recycled and composted ^{4,5} (%)				3.2%
C&I waste Landfilled ⁵				24,996

Note

1. No of households taken from The Rate Collection Agency for year ending December 2000, December 2001, March 2002 and March 2003.
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

2.2 CURRENT HOUSEHOLD WASTE ARISING

For the basis of this review, the definition of household waste used has been that given in the Municipal Waste Data Monitoring and Reporting: Interim Guidelines 2003. The definition in the Guidelines states household waste means waste arising from a domestic property (i.e. a building or self contained part of a building which is used wholly for the purposes of living accommodation), caravan, residential home, premises forming part of a university or school or other educational establishment and premises forming part of a hospital or nursing home.

2.2.1 Household Waste Production

The household waste arisings for each Council has been presented below.

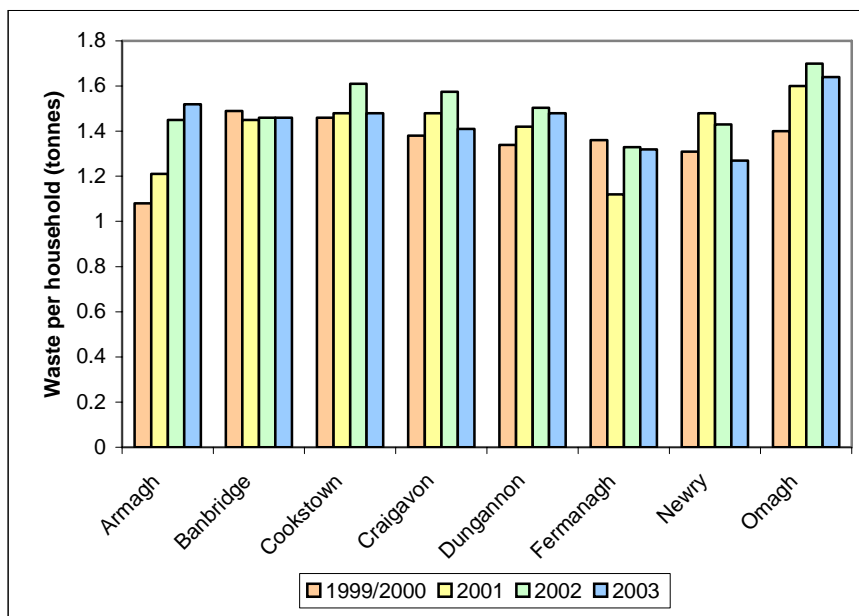
Household Waste Arisings (tpa)				
	1999/2000	2001	2002	2003
Armagh City & District Council	19,461	22,212	27,249	29,330
Banbridge District Council	21,619	21,386	22,195	23,755
Cookstown District Council	15,321	15,758	17,543	17,208
Craigavon Borough Council	39,949	43,550	47,326	45,392
Dungannon & South Tyrone Borough Council	21,340	23,028	25,121	25,381
Fermanagh District Council	27,268	22,683	28,182	29,211
Newry & Mourne District Council	37,041	42,408	42,099	41,247
Omagh District Council	21,309	24,658	27,354	28,020
SWaMP TOTAL	203,308	215,683	237,069	239,542

The table shows the variation in household waste arisings for the group between 1999 and 2003. The Waste Management Plan for the SWaMP Region suggested a growth rate for household waste arisings of 1.91%. Although there is a great deal of variation between years, with increases of up to 9.9% being seen between 2001 and 2002, the average growth in waste arisings for the 3.75 year period between 1999/00 and 2003 has been calculated as 4.47%, with the growth percentage for the last year being 1.04%.

2.2.2 Waste Quantities Generated Per Household

The quantity of waste generated per household, calculated as the quantity of household waste produced in a region divided by the number of households, provides an indicator of trends in household waste arisings. The figure can be used to assess the performance of waste reduction activities and evaluate broad trends in household waste generation. The average quantity of waste generated per household in the SWaMP Region for 2003 has been estimated as 1.48 tonnes per household per annum, a decrease of 0.02 tonnes per household from 2002. This provides an indication that the waste reduction initiatives, such as recent education and awareness initiatives, are beginning to influence the public's view on efficient waste management. This is demonstrated by the fact that 2003 is the first year since 1999/00 that the average waste growth per household has decreased within the SWaMP Region.

Household Waste Generated per Household



2.3 CURRENT HOUSEHOLD WASTE RECOVERY RATES

A key target set out in the Waste Management Strategy for Northern Ireland is recovery of 25% of household waste by 2005 (of which 15% must constitute recycling and/or composting).

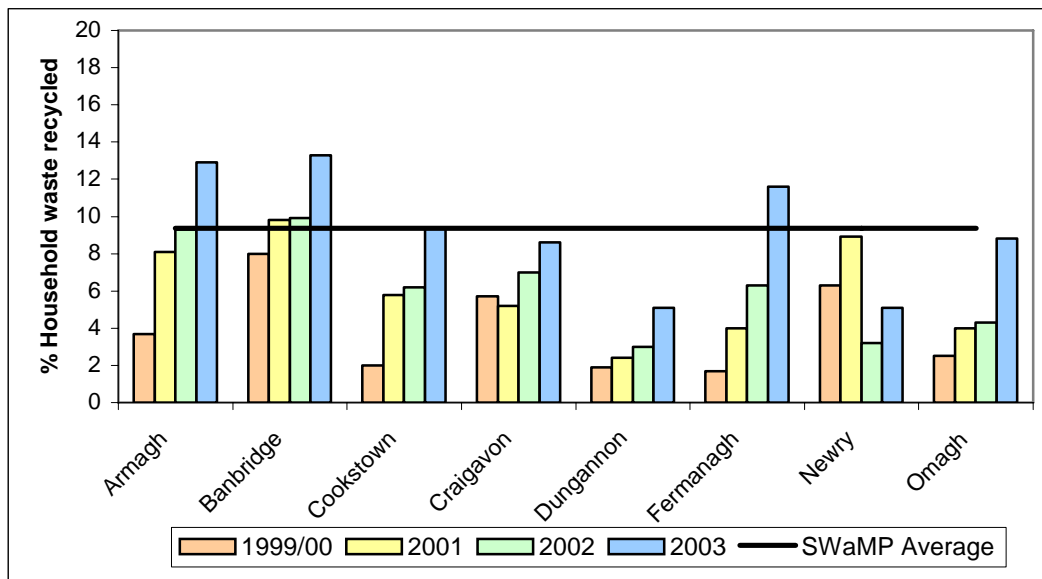
Household Waste Recovery Rates 2003	
Armagh City and District Council	22.5%
Banbridge District Council	33.0%
Cookstown District Council	16.1%
Craigavon Borough Council	19.0%
Dungannon and South Tyrone Borough Council	13.4%
Fermanagh District Council	17.5%
Newry and Mourne District Council	13.2%
Omagh District Council	12.2%
Average SWaMP Household Recovery Rate	18.0%
Waste Management Strategy 2005 Target	25%

The average household recovery rate for the SWaMP Region during 2003 was 18.0%, an increase of 3.8% on the 2002 waste arisings. A total of 43,180 tonnes of household waste were recovered in the SWaMP Region.

2.3.1 Household Waste Recycling & Composting Rates

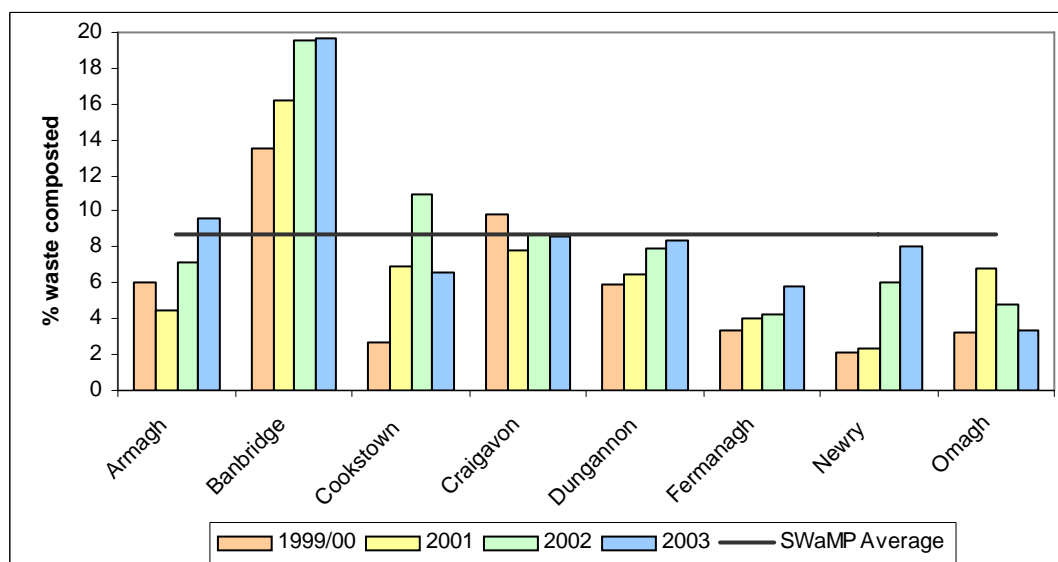
The average percentage of household waste recycled in the SWaMP Region during 2003 is estimated to be 9.1%, with a total of 21,748 tonnes being recycled. This figure has risen 3.1% since the same period in 2002. This increase in recycling is due to the increase in public awareness in waste management, generated through education and awareness campaigns as well as the provision of more facilities, both at the individual household level and at a Council level. All Councils within the Region have experienced an increase in recycling from the same period last year. The breakdown of these figures are illustrated below.

Household Recycling Rate (excluding composting)



The average household composting rate for the SWaMP Region for 2003 is estimated to be 8.9%. This figure represents a rise of 0.7% on 2002 figures. It is expected that the reason for this small rise in percentages when compared with the rise in recycling percentages is due to the fact that, as a result of the implementation of the Animal By Products Regulations, there is at present limited capacity for the treatment of composting waste. Approximately 21,432 tonnes of household waste has been composted in the Region during the year. The composting rates for each of the individual authorities in the Region are presented below.

Household Composting Rate



2.4 CURRENT MUNICIPAL WASTE ARISING

The quantity of municipal waste, and particularly its biodegradable fraction, is a key indicator of waste management performance given its relationship to landfill diversion targets under the Landfill Directive (1999/31/EC). For the purposes of this report, the definition used for municipal waste has been taken from the Municipal Waste Data Monitoring and Reporting: Interim Guidelines, 2003. The definition in the Guidelines states municipal waste means household waste and any other waste under the control of (i.e. collected by) District Councils or their agents acting on their behalf.

2.4.1 Municipal Waste Production

The municipal waste produced by each Council has been presented below.

Municipal Waste Arisings (tpa)				
	1999/00	2001	2002	2003
Armagh City and District Council	25,009	27,153	27,889	31,024
Banbridge District Council	23,665	22,490	23,442	26,504
Cookstown District Council	21,185	29,282	24,157	19,662
Craigavon Borough Council	50,681	52,450	52,105	53,089
Dungannon and South Tyrone Borough Council	24,836	26,584	26,953	28,141
Fermanagh District Council	36,636	39,167	35,854	33,626
Newry and Mourne District Council	48,991	52,148	48,502	44,087
Omagh District Council	25,664	30,332	29,901	29,232
SWaMP TOTAL	256,667	279,606	268,803	265,365

As with household waste, municipal waste was estimated in the Waste Management Plan to be growing at a rate of 1.91% per year. The figures in the table above show a large degree of fluctuation in these growth rates. The average growth rate for the Region, calculated for the 3.75 year period between 1999/2000 and 2003 is only 0.89%. The growth rate however over the past year has been calculated as 2.86%.

A number of Councils have recorded a drop in municipal waste arisings between 2002 and 2003. The drop has been observed due to the fact that there were reporting inaccuracies in the quantities of commercial and industrial waste measured during 2002.

2.4.2 Municipal Waste Recycling & Composting Rates

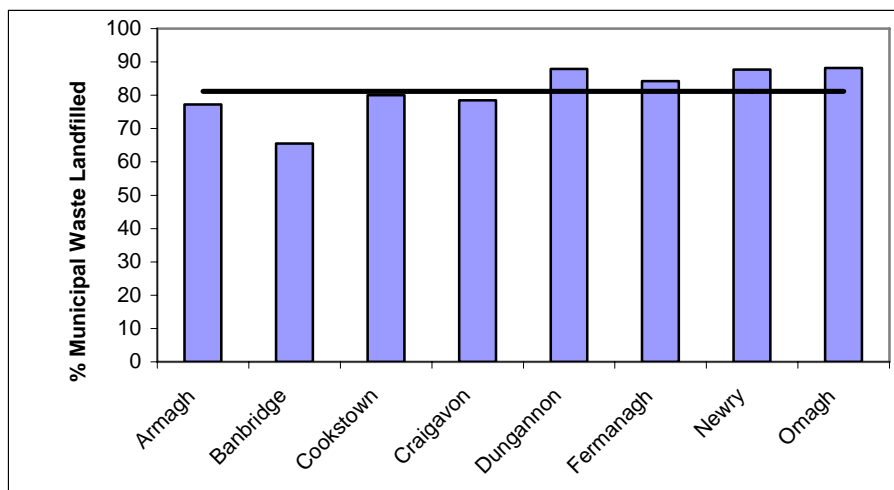
The approximate total amount of municipal waste recycled and composted, measured as a percentage of the total municipal waste arisings during 2003 was 49,206 tonnes or 18.5%. The breakdown of these figures for each Council is shown below. The figures can be calculated as the tonnage of municipal waste recovered divided by the total municipal waste tonnage.

Municipal Waste Recovery Rates 2003	
Armagh City and District Council	22.8%
Banbridge District Council	34.5%
Cookstown District Council	20.0%
Craigavon Borough Council	21.5%
Dungannon and South Tyrone Borough Council	12.1%
Fermanagh District Council	15.8%
Newry and Mourne District Council	12.3%
Omagh District Council	11.8%
Average SWaMP Municipal Recovery Rate	18.5%

2.4.3 Municipal Waste Landfilled

The approximate percentage of municipal waste landfilled, as a percentage of total municipal waste arisings in the SWaMP Region during 2003 was 81.5% or 216,157 tonnes. This figure represents a decrease of 7,670 tonnes or 5% on last years total. The figures were calculated as the tonnage of municipal waste landfilled during 2003 divided by the total municipal waste arisings and are illustrated below.

% Municipal Waste Landfilled



2.4.4 Biodegradable Municipal Waste Landfilled

The approximate tonnage of Biodegradable Municipal Waste (BMW) landfilled in the SWaMP Region in 2003 is estimated to be 155,622 tonnes or 82.5% of the total BMW in the Region. This figure represents a decrease of 622 tonnes in the last year. The table below shows the tonnages of BMW for the individual Councils within the SWaMP Region and compares current BMW landfilled tonnages against the 2005/06 WET Act targets.

BMW Landfilled		
	BMW landfilled 2003	2005 WET Act Target
Armagh City and District Council	17,590	17,790
Banbridge District Council	12,395	12,896
Cookstown District Council	11,801	11,681
Craigavon Borough Council	31,097	30,961
Dungannon and South Tyrone Borough Council	17,348	18,375
Fermanagh District Council	19,839	21,041
Newry and Mourne District Council	27,075	28,720
Omagh District Council	18,477	19,155
SWaMP TOTAL	155,622	160,619

Significant effort has been made to date to reduce the amount of BMW landfilled. However with municipal waste and household waste growth rates estimated at 3% per annum continuing implementation of the Waste Management Plan will be essential if the 2005 WET Act targets are to be met.

2.5 COSTS OF WASTE MANAGEMENT

The overall cost of waste management for each of the eight Council areas is presented in the table below. This information is based on the financial year 2003/04 and has been calculated using the financial KPIs. This data should be interpreted with caution as it is in draft format and is at present the subject of a financial auditing process.

Costs of Waste Management		
	Net cost waste collection per household	Cost of waste treatment and disposal per tonne
Armagh City and District Council	£43.07	£14.13
Banbridge District Council	£55.77	£20.23
Cookstown District Council	£55.40	£17.13
Craigavon Borough Council	£77.13	£24.73
Dungannon and South Tyrone Borough Council	£60.40	£29.18
Fermanagh District Council	£ 46.60	£22.63
Newry and Mourne District Council	£49.94	£19.03
Omagh District Council	£41.08	£41.20

3.0 REVIEW OF THE IMPLEMENTATION OF THE WASTE MANAGEMENT PLAN

The implementation of the Waste Management Plan for the SWaMP Region required the provision of a range of enhanced services and facilities over the period of the Plan.

The numbers and types of facilities that have been developed, as well as the quantity of waste processed during the reporting period is presented in the Secondary Key Performance Indicators in Appendix B. These are presented for the reporting period 2003 and also the first quarter of 2004.

This section of the review compares and contrasts the infrastructure and facilities that have been implemented to date or that are proposed for 2004 & 2005 with what was contained within the SWaMP Waste Management Plan and highlights areas in which further development is required.

3.1 HOME COMPOSTING

To date Councils have issued a small number of home composting bins to households throughout the Region as summarised below.

Home Composting Units	
Armagh	No record of number of units issued.
Banbridge	No units issued and no plans to implement such a scheme.
Cookstown	Approximately 400 issued.
Craigavon	Approximately 2,500 issued.
Dungannon	Approximately 1,100 issued.
Fermanagh	Approximately 500 issued.
Newry & Mourne	Approximately 200 issued.
Omagh	Approximately 2,000 issued.

Home composting can contribute to minimising waste arisings whilst avoiding additional collection costs to Councils. However, until satisfactory measures are put in place to improve data recording and measurement, tonnages recovered through home composting schemes cannot be included within current recovery rates.

3.2 EDUCATION AND AWARENESS

The objective of the education and awareness aspects of the plan is to stem the increase in waste arisings per household, returning to 1998 levels by 2005. This is to be achieved

through a series of education and awareness actions which will encourage waste minimisation and assist in a cultural change in behaviour to waste. These actions are contained below along with the progress that has been made towards meeting these targets by the group.

Education and Awareness Actions		
	Achieved	Comment
Waste education officer for each council	✓	Waste education officers have been appointed in some Councils, others have yet to appoint anyone in this position.
Provision of enforcement officers	✓	The SWaMP group supports the provision of waste enforcement officers by EHS.
Participation in a NI wide environmental awareness campaign in conjunction with DOE	✓	The SWaMP Group have taken part in the 'Wake Up To Waste' Campaign.
Introduce publicity information	✓	Councils within the SWaMP Group have distributed mailshots to community groups and have supported the use of a mobile education unit.
Development of a waste website	✓	The SWaMP Group have developed a waste website as part of their initial Waste Management Plan.
Structured education programme for schools	✓	The SWaMP Group have initiated the development of 'Eco-schools' within the Region, school visits by waste education officers, teacher packs to schools and teacher training to allow structured waste education to be provided in schools within the Region.
Structured education programme for communities	✓	The SWaMP Group has consulted with communities and community groups to develop a structured education programme for communities. Part of this programme is the promotion of funding sources that communities could benefit from.
Waste recycling initiatives and funding for community groups	✓	The SWaMP Group have held themed environmental weeks as an initiative to promote waste recycling and part of this has been the promotion of funding sources available to community groups.
Structured awareness raising and waste minimisation with businesses	✓	The SWaMP Group have initiated waste minimisation clubs and have distributed SME starter packs to businesses to raise awareness of waste issues and give them information on how to develop waste initiatives within their businesses.
Waste reduction programme for each Council's internal operations	✓	Councils within the SWaMP Group have implemented in-house recycling and have carried out internal waste audits to allow them to develop a waste reduction programme for each Council's operations.
Development of a buy recycled and green purchasing policy for Council's	✓	Craigavon Borough Council have a buy recycled and green purchasing policy built into their Sustainability Strategy.
Development of green procurement policies for capital infrastructure to include waste minimisation and recycling	✓	The SWaMP Group have developed green procurement policies for capital infrastructure for waste facilities.
Develop an information stand, leaflets and other educational material for targeting the general public, through events and public information days	✓	The SWaMP Group have distributed mailshots and leaflets to the public throughout the Region, as well as taking out advertising within local papers.
Develop in-house environmental management systems to promote waste minimisation and recycling where appropriate	✓	The Councils within the SWaMP Region have undertaken environmental awareness training for staff, internal waste audits and have developed in-house recycling schemes.
Provision of a mobile educational unit to visit schools	✓	It is proposed that there will be a mobile educational unit within the Region to be used by 2005.

Group will seek the support and co-operation of community groups	✓	The SWaMP Group will encourage Council–Community partnerships and will consult with communities in the siting of waste facilities to gain their support and co-operation.
To help bring the Council's message and provide information and a source of contact to residents	✓	The SWaMP Group have provided their residents with information on waste issues through promotional literature and the use of a mobile educational unit.
To develop community composting and recycling schemes where ownership for the project is placed with local residents	✓	Community composting and recycling schemes have been developed by the Councils within the SWaMP Group through participation in educational visits and promotion of available funding sources.
To work with Councils in the collection and processing of materials for recycling and composting	✓	The SWaMP Group have encouraged District Council–Community partnerships to work with Councils in the collection and processing of materials.
Encourage participation in recycling schemes	✓	Participation in recycling schemes has been encouraged by educational visits and facilitation.
Identify a number of organisations on a pilot basis to operate recycling facilities in order to assess if higher participation and capture rates than those estimated can be achieved	✓	A number of assessments have been carried out to look at the efficiency of paper collection schemes. These have been carried out for Banbridge District Council and Craigavon Borough Council

3.3 KERBSIDE COLLECTION

Kerbside collection schemes have been implemented throughout the SWaMP Region with most Councils' issuing either blue bins or black boxes for the collection of mixed dry recyclables and brown bins for the collection of kitchen and organic waste within their Council area. The following tables provide detail of the level of implementation of these schemes within each Council area and compares this with the projected levels stated within the Waste Management Plan.

Kerbside Collection – Compostables				
	No. of bins issued 2003	Projected No. of bins	Target Achieved	Comment
Armagh	6,000	1,400	✓	
Banbridge	8,000	3,800	✓	
Cookstown	0	0	✓	
Craigavon	0	0	✓	
Dungannon	3,095	3,400	✗	A fire in 2003 damaged new bins and delayed the roll out of facilities. 4,110 bins were rolled out in the summer of 2004. A further 4,047 brown bins are planned to be rolled out by 2005/06 to allow Dungannon to exceed their target of 7,100 bins by 2005.
Fermanagh	0	0	✓	
Newry & Mourne	9,900	4,500	✓	
Omagh	0	0	✓	
SWaMP TOTAL	26,995	13,100	✓	

These figures show that Armagh, Banbridge and Newry & Mourne Councils are ahead of their projected position for 2003 for numbers of brown bins rolled out. Dungannon at this stage is behind their projected position for 2003, although their plans to roll out further brown bins by 2005 will allow them to meet their 2005 target. Cookstown, Craigavon, Fermanagh and Omagh Councils are yet to undertake any kerbside collection of compostable material. Each of these Councils, with the exception of Fermanagh, are planning to roll out brown bins in their Council area in 2004 and 2005.

Kerbside Collection – Mixed Dry Recyclables				
	No. of boxes/bins issued 2003	Projected No. of boxes/bins	Target Achieved	Comment
Armagh	6,000	1,400	✓	
Banbridge	8,000	3,800	✓	
Cookstown	4,600	7,200	✗	A further 6,998 bins/boxes are planned to be rolled out by 2005/06 to allow Cookstown to exceed their target of 10,200 bins by 2005.
Craigavon	18,000	16,000	✓	
Dungannon	7,500	2,250	✓	
Fermanagh	21,300	10,250	✓	
Newry & Mourne	500	4,500	✗	A further 11,500 bins/boxes are planned to be rolled out by 2005/06 to allow Newry & Mourne to exceed their target of 9,000 bins by 2005.
Omagh	16,428	4,500	✓	
SWaMP TOTAL	82,328	49,900	✓	

These figures show that all the councils apart from Cookstown and Newry & Mourne are ahead of their projected position for 2003 for numbers of blue bins/boxes rolled out. Both of these Councils plan to roll out additional bins/boxes by 2005 to allow them to meet their 2005 target.

3.4 CA SITE PERFORMANCE

The performance of civic amenity sites within the SWaMP Region is illustrated in the tables below. The following table compares the total municipal waste tonnages being recovered at CA sites in 2003 within each Council area with the equivalent projected within the Waste Management Plan.

Recovered Tonnages at CA Sites – Municipal Waste				
	Recovered - 2003 KPI's (tpa)	Projected recovered (tpa)	Target Achieved	Comment
Armagh	4,457	3,284	✓	
Banbridge	5,827	5,079	✓	
Cookstown	3,079	823	✓	Pomeroy – still awaiting waste license
Craigavon	8,564	4,847	✓	
Dungannon	2,405	1,336	✓	
Fermanagh	2,128	3,816	✗	Sites have only recently been manned. 2 new sites proposed for 2004/05 and 1 new site for 2006/07
Newry & Mourne	3,173	2,461	✓	Crossmaglen still awaiting planning permission
Omagh	1,789	2,951	✗	2 sites still awaiting planning permission
SWaMP TOTAL	31,422	24,597	✓	

In terms of meeting the projections set out in the Waste Management Plan, the tonnages of municipal waste being recycled at CA sites generally exceed those projected for 2005. Fermanagh and Omagh propose to develop additional CA sites during 2004/05 and therefore it is anticipated that all Councils within the SWaMP Region will exceed the projected tonnages and recovery rates from CA sites by 2005. However this is subject to current planning applications being granted prior to the end of 2004.

The following table then provides details on the recovery performance, tabling the percentage municipal waste recovered at CA sites against the percentage municipal waste landfilled.

Civic Amenity Site Performance - Municipal Waste		
	% recovered at CA Sites	% landfilled at CA Sites
Armagh	55%	45%
Banbridge	68%	32%
Cookstown	52%	48%
Craigavon	68%	32%
Dungannon	27%	73%
Fermanagh	16%	84%
Newry	46%	54%
Omagh	47%	53%
SWaMP Average	46%	54%

The following table shows both the tonnages and the percentage of household waste being recovered at CA sites. This is calculated as the total municipal waste recovered minus construction and demolition waste being recovered at the CA Site.

Civic Amenity Site Performance- Household Waste		
	Recovered tonnage (tpa)	% Recovered
Armagh	3,966	49%
Banbridge	4,747	56%
Cookstown	2,062	35%
Craigavon	5,807	46%
Dungannon	2,406	27%
Fermanagh	2,128	16%
Newry	3,173	46%
Omagh	1,761	46%
SWaMP	26,048	38%

There is however a variation in CA Site performance throughout the Region, when looking at the percentages recovered against the percentages landfilled. The figures show that the Region as a whole is recovering less than half of the municipal waste and only 38% of the household waste being collected at CA sites.

3.5 INFRASTRUCTURE

The SWaMP Waste Management Plan details the infrastructure that needs to be implemented either within each Council area or within the SWaMP Region in order for waste management targets to be met. The Plan lists infrastructure such as: civic amenity sites, waste transfer stations, recycling points, landfill sites, open-windrow composting facilities and in-vessel/enclosed composting facilities. Details of the number of facilities projected under the Waste Management Plan along with the current numbers of each facility and those proposed prior to the end of 2005 are provided below.

Infrastructure			
	Projected number of facilities	Number of facilities developed	Comments
Materials Recovery Facilities	1 or 2 facilities	None	Councils have procured services for the reprocessing of MDR collected with the Council areas and therefore no MRF's will be developed.
Civic Amenity Sites	15 new sites; enhancement of 3 existing	8	A remaining 7 new sites will be developed in 2004/2005. Banbridge are planning to extend one site while outline planning permission has been secured for a new site in Newry and applied for new sites in Cookstown and Omagh. Fermanagh are currently procuring a new site at Drummeemore. In addition, future sites are being planned for Banbridge, Cookstown, Fermanagh and Newry.
Recycling Points	94 new facilities	70	21 facilities will be developed in 2004/2005. 7 facilities to be developed 2005/06
Waste Transfer Stations	8 facilities	Dungannon: Tullyvar Cookstown: Magheraglass Omagh: Gortrush	Drummeemore planning application to be lodged Sep 04. Armagh, Banbridge & Craigavon have secured contracts for the treatment of materials within their Council area and therefore will not be required to develop waste transfer stations. Cookstown have introduced a hardstanding area at Magheraglass Landfill Site
Open Windrow Composting Facilities	2 – 3 facilities	None	Councils have procured services for the composting of organic materials collected with the Council areas and therefore no composting facilities will be developed.
In-vessel/enclosed Composting Facilities	1 facility	None	Awaiting clarification and guidance of the Animal by Products Regulations to ensure that materials are treated appropriately. A Feasibility study for the development of an in-vessel composting facility at Terryhoogan has been carried out. Tullyvar landfill site has also been identified as a potential suitable location.
Landfill Sites	1 new facility at Drummeemore (Fermanagh)	None	Planning Permission for site granted. PPC application lodged awaiting decision.

3.6 SERVICE CONTRACTS

As highlighted above, the emphasis has moved away from Councils developing their own infrastructure such as materials recovery facilities, open windrow composting facilities and in-vessel composting facilities. Instead these services have been procured through a number of individual or joint contracts that have been issued by Councils for the collection, transfer and reprocessing of mixed dry recyclables and compostable materials. This is detailed in the following table.

Service Contracts		
	MDR	Compostables
Armagh	Bryson House	NWP
Banbridge	Bryson House	NWP
Cookstown	Shergrim	No Collection
Craigavon	GD Recycling	NWP
Dungannon	Shergrim	Simpro
Fermanagh	Glassdon	No Collection
Newry	Wastebeater	NWP
Omagh	Shergrim	Simpro

Due to the introduction of the Animal By Products Regulations, and the fact that guidance and certification is still being developed no Council within the Region has procured the service of an in-vessel composting facility. At present, the group is in the process of procuring a composting contract for the treatment of mixed organic and kitchen waste arising from separate kerbside collections within all eight of the Council areas. Possible locations for this facility includes Terryhoogan and Tullyvar, as identified within the waste management plan and which are current owned by local authorities within the group, as well as privately owned facilities. Key to the development of such infrastructure however is the timely granting of planning permission.

3.7 OTHER CONTROLLED WASTE

3.7.1 *Commercial and Industrial (C&I)*

The C&I producing industries are being encouraged to become involved in the BPEO process. This process includes a mix of options such as landfill, recycling, recovery, re-use and reduction, and therefore be part of the solution for dealing with this waste stream.

Individual Councils within the SWaMP Group have also provided segregated collection services for C&I wastes or provisions for the collection of C&I waste at civic amenity sites.

The following table provides details on the current tonnages of municipal C&I waste collected by each council within the SWaMP Group and the current recovery rates.

Commercial and Industrial (C&I) Wastes				
	C&I Waste produced	C&I Waste recovered at CA sites	C&I Waste recovered through kerbside collections	C&I Waste Landfilled
Armagh	1,694	491	0	1,203
Banbridge	2,749	1,080	231	1,438
Cookstown	2,454	1,017	156	1,281
Craigavon	7,697	2,757	63	4,877
Dungannon	2,760	0	0	2,760
Fermanagh	4,415	0	203	4,212
Newry & Mourne	2,840	0	0	2,840
Omagh	1,212	28	0	1,184
SWaMP TOTAL	25,821	5,373	653	19,795

In addition, as the emphasis shifts from Councils developing their own facilities to Councils procuring commercial services for the treatment of specific waste streams, this has led to the development of a number of reprocessing facilities, within the area, by the waste industry sector. These facilities have in turn provided additional capacity for the recovery of C&I waste.

3.7.2 Construction and Demolition (C&D)

The Construction/Demolition industry is one of the largest producers of waste, but in general, as an industry the producers and handlers of this waste have not kept records of quantities or types arising, nor disposal destinations. For this reason there is insufficient data available on C&D waste. However, it is known that at present an increasing quantity of C&D waste produced is recycled and/or reused on site due to the costs associated with disposal.

In addition with the implementation of the Duty of Care Regulations, better data on the quantities of C&D waste being produced, recovered and landfilled will become available and additional facilities to reprocess this material developed.

3.7.3 Hazardous

To deal effectively with hazardous waste generated, and to reduce the relatively constant levels of hazardous waste produced from year to year, a Northern Ireland wide Hazardous Waste Forum has been established. The aim of this forum is to produce a strategy to identify the preferred waste management solutions for hazardous waste. The SWaMP group have been participating in this Forum.

3.7.4 Packaging

Recycling and recovery of packaging waste from the municipal waste stream are a requirement of the EU Packaging Waste Directive. To deal effectively with packaging waste, to minimise its production and to comply with the EU Packaging Waste Directive, a Northern Ireland wide Packaging Waste Forum has been set up, the aim of which is to produce a strategy to deal with this waste stream. The SWaMP group have been participating in this Forum.

3.7.5 Priority Waste Streams – Tyres, WEEE, ELV

Tyres

In order to meet the requirements of the Landfill Directive, which bans landfill operators accepting whole, used or shredded tyres, the SWaMP Group along with the North West Regional Waste Management Group have joined together to procure services for the collection of tyres from designated points within each council area. The tyres are delivered to a reprocessing facility, processed to render them suitable for delivery to end markets and then distributed onwards to end markets. This service was procured by both the groups in June 2004 and will be carried out by the company R4.

Waste Electrical and Electronic Equipment (WEEE)

As a result of the Waste Electrical and Electronic Equipment (WEEE) Directive, which was transposed into national legislation on 13 August 2004, various requirements of the Directive will come into force in late 2004, 2005 and 2006. To prepare for the introduction of these requirements, a number of pilot schemes have been implemented within Northern Ireland. One of the schemes is taking place within Banbridge Council area. This pilot scheme involves the provision of facilities for the separate collection of WEEE at civic amenity sites.

End of Life Vehicles (ELV)

The End of Life Vehicles (ELV) Directive was due to be transposed into national law in all member states by 21 April 2002, although the UK and other member states missed this deadline. As a requirement of this Directive, producers will be required to take responsibility

for the vehicles which they place on the market. It is recognised that further facilities will be required to deal with this waste stream in due course, it is anticipated that these will evolve in response to market requirements.

4.0 ASSESSMENT OF PROGRESS TOWARDS TARGETS

4.1 PROJECTED RECOVERY RATES

As previously stated in this review, one of the primary targets of the Waste Management Strategy for Northern Ireland was to recover 25% of household waste (of which 15% must constitute recycling and/or composting) by the end of 2005.

4.1.1. Projected Household Waste Recovery Rates

The following table shows the estimated average quantity of household waste recovered (through recycling and composting), along with the target recovery rates as laid out in the Waste Management Plan, for the SWaMP Region between 2003 and 2005/06. These values can be used as an indication of the success of the local authority initiatives in progressing towards the 2005 targets.

The breakdown of the values for each individual local authority within this period is presented in Appendix C.

Projected Household Waste Recovery			
	2003	2004/05	2005/06
Armagh City and District Council	22.5%	25.8%	33.0%
Banbridge District Council	33.0%	36.9%	38.3%
Cookstown District Council	16.1%	20.0%	25.0%
Craigavon Borough Council	19.0%	19.3%	20.5%
Dungannon and South Tyrone Borough Council	13.4%	18.3%	22.6%
Fermanagh District Council	17.5%	28.6%	28.0%
Newry and Mourne District Council	13.2%	19.2%	21.8%
Omagh District Council	12.2%	15.9%	22.3%
Average values for SWaMP	18.0%	22.5%	25.7%
Projected Recycling Targets	12%	17%	25%

It has been estimated that the projected quantity of household waste recovered (through both recycling and composting) in the SWaMP Region for 2005/06 is 25.7% or 65,891 tonnes. As can be seen from the table, there are a number of Councils failing to meet the 2005 target, although all Councils are expected to achieve a recycling rate of over 20%.

Investigations have shown that there are a number of factors which could contribute to this. As already discussed in Section 2, waste growth is considered to be a large factor. Calculations have shown that, had the waste in these areas grown at a steady rate of 1.91% over the period 1999/00 to 2003, then the individual Councils would have been expected to meet the 25% target. This, combined with the fact that a number of Councils have fallen slightly short of delivering all the infrastructure outlined in the Waste Management Plan, has led to the differences.

4.1.2 Projected Municipal Waste Recovery Rates

The following Table shows the estimated average quantity of municipal waste recovered (through recycling and composting) for the SWaMP Region between 2003 and 2005/06. The breakdown of the values for each individual local authority within this period is presented in Appendix C.

Projected Municipal Waste Recovery Rates			
	2003	2004/05	2005/06
Armagh City and District Council	22.8%	26.1%	32.8%
Banbridge District Council	34.5%	37.9%	38.9%
Cookstown District Council	20.0%	23.2%	28.7%
Craigavon Borough Council	21.5%	21.6%	22.5%
Dungannon and South Tyrone Borough Council	12.1%	16.5%	20.3%
Fermanagh District Council	15.8%	25.3%	24.7%
Newry and Mourne District Council	12.3%	17.9%	20.4%
Omagh District Council	11.8%	15.8%	22.2%
Average values for SWaMP	18.5%	22.6%	25.4%

It has been estimated that the projected quantity of municipal waste recovered (through recycling and composting) for the SWaMP Region for 2005/06 is 72,229 tonnes or 25.4%. All Councils in the SWaMP Region have a projected further increase in their recovery rates between 2003 and 2005/06.

4.2 WET ACT TARGETS

One of the targets set out for Northern Ireland is the Waste and Emissions Trading (WET) Act. The WET Act target for the United Kingdom sets out a series of targets for the diversion of Biodegradable Municipal Waste (BMW) from landfills as well as provision of a Northern Ireland Allowance Scheme which will allocate landfill allowances to local authorities.

This Act will provide a cost effective and efficient way of helping the UK meet its obligations under the Landfill Directive. This section provides details of the projected municipal and BMW landfilled quantities and assesses the BMW values against the current NI Allowances Scheme Targets.

4.2.1 *Projected Municipal Waste Landfilled*

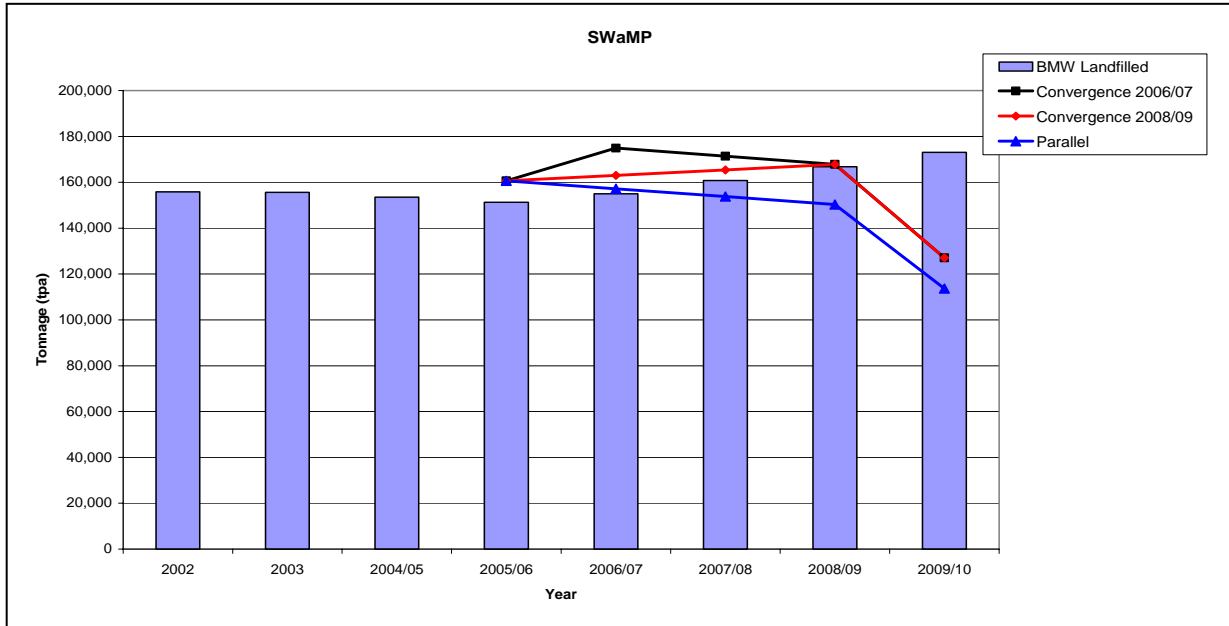
The following table shows the projected amounts of municipal waste landfilled between 2003 and 2005/06 in the SWaMP Region. A more detailed breakdown of the values for each individual local authority within the SWaMP Region for this period is presented in Appendix C.

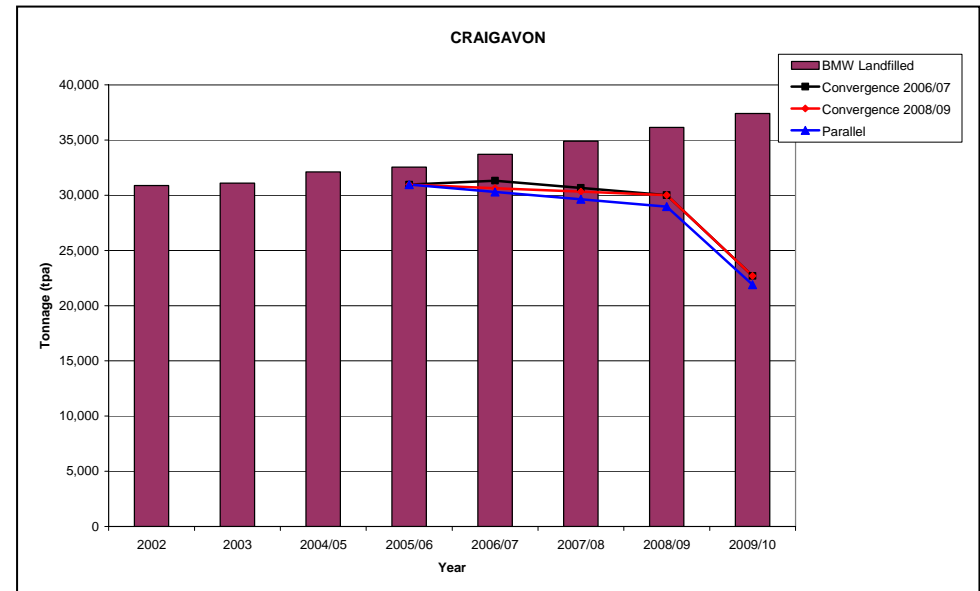
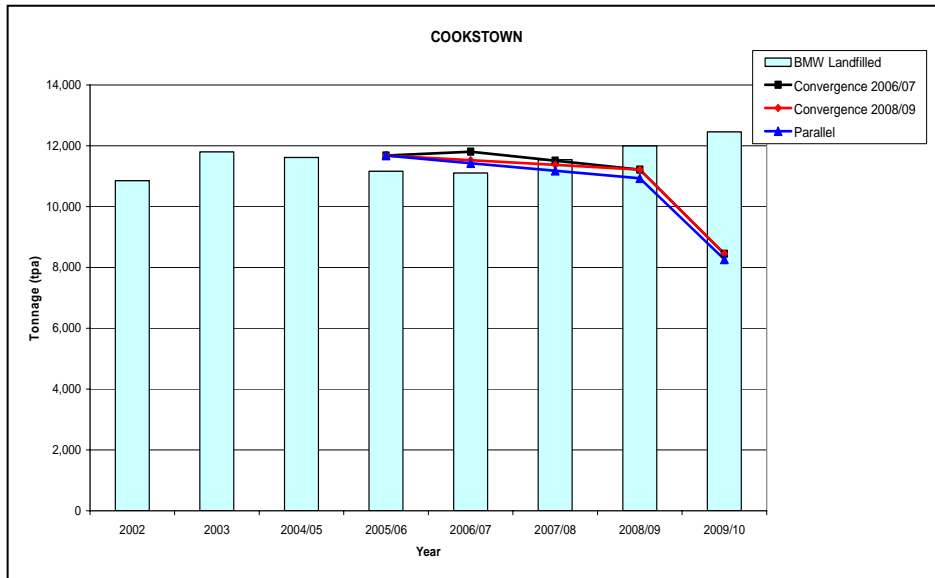
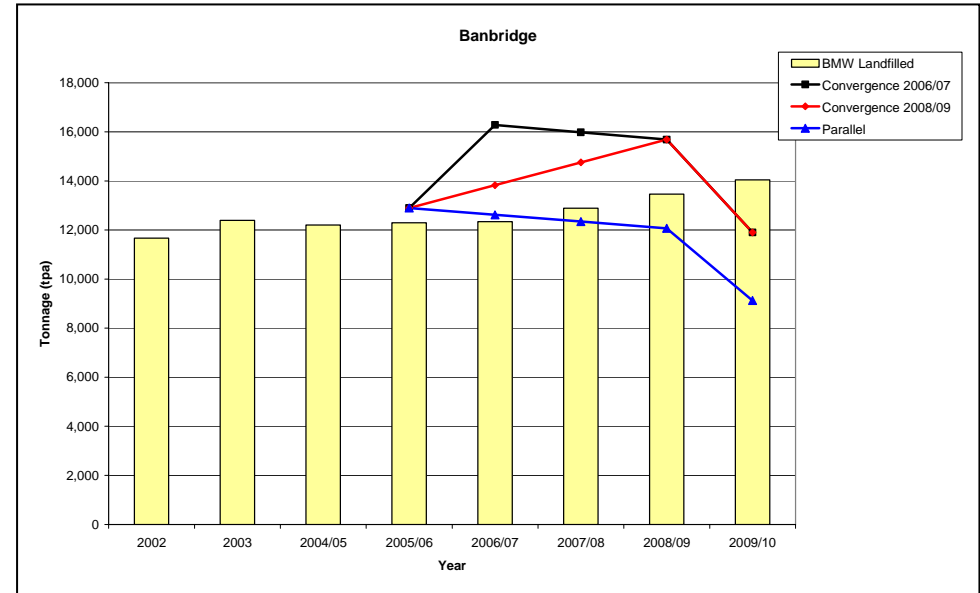
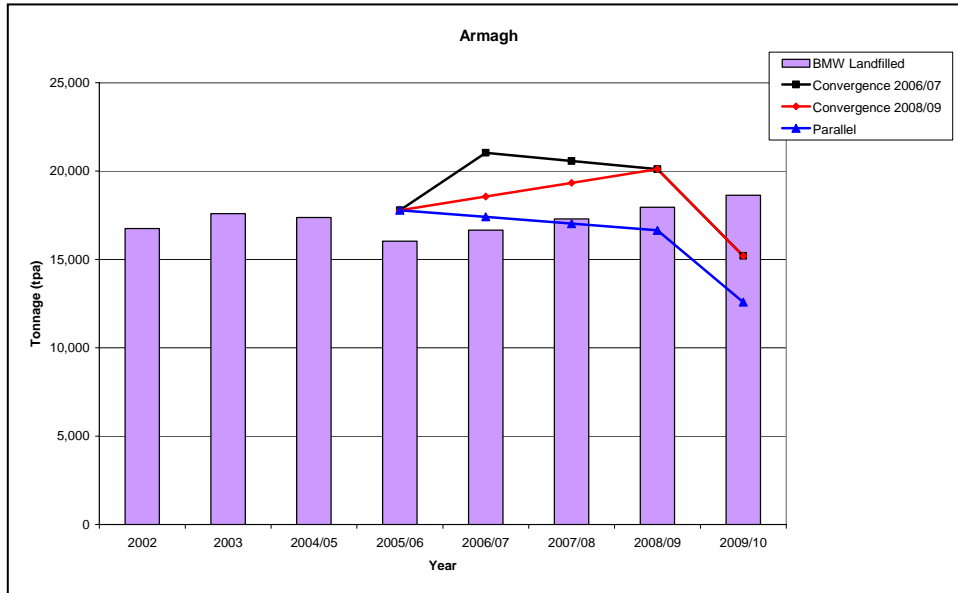
Municipal Waste Landfilled			
	2003	2004/05	2005/06
Armagh City and District Council	23,942	23,778	22,274
Banbridge District Council	17,355	17,083	17,289
Cookstown District Council	15,720	15,661	14,991
Craigavon Borough Council	41,666	43,159	43,963
Dungannon and South Tyrone Borough Council	24,729	24,382	23,954
Fermanagh District Council	28,318	26,074	27,065
Newry and Mourne District Council	38,651	37,546	37,510
Omagh District Council	25,778	25,530	24,302
SWaMP	216,158	213,212	211,348

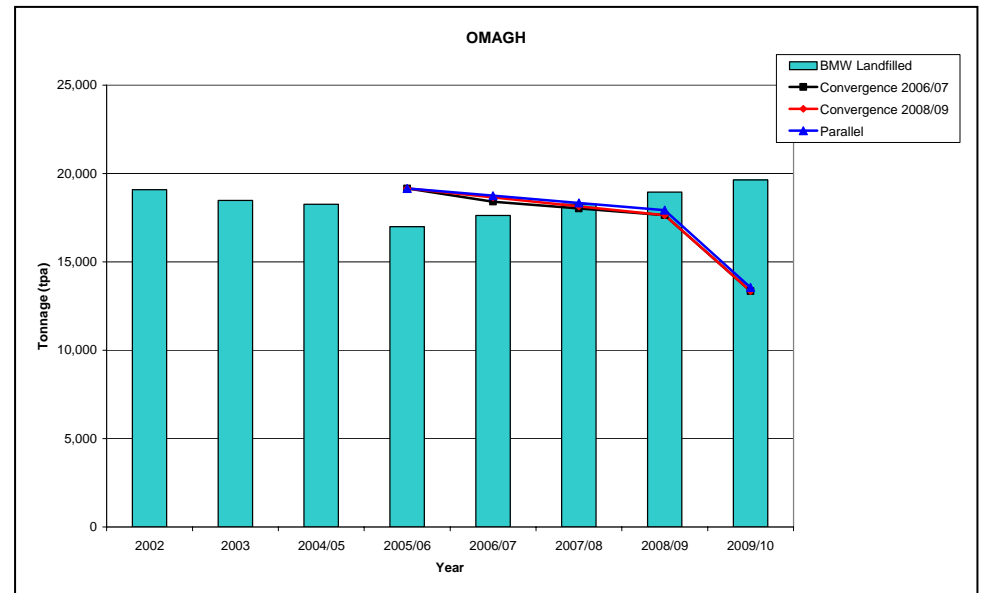
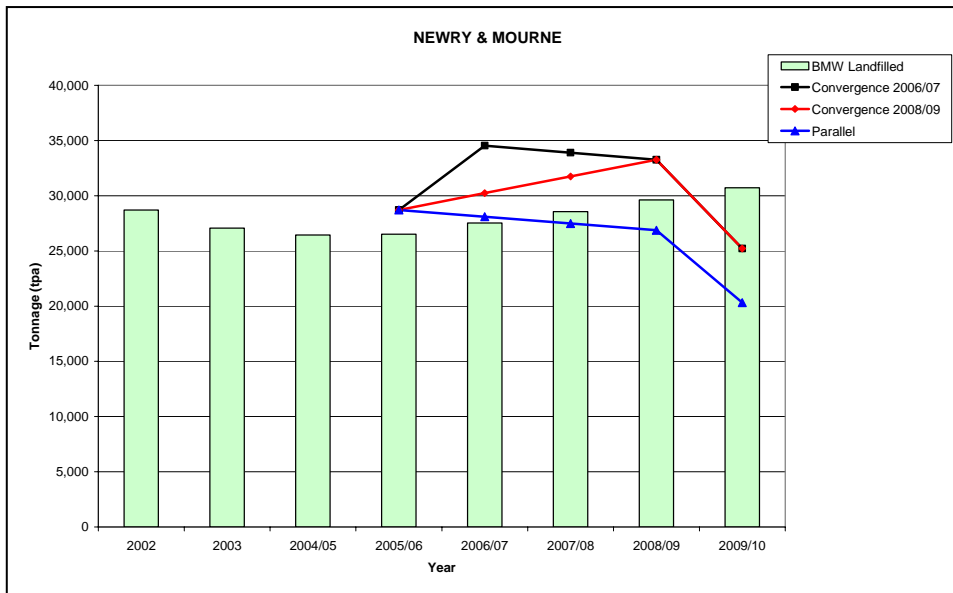
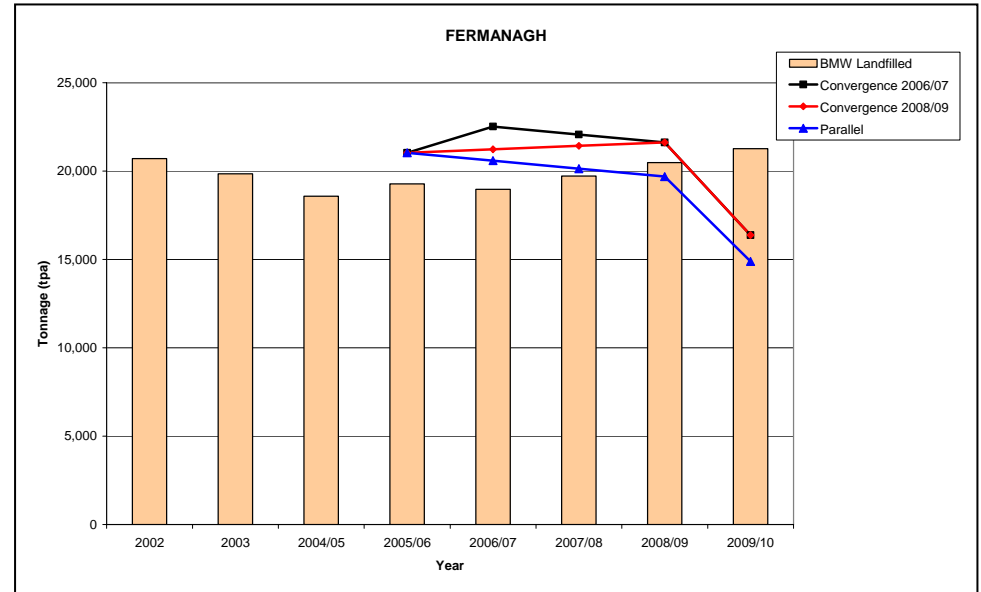
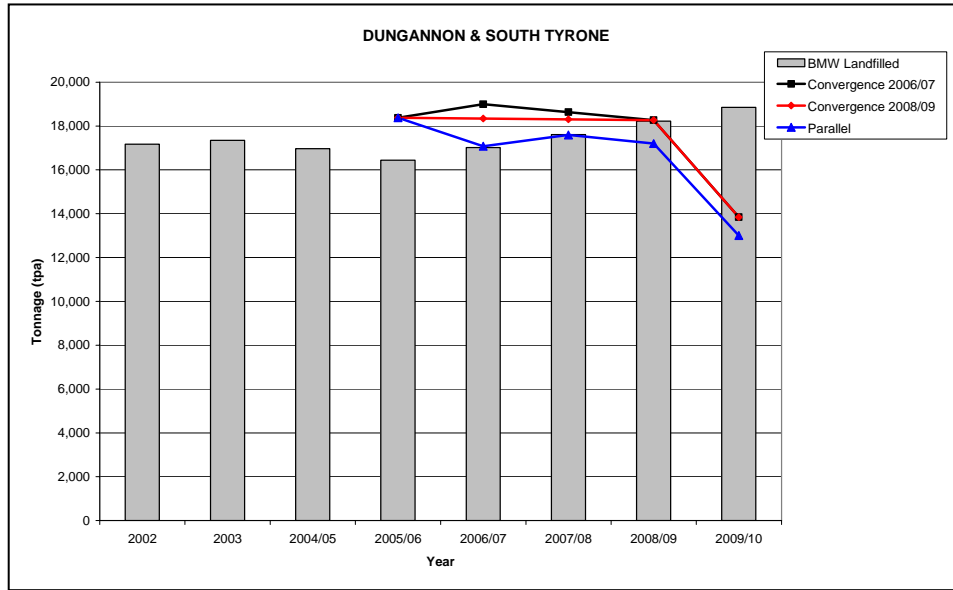
Note 1. Municipal waste calculated to the nearest tonne.

4.2.2 *Projected Biodegradable Municipal Waste (BMW) Landfilled*

The following graphs show the quantities of Biodegradable Municipal Waste (BMW) landfilled for the SWaMP Region between 2003 and 2005/06 and assess the projected tonnages against the NI Landfill Allowances. The breakdown of the values for each individual local authority within the SWaMP Region, along with the estimated cost implications associated with non-compliance, for this period is presented within Appendix C.







The projected BMW landfill projections are calculated on a Mass Balance approach to ensure the data is as accurate as possible.

These current projections suggest that the SWaMP Region as a whole will meet the NI Landfill Allowances up until 2008/09 if the allowances are based on a Convergence model. They do however fall short of the 2009/10 target by approximately 46,000 tonnes resulting in potential fines of £9.2 million in 2009/10. This assumes that there will be free transfer / movement of allowances between Councils within the SWaMP group. If this was not possible then Cookstown and Omagh would fail to also meet their 2007/08 and 2008/09 targets and Craigavon would fail to meet all their targets.

This is mainly due to the significant growth in waste arisings and occupied housing numbers within these Council areas and also to the ongoing improvement in waste data collection and reporting throughout Northern Ireland.

However, if the NI allowances are based on the Parallel model, the SWaMP Region fall short of the 2007/08, 2008/09 and 2009/10 targets. This will lead to potential fines within these financial years.

5.0 IMPLEMENTATION ACTIONS FOR DIVERSION OF BMW IN 2005,2006 AND 2007

5.1 GAP ANALYSIS

In order to minimise the potential gap between the amount of BMW landfill and the NI Allowance targets, a number of options have been assessed. These include:

- Minimisation of Waste Growth;
- Variation of the BMW percentage in municipal waste;
- Maximisation of Recycling and Recovery Rates.

5.1.1 *Minimising Waste Growth*

The percentage growth in waste arising within NI has fluctuated between years which has had significant impact on the waste projections set out within the Waste Management Plan. The effect of changes in the percentage growth of household and municipal waste is illustrated below for 2009/10 and compared against the NI Allowance Convergence model.

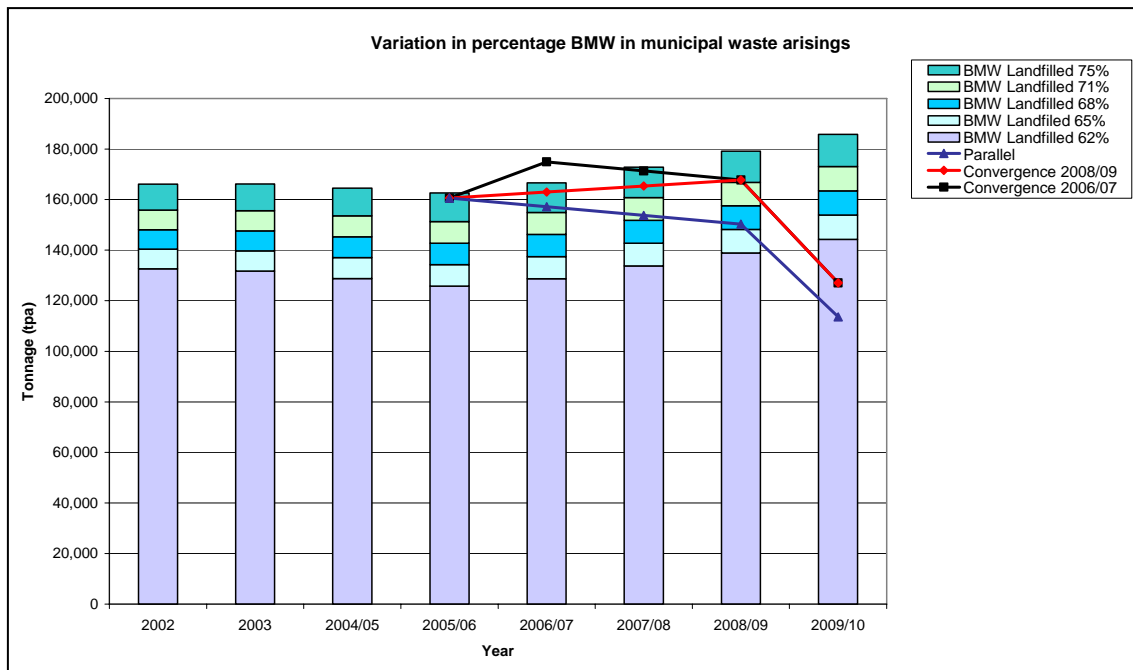
BMW Waste Landfilled			
	Projected tonnages 2009/10	Convergence Target 2009/10	Difference
Current Arisings (3% growth in MSW & HHW)	173,034	127,054	- 45,980
4% growth in MSW	186,559	127,054	- 59,505
2% growth in MSW	160,149	127,054	- 33,095
1% growth in MSW	147,881	127,054	- 20,827

Waste minimisation can therefore play a key role in the SWaMP group meeting their targets as a decrease of 1% in waste arisings is estimated to reduce the amount of BMW landfilled by approximately 13,000 tonnes.

5.1.2 *Variation in the percentage of BMW within the Municipal Waste fraction*

An assessment has been made of the effects of changing the biodegradable fraction of municipal waste. One of the main assumptions of the review is that the biodegradable fraction accounts for 71% of the municipal waste total. A sensitivity analysis was undertaken to identify the effects of changing this percentage on the performance towards the BMW landfilled and the NI Allowance targets.

As illustrated below, variation in the biodegradable fraction of municipal waste can lead to a reduction or an increase in the amount of BMW landfilled.



In order to establish the current biodegradable fraction of municipal waste, a Compositional Analysis should be undertaken. It should be noted that any future Compositional Study would need to be carried out in accordance with DEFRA Guidelines. Future consultation with EHS is recommended to establish if a reduction in the biodegradable fraction can be applied in SWaMP.

5.1.3 Maximising Recycling and Recovery Rates

As part of the development of collection schemes it is assumed that this will be undertaken on a staged approach with one stage building upon the performance of the previous one in order to achieve the maximum possible recovery rates and diversion of BMW from landfill.

Stage I includes for the expansion of current collection schemes for mixed dry recyclables to every household within the SWaMP Region and the ongoing issue of bins/boxes to new developments within the area

It is estimated that an additional reduction of approximately 3,000 tonnes in the total amount of BMW landfilled could be achieved through the implementation of this stage. Stage II builds upon the work carried out in Stage I and includes for the expansion of existing schemes for the collection of compostable material to all urban areas within SWaMP in 2006/07 and 2007/08 and the ongoing issue of bins to new developments within the Urban areas.

Where schemes are currently in place or proposed for the expansion of this scheme to entire Council areas, these will be maintained.

It is estimated that a further reduction of approximately 10,500 tonnes in the total amount of BMW landfilled could be achieved through the implementation of this stage. However this assumes that an in-vessel composting unit, which has been certified as meeting Animal By Products Regulations, has been procured within the Region by 2006.

Stage III again builds upon Stage I & II and includes for the expansion of the collection scheme for compostables to every household within the SWaMP Region by 2008/09 and any subsequent new developments in 2009/10.

It is estimated that a further reduction of approximately 3,000 tonnes in the total amount of BMW landfilled could be achieved through the implementation of this stage.

Therefore the total recovery rate following the implementation of Stages I - III is estimated at 30.5% by 2009/10 (an increase of 6.1%) and a total reduction of approximately 16,500 tonnes as highlighted below. However, the implementation of Stage I –III is not sufficient to close the gap of 46,000 (Convergence model) and meet the 2009/10 target.

Stage IV includes for the exclusion of all C&I waste currently collected by Councils from April 2009. It is estimated that this would reduce the amount of BMW landfilled by approximately 21,000 tonnes. However, this stage may be difficult to implement and would work against the efforts that are currently being made to recover Commercial & Industrial Wastes.

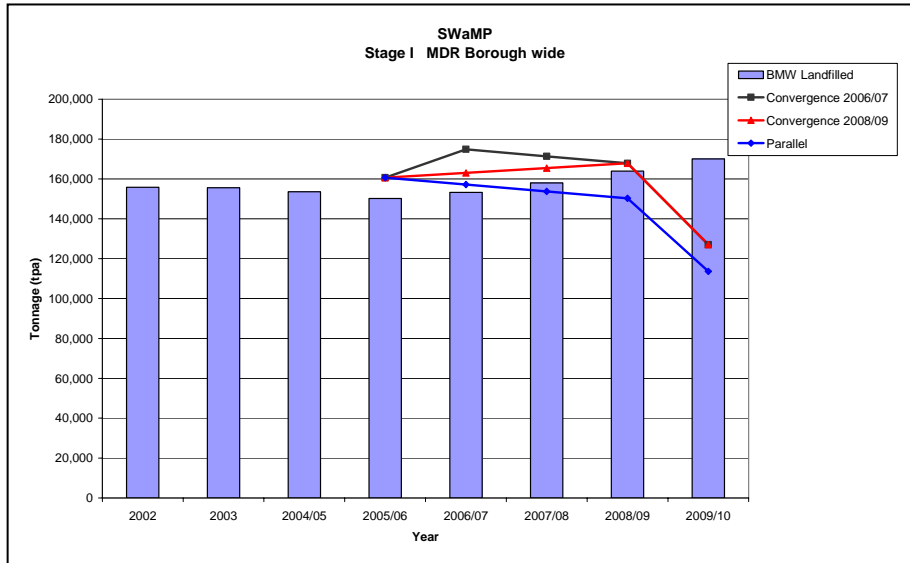
BMW Waste Landfilled – Convergence			
	Projected tonnages 2009/10	Convergence Target 2009	Difference
Current Arisings (3% growth in MSW & HHW)	173,034	127,054	- 45,980
Stage1 - MDR Collected Borough Wide	170,001	127,054	- 42,947
Stage II - Kitchen & Organic Materials Collected from Urban Area	159,402	127,054	- 32,348
Stage III - Kitchen & Organic Materials Collected Borough Wide	156,021	127,054	- 28,967
Stage IV - C&I Waste no longer collected by Councils from April 2009	134,655	127,054	-7,601

This gap increases further if the Parallel model is used for comparison, as highlighted in the following table.

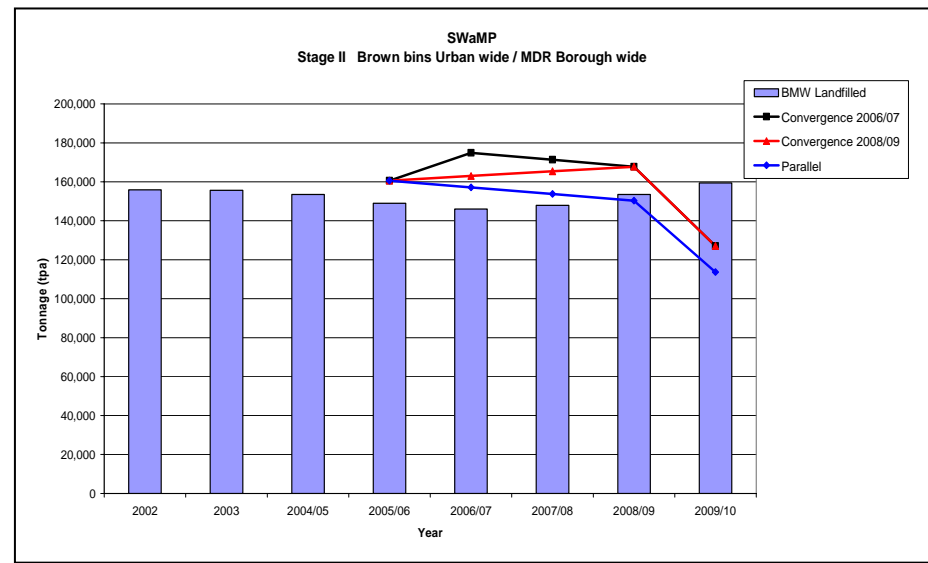
BMW Waste Landfilled – Parallel			
	Projected tonnages 2009/10	Parallel Target 2009	Difference
Current Arisings (3% growth in MSW & HHW)	173,034	113,634	- 59,400
Stage1 - MDR Collected Borough Wide	170,001	113,634	- 56,367
Stage II - Kitchen & Organic Materials Collected from Urban Area	159,402	113,634	-45,768
Stage III - Kitchen & Organic Materials Collected Borough Wide	156,021	113,634	- 42,387
Stage IV - C&I Waste no longer collected by Councils from April 2009	134,655	113,634	- 21,021

The following graphs illustrate these options and compare the tonnages of BMW landfilled in each year against the 2006/07 Convergence model, the 2008/09 Convergence model and the Parallel model. The breakdown of the values for each individual local authority within the SWaMP Region, along with the estimated cost implications associated with non-compliance, for this period is presented within Appendix D. A graph has also been included to show Stage IV with consideration being given to the effect of a change in the biodegradable fraction within municipal waste.

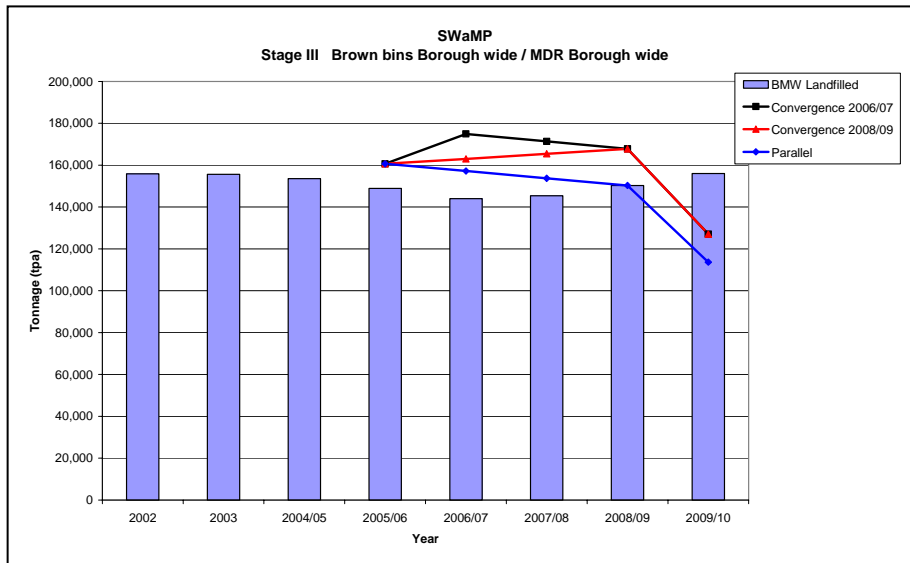
Stage I MDR Collected Borough Wide



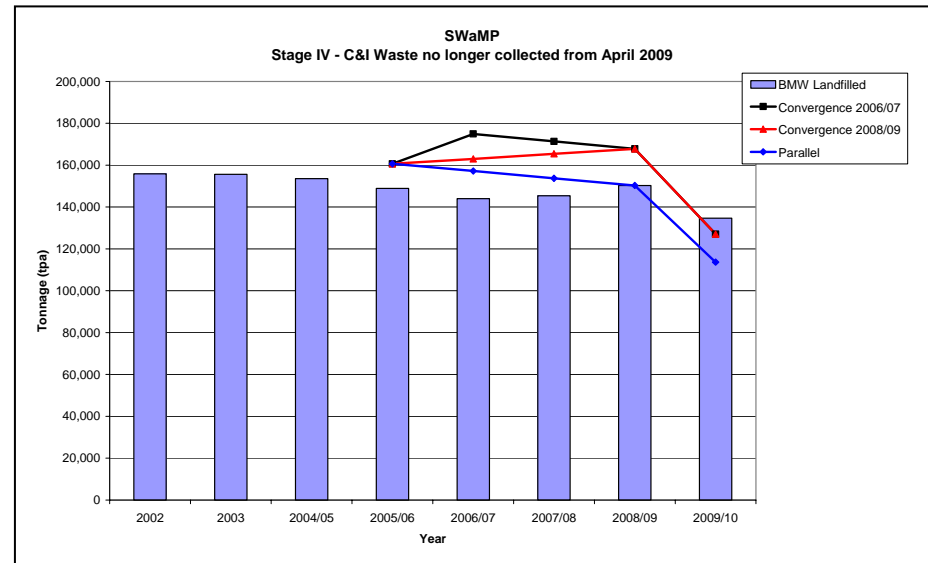
Stage II Kitchen & Organic Materials Collected from Urban Area



Stage III Kitchen & Organic Materials Collected Borough Wide



Stage IV C&I Waste no longer collected from April 2009



5.2 DISCUSSION

The gap analysis has set out a number of options to extend recycling and composting. These have included four key areas:

- Blue bins / black boxes to be rolled out Council wide
- Brown bins to be rolled out in all urban areas
- Brown bins to be rolled out in all urban and rural areas
- Withdrawal of commercial / trade waste services

The analysis demonstrates that the 2009/10 target cannot be met through introduction of these source separated recovery schemes alone.

The analysis assumes a 3% per annum growth rate in both household and municipal wastes. The comparisons indicate that if waste growth were curtailed, this would have a significant impact on the ability to meet the 2009/10 target. More recent data suggests that municipal waste growth is slightly below the 3% value, and therefore this value should be monitored on a quarterly basis.

In addition to this, there is a further assumption that the biodegradable fraction of municipal waste is 71%. It should be noted that a reduction in this percentage would potentially reduce the infraction costs for the SWaMP Group.

The actions considered in the gap analysis such as mixed dry recyclable collections and organic collections are consistent with the schemes and infrastructure identified within the current Waste Management Plan, as such it is considered appropriate that these schemes are expanded within the context of the Plan rather than the need to have developed and adopted a reviewed Plan. It is considered that more than one in vessel composting facility will be required in the sub region. This is necessary in order to comply with the requirements of the Animal By-Products Regulations and also to ensure that there is sufficient capacity to treat all brown bin waste within the Region. This information therefore should be considered in future planning applications for composting facilities.

5.3 OPTIONS

Beyond the above measures SWaMP will have to embark on further treatment of the residual, grey bin, waste to meet the 2009/10 targets. The following aspects have been considered in the review of options:

- Compliance with existing Waste Management Plan;
- Timescale for delivery – the indicative time required to have delivered the facilities.

The main generic options considered to treat waste to meet the 2009/10 target have included:

- **Incineration** – Incineration has been defined in EU legislation as the thermal treatment of wastes with or without the recovery of combustion heat generated. This form of treatment however is not considered to be deliverable by 1 April 2009.
- **Anaerobic Digestion** – Anaerobic Digestion involves the decomposition of organic waste by bacteria to produce a methane rich gas combustible gas, which is suitable for driving gas turbines and hence fueling plants. The residual material produced from the process, a fertiliser compost residue, has the potential to be used as a soil fertiliser. Although well established for the treatment of sewage sludge and farm slurries, it is still considered to be in experimental stages for municipal and industrial wastes. There is however a new anaerobic digestion facility for agricultural wastes, in the form of a bio-gas plant being proposed for Fivemiletown, Co. Tyrone, although the delivery of this facility may be subject to a delay. The suitability of this plant for treating mixed organic waste for the SWaMP Region will be subject to further assessment and discussion with statutory authorities when more detailed information becomes available.
- **Autoclave** – Autoclaving is a pre-treatment system, which is essentially a steam treatment process. It has traditionally been used to sterilise clinical wastes but may be used for municipal waste where shredded municipal waste is processed in a pressurised drum under the action of steam. After processing, recyclable material can be extracted and a refuse derived fuel produced. There will however be a residue for disposal from mixed MSW processing.
- **Mechanical Biological Treatment (MBT)** – MBT can take a number of forms and in its most generic scope could include all mechanical and biological treatment processes. A basic MBT option would be to bio-stabilise the residual, grey bin, waste in units similar to that used for in vessel composting followed by landfilling. Mechanical Biological Treatment (MBT) is considered to be the most realistic delivery option for SWaMP to meet the 2009/10 target although discussion is needed to identify the reduction in biodegradability from the process. MBT is considered to be compliant with the Waste Plan in that the infrastructural elements are already included. In addition to this, it is also deliverable within the desired timescale. This facility would require a robust outlet for the burning of the Refuse Derived Fuel (RDF). Within the UK and number of MBT plants supply refuse derived fuel to cement kilns. There are 2 cement kilns operating in the general area, one in Cookstown and another in Derrylin.

6.0 CONCLUSIONS AND RECOMMENDATIONS

In conclusion, the gap analysis has highlighted the importance of delivery of infrastructure in order to ensure that the SWaMP group as a whole meets their targets. As a result of this review, it is therefore recommended that SWaMP should, as a minimum, role out collections for mixed dry recyclables Council wide and role out mixed organic collections (kitchen and garden) to at least all urban areas, the latter being subject to delivery of suitable treatment facilities.

The following is a summary of recommendations and actions required under the 2003 review:

Recommendations and Actions	
Infrastructural Actions	<ul style="list-style-type: none"> ▪ Delivery of In vessel Composting facilities; ▪ Securing long terms contracts for a materials recovery facility; ▪ Procuring outlets for garden waste.
Kerbside Actions	<ul style="list-style-type: none"> ▪ Delivery of mixed dry recyclables bins Council wide; ▪ Delivery of brown bins urban wide (equality issues to be assessed at individual Council level).
Civic Amenity Site Actions	<ul style="list-style-type: none"> ▪ Audit the performance of Civic Amenity Sites; ▪ Extend the collection at Civic Amenity Sites to include, for example, the collection of wood, metals and WEEE; ▪ Contract for various materials collected (including WEEE).
Future Surveys	<ul style="list-style-type: none"> ▪ Compositional Studies; ▪ Investigation of outlets for Refuse Derived Fuel; ▪ Investigation into the performance of Mechanical Biological Treatment (MBT) plants and Anaerobic Digestion (AD) plants; ▪ Participation and capture rate assessment; ▪ Assessment of biodegradable reduction in treatment plants.