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National Waste Strategy: Scotland

# Tayside



## Area Waste Plan



SCOTTISH EXECUTIVE





## Tayside Area Waste Plan



Prepared by SEPA  
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Tayside Recyclers: 2nd right image on front cover supplied by Tracey Dixon.

## Foreword by Tayside Waste Strategy Group Chair

I am very pleased to present the first ever Tayside Area Waste Plan. The Tayside Waste Strategy Area Group has been working hard since early 2000 to prepare a long-term, integrated plan for the management of waste in the Tayside area. This process has been carried out in consultation with a range of stakeholders and I would like to thank everyone involved for their constructive comments.

The plan presents us with a series of challenges by proposing a step change in the way we think about and handle our waste. First and foremost, we must find ways of reducing the amount of waste we produce. We must then consider the waste that we do produce as a potentially valuable resource. This means that we must reuse and recycle as much of this resource as possible. We must then get as much benefit as possible from the remaining waste before we finally resort to landfilling. These are the challenges that face us all.

This plan proposes a way forward for the next 20 years. However, for this to work – and work it must, we have to ensure that the strategic direction we are proposing is sensible and workable. There is no option other than to change the way we deal with our waste. I would encourage everyone in Tayside to rise to the challenges and play your part.

**Colin Anderson**

Chair, Tayside Waste Strategy Area Group

## Foreword by Scottish Executive

Currently almost all of Scotland's household waste goes to landfill sites. This has been a cheap and – for most of us – convenient way of putting waste out of sight and out of mind. But disposing of unsorted refuse in this way is, quite literally, a waste of the world's resources. It is also a potent source of greenhouse gases and other emissions to the environment with waste management (mainly from landfills) contributing almost a quarter of the total amount of methane emitted in Scotland each year.

Moving to a position where we produce less waste, reuse and recycle more and recover value from as much as possible of what is left is at the heart of the Scottish Executive's approach to sustainable development. Nationally we have set a target of recycling or composting 25% of Scotland's waste by 2006, but we aim to move beyond that to achieve higher levels of recycling and composting and minimise our use of landfill. These are goals that are wholeheartedly supported by the Scottish people. In the recent Executive survey of public attitudes on the environment over two-thirds of people indicated that they were worried or very worried about waste management issues. Many already support recycling and composting initiatives by local authorities and the community sector. Opinion surveys show that more than 80% of people would participate in kerbside recycling if the necessary facilities were in place.

The change cannot be achieved overnight. It will need investment in new services and new facilities and in the development of markets for recycled materials. The Executive has allocated more than £230m over the next three years for these purposes. The change also needs a change of culture so that sorting our waste becomes a part of daily life for all of us. And crucially it must be based on thorough planning taking full account of local circumstances.

The preparation of this Area Waste Plan for Tayside, along with 10 other area plans and the National Waste Plan, has been the essential first step on the path to change. The Plan is the product of intensive work by Angus, Dundee City and Perth and Kinross Councils, the Scottish Environment Protection Agency and the Scottish Waste Awareness Group and a representative from the not-for-profit sector to identify the best practicable environmental option for waste management in Tayside. Its completion is a testament to the potential of partnership working across local authority, organisational and sectoral boundaries and all participants deserve credit for the parts they have played. The exercise has also generated extremely high interest amongst the general public in waste issues, partly as a result of the area groups organising many local meetings, exhibitions, leaflets and consultations.

The programme of change set out in this plan and its counterparts is a challenging one. But it is one, which by building on the partnerships that have been established at national and local level by the waste planning process, we can and must achieve.

**Ross Finnie**

Minister for Environment and Rural Development

# Executive Summary

This Tayside Area Waste Plan has been developed by the Waste Strategy Area Group to establish a framework for improved waste management practices across the three local authority areas of Angus, Dundee City and Perth & Kinross.

This plan is the final output of a process to profile a range of waste management options for the next 20 years, appraise these options and establish a best practicable environmental option (BPEO) for Tayside.

The key aim of the area waste plan (AWP) is to:

**'Contribute to the sustainable development of the Tayside Area by developing waste management systems that will control waste generation, reduce the environmental impacts of waste production, improve resource efficiency, stimulate investment and maximise the economic opportunities arising from waste.'**

The principle of sustainable development is now fully embedded at all levels of Government thinking and policy-making. The Scottish Executive recognises that effective resource use is a crucial element of sustainable development and therefore set the following objective within the spending proposals for 2003–6:

**'Ensure progress towards sustainable waste management of Scotland's waste and achievement of EU landfill reduction targets by 2010, 2013 and 2020.'**

The Executive overall national target set to achieve this aims to:

- Increase the amount of waste collected by the local authorities which is recycled or composted to 25% by 2006.

This AWP has five main parts:

- Section 1** → Sets out the background to the AWP in the context of the Tayside area and details current waste management practices and infrastructure.
- Section 2** → Summarises the strategic framework and key drivers behind the development of the AWP and presents a summary of the methodology used to develop the best practicable environmental option for municipal solid waste in Tayside.
- Section 3** → Presents details of the best practicable environmental option for the management of the municipal solid waste in Tayside, which seeks to build on the existing range of waste management facilities and significantly increases the amounts of waste, which will be composted, recycled and reused.
- Section 4** → Presents a framework for developing the best practicable environmental option for non-municipal solid wastes that are not specifically covered in this plan.
- Section 5** → Presents essential elements for implementing the AWP, including an action plan detailing future actions, timescales and responsibilities.

The plan primarily focuses on municipal solid waste (MSW), produced by households and some commercial premises that is collected and managed by the Councils. It sets out the strategy for implementing the best practicable environmental option (BPEO), as agreed by the group in December 2001 and reported in the Tayside Draft Area Waste Plan dated April 2002. Further detail on the other options considered, the assumptions made and consultation feedback are contained within the documents referenced in annex 4.

Information and data on non-MSW, from industrial, non-local authority collected commercial, non-natural agricultural and mines and quarries is currently insufficient to conduct a thorough analysis of management options and identify the BPEO. Therefore only a framework for the future development of BPEO for non-MSW is presented in Section 4 and the Tayside Waste Strategy Area Group will continue to identify areas where management of this waste stream can be improved.

## Summary of MSW BPEO

The BPEO for the management of MSW within Tayside contains the following elements:

- Preventing the generation of waste at source.
- Increasing segregated kerbside collections of dry recyclate and compostables.
- Increasing the quantities of paper, card, glass, plastic, metal etc. recycled.
- Increasing the quantities of putrescible wastes,(e.g. garden and kitchen waste) composted.
- Ensuring energy recovery from appropriate wastes by combustion at the DERL energy from waste plant.
- Reducing the quantities of waste going to landfill.

The table below summarises the proportions of the total amount of MSW and how they are managed over time.

### Es.1 – Indicative BPEO percentages for Tayside MSW

Year	Recycling	Composting	Energy from Waste	Landfill
2001	6%	5%	13%	76%
By 2010	19%	11%	31%	39%
By 2013	25%	12%	30%	33%
By 2020	33%	14%	29%	24%

The BPEO requires increased levels of public awareness and participation in waste prevention and in source separating of materials for kerbside collection. It also encourages communities to get involved in developing local projects that have added social or environmental value.

Improved collection systems aim to capture a high quality material and make recycling accessible to householders across Tayside. Initiatives to increase diversion of biodegradable municipal waste from landfill include kerbside collection of garden wastes and development of centralised and local community composting sites.

Taking forward the Tayside AWP will require partnership working at a range of levels and with a number of stakeholders. Consequently, it is essential that commitment is given by all stakeholders, to both the principles behind the plan and the range of actions promoted. Education and awareness raising is a vital element in achieving widespread attitude and behaviour change towards household and commercial waste management.

### Changes from the Draft Area Waste Plan

The draft area waste plan was consulted on between May and July 2002. The consultation generated 75 responses of which around 80% said they were happy with the plan. Three general areas of improvement were highlighted:

- It was felt that the BPEO was swamped by the other options presented. Only the BPEO has been carried through to this final plan.
- Education and awareness raising was not considered to be highlighted enough. This section has been expanded.
- Some of the actions were not clear enough. A 'smart' action plan matrix has been developed.

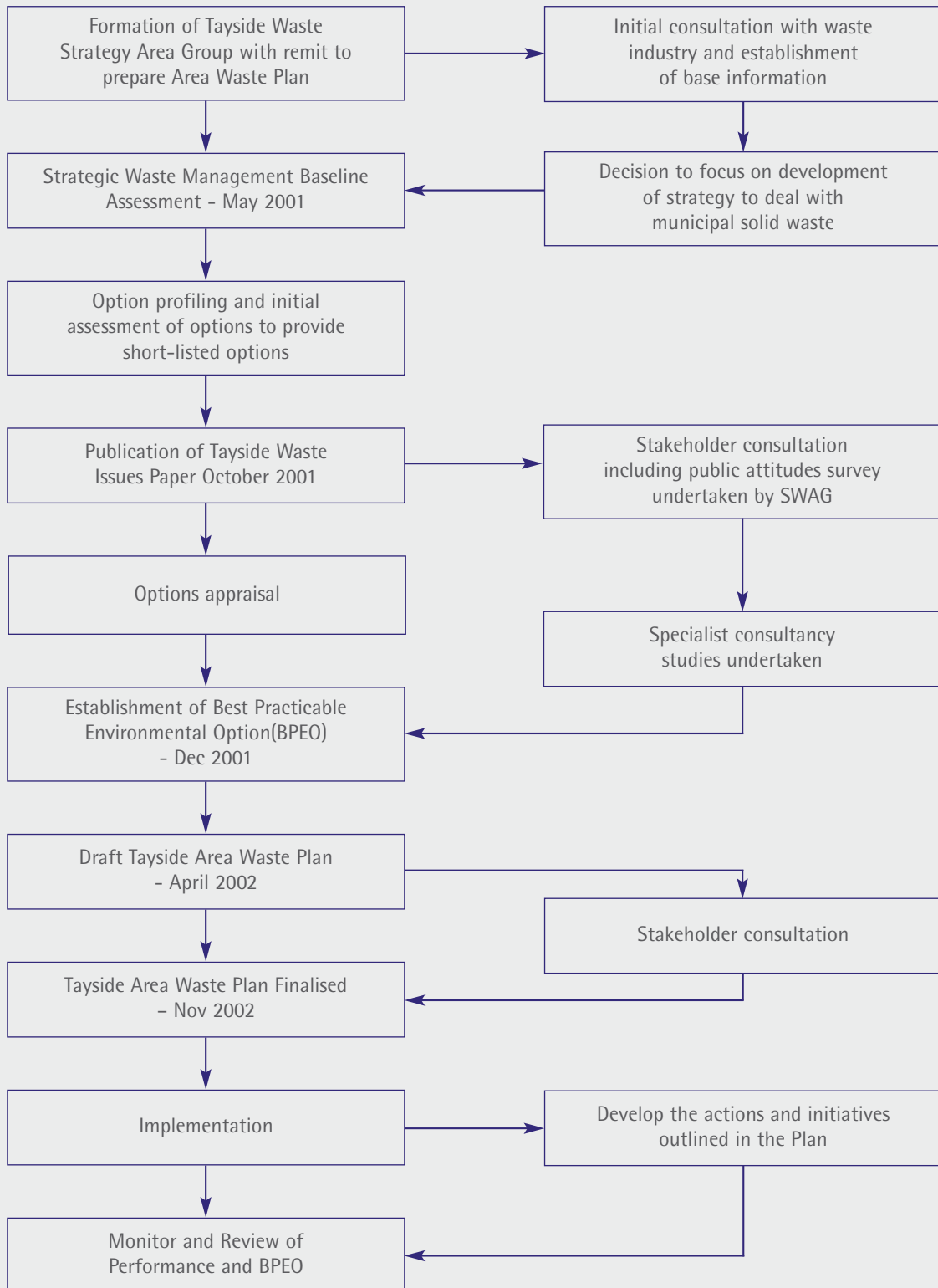
### Implementation of the Tayside Area Waste Plan

In order to implement this AWP, a number of actions have been established and these are contained in Annex 2. These actions will mainly:

- take forward the development of the AWP;
- ensure appropriate data and information is gathered in order to monitor and develop the AWP; and
- develop the detailed implementation arrangements.

Implementation of this plan will result in the management of waste costing more. Increasing levels of funding will be required for local authorities and inevitably the producers of waste will be required to pay more. The land use planning system will require to take account of the AWP and ensure that appropriate land allocations and planning permissions for infrastructure is in place.

## Area Waste Plan Process



## Key Acronyms

Terms and abbreviations most frequently used.

### **AWP**                    **Area Waste Plan**

The National Waste Strategy: Scotland 1999 established 11 Waste Strategy Area Groups. Each Group was charged with producing an AWP presenting the strategic plan for the waste arising in that area based on National Waste Strategy: Scotland principles.

### **BMW**                    **Biodegradable municipal waste**

Waste collected by local authorities that is capable of undergoing anaerobic or aerobic decomposition, such as food or garden waste, paper and cardboard i.e. waste that rots. This is generally accepted to be 60% of municipal solid waste.

### **BPEO**                    **Best practicable environmental option**

The National Waste Strategy: Scotland 1999 defined the BPEO as the outcome of a systematic and consultative decision-making procedure, which emphasises the protection and conservation of the environment across land, air and water. The BPEO procedure establishes, for a given set of objectives, the option that provides the most benefits or the least damage to the environment as a whole, at acceptable cost, in the long term as well as in the short term.

### **MSW**                    **Municipal solid waste**

For the purposes of this plan, the municipal solid waste definition is taken to mean household waste and any other wastes collected by the local authority, or on behalf of the local authority.

### **SWMBA**                    **Strategic waste management baseline assessment**

An assessment and description of the existing waste management in an area. Examines waste arisings, waste management facilities and capacities, imports and exports of waste, existing contract arrangements and demographics such as population and household numbers.

### **SWAG**                    **Scottish Waste Awareness Group**

This group has been tasked with planning public awareness campaigns on domestic waste management throughout Scotland.

### **Tayside WSAG**    **Tayside Waste Strategy Area Group**

A key component of the National Waste Strategy: Scotland was the establishment of 11 area waste groups across Scotland. The groups are charged with making the national strategy a reality at a local level, developing local solutions in response to local needs. The Tayside Waste Strategy Area Group consists of the following partners:

**Angus Council**

**Dundee City Council**

**Perth and Kinross Council**

**Scottish Environment Protection Agency**

**Scottish Waste Awareness Group.**

A full glossary of terms is presented in Annex 1.

# 1 Introduction and Context

## 1.1 Background

Waste management in Scotland is facing a period of rapid and radical change. Driven by European legislation, the need for improved environmental protection and public expectation, we must find ways of reducing our current dependence on landfill and moving towards more sustainable methods of managing waste and resources. We must also seek to reduce the growth in waste arisings, minimise resource use, reduce the hazardous content of waste and find waste management solutions that do not compromise the future. This is in line with the principle of sustainable development. It will require a fundamental change in our current attitude to waste and an acceptance that each of us has a responsibility to reduce waste and not simply to pass the responsibility to others.

In order to tackle these issues, the National Waste Strategy: Scotland described a process of area waste planning and the formation of Waste Strategy Area Groups (WSAG). The strategy has been adopted by the Scottish Executive as the principal mechanism to develop sustainable waste management across Scotland. The Tayside WSAG was formed in April 2000 and is a partnership of the following organisations:

- Angus Council
- Dundee City Council
- Perth and Kinross Council
- Scottish Environment Protection Agency
- Scottish Waste Awareness Group.

In addition, Tayside Recyclers have assisted in the development of the plan and articulated the views of a not-for-profit organisation.

This is the first area waste plan (AWP) to be prepared for Tayside. Dealing primarily at this stage with the management of municipal solid waste (MSW), the plan sets out a strategy that will meet the Landfill Directive Diversion Targets (see Section 2.4.1). While other waste streams are dealt with in less detail, principally because of a lack of quantitative and qualitative information, the AWP establishes a number of actions to enable detailed plans for non-municipal solid wastes (non-MSW) to be formulated in the future.

## 1.2 Area Waste Plan: Key Aims and Objectives

The key aim of the AWP is to:

**'Contribute to the sustainable development of the Tayside area by developing waste management systems that will control waste generation, reduce the environmental impacts of waste production, improve resource efficiency, stimulate investment and maximise the economic opportunities arising from waste.'**

This aim is supported by the following objectives:

1. Set out in detail the existing waste management infrastructure and arrangements, develop the principles and plan for progress in waste management in the medium and long terms to meet current and future legislative requirements and the objectives of the National Waste Strategy: Scotland.
2. Ensure that the waste management system developed is in accordance with the best practicable environmental option (BPEO) and accords with the principles of sustainable development and integrated waste management, and makes the maximum possible contribution to reducing society's environmental impact at an acceptable cost.
3. Provide a clear framework for stakeholders to judge the future development of waste management services in the Tayside area, and to guide both local authority integrated waste management plans and private investment decisions.
4. To provide direction for development planning policy in Tayside in order to ensure it is consistent with, and contributes to, the overall aims of the National Waste Strategy and the Tayside AWP.
5. To maximise the opportunities for Tayside businesses arising from sustainable waste management, including the not-for-profit sector.

6. To enable all key stakeholders the opportunity to input to the area waste planning process.
7. Ensure that the area waste planning process offers a clear, transparent and informative approach to local stakeholders.
8. To raise public awareness of the future challenges in implementing the AWP and promote active participation by all stakeholders in meeting the objectives.
9. To maintain regular review of the new waste management technologies to ensure the continued BPEO for the Tayside area in the longer term.

### 1.3 Developing an Integrated Plan

The AWP seeks to adopt an integrated approach which:

- Ensures that all waste streams are considered together and the solutions chosen for individual waste streams are considered in the light of how they impact on the management of others.
- Considers waste minimisation, reuse, recycling, energy recovery, disposal, promotion and education and local market development in a coherent and planned way.
- Ensures consistency with adjoining areas and national integration of the plan within the National Waste Strategy: Scotland.

The Tayside WSAG has primarily considered the management of MSW. At this stage it has not been possible to take the fully integrated approach as suggested in SEPA's BPEO decision-making guidance, because of issues associated with data availability on the quantity, sources, and content of commercial, industrial and construction and demolition wastes dealt with by the private sector. This will require ongoing consultation with the Tayside waste industry to develop a fully integrated plan for non-MSW waste streams and a number of action points to take this forward are set out later in this plan. It is recognised that there is a need for an integrated approach to collecting and managing information to meet the many demands for waste management data. Data is required for European reporting requirements, policy planning, reviewing performance, assessing the impacts of new legislation, regulating effectively, aiding research and communicating with stakeholders.

As part of this process, regular annual surveys of MSW and licensed waste management sites are being brought forward by SEPA. In addition, work is ongoing to improve the quality of data on special waste, priority waste streams and general industrial wastes. Significant improvement will need to be made to the quality of data on waste arising if the shift to an effective resource management culture in Scotland is to be achieved.

#### Action 1

Using national methodology plan the strategic management of Tayside non-MSW.

#### Action 2

Develop a data collection and management system for non-MSW streams.

#### Action 3

Develop an AWP for Tayside that fully integrates all waste streams.

#### Action 4

Develop a waste analysis strategy for MSW arising in Tayside.

When completed and integrated across Scotland, the 11 AWP's will require to collectively meet national legislative requirements. In order to achieve consistency of approach across the Waste Strategy Areas, a broad methodology and guidance was established through the following key documents: 'Supporting Guidance for Area Waste Plans' and 'Best Practicable Environmental Option (BPEO) Decision-making Guidance'. An important element was to seek the involvement of all key stakeholders (waste industry, local authorities and the general public) at various stages of the process. Consistency between adjoining areas is also important. For Tayside this means integration with the North East, Fife, Highland and Forth Valley Waste Strategy Areas and continuing dialogue with the other Waste Strategy Area Groups.

The AWP establishes a broad approach to waste management in the Tayside area. However, it must not be seen in isolation, but as part of the wider drive of improved environmental and community awareness and sustainability objectives. The AWP will therefore influence and in turn be influenced by a raft of other policy documents and initiatives and has a key role in integrating the investment programmes and other plans, strategies and initiatives developed by central and local government, partner agencies and the waste industry generally. A list of potential linked documents is outline and summarised in Annex 3.

## 1.4 Area Description

The Tayside Waste Strategy Area comprises the administrative areas of Angus, Dundee City and Perth and Kinross. This is an extensive geographical area of about 7560 square kilometres (approx. 756,057 hectares) and comprises an attractive and diverse area of coastline, lowland and remote upland character with a population of about 386,402 (2001 estimate). Just under half of the population live in Dundee and Perth, while the remaining population live in a network of towns, villages and smaller settlements. In the period to 2016, the population of the Tayside area is forecast to decline to 373,200 although in contrast the population of Perth and Kinross is expected to increase. Although population trends are an important indicator, perhaps a more useful indicator of waste arisings is that of household projections. There are currently about 171,800 households (2001 estimate) in the Tayside waste area and this is expected to increase to around 184,200 in the period to 2016. Whereas Dundee City will remain steady, both Angus and Perth and Kinross are expected to increase substantially. These forecasts will have implications for both the strategy and management of waste in the Tayside area. Tables 1.1 below and Table 1.2 over show changes in the population, household and economy within the Tayside area. Further work is required on how these changes will translate into impacts on the total wastes arisings in the area.

**Table 1.1 - Population and Household Projections**

Population Projections	2001	2011	2016	Change 2001-2016	% Change
Angus	109794	108711	107932	-1862	-2%
Dundee City	142532	129842	123720	-18812	-13%
Perth & Kinross	134076	138904	141558	+7482	+5.6
Tayside Waste Area	386402	377457	373210	-13192	-3.4

Household Projections	2001	2011	2016	Change 2001-2016	% Change
Angus	47300	50300	51800	+4500	+10%
Dundee City	66600	66500	66400	-200	0%
Perth & Kinross	57900	62600	66000	+8100	+14%
Tayside Waste Area	171800	179400	184200	+12400	+7%

Sources: General Register Office (Scotland) and Scottish Executive Development Department

Economic activity and the commercial and industrial makeup of the Tayside area will influence both the types and volumes of waste produced in the area. The employment forecasts given in Table 1.2 give a good representation of the commercial and industrial makeup of the Tayside area.

**Table 1.2 – Employment Forecasts – Tayside**

Employment Estimates by Major Industrial Groups: Tayside					
	1998	2000	2008	2010	% change
Agriculture etc.	3300	3200	3200	3200	-3.1%
Mining & quarrying	400	400	400	400	0.0%
Manufacturing	21500	20600	18600	18100	-15.8%
Utilities	1900	1800	1600	1600	-15.8%
Construction	9600	9600	8700	8500	-12.9%
Distribution, hotels	43500	43800	47700	48900	+11.0%
Transport & communications	7900	7900	8000	8100	+2.5%
Other market services	25800	27900	35500	37500	+31.2%
Non-market services	51400	5100	52800	53200	+3.4%
Total	165300	166300	176700	179500	+7.9%

Source: CE/ER LEFM Estimates

## 1.5 Current Waste Management Practice within Tayside

Future plans for the management of waste must be set within the context of the existing waste management situation in Tayside. This is presented in the May 2001 Strategic Waste Management Baseline Assessment (SWMBA) report.

This assessment provides detailed descriptions and data on current waste management practices, flows and sites and demonstrates that Tayside has a relatively self-contained system for the management of household, commercial and industrial wastes. However certain specific wastes are either imported or exported for specialist treatment or disposal. Examples of this include clinical waste, organic waste for application to agricultural land and special wastes.

In common with the rest of Scotland, Tayside has traditionally relied on landfill as the primary method of waste disposal. There are two strategically important landfill sites; Restenneth, Forfar, in Angus and Binn Landfill, Glenfarg, in Perth & Kinross. Both sites are expected to continue to accept waste until around 2013. Dundee City also has the DERL (Dundee Energy Recycling Limited) energy from waste plant able to combust up to 120,000 tonnes of wastes annually. Recycling and composting of wastes is increasingly an important element of waste management in Tayside.

Table 1.3 summarises the numbers and types of waste management facilities within Tayside that have current waste management licences.

**Table 1.3 – Current Licensed Waste Management Infrastructure**

Facility Type	Number
Landfill (household, commercial, industrial)	5
Landfill (inert)	34
Landfill (commercial/industrial/sludges)	7
Transfer stations	24
Civic amenity sites	17
Treatment facilities	7
Metal recycling facilities	8

Additions to the current infrastructure will be required in order to cope with increasing volumes of waste arising and the shift in the management of waste up the waste hierarchy. Sections 3 and 4 deal in detail with MSW and non-MSW wastes respectively and will set out the future infrastructure needs of these waste streams where possible. Where this is not possible, a process will be established to identify future infrastructure needs.

#### 1.5.1 Municipal Solid Waste Management

Angus, Dundee City and Perth & Kinross Councils have a history of being at the forefront of recycling in Scotland with all achieving a recycling rate (including composting) greater than 10% in 1999. This was twice the national rate. A variety of waste materials are collected, sorted and stored in Tayside prior to onward transportation to re-processors where the wastes are recycled. All three councils compost green wastes in open windrows and collect paper, metal and glass for reprocessing. In addition there are a number of other organisations involved in recycling of waste in the Tayside Area. There is however little waste prevention activity in the area currently.

A summary of the current arrangements for the management of MSW in Tayside is given in Table 1.4. This shows that landfill is the most significant final waste management route for this waste type. It also shows there are existing collections of wastes for recycling from both the kerbside and mini recycling points taking place across Tayside.

**Table 1.4 - Summary of Current Municipal Solid Waste Management**

	Angus	Dundee City	Perth & Kinross
Mini Recycling Points	5 mini recycling points: Friockheim, Glamis, Inverkeilor, Letham, Newtyle for the following materials: Drink & food cans Glass Newspapers & magazines 34 points for the following materials, i.e. supermarkets: Drink & food cans Glass Newspapers & Magazines (some sites glass only) Edzell still has a mixed general waste skip site at present.	21 mini recycling points for the following materials: Glass Aluminium cans Paper	32 mini recycling points for the following materials: Aluminium cans Glass Newspapers, magazine, office quality paper Textiles
Civic Amenity Sites (some of which include mini recycling points)	7 civic amenity sites: Arbroath, Brechin, Carnoustie, Forfar, Kirriemuir, Monifieth, Montrose for the following materials: Mixed cans Textiles Glass Paper Cardboard Green waste Plastics Engine oil & batteries Scrap metal Gas bottles Fridges/freezers Inert waste (5 sites) Wood (3 sites) Mixed general waste	2 civic amenity sites: Riverside and Baldovie. Work is currently underway to provide a third site at Marchbanks	8 civic amenity sites: Aberfeldy, Auchterarder, Bankfoot, Blairgowrie, Crieff, Kinross, Pitlochry, Perth for the following materials: Aluminium cans Textiles Glass Paper Green Waste Plastic Milk Cartons Car Oil & Batteries TV, Video & Hi-Fi equipment Fridges/freezers Scrap metal

	Angus	Dundee City	Perth & Kinross
Centralised composting	Council accepts green waste at all civic amenity sites but also offers a kerbside collection in some areas. Some is delivered direct to the composting facility by businesses/parks department. The green waste is centrally composted at Restenneth Landfill, Forfar where it is used as a cover. Total for 2001: approx. 4,000 tonnes	13000 brown bins issued to householders for the collection of clean garden waste. Garden waste also accepted at civic amenity sites. The waste is taken to a central site at Riverside, where it is shredded before being composted in open windrows. The finished product is sold to various contractors as a soil conditioner and compost for use within the local area.	Council accepts green waste at all civic amenity sites but also offers a kerbside collection in some areas. The green waste is centrally composted at Binn Landfill Glenfarg where it is used as a cover. Total for 2001: 8600 tonnes
Home composting	Home composters sold at a council subsidised price from Blackwells. Several promotional days have taken place at supermarket sites. Green cone composters also sold.	No activity to date	Promotional offer for home composters run in conjunction with Blackwells and Scottish & Southern Energy. Home composters sold at cost price at all CAS or delivered to residents in the Perth & Kinross Council area for an additional £3.
Community composting	A neighbourhood composting operation does take place at Hospitalfield in Arbroath.	No activity to date.	A pilot project for community composting is about to start in Crieff. Project will be in partnership with SITA.
Kerbside schemes	Newspaper kerbside collection offered to 75% of households. Paper is left out in bags fortnightly. Trial green waste kerbside collection is offered to 2% of households. Wheelie bins are emptied fortnightly, spring to autumn. Trial dry recyclate kerbside collection is offered to 2% of households. 59 litre boxes are emptied weekly.	Waste paper is collected on a four weekly cycle from approximately 26000 properties within the city. The paper is sold to a national contractor for use within the newspaper industry. Total for 2001: 2512 tonnes. Garden waste is collected on a fortnightly cycle from 13000 households and is composted at Riverside. Total for 2001: 3722 tonnes.	Paper recycling and green waste kerbside collections offered to 62% of the population. All green waste is collected in brown-lidded wheelie bins. Paper is collected in blue-lidded wheelie bins in some areas and in other areas it is collected in plastic bags that householders provide.

	Angus	Dundee City	Perth & Kinross
Energy from waste	Household waste from the southern part of area is sent to DERL. Mixed general waste from 3 CA sites is sent to DERL (sept 01 onwards). Both diverted to Restenneth during shutdowns. Total for 2001: approx. 20,000 tonnes	All household waste collected within Dundee is taken to the DERL energy from waste plant situated at Baldovie. The refuse is shredded and turned into a fuel stock before being burnt using fluidised bed technology to produce electricity that is fed into the national grid. Mixed waste collected from civic amenity sites is taken to a transfer station for separation before the combustible element is taken to DERL for incineration.	2001: 1052 tonnes to DERL Dundee.
Landfill	Municipal solid waste from the northern part of area is sent to Restenneth. Mixed general waste from 5 civic amenity sites is sent to Restenneth. Inert waste from 6 civic amenity sites is sent to Restenneth. Total for 2001: approx. 30,000 tonnes	The residual waste from the civic amenity sites, and any other element of the household waste that is considered unsuitable for the DERL plant is taken to landfill at Binn Landfill, Glenfarg.	2001: 75,726 tonnes to Binn Landfill, Glenfarg.

Reference to 2001 above relates to the financial year 2001/2.

### Current Contracts

The current contractual arrangements in place between local authorities and private contractors will influence the future waste management arrangements. Table 1.5 summarises the existing contractual arrangements between Tayside local authorities and private contractors.

Table 1.5 - Current MSW contract

Council	Contracted Activity	End of Current Contract	Contractor	Annual Tonnage	Site or Facility
Angus	Treatment of waste at DERL energy from waste plant	2020	DERL	30,000–36,000	DERL Energy from waste plant
Dundee City	Treatment of waste at DERL energy from waste plant	2024	DERL	75,000	DERL Energy from waste plant
Perth & Kinross	Landfilling of waste, composting of waste	2011	SITA	65,000	Binn Landfill, Glenfarg

#### 1.5.2 Non-municipal Solid Wastes

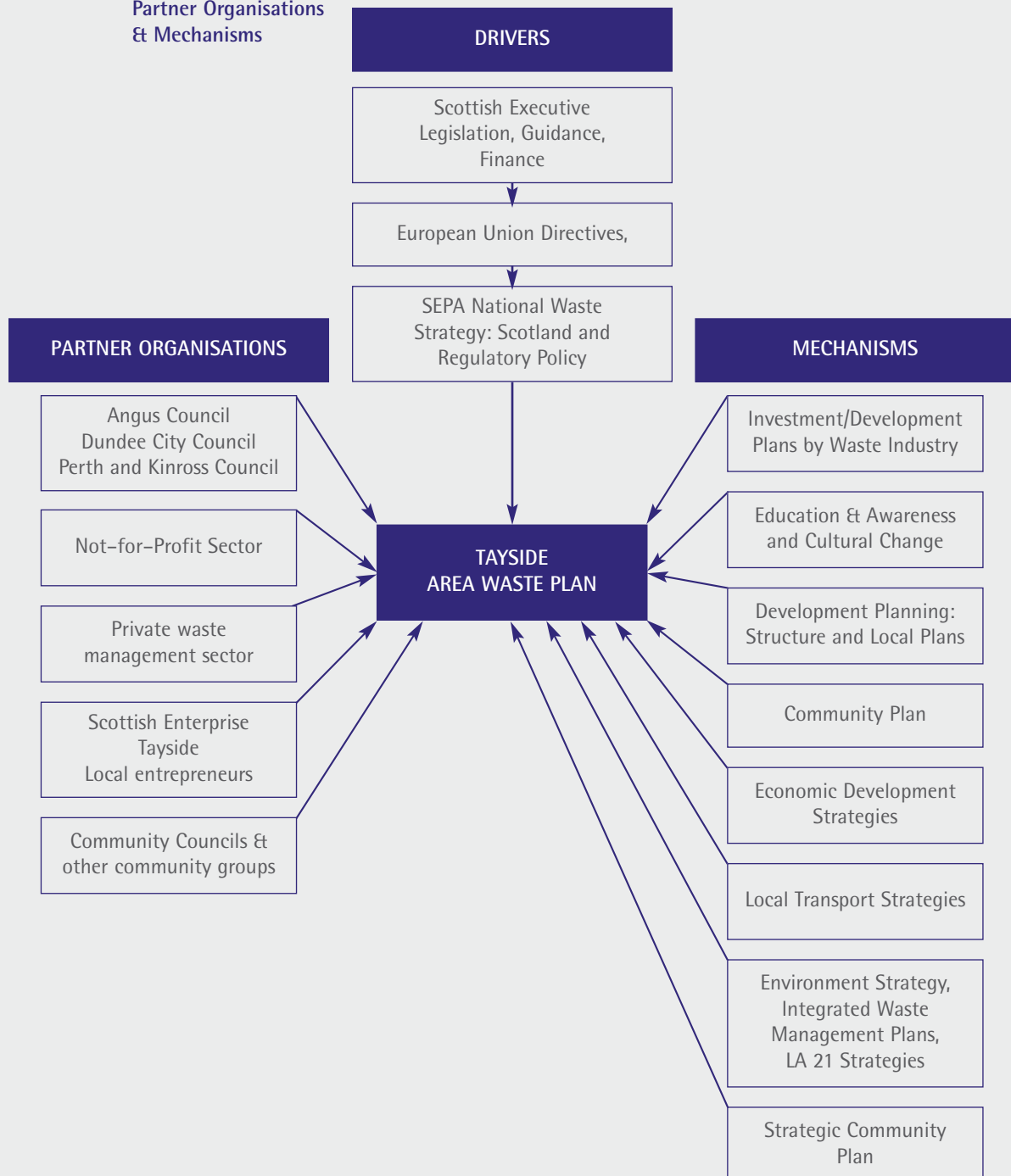
At present, there is limited quantitative data on commercial, industrial, construction and demolition wastes currently arising within Tayside. Management of these wastes are primarily dealt with by the private sector. Significant quantities of these wastes are landfilled, however increasing quantities are being recovered and reused. SEPA are leading work to establish a better information base and methodology to develop a strategy for managing non-MSW streams. This strategy is described in chapter 4.

## 2 Strategic Framework and Drivers for Change

### 2.1 Introduction

The purpose of this section is to summarise a number of key drivers and influences which set the context for the area waste plan (AWP) and which will impact on the future waste planning and management in Tayside. Figure 2.1 summarises the most significant partner organisations, drivers and mechanisms for change. The most significant drivers are then described in more detail. Annex 3 gives more detailed information on links to other policies.

**Figure 2.1 – Key Drivers, Partner Organisations & Mechanisms**



## 2.2 Definition of Waste

The definition of waste given in Council Directive 75/442/EEC (Waste Framework) as amended by Council Directive 91/156/EEC is any substance or object in the categories set out in annex 1 which the holder discards or intends or is required to discard. The Directive excludes from its scope gaseous effluents emitted into the atmosphere and, where they are already covered by other legislation, radioactive waste, waste resulting from prospecting, extraction, treatment and storage of mineral resources and the working of quarries, animal carcasses and the following agricultural wastes – faecal matter and other natural non-dangerous substances used in farming, waste waters with the exception of waste in liquid form and decommissioned explosives.

## 2.3 Sustainable Waste Management

It is Scottish Executive policy to move towards more sustainable waste management systems with increased recycling and composting [25% of municipal solid waste (MSW) by 2006] and less reliance on landfill disposal. The Strategic Waste Fund has been established to assist local authorities with the additional costs of implementing the National Waste Strategy.

## 2.4 The EU Landfill Directive

The EU Landfill Directive is one of the key drivers behind the National Waste Strategy: Scotland. The Directive imposes environmental and engineering standards for landfills across Europe and will ban the landfilling of many substances that are disposed of in this way at present. The Directive also requires a progressive reduction in the landfilling of biodegradable municipal waste (BMW) and the pre-treatment of wastes before landfilling, to reduce waste volume and minimise the environmental impact of disposal. This will assist in the reduction of landfill gases, such as methane, which are significant contributors to global warming.

### 2.4.1 Diversion of Biodegradable Municipal Waste

The Directive establishes national targets and timescales for the reduction of BMW to landfill. Where member states are particularly dependent on landfill they will be allowed to defer the implementation of the target dates by up to four years. It is expected that the UK will take advantage of this derogation. The UK has to report to the European Commission by July 2003 giving details of how the targets will be met and a decision on whether to extend the target dates will be taken then. In developing this AWP the assumption has been made, on consultation with the Scottish Executive, that the 4-year delay will be taken.

Including the 4-year delay the amount of BMW allowed to landfill will be (depending on whether the 4-year delay is used) as follows:

75% of 1995 levels by 2006 or 2010 including derogation.

50% of 1995 levels by 2009 or 2013 including derogation.

35% of 1995 levels by 2016 or 2020 including derogation.

It is the intention to reach these targets earlier wherever possible.

**What will this mean for the Tayside area?**

Using the 1999 waste arisings figures for the Tayside area and assuming two projection rates, nil growth (Table 2.1) and 2% annual growth (Table 2.2), the following tables show the BMW diversion from landfill that will be required for each of the target years. The figures have been calculated on the basis that the UK will take advantage of the 4-year delay.

Table 2.1 – BMW Diversion Required with 0% Growth

Area	Estimated MSW <sup>1</sup> Arisings 1995 <sup>2</sup>	BMW <sup>3</sup> Permitted To Landfill by 2010	BMW Diversion Required by 2010	BMW Permitted To Landfill by 2013	BMW Diversion Required by 2013	BMW Permitted To Landfill by 2020	BMW Diversion Required by 2020
Angus	62210	27995	16845	18663	25816	13064	31415
Dundee	87894	39552	16050	26368	29234	18458	37144
Perth & Kinross	71398	32129	21895	21419	32604	14994	39030
Tayside	221502	99676	54430	66450	87656	46516	107591

Table 2.2 – BMW Diversion Required with 2% Growth

Area	Estimated MSW <sup>1</sup> Arisings 1995 <sup>2</sup>	BMW <sup>3</sup> Permitted To Landfill by 2010	BMW Diversion Required by 2010	BMW Permitted To Landfill by 2013	BMW Diversion Required by 2013	BMW Permitted To Landfill by 2020	BMW Diversion Required by 2020
Angus	62210	27995	26443	18663	39103	13064	53298
Dundee	87894	39552	28498	26368	45847	18458	64495
Perth & Kinross	71398	32129	33990	21419	48747	14994	65599
Tayside	221502	99676	88932	66450	133698	46516	183393

<sup>1</sup>Municipal Solid Waste - see key acronyms

<sup>2</sup>Estimated by splitting 2.8 million tonnes for Scotland proportionally amongst the local authorities using waste arisings for 1998 to allocate each authority's proportion. Scottish Executive still to advise on method of calculation, which could significantly alter the amount of waste to be diverted.

<sup>3</sup>Biodegradable municipal waste - see key acronyms

#### 2.4.2 Landfill Permits

A key mechanism in controlling the amount of BMW each local authority will be allowed to landfill in future will be a system of Landfill Permits. The Scottish Executive will decide if local authorities will be able to trade their allowances, although it will be the responsibility of each local authority in the Waste Strategy Area Group to determine how to use the permits allocated to them. This would allow local authorities in areas where the additional costs of BMW diversion from landfill are disproportionately high or where landfilling is the agreed best practicable environmental option (BPEO) to 'buy permits' from other local authorities which are exceeding their individual BMW landfill diversion target. The overall allocation of allowances will be set to reduce the amount of BMW sent to landfill. Until the working detail of the tradable permit system is known and the 1995 baseline figures are allocated to each local authority, the impact on Tayside cannot be determined.

### 2.4.3 Other Technical Requirements

The Landfill Directive also has a number of other requirements, which will have an impact on the ability of landfill sites to accept certain waste types. Until a full assessment of the Tayside landfill sites against the Landfill Directive criteria has been made, the full impact of the Directive will not be fully understood. The main requirements of the Directive are as follows:

- Classification of sites to certain standards or acceptance of certain waste types. This could result in no landfill site in Tayside being able to accept hazardous wastes.
- Banning of specific wastes from landfill, including liquids and tyres.
- Increased technical and engineering standards.
- Treatment of waste prior to acceptance into landfill in order to reduce its volume or hazardous nature, facilitate its handling or to enhance recovery.

## 2.5 Landfill Tax

The Landfill tax encourages efforts to minimise the amount of waste generated and to develop more sustainable waste management techniques by making landfill a less economically attractive option.

The current landfill tax escalator, introduced in 1999, commits the government to raise the standard rate of tax for active waste by £1 per tonne each year until 2004/5, by which time it will have reached a rate of £15 per tonne. There is a strong case for increasing the tax significantly in future years to provide incentives for diversion of waste from landfill towards recovery treatments. The UK government announced in the November 2002 pre-budget statement their intention to consult on a revenue neutral proposal to increase the tax escalator to £3 per tonne from 2005/6 on the way to a medium to long-term rate of £35 per tonne

As an integral part of Landfill Taxation a Landfill Tax Credit Scheme (LTCS) has been returning some of the revenue from Landfill Tax to the community to improve environmental quality and local participation in waste projects.

The Government has announced a reform the LTCS from 1 April 2003. The level of funding for the replacement schemes will be capped at the value of the tax which would have been forgone in 2002/3 if all the available tax credits had been claimed by landfill operators. Approximately one-third of the funding will continue to be made available through a reformed tax credit scheme for spending on local community environmental projects, ensuring that the current level of support for these types of projects is maintained. The remainder will be allocated to public spending to encourage sustainable waste management.

## 2.6 National Waste Strategy Principles

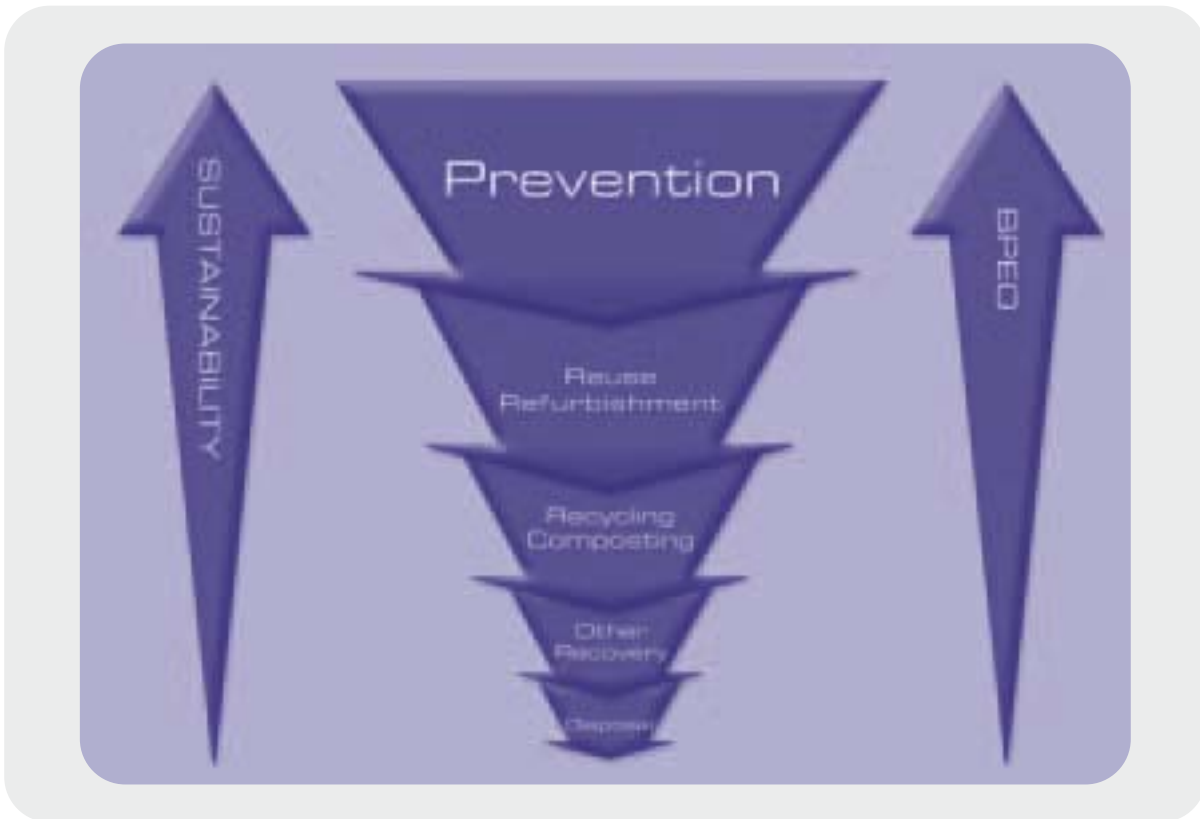
The National Waste Strategy: Scotland (NWSS) establishes key principles, which need to be taken into account in developing a sustainable future for waste management. These have influenced the development of the Tayside AWP. These are:

- the waste hierarchy;
- the proximity principle and self sufficiency and
- best practicable environmental option.

How these principles will affect the development of waste management systems and methods in Tayside is described below.

### 2.6.1 The Waste Hierarchy

The waste hierarchy provides a framework within which the most desirable waste management options are set out. Within Tayside, in common with the majority of Scotland, existing waste management practices are towards the bottom of the hierarchy. The objective of sustainable waste management is firstly to minimise the amount of waste being produced at source and thereafter increase the percentage of waste that can be reused, recycled and recovered. Ultimately the percentage of waste being disposed of to landfill should continue to reduce.



What this means for Tayside is described below.

### Waste Prevention

The need to prevent and reduce the amount of waste being produced has never been greater. Waste prevention therefore forms a key element of the National Waste Strategy: Scotland. Waste prevention can be achieved at a number of stages in a products life cycle, including product design, changes to management and production processes and the development of clean or 'wasteless' technologies. Householder behaviour and consumer choice have a significant role to play in waste prevention.

Waste prevention initiatives must address two distinct waste streams:

- household waste; and
- commercial and industrial waste

Household waste is by far the greatest proportion of MSW. By minimising the growth of household waste, the diversion required to meet the landfill directive targets can be significantly reduced. For example in Tayside, the rate of waste growth to 2020 has been assumed to be 2% (based on past growth rates and future household change). If this growth rate were reduced to 1% then some 42,000 tonnes of BMW would not require to be diverted from landfill. Prevention of household waste will also be assisted by other initiatives (for example producer responsibility legislation, education and awareness initiatives), and action by householders such as home composting.

For commercial and industrial wastes, there is a great deal of evidence which demonstrates that waste can be significantly minimised at various stages of manufacturing processes providing a financial benefit to the company as well as reducing the environmental impact of waste.

## Reuse and Refurbishment

In recent years there has been a decline in the reuse and refurbishment of consumer durables as the cost of replacing them has fallen in relation to the cost of repair. However, as well as removing items from the waste stream, reuse and refurbishment are linked to job creation and economic improvement. There are already reuse and refurbishment schemes in operation in Tayside ranging from the reuse of old clothing through to the refurbishment of furniture and computers. It is considered that there remains potential for future expansion and opportunity for stimulating this type of activity in Tayside.

The stakeholder consultation process highlighted opportunities for increasing reuse and refurbishment. This was seen as having many social benefits including the opportunity of employment for those who have difficulty in obtaining employment, and enabling those on low incomes to afford goods they previously could not.

## Recycling

Recycling is the separation of a material for processing, followed by preparation and sale onto a market to replace an existing virgin material. The most commonly recycled materials include newspaper, cardboard, glass and metals. There are numerous environmental benefits such as reduced air emissions, reduced impacts of extraction, energy savings, lower disposal impacts and more efficient use of raw materials. There are often other benefits such as encouraging producers to take responsibility for their wastes and economic benefits such as improved competitiveness or greater employment opportunities.

The collection of wastes as separate material fractions reduces contamination and the need for additional separation processes. This retains the quality and value of the waste materials.

Angus, Dundee City and Perth and Kinross Councils have amongst the best records of all local authorities in Scotland for recycling. The following materials are recycled:

- Paper and card
- Glass
- Metals including metal packaging
- Plastics
- Textiles.

## Composting

Composting is the aerobic decomposition of organic material to produce a stable material containing organic matter and plant nutrients. There can be benefits in applying this material to land including nutrient addition, improved soil structure and improved water retention. These benefits are best realised through the use of source segregated uncontaminated compostable wastes.

The three Tayside local authorities use open windrow composting methods to compost green wastes with some success.

## Energy Recovery

Energy recovery involves recovering part of the energy value from waste, either by burning or thermally treating the waste directly (for example incineration) or by burning a fuel produced by the waste (as with refuse-derived fuel or landfill gas). Energy is then recovered through the production of electricity or utilisation of heat produced in the process. The energy conversion efficiency of the plant will depend on the specific design e.g. recovery of energy through combined heat and power.

For further guidance on energy recovery from wastes, reference should be made to SEPA's 'Guidelines and Approach to Thermal Treatment and Energy From Waste' available at [www.sepa.org.uk/nws](http://www.sepa.org.uk/nws).

The DERL (Dundee Energy Recycling Limited) energy from waste plant is operational in Dundee. It has a capacity of 120,000 tonnes a year, which comprises 105,000 tonnes of MSW and 15,000 tonnes of commercial and industrial wastes including some clinical waste. Energy in the form of electricity is produced by the plant, and is sold into the National Grid. The plant uses bubbling fluidised bed technology. There are wastes in the municipal waste stream, that are not suitable for combustion in the DERL plant and for some wastes greater value can be recovered through recycling or reuse. The plant has a life expectancy of 20 years.

## Waste Disposal

Landfill disposal sits at the base of the waste hierarchy for the following reasons:

- potential pollution to land, air and water; and
- it is a waste of resources and is considered to be unsustainable.

Landfill will, however, continue to form part of an integrated waste management system of treatment and disposal options for the foreseeable future.

### 2.6.2 The Proximity Principle and Self Sufficiency

This means waste should be disposed of as near as possible to the point at which it arises. Most of waste originating in Tayside is managed within the area, with the exception of wastes requiring specialist treatment, such as hazardous wastes, and wastes being sent for recycling e.g. paper. These wastes are often transported as far as the south of England. However, as greater quantities of material for recycling are collected then there will be more opportunities for the development of local markets and reprocessing facilities in Tayside and other parts of Scotland.

### 2.6.3 The Best Practicable Environmental Option

BPEO is the outcome of a systematic and consultative decision-making procedure, which emphasises the protection, and conservation of the environment across land, air and water. The BPEO procedure establishes, for a given set of objectives, the option that provides the most benefits or the least damage to the environment as a whole, at acceptable cost, in the long term as well as in the short term. Within the National Waste Strategy: Scotland framework, this includes balancing social, economic and environmental costs and benefits. The Tayside AWP describes the BPEO for MSW and sets out the process by which the BPEO will be determined and implemented for all other wastes.

## 3 Best Practicable Environmental Option for Municipal Solid Waste – The Strategy for Change

### 3.1 Introduction

This section sets out the best practicable environmental option (BPEO) for municipal solid wastes (MSW) in Tayside. This waste stream consists of the household and commercial wastes collected by the three Tayside local authorities.

The BPEO for Tayside will require municipal solid waste (MSW) to be managed to achieve the following:

- Meet the Landfill Directive requirements for the diversion of biodegradable municipal wastes (BMW).
- Preventing the generation of waste at source.
- Increasing segregated kerbside collections of dry recyclates and compostables.
- Increasing the quantities of paper, card, glass, plastic, metal etc. that are recycled.
- Increasing the quantities of putrescible wastes (e.g. garden and kitchen waste) that are composted.
- Ensuring energy recovery only from appropriate wastes by combustion at the DERL energy from waste plant.
- Reducing the quantities of waste landfilled.

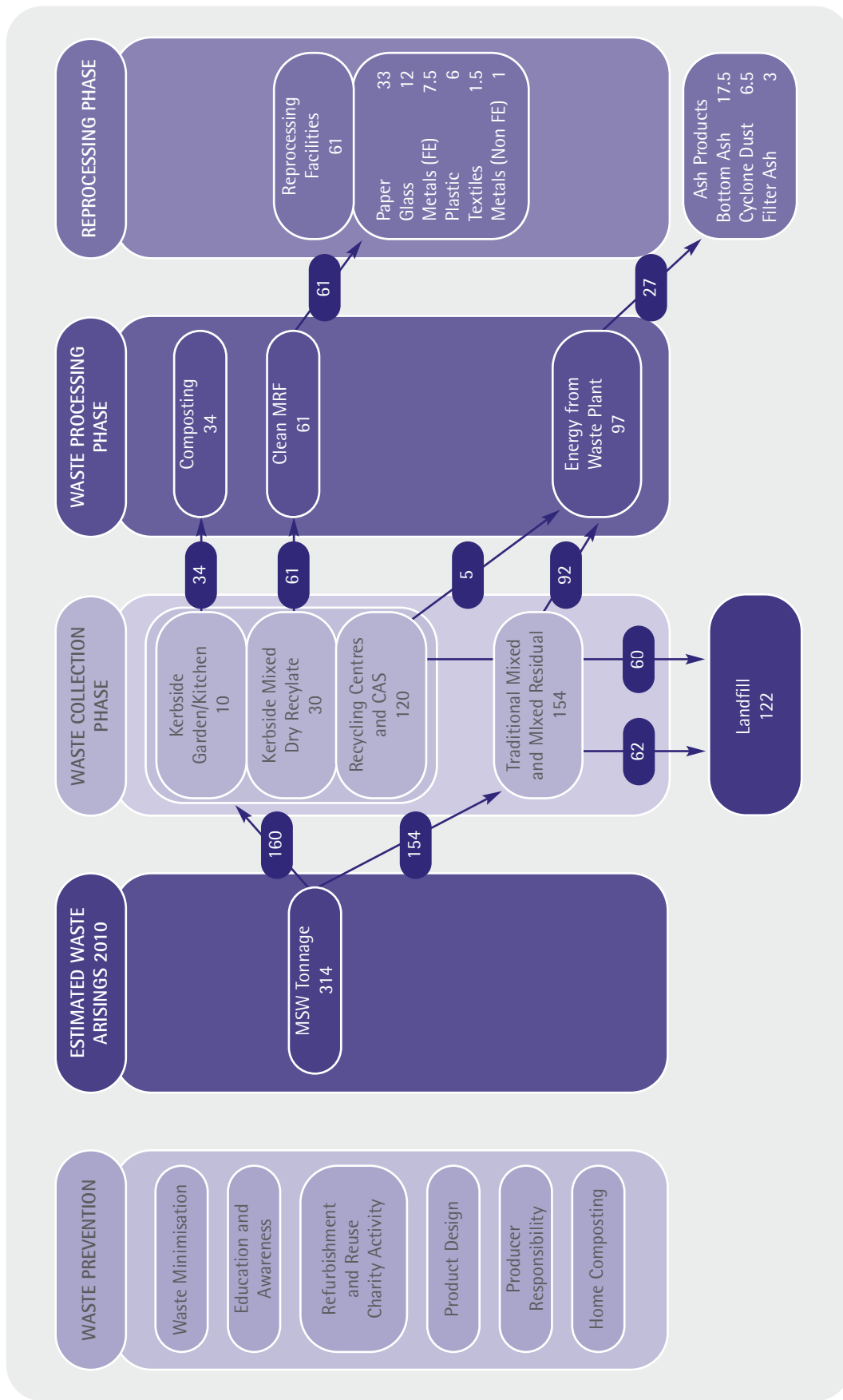
The key stages and assumptions in determining the BPEO for MSW are described in detail in the Draft Tayside Area Waste Plan 2002 and other background reports, details of the availability of which can be found in Annex 4. A summary of this process is illustrated in the schematic attached to the Executive Summary.

The BPEO targets throughout this section contain strategic targets for the Waste Strategy Area. Local Implementation plans will set out the detail of localised delivery systems based on each local authorities ability achieve a proportion of the overall Tayside BPEO.

### 3.2 Best Practicable Environmental Option for Municipal Solid Waste

The following paragraphs (3.2.1 to 3.11) describe in detail the Tayside BPEO for the management of MSW in Tayside. Figures 3.1–3.3 over show indicative tonnages of materials in each of the Landfill Directive target years and how they are dealt with. These estimates are dependent on a number of variables, in particular waste composition and waste growth rates.

Figure 3.1 – Schematic of Waste Management Option for Tayside MSW 2010 (000 tonnes)

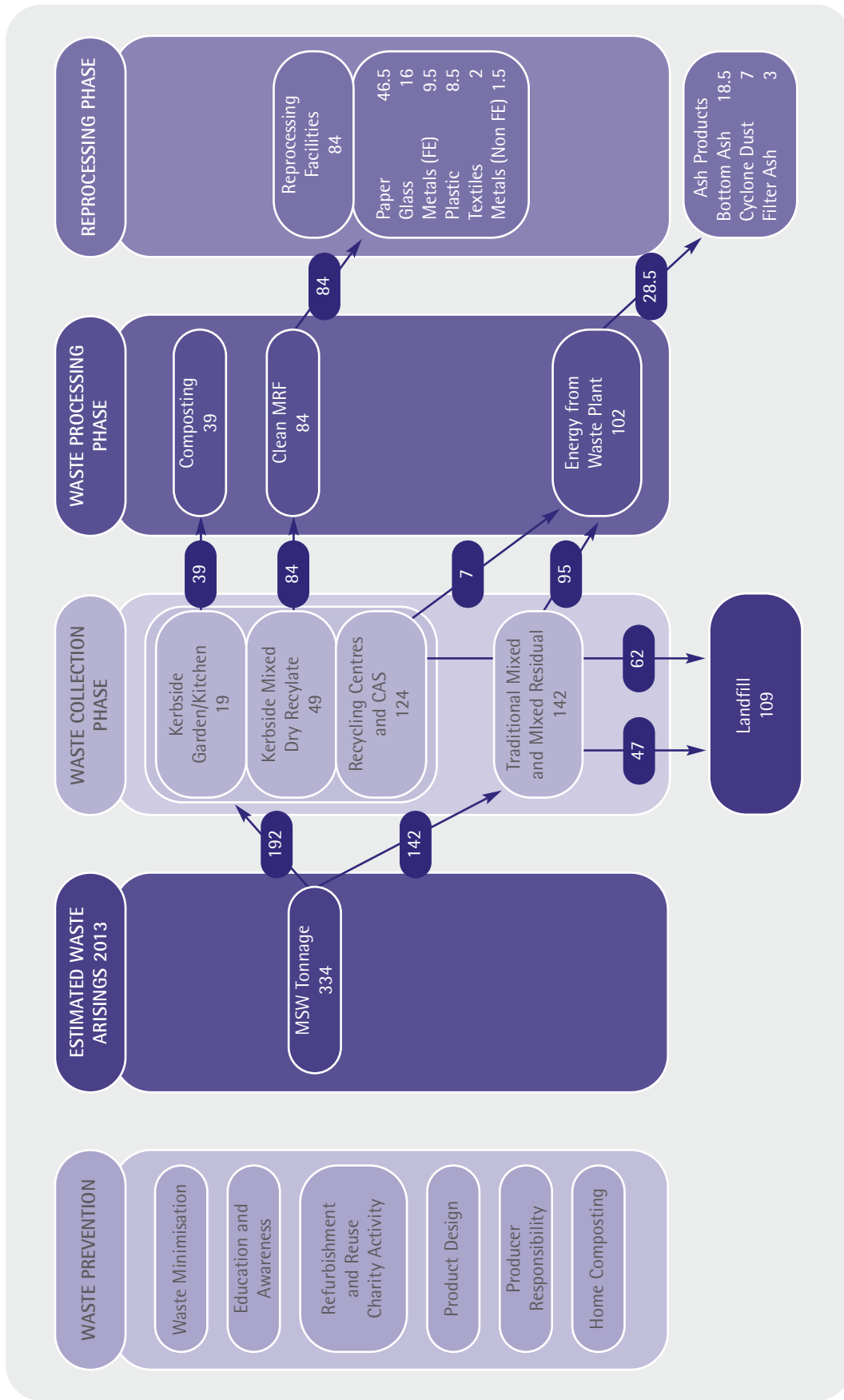


All figures in '000 tonnes and are indicative only.

MRF = Material Recycling Facility

Cyclone dust and filter ash recycling dependent on technical constraints

Figure 3.2 – Schematic of Waste Management Option for Tayside MSW 2013 (000 tonnes)

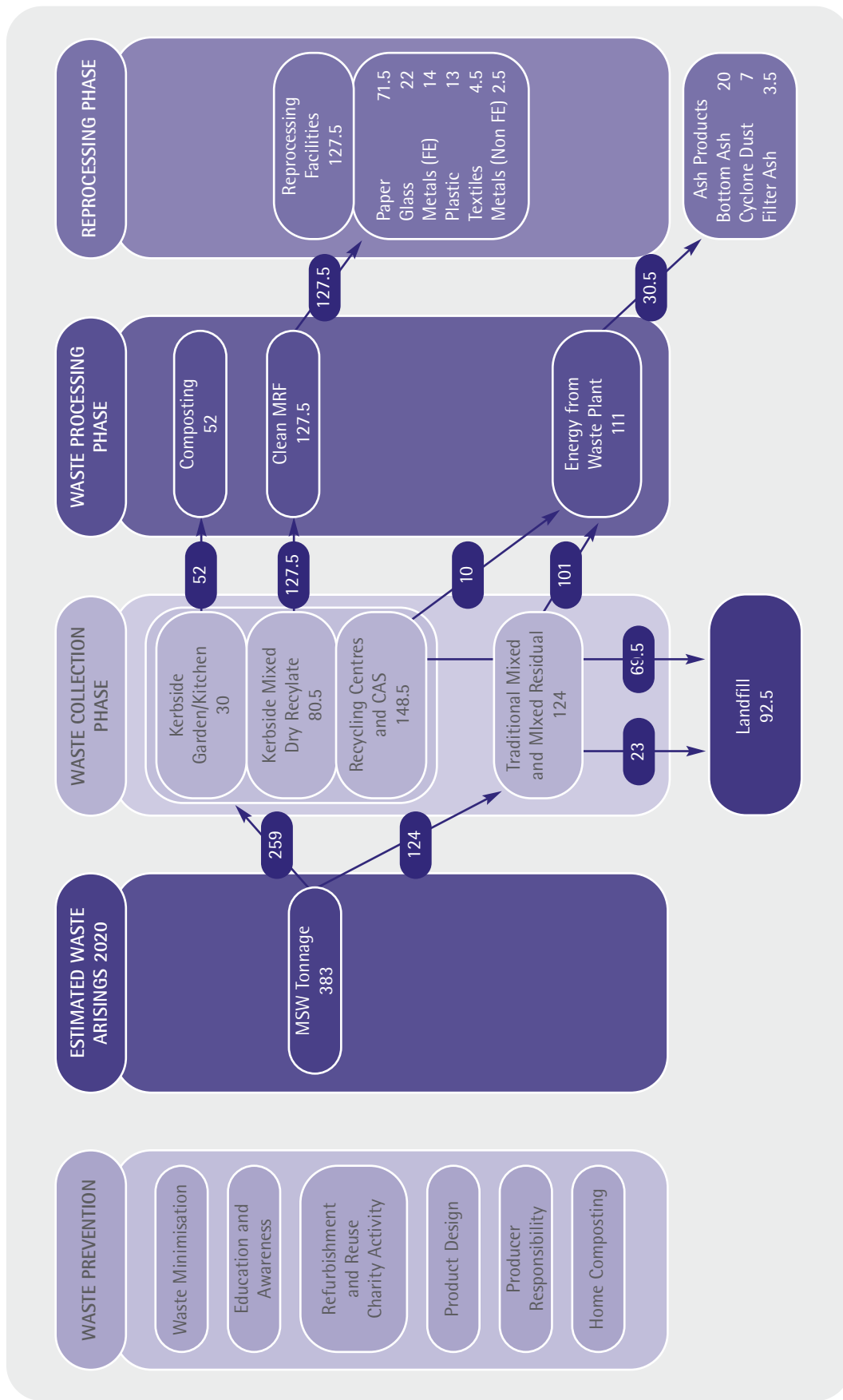


All figures in '000 tonnes and are indicative only.

MRF = Material Recycling Facility

Cyclone dust and filter ash recycling dependent on technical constraints

Figure 3.3 – Schematic of Waste Management Option for Tayside MSW 2020 (000 tonnes)



All figures in '000 tonnes and are indicative only.

MRF = Material Recycling Facility

Cyclone dust and filter ash recycling dependent on technical constraints

### 3.2.1 Waste Prevention

In working with the National Resource and Waste Forum (NRWF), SEPA is developing a national framework to guide the work of the waste strategy area groups (WSAGs) and other key players on waste prevention. This will include research into best practice in waste prevention, both within the UK and abroad. The outputs from this research will be twofold:

- Practical guidance to WSAGs on how to develop their own local waste prevention plan, and a selection of various tools and techniques.
- National recommendations to policy makers and others on instruments which have been demonstrated as successful in preventing waste.

The Tayside WSAG will then draw together a local stakeholder group with the remit to identify existing waste prevention initiatives and develop a Tayside area waste prevention strategy. This strategy will identify actions to be undertaken locally and will tie in to national initiatives on education, promotion and emerging policy instruments.

#### Action 5

A Tayside strategy for the prevention of household waste will be produced which will be informed by SEPA research.

#### Action 6

A household waste prevention guide will be produced to assist householders and other stakeholders.

The public sector (central and local government, health etc) is one of the largest employers in the area, and through its diverse activities generates large quantities of waste. A range of actions, from procurement activities through proper separation of wastes to promoting waste minimisation through staff training can make a contribution. The Tayside WSAG has yet to tackle these wide-ranging issues, however members of the group have agreed to take a lead in examining their own activities through preparing and implementing environmental strategies and considering environmental management systems.

Waste prevention can be achieved by householders and businesses through customer decisions about what to buy and how much packaging to accept.

#### Action 7

To undertake a range of actions to ensure their respective organisations reduce the amounts of waste they each produce. This will include the following actions:

- Introducing staff training and raising awareness on waste management practice.
- Local councils considering means of minimising wastes generated by their in house direct service and direct labour operations, including building maintenance, street sweeping and roads maintenance.
- Examining procurement activities with a view to promoting waste minimisation, reuse and the purchase of recycled materials.

### 3.2.2 Reuse and Refurbishment

The reuse and refurbishment of waste is implicit in the Tayside AWP. Value is retained and the reuse and refurbishment activities can be used to stimulate social inclusion by providing employment and producing goods that can be used by those who would otherwise struggle to afford them. The not-for-profit sector has an important role in taking this forward.

#### Action 8

Investigate and report on the feasibility of reuse and refurbishment of MSW. This will include looking at further separation of civic amenity and bulky household wastes. This report will include a review of existing management and operational practices and ways in which these can be developed.

### 3.2.3 Recycling

The BPEO requires a significant increase in the quantities of materials collected and forwarded to reprocessors for recycling. This will involve significantly increasing the segregated kerbside collections of paper, plastic, textiles, and ferrous and non-ferrous metals. It is possible that glass will also be collected in this way, however any collection system that produces a mixed (colour) glass fraction will limit the options for reprocessing glass. In order to achieve the recycling targets set out in Section 3.4 increasing householder participation rates in segregated kerbside collections will be required. This is illustrated in Table 3.1 which shows the levels of participation in segregated kerbside collection of dry recyclate required to be achieved in each of the target years by each local authority.

**Table 3.1 - Levels of Participation in Kerbside Segregated Collections of Dry Recyclate**

Number of Households Participating (% of all households in each Local Authority area)			
Year	Angus Council	Dundee City Council	Perth & Kinross Council
2006	10%	40%	30%
2010	30%	50%	60%
2013	60%	60%	70%
2020	80%	80%	80%

There are a number of methods by which segregated kerbside collection can be undertaken. The method chosen will be dependant upon housing type and geographical location and will be determined after further investigation.

#### Action 9

Develop a strategy for the implementation of segregated kerbside collection systems for dry recyclate.

The Tayside WSAG will work in partnership with the three Tayside local authorities to develop a strategy for the implementation of segregated kerbside collection systems for dry recyclate. An initial report will be produced by April 2003. This will allow a bid to the Strategic Waste Fund for funding kerbside collection schemes.

In addition to segregated kerbside collections, there will be a need to progressively increase the number of mini recycling centres in each of the three local authority areas. These will collect recyclate from households that do not have segregated kerbside collections and materials that are not suitable for segregated kerbside collection. Table 3.2 gives indicative numbers of mini recycling points, which will be established in each of the local authority areas. The actual numbers required will be dependent upon the extent and success of segregated kerbside collection schemes.

In addition new facilities and infrastructure will be required in order to sort and package recyclable materials prior to onward transportation to re-processors. This may involve an upgrade of existing transfer stations or alternatively the provision of a dedicated clean materials recovery facility (MRF).

**Table 3.2 - Number of Mini Recycling Points Required**

Number of Mini Recycling Points			
Year	Angus Council	Dundee City Council	Perth & Kinross Council
2010	40	40	80
2013	50	50	100
2020	80	80	120

### 3.2.4 Composting

Increasing the quantity of separately collected compostable kitchen and garden wastes will also be required in order to meet Landfill Diversion Targets in the most sustainable way. This will be achieved using segregated kerbside collections of kitchen and garden compostables and recycling/civic amenity sites provided with separate skips of compostable garden wastes. To achieve the composting targets (see Section 3.4) will again require increasing householder participation rates in segregated collections. This is illustrated in Table 3.3, which shows indicative levels of participation in segregated kerbside collection of compostable wastes that require to be achieved in each of the target years by each local authority.

**Table 3.3 - Number of Households Participating in Segregated Kerbside Collections of Compostable Wastes**

Number of Households Participating (% of all households in each Local Authority area)			
Year	Angus Council	Dundee City Council	Perth & Kinross Council
2006	10%	35%	30%
2010	30%	50%	60%
2013	40%	60%	70%
2020	80%	80%	80%

A number of compost operations will be established across the Tayside area. It is likely that in-vessel type technologies will be required to compost kitchen wastes in order to kill pathogens and comply with the Animal By-Products Order

#### **Action 10**

Develop a compost strategy for the Tayside area which will determine the number of facilities required, the type of technology to be employed, the types of waste able to be composted and detail how the product will match market needs.

#### **Action 11**

Identify and report on markets for any compost that will be produced. Particular focus will be on securing sustainable markets in the Tayside area and the specification of products required by customers.

### 3.2.5 Energy Recovery

The DERL energy from waste plant plays a pivotal role in the Tayside AWP. In order for all three local authorities to meet the targets required of them (Landfill Directive BMW diversion, recycling and composting targets) the capacity of DERL will require to be shared between, at least, the three authorities. This has the advantage of ensuring that only those wastes that are best suited for combustion are combusted and those that are suitable for recycling are recycled. SEPA's emerging policy on the use of energy recovery technologies supports this strategy.

The following waste will be collected for pre-treatment and combustion at DERL:

- Residual waste following the collection of recyclates and compostable materials and collections from households that do not participate in segregated kerbside collections.
- Wastes delivered to civic amenity sites that are not suitable for reuse, recycling or composting and that are suitable for combustion.

The Tayside WSAG will seek to establish joint working arrangements with DERL to ensure that the feedstock wastes for the DERL energy from waste plant are the most appropriate for combustion.

#### **Action 12**

Report on the feedstock wastes that are the most appropriate for combustion in the DERL energy from waste plant.

There are three ash types produced by the DERL energy from waste plant. Bottom ash makes up the largest proportion and is currently recycled into roadstone coating products. The other ashes (fly ash and cyclone dust) are currently sent to landfill although investigations are ongoing in order to assess their suitability for being recycled.

Before 2020, consideration will have to be given to a replacement for DERL since it will be nearing the end of its useful life. As time progresses, we will have a much better understanding of how waste tonnages and composition are changing. Alternative technologies will also be better understood and developed. This information will progressively inform any replacement decision. Subsequent reviews of the AWP will take this into account.

### 3.2.6 Disposal to Landfill

MSW that is not recycled, composted or treated in the energy from waste plant (DERL) will be disposed of to landfill. In addition reject material from all these processes will also be disposed of to landfill. Over the 20-year time frame of this plan there will be a significant reduction in the amount of waste going to landfill and in particular the biodegradable waste. There is sufficient landfill capacity in Tayside in the short term, however it is anticipated that additional landfill capacity for MSW will be required around 2013.

Table 3.5 demonstrates that the Tayside BPEO allows the BMW Landfill Directive targets to be met for the target years.

## 3.3 Household Hazardous Wastes

Household hazardous wastes such as batteries, pesticides, solvents etc. contain chemicals that are potentially toxic. If these wastes are not removed from the waste stream they can adversely affect the environmental performance of the waste management techniques employed to manage MSW. In order to limit the impact of household hazardous wastes, the Tayside WSAG will investigate and initiate pilot household hazardous waste collection systems.

A national partnership project is being delivered to investigate the options available to local authorities in Scotland for collecting household hazardous waste separately from the domestic waste stream. Once an initial study has taken place to review the current situation on household hazardous waste recovery in the UK and Europe and what future legislation will mean for local authorities, pilot collection trials will be implemented to accurately determine the logistical and economic realities of separate household hazardous waste collections. The project will also investigate current public awareness of the issues to develop effective education campaigns.

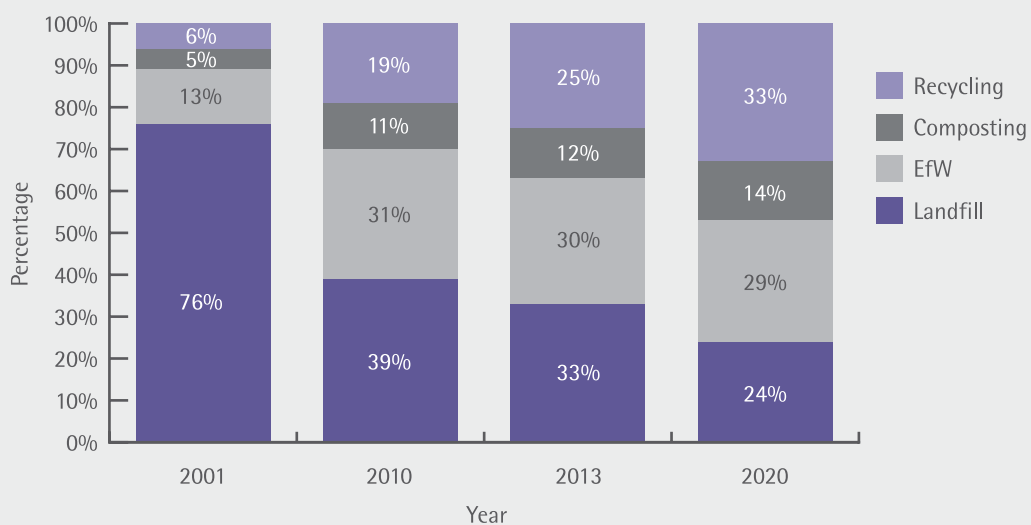
## 3.4 Performance Targets

The Landfill Directive requirement to divert BMW from landfill must be met. This requirement is implicit in the BPEO for Tayside. In order to achieve the BPEO, the three local authorities collectively will have to meet the overall targets set out in Figure 3.4 over.

In order to create a level playing field, each of the three Tayside local authorities will require, as a minimum, to meet the specific targets in Table 3.4 over. These targets will be reviewed on a 5-year cycle.

Table 3.5 over demonstrates that the BPEO delivers the necessary diversion of BMW from landfill by showing that for each of the target years, the amount of BMW to landfill is less than the maximum allowed (see Table 2.2).

**Figure 3.4 - Indicative BPEO Targets**



Notes - percentages are of the total amount of MSW

- The 2001 figures are year April 2000 to March 2001 and from SEPA Local Authority Waste Arisings Survey.

Figure 3.4 shows the target proportions of MSW arising in Tayside, requiring to be recycled, composted, combusted in an energy from waste plant or ultimately landfilled in order to achieve the BPEO and Landfill Diversion Targets and which contribute to the 25% recycling and composting national target by 2006. Figures are given for each of the Landfill Directive target years (2010, 2013 and 2020) with the base year of 2001 shown to illustrate the change required from current waste management. These targets require to be met collectively by the partnership working of the three Tayside local authorities.

The percentage shown for energy from waste (EfW) reflects the total tonnage of waste entering the combustion chamber of the plant. The recycling percentage does not include any ash produced by DERL and subsequently recycled. The landfill percentage does not include any ash produced by DERL and subsequently landfilled.

Bottom ash from DERL is however currently recycled and would contribute approximately 6% to the recycling figure. This is considered to be 'secondary' recycling and is therefore not included in the recycling target in Figure 3.4.

**Table 3.4 - Local Authority Minimum Targets**

Recycling Rate		Composting Rate	
2010	- 17%	2010	- 10%
2013	- 22%	2013	- 10%
2020	- 30%	2020	- 12%

Table 3.4 sets out the minimum targets for recycling and composting to be achieved by each local authority. In order to achieve the overall targets set out in Figure 3.4, one or more of the local authorities will require to exceed the minimum recycling and composting targets. Again, the recycling rate in Table 3.4 does not include recycling of ash from DERL.

These targets along with the targets arising from the BPEO decisions of the ten other AWP's will inform the development of national targets for Scotland which are expected to be published in 2003.

**Table 3.5 – BMW to landfill vs. Landfill Directive targets**

	BMW Permitted to Landfill (tonnes)	BMW Actually Landfilled in accordance with the BPEO (tonnes)
2010	99,676	63200
2013	66450	53700
2020	46516	39700

Table 3.5 confirms that the Tayside BPEO will ensure compliance with the BMW targets in the Landfill Directive.

### 3.5 Implementing the Best Practicable Environmental Option

Taking forward the implementation of the BPEO will require an ongoing partnership approach between the Tayside local authorities and other stakeholders to achieve the targets set out above. The Tayside AWP also seeks to achieve Best Value from the infrastructure and investment that is already in place. The importance of an effective DERL energy from waste plant to achieving the BPEO cannot be overstated. The immediate next steps for the Tayside local authorities will be to work up more detailed implementation plans that will flesh out the necessary actions, costs and timescales. It is also recognised that in taking forward this BPEO that there will be significant linkage with the land use planning system to secure approval for sites and projects. A number of pilot projects are also likely to be introduced for waste collection methods. This will allow evaluation of a number of options before firming up on those methods and technologies, which would represent Best Value for Angus, Dundee City and Perth & Kinross councils. Table 3.6 sets out an indication of the key facilities identified at this stage that are required to meet the BPEO targets set out in Figure 3.4 and which will have land use planning implications. The capacity of the required infrastructure could increase if surplus capacity is built in to enable waste from other sources to be accepted.

**Table 3.6 – Indicative Infrastructure required to implement Tayside BPEO for Municipal Solid Waste**

Requirements	Total Capacity Required <sup>1</sup>	Timescale	Notes
Expansion of mini recycling points	Dependant on coverage of kerbside segregated collections.	Phased from 2003 to 2020 – see Table 3.2	Plan to draw up strategy and identify sites.
Clean material recovery facility (MRF)	61,000 tonnes – 2010 84,000 tonnes – 2013 127,500 tonnes – 2020	2006 onwards	Likely to require 1 or 2. One may make more economic sense. Will be required to separate and package increasing quantities of collected recycle. Dundee and Perth most likely locations and preferably next to railhead.

Requirements	Total Capacity Required <sup>1</sup>	Timescale	Notes
Composting facilities	34,000 tonnes – 2010 39,000 tonnes – 2013 52,000 tonnes – 2020	Modular systems phased from 2004 onwards	Will require in-vessel systems, which will need to be able to deal with increasing quantities of waste up to 2020. It is possible that single large in-vessel plant may make more sense for kitchen putrescibles.
Landfill capable of taking non hazardous waste	122,000 tonnes – 2010 109,000 tonnes – 2013 92,500 tonnes – 2020		Likely new landfill for non-hazardous wastes required around 2013

<sup>1</sup>Capacity required will be dependent on several variables including waste composition, waste growth, participation in recycling schemes, and success of waste prevention schemes. Capacities are only for MSW, these capacities will increase if other wastes are managed at these facilities. Facilities, which accept wastes other than MSW, will require larger capacity.

In addition to the above the following actions are considered necessary to implement the BPEO:

### 3.6 Funding of the Best Practicable Environmental Option

Implementation of the BPEO will result in the cost of the management of MSW rising an estimated two to three times current costs. Significant additional resources for both capital investment and year on year running costs will be required to implement the BPEO. There are differing methods by which this funding can be secured and the infrastructure and services managed and funded. The Scottish Executive has established a Strategic Waste Fund that Local Authorities will be able to bid into in order to fund the BPEO. In addition partnership working with profit and non-profit-making organisations will make a contribution to delivering the necessary infrastructure and service provision. The implementation of the BPEO is reliant on sufficient additional levels of funding being secured.

Indicative costs were calculated as part of the development of the BPEO. These costs are subject to many variables and in order to avoid any misinterpretation have not been included in this plan. Detailed costs for each local authority will be set out in their Implementation Plan for the Strategic Waste Fund bid. Further information on national costs will be provided in the National Waste Plan 2003.

The focus of the process to establish the BPEO was to find the optimum methods of waste treatment that should be used to at least meet the three landfill reduction targets set by the Landfill Directive (ie permitted to landfill 75%, 50% and 35% of 1995 levels of biodegradable municipal waste sent to landfill, by 2010, 2013, and 2020, respectively). In the light of the draft AWP's published in spring 2002, the Executive has calculated that an interim overall national target of recycling and composting of 25% of waste collected by local authorities is achievable by 2006 by collective implementation of AWP's. The Executive has allocated £230 million for the financial years 2003/04, 2004/05, 2005/06 through the Strategic Waste Fund to assist with the additional costs of implementing the AWP's. It is expected that the delivery of the plans will contribute to the 2006 target by early implementation of recycling and composting systems.

### 3.7 Recycling Market Development

It is clear that if Scotland is to make better progress in recycling, significant effort must be made to develop both national and local markets using recycled materials. Progress can also be made in improving the logistics of supply to markets outside Scotland. Two major initiatives have been established to promote sustainable waste management through the creation of stable markets for recycled materials and products and by removing barriers to waste minimisation, reuse and recycling.

The ReMaDe Scotland (Recycling Market Development [www.remade.org.uk](http://www.remade.org.uk)) programme was established in 1999 to identify potential markets and uses for recovered materials in Scotland. It is the key focal point for recycling market development in Scotland and is seeking to increase recovery of waste, create jobs, support the AWP and local recycling businesses through encouraging investment, supporting local partnerships and engaging wider awareness in uses of recovered materials.

WRAP (Waste and Resource Action Programme [www.wrap.org.uk](http://www.wrap.org.uk)) is a £40m UK-wide programme funded for 3 years (established 2001) to change attitudes to waste minimisation and recycling through the creation of stable and efficient markets for recycled materials and products. The programme is looking at material specific research and development projects, compost standards, delivering training programmes and government procurement. WRAP is working closely with ReMaDe and other organisations, addressing barriers to recycling including market development, supply chain issues, investment packages to reduce business risk in new technologies and processes, and supporting the development of recycling infrastructure.

The Tayside WSAG in partnership with ReMaDe will identify and develop opportunities for local market development and continue to monitor market development.

Scottish Enterprise Tayside have a role in establishing and developing local markets for the reprocessing of collected recycle. The Tayside WSAG will seek to work with SET to establish and develop local markets.

### 3.8 Education and Awareness Raising

The National Waste Strategy: Scotland makes it clear that there needs to be a fundamental shift in attitudes and behaviour of all waste producers in Scotland.

The Scottish Waste Awareness Group (SWAG) will plan public awareness campaigns on domestic waste management throughout Scotland as part of the Waste Aware Scotland programme.

These campaigns will provide stakeholders with an understanding of the problem, suggest optimal solutions and provide a means for taking action. One of the key components will be to match the campaigns with 'real' infrastructure – encouragement to make changes that can be supported and enhanced. Concurrently public perception values and needs will be considered. This ensures stakeholder participation and involvement and guides stakeholders towards making their own decisions within their local area. All of which is geared to producing greater participation within local schemes.

Each campaign will focus on a specific waste management issue (e.g. kerbside campaign, recycling point campaign etc.) and will be run concurrently with the implementation of the Tayside AWP. Each campaign will comprise of three basic stages:

- **Before survey** – to assess attitudes and behaviour towards the identified waste prevention issue prior to the intervention strategy.
- **Campaign** – intensive localised intervention strategy run initially for a 6-month period working in partnership with the key stakeholders within the area including the Waste Strategy Area Co-ordinator, the local authority, the local community and voluntary groups, retailers', private waste industry etc.
- **After survey** – to assess attitudes and behaviour towards the identified waste prevention issue after the intervention strategy, and to appraise the effectiveness of the different methods employed.

This format will allow SWAG to monitor progress towards more sustainable public waste management behaviour, and to develop models of good practice and Best Value for changing public attitudes to reduction, reuse and recycling. A rolling programme of Waste Aware Campaigns in conjunction with AWP time-scales will be implemented across Scotland.

#### **Action 13**

A Tayside education and awareness group will be established to promote the aims of the AWP with an initial focus on household waste. Members of the group will include SWAG, the three Tayside local authorities and SEPA.

#### **Action 14**

Establish and maintain a directory of waste management services. This will allow all residents of Tayside to identify what services are available to deal with differing waste materials in their locality. The directory will also be available through each of the local authorities' web sites.

### **3.9 Community Sector Involvement**

The community sector can have a significant involvement in methods and solutions for managing wastes in a more sustainable manner. There is already a long history of community based and operated projects in Tayside. Locally operated and managed community projects also bring social benefits through creation of employment and social inclusion.

#### **Action 15**

Facilitate and support the establishment and development of community-based and operated waste management initiatives.

Determine the type and level of support required by community groups through the organisation of a focus group.

### **3.10 Integrating Tayside Best Practicable Environmental Option Into National Context**

While the 11 AWP's and their BPEOs have set out a response to the management of wastes locally, each AWP will contribute to the overall National Waste Strategy for Scotland. This in turn will contribute to the UK government's response to the requirements of the EU framework directive and sustainable development.

Although each AWP establishes an action plan, there may be opportunities for partnership working across waste strategy area boundaries delivering more cost-effective and robust solutions. In order to identify these opportunities the 11 BPEOs were evaluated as part of an integration process.

Integration recommendations will be taken into consideration by the WSAG throughout the implementation of the AWP.

### **3.11 Risk to Implementation**

There are a variety of risks which if realised could compromise the successful and timely implementation of the BPEO. It is important these risks are identified and managed. Examples of such risks include:

- failure to identify sustainable markets for recycle;
- failure to secure adequate funding;
- lack of adequate public participation in recycling initiatives; and
- failure to secure necessary permissions for infrastructure.

The Tayside WSAG will therefore develop a risk management strategy that will be reviewed on a regular basis.

#### **Action 16**

The Tayside WSAG will develop a strategy for the management of risks that may compromise the successful and timely implementation and delivery of the BPEO for MSW arising in Tayside.

### 3.12 Future Developments and Proposals

The BPEO for MSW in Tayside has been chosen with regard to a given set of assumptions and based on currently available methods and technologies. It is accepted that changes in legislation, technology or knowledge may mean the chosen BPEO could be superseded. To allow for future developments or proposals not included in the plan, the BPEO will be kept under review and may be superseded by valid proposals that can be shown to provide a better (or equivalent) BPEO. The WSAG will consider evaluating relevant waste management proposals for an improved BPEO as they arise.

The options included in the BPEO evaluation are generic and for the most part are not site specific. Hence site-specific development proposals that arise both inside and outside the borders of the Waste Strategy Area may satisfy or improve the agreed BPEO.

Regional or national waste facilities may be proposed by developers on a scale designed to attract waste from outside the Waste Strategy Area in which they are located. As part of the planning application process, the developer may be required to demonstrate that the proposals satisfy or exceed the BPEO of the Waste Strategy Areas from which the waste will be obtained.

Where existing or proposed regional or national scale facilities will result in waste movement between Waste Strategy Areas, then consideration of the proposed waste exports and imports must be included in the BPEO process. The export or import of waste should be considered as part of the BPEO process, for both the importing and exporting areas, where it is proposed as an original or developing option. Any subsequent review of the BPEOs should also take this into consideration. Approval of the proposed waste management facilities in the importing area is a matter for consideration by the planning and licensing authorities.

## 4 Managing Non-Municipal Solid Wastes

### 4.1 Introduction

Over 12 million tonnes<sup>1</sup> of waste arose from Scotland's homes, shops, offices and industry in 1998. However, due to the lack of complete and robust data for all wastes, the development of the best practicable environmental option (BPEO) for Tayside has initially focused on municipal solid waste (MSW), which consists of just 2.8 million tonnes of this total waste stream (see Section 3). This section focuses on all non-MSW. These consist of all wastes other than municipal waste as defined in this document.

A framework to address the management of non-MSW, which forms the largest part of the wastes produced in Scotland, has been developed through a partnership between representatives from SEPA, Scottish Executive, the Enterprise community and the waste management industry. These wastes will be a major focus for the future development of the National Waste Strategy: Scotland (NWSS) and the local area waste plans (AWP).

The non-MSW are more complex than MSW collected by the local authorities, and significant data gaps exist. Whilst the BPEO process initially developed by SEPA has been successfully applied to MSW, it has become apparent that the process will need to be reviewed and redefined to deal with other waste streams.

The partnership approach that is at the heart of development of the NWSS has been a success and should continue. For this reason a multi-stakeholder group was brought together to obtain preliminary views and input into a management approach for non-MSW.

The key issues for the non-municipal solid waste framework are:

- **Waste arisings data** – there is no legal requirement to record and report waste arisings data and this has contributed to the absence of sufficient detailed data required to make a BPEO decision.
- **Producer behaviour** – identify the tools that are currently available and those that need to be developed further, to influence the behaviour of commercial and industrial waste producers to ensure the adoption of the BPEO.
- **Non-MSW plan** – provision of a detailed plan to ensure that the NWSS and local AWP's deal with all controlled wastes and do not just focus on MSW.

### 4.2 Specific Waste Streams

Using the Consolidated European Waste Catalogue (August 2002), all listed wastes have been grouped into compatible sectors. These groupings will form the basis of future work on non-MSW. Any links with the current Priority Waste Stream programme and existing technical guidance, best practice etc., have been made along with possible links to current BPEO technology options for MSW as set out in this AWP.

The waste groupings are detailed in Table 4.1 over.

<sup>1</sup>This figure from the NWSS does not include agricultural, mining and quarrying wastes as these are currently not controlled wastes as defined by the Environmental Protection Act 1990.

Table 4.1 - Waste Groupings

Waste Grouping	
A	Exploration, mining, quarrying and physical/chemical treatment of minerals
B	Animal/fish wastes (agriculture, aquaculture, hunting, fishing, food preparation/processing)
C	Plant wastes (agriculture, aquaculture, hunting, fishing, food preparation/processing and forestry)
D	Leather, fur and textile industries
E	Petroleum refining, natural gas purification and coal pyrolysis
F	Wastes from inorganic chemical processes
G	Wastes from organic chemical processes
H	Wastes from thermal processes
I	Wastes from surface treatments/coatings (metals and other materials)
J	Waste organic solvents, refrigerants and propellants
K	Waste packaging (including absorbents, wiping cloths, filter materials and protective clothing)
L	Wastes not otherwise specified
M	Construction and demolition wastes (including soil from contaminated sites)
N	Human and animal healthcare wastes (including research wastes/excluding kitchen wastes)
O	Water industry wastes (including water/sewage treatment wastes)
P	Other waste industry wastes

#### 4.2.1 Prioritisation of Projects

A decision matrix has been developed to classify the wastes into high, medium and low priority projects. This has been based on the following considerations

- Links to MSW BPEO
- Hazardous content
- Recovery/recycling value
- Sectoral importance (to the Scottish economy)
- Infrastructure shortfall in Scotland
- Quantity
- Finite resource use
- Legislative/regulatory priority.

These projects will be managed at either the local or the national level depending on the geographical distribution of arisings. Section 4.3 details how this AWP will contribute to the outputs of these projects.

Technical groups consisting of the key waste producers, waste managers and other stakeholders specific to each of the sector groupings will be formed to drive the range of projects forward. The membership of these groups is very important to ensure ownership and credibility of the project outputs by those sectors that produce and manage these wastes for the future. The groups will undertake and commission work that will seek to provide the following recommended outputs:

- Establish reliable baseline data and existing regulatory controls.
- Report on current practices to deal with waste.
- List current facilities and technologies.
- Identify emerging technologies and processes.
- Recommend good practice and links to existing best practice guidance.

- Provide guidance on identifying local BPEO and the use of life cycle analysis.
- Produce user guides.
- Identify problematic wastes that may require further research.
- Identify waste minimisation tools.
- Identify skills gaps and training opportunities.
- Identify barriers to achieving BPEO and recommendations to overcome.
- Describe benefits and opportunities to implementing BPEO.
- Identify necessary regulatory controls and other drivers.
- Identify any necessary economic and regulatory impact assessments for the sector.
- Identify enterprise opportunities and social benefits.

#### 4.2.2 Self Assessment Guidance for Best Practicable Environmental Option Decision-making

Not all wastes can be addressed as a high priority and the timetabling of BPEO projects will be over the longer term. There are opportunities to encourage the widespread use of the BPEO decision-making processes that consider environmental, economic and social aspects when dealing with these wastes. The development of generic 'Self-Assessment BPEO Guidance for Industry and Commerce' will provide a valuable and consistent process for waste producers, waste industry and waste regulators alike, when making localised assessments on the best sustainable options available and the use of life cycle assessment. In order to achieve widespread industry ownership and acceptability of the guidance, it shall be developed in an inclusive manner with consultation involving key stakeholders and will be undertaken at a national level.

### 4.3 Local Non-Municipal Solid Waste Framework

#### 4.3.1 Non-Municipal Solid Waste Data

The lack of comprehensive and reliable waste arisings data (i.e. waste types and quantities), a situation not unique to the Tayside area, has restricted the local planning process for non-MSW. In order to plan effectively for the management of these waste streams an appropriate dataset will require to be gathered. The recent introduction by SEPA's waste data team of quarterly surveys of licensed waste management facilities will, in time, deliver a data set of all wastes managed at licensed sites in Scotland. In addition the Tayside Waste Strategy Area Group (WSAG) will undertake to fill this data gap locally as part of the national framework. This will include appropriate consultations and surveys with key local industry groupings over a period of time to measure the arisings of non-MSW in the area.

Following data capture and interpretation, a review of the capacity and type of existing facilities can then be carried out. Thereafter the forward capacity required to maintain an adequate network of facilities can be identified on the basis of the current management systems for these wastes. It is expected that this ongoing data gathering and consultation process will also help to identify and establish local markets for recycled materials.

## 4.4 Specific Local Waste Streams

The framework described above will be applied nationally and locally to develop plans and best practice for dealing with non-MSW wastes. There are wastes that are more important locally. These include the following:

- Service industry wastes
- Agricultural wastes
- Food processing wastes.

In addition there are wastes on which we have better data and information. This data and information has come from SEPA initiated priority waste stream projects.

### 4.4.1 Priority Waste Stream Projects

Waste streams of national significance that may require national solutions will be subject to a priority waste stream project. This initially involves data and information collection that is then reported. Of the 13 identified Priority Waste Stream Projects for Scotland, construction and demolition wastes, tyres, newsprint and end-of-life vehicles (ELVs) have reported. The conclusions of these initial reports are summarised below. Reference should be made to the full reports for the full set of conclusions.

#### Construction and Demolition (C&D) Waste

This waste stream is the largest single source of waste, by weight, due to its high density. The data report estimates that in the year 2000, C&D arisings in Tayside were 740,000 tonnes with approximately 486,000 tonnes (about 65%) being recovered through crushing and screening, road planning and hand picking. Around 125,000 tonnes was disposed of to landfill and 129,000 tonnes disposed of via exempt sites.

Although Tayside had the highest recycling rate in Scotland, the study identified that nationally around 37% of the landfilled C&D Waste could be recycled. Realising this potential locally would create a further 46,250 tonnes of secondary aggregate that could replace virgin aggregate used for construction in Tayside. Information on the current infrastructure for this waste stream can be found on the CIRIA Internet Register of Recycling Sites (<http://www.ciria.org.uk>).

Through improved resource management of the construction industry, preventing or reducing the production of waste will have the maximum positive environmental impact through reduced resource use, lower emissions and energy consumption. Action 22 in Chapter 5 requires development plans to identify a 10-year forward supply of landfill for inert and non-hazardous wastes. Construction and demolition wastes largely fall into these categories. It is expected that fiscal measures such as landfill tax and aggregates tax will provide further incentive to increase the reuse and recycling of this waste stream and reduce the quantities being landfilled.

#### Tyres

The national data study on tyres collected data from the tyre-related industry in Scotland. The waste data collected was incomplete and therefore the arisings were also calculated using a predictive model. Arisings in 1999 for Tayside were estimated at 2640 tonnes. The data was broken down into three categories:

- 2120 tonnes discarded by replacement,
- 420 tonnes from ELVs; and
- 100 tonnes reported as illegally dumped.

The arisings data was further broken down in the study using the headings car, small truck and large truck.

Nationally, around 3% of tyres are reused, 13% recycled (via retreading and silage clamps/landfill engineering) and 49% landfilled. It should be noted however that since 1999 the situation is less bleak in that very few tyres arising in Scotland are now being landfilled. Significant markets are now available, for example, Lafarge Cement UK (formerly Blue Circle Cement Kiln in Dunbar) that use tyres as a coal substitute and old tyres are used within landfill sites for engineering purposes e.g. leachate drainage layer and liner protection.

Implementation of the Landfill Directive will see a ban on whole tyres to landfill by July 2003 and shredded tyres by 2006.

## Newsprint

Newsprint is a significant component of municipal and commercial waste streams. This project examined newsprint in the context of its suitability for recycling, its quantity and its potential to stimulate large-scale industrial investment in Scotland through the manufacture of newsprint from recovered materials.

The total newsprint waste arisings in Scotland in 1999 is estimated to have been approximately 240,000 tonnes. Of this, 6% was printers waste, 11% over issue to sales outlets and 83% post-consumer (based on sales data). The extent of post-consumer newsprint waste arisings in Tayside in 1999 was estimated at 15,131 tonnes.

Recovery of newsprint is estimated at 75% printers waste, 100% of over issues and only 14% of post-consumer newsprint arisings for the whole of Scotland.

It is estimated that the requirements of the Landfill Directive targets to divert biodegradable municipal waste from landfill will require the recovery of between 150,000 and 230,000 tonnes per year of newsprint waste by 2016, requiring a five- to eight-fold increase in recovery above current levels. It is unlikely that this will result in new mill capacity being developed in Scotland but a number of other potential outlets have been identified:

- Cellulose insulation materials
- Manufacture of waste newspaper briquettes for use as fuel
- Animal bedding
- Compost.

These outlets could be developed as new reprocessing opportunities within Tayside, but would require a stable and guaranteed supply of materials. This will require co-ordination and co-operation between local authorities and private sector organisations.

## End-of-Life Vehicles

There are two different categories of this waste stream:

- **Premature ELVs** – processed by insurance companies where end of life is determined by damage as a result of an accident, fire, flood or theft.
- **Old ELVs** – processed by local authorities and private owners/vehicle retailers when a vehicle comes naturally to the end of its life between 10–14 years old.

The national study on ELVs estimates 1999 arisings in (cars and light goods vehicles) to be 7251 vehicles, equating to 7106 tonnes (at 0.98 tonnes average weight of an ELV).

Current infrastructure indicates that there are 31 dismantlers/scrap yards/metal recyclers in the waste strategy area. It is likely the higher standards required by the End of Life Vehicles Directive will result in a reduction in the numbers of dismantlers/scrap yards/metal recyclers over future years.

The report identifies best practice under the requirements of the End of Life Vehicle Directive that includes:

- design of vehicles;
- recycling/recovering component parts before shredding; and
- recycling/recovering material from shredder residue.

## 4.5 Waste Prevention and Minimisation

In order to realise significant levels of waste minimisation, a co-ordinated effort with government, government agencies and industry is fundamental. There will be a requirement for further regulatory and economic instruments, increased education and awareness and other measures to stimulate waste minimisation activity. Waste minimisation tools including pre-product design, changes to management and production processes and the development of clean or waste-less technologies will require to be undertaken at national and company level.

### Action 17

Produce a report considering the best means of delivering waste minimisation support to Tayside businesses.

The Tayside WSAG partners will consider the best means of initiating and delivering waste minimisation support to companies in the area, including the need for full-time project officers. An initial report on how to take this forward, including the identification of funding sources will be produced by October 2003.

#### 4.6 Reuse and Refurbishment

There is significant opportunity to get value from waste materials through reuse and refurbishment. Successful reuse and refurbishment schemes can also provide employment opportunities. Barriers to facilitating reuse and refurbishment opportunities exist. The most common is the difficulty in making the connection between the waste producer and any potential users of the waste. Waste Exchange is a system where the waste of one individual can be considered the resource of another. Schemes of this type make connections between waste producers and potential users of the waste. While there are examples of waste exchanges operating in the UK, there are none currently in the Tayside area at present. It may be possible to establish a local service or link into a nationally developed service.

#### 4.7 Recycling and Composting

The development of commercial recycling services has the potential to maximise the overall benefits and feasibility of the recycling and composting parts of the MSW BPEO, and will be encouraged wherever possible. Examples of integrated recycling schemes include:

Office paper and cardboard recycling.

Glass recycling from pubs and clubs.

Composting of canteen, food processing, landscape gardening and agricultural wastes.

Plastic, steel and aluminium container recycling.

Oils, solvents and batteries processing.

Ferrous and non-ferrous metals recycling.

The collection of waste materials significantly impacts on the recycling options available. Separate collections based on material type, increases the recycling opportunities available. The Tayside WSAG in partnership with other stakeholders including Scottish Enterprise Tayside, will encourage the separation of waste materials at source.

#### 4.8 Energy Recovery

The recovery of energy from non-MSW may be appropriate for a range of wastes. These include:

- Clinical waste
- Special waste
- Oily waste
- Tyres
- Sewage sludge
- Shredder residues
- Agricultural waste
- Industrial sludges.

Energy recovery through combustion has the advantage that it can effectively treat certain hazardous wastes. If biomass-derived wastes are combusted the energy generated has the advantage of being generated from a renewable source. It should be noted that the actual wastes treated would depend on their nature, the technology of the plant chosen and the economics of managing the wastes.

#### 4.9 Disposal

Significant quantities of non-MSW are landfilled in the Tayside area. The majority of this waste is C&D waste. Action 22 in Chapter 5 requires development plans to identify 10 years forward landfill capacity for non-hazardous and inert wastes. There could be wastes currently disposed of to landfill which the Landfill Directive will ban from landfill in future years. The Tayside WSAG should ensure work is initiated to identify these wastes and understand the infrastructure requirements.

#### 4.10 Recycling Market Development

The waste screening process carried out as part of the national non-MSW framework has identified shortfalls in current infrastructure for the range of waste groupings. This highlights potential local and national business opportunities to develop and provide facilities and services to collect and reprocess waste materials.

Consultation has identified that local businesses and industry would like to recycle more of, and have improved access to local markets for, the following materials:

- Paper and cardboard
- Plastic
- Wood
- Metal
- Oil.

In response to this, the Tayside WSAG will establish a Recycling Market Development Group, with membership likely to include representatives from Scottish Enterprise Tayside, the waste industry, local waste producers, local authority economic development staff and SEPA. This group will seek to identify new local market development opportunities and encourage the establishment of additional local market capacity.

#### 4.11 Education and Raising Awareness

The cultural shift that is required to change attitudes and behaviour is not only targeted at local householders. As key waste producers, local business and industry must also be involved in future education and awareness programmes. There is already a great deal of useful information available to businesses on waste and environmental issues and where required complimentary information will be further developed and disseminated widely. The promotion of information will be targeted wherever possible through the existing business environmental information networks.

#### 4.12 Waste Producer and Industry Involvement

The waste industry need to be involved in the implementation of the AWP as they will in many cases be the major providers of investment in new infrastructure and provide considerable expertise in the management of wastes. Local businesses and industry must have their waste management needs addressed to ensure that the Scottish economy is supported by the National Waste Strategy and that good practice is promoted to all waste producers. To ensure the effective input of the waste management industry and waste producers local forums will be established to identify local needs, utilise and share local knowledge and expertise.

##### **Action 18**

Establish a stakeholder group to develop strategies for moving the management of industrial and commercial wastes up the waste hierarchy.

## 5 Developing and Implementing the Area Waste Plan

### 5.1 Introduction

The Tayside Area Waste Plan (AWP) provides a framework for taking forward waste management in Tayside. However, it is recognised that to implement the various short and longer-term actions will involve a partnership with public agencies, the waste industry, private and voluntary organisations, and our communities. The AWP will also provide a framework for investment and for other plans and initiatives involving our partner agencies and organisations. Key actions include:

- defining the future role and membership of the Waste Strategy Area Group and local forums;
- implementing the AWP action plan;
- funding the AWP;
- monitoring the implementation of the AWP;
- linking the AWP to the land use planning system;
- supporting and responding to national initiatives as set out in the National Waste Plan.

### 5.2 Future Role and Membership of Waste Strategy Group and Local Forums

The Tayside Waste Strategy Area Group and associated local forums will be maintained as the focal point for the development of Tayside AWP. In this way we can ensure that the Tayside AWP makes good progress. The partnerships developed in this group and associated forums provide a long term development resource and a way of embedding expertise on a wide range of issues relating to the development of the National Waste Strategy: Scotland.

A Tayside Waste Strategy Area Co-ordinator will also be maintained by SEPA to provide ongoing facilitation and co-ordination and to ensure that the range of national projects identified in the National Waste Plan are integrated into the AWP. Waste Strategy Area Co-ordinators will be responsible for co-ordinating the waste strategy area group and for reporting on the annual progress of AWP development. Other partners also have significant roles to fulfil.

### 5.3 Action Plan

The actions arising in this AWP are presented in a format that provides further detail on the objective of each action and how they will be delivered and measured. This framework will provide a consistent and transparent format for monitoring and reporting on progress. Resources will be identified and reported on in annual reviews. The full action plan is in Annex 2.

### 5.4 Funding the Area Waste Plan

Funding of the necessary investment for new waste management infrastructure and operations may be obtained in a number of different ways, including private finance, through a public-private partnership (PPP) or PFI arrangement (refer to Annex 3), or traditional direct funding by the local authority. The Scottish Executive has established the Strategic Waste Fund (SWF) to allow specific grants to be paid to local authorities to assist with additional costs to meet the requirements of the AWP (refer to SWF Guidance available from the Scottish Executive, contact details in Annex 5). Additional funding may also be available in some cases from other sources, e.g. landfill tax credits, New Opportunities Fund 'Transforming Waste Scotland', EU structural funds and the sale of packaging waste recovery notes (PRNs).

Further information is available on the web site: <http://www.sepa.org.uk/nws/funding/index.htm>

## 5.5 Monitoring the Implementation of the Area Waste Plan

Monitoring and review of the AWP performance will be an important element in measuring the influence and success of the plan. This will ensure that the plan continues to be effective and deliver the improvement in waste management at both the Tayside and national level.

An annual AWP progress report will be provided to the Scottish Executive, and made available on the web site with a summary of the annual forward development plans. This will highlight progress on implementing the AWP and flag up key issues that need to be addressed by a future review of the plan.

Given that the municipal solid waste (MSW) best practicable environmental option (BPEO) process was a rigorous and consensual process, involving all local authorities and a range of other key stakeholder bodies, it is proposed that the aggregated figures from the AWP should form the basis for national recycling and recovery MSW targets. It is also proposed that the targets post-2010 should be reviewed in line with revised AWP. This would take into account the progress made in achieving the 2010 target and issues such as the future adoption of new technologies and application of legislation.

### 5.5.1 Application of Municipal Solid Waste Targets

The three local authorities within the Tayside area could meet the AWP targets either collectively or individually. Collective working will allow for greater flexibility. However, each authority will have to be clear from the outset what their share of the target tonnage is. This will require a high level agreement between each authority in the waste strategy area. Individual working will not provide the same level of flexibility. Should agreement between local authorities prove difficult to reach, arbitration may be required to split area targets into individual authority targets.

### 5.5.2 Indicators

The Tayside AWP is setting out the forward direction towards making the significant changes that are required to change our 'throw away' culture to a more waste-aware, resource-efficient society. The magnitude of this change is substantial and to ensure that the plan becomes a reality, the monitoring and reporting of its implementation will be essential.

A wide range of stakeholders will have a key role to play, not only in the implementation of actions but in the monitoring and communication of progress made and continuing the partnership approach that has been at the heart of the development process to date.

Table 5.1 over sets out the proposed indicators that would contribute towards the National Monitoring framework along with identified sources of information that can be utilised to gather annual data for reporting requirements.

Table 5.1 – Indicators

	Indicator	Type (National/ WSA/LA Area)	Relevance	Measure	Information Source
1	Waste Production	National WSA LA	Waste levels must be known for effective forward planning (disposals and treated wastes)	Waste arisings in millions of tonnes, and categorised as per the requirements of the Waste Data Strategy.	SEPA: Local Authority Waste Arising Survey, Industry Trend Survey
2	Treatment of MSW	National WSA LA	Monitor waste treatment against indicative levels set out in National Waste Plan and Area Waste Plans	Tonnage of MSW (expressed as a percentage of total tonnage) treated by: → Recycling → Composting → Energy from Waste → Landfilling	SEPA: Local Authority Waste Arising Survey, Community Recycling Network
3	Treatment of non-MSW	National WSA LA	Monitor waste treatment against baseline levels established as part of non-MSW technical assessments groups	Tonnage of non-MSW (expressed as a percentage of total tonnage) treated by: → Recycling → Composting → Energy from Waste → Landfilling	SEPA: industry trend surveys, SESA, Private Waste Management Companies
4	Collection of MSW	National WSA LA	Monitor public access to recycling collection services	Percentage of MSW collected from: segregated kerbside collections survival bag collections number of mini recycling points per 100 households (by LA area)	SEPA: Local Authority Waste Arising survey, Local Authorities, Community Recycling Network
5	Landfilling of BMW	National WSA LA	Monitor compliance with Landfill Directive Note: this indicator can be derived from Treatment of MSW indicator	Tonnes of BMW expressed as a percentage of BMW produced in 1995	Local Authority Waste Arising Survey, SEPA data returns
6	Waste Prevention	National WSA	Stabilisation and reduction of waste growth is essential for successful resource management and to prevent further environmental degradation	Production of MSW per household per year (further guidance on how to measure prevention will be produced by the Waste Prevention Working Group: SEPA)	SEPA: Local Authority Waste Arising Survey, Local Authorities: No of Households

	Indicator	Type (National/ WSA/LA Area)	Relevance	Measure	Information Source
7	Public Awareness	National WSA LA	Determine effectiveness of environmental awareness campaigns	Shifts in public behaviour: percentage aware of and actually participating in recycling and waste prevention	Waste Aware Campaign Surveys, SWAG Baseline surveys
8	Employment in the waste management sector	National Local	The traditional waste management sector has diversified to include community groups and social inclusion programmes. The total size of the sector is not known	Number of employees including environmental taskforce placements within the waste management sector	SESA, Scottish Enterprise, SEPA, Local Authorities, Community Recycling Network

#### Action 19

Establish a comprehensive framework for monitoring the development and implementation of the AWP. This will take fully into account progress on the national monitoring framework.

#### Action 20

Establish a multi-stakeholder group to monitor and report on the action plan, targets and indicators. This group will produce an annual public report

## 5.6 Linking To Land Use Planning

### 5.6.1 Need for Positive Planning

It is clear that in planning to meet the landfill diversion targets, new infrastructure will be required in the coming years. Development planning – Structure and Local Plans – has an important role to play in this by planning positively for the necessary waste management infrastructure needed to implement the AWP. It will assist in ensuring that there is an integrated network of waste management facilities in Tayside, which meet the objectives of the AWP. Planning authorities when considering development proposals will ensure they are fully assessed against the AWP and accord with the chosen strategy. The planning system will also assist in ensuring that protection is given to the natural, built and historic environment and assist in moving towards a more sustainable form of development.

### 5.6.2 Context for Development Planning

The following publications will be used to assist in the development of Structure and Local Plan policies and when considering planning applications for waste management or treatment facilities in Tayside:

- NPPG 10, Planning and Waste Management sets out the role and responsibility of planning authorities in developing policy and identifying sites for waste management facilities. 'Planning authorities have a duty to provide policies for suitable waste disposal sites or installations in order to supply the land necessary for waste treatment and disposal to take place.' (page 6, para 2)

- PAN 63, Waste Management Planning provides best practice on a range of issues associated with waste management facilities and encourages a more proactive approach to waste management policy in development plans, and
- Tayside AWP is a material consideration for the land use planning system. As far as is practicable the AWP provides a clear framework for the development of waste management facilities to meet landfill diversion targets together with indicative infrastructure requirements to be incorporated into development plan policy as soon as is practicable.

### Development Plan in Tayside

The Tayside Waste Strategy Area is currently covered by the Tayside Structure Plan 1993 (approved March 1997) although it will be replaced by separate Structure Plans for the Dundee and Angus area and Perth & Kinross area in the near future. Both documents have been finalised and submitted to Scottish Ministers and are awaiting final approval. The Tayside Structure Plan provides the framework for the adopted area wide Local Plans covering Dundee City (1997) and Angus (2000), together with six covering Perth & Kinross. Local plan reviews are now underway in Angus, Dundee and Perth & Kinross and these new plans will incorporate the guidance contained in the round of 'new' Structure Plans in due course and the Tayside AWP. This will include policies to ensure that new developments minimise the generation of waste and that necessary infrastructure (e.g. recycling points) are built into the design process for large scale housing and commercial developments. Where appropriate, WSAG members will work together to consider the need for waste management facilities on a regional basis.

### Technical Support

SEPA has agreed subject to available resources, that it will provide expert technical assistance to planning authorities in defining the technologies that accord with the MSW BPEO decision (and future BPEO decisions). This could include commenting on the degree to which planning applications accord with the AWP, reviewing life-cycle assessment models where necessary and offering to appear as expert witnesses at public inquiries as required. Further assistance in the interpretation of the Landfill Directive and calculation of remaining landfill capacities, including the provision of waste data will also be provided where required. SEPA will also provide technical assistance in identifying and assessing the suitability of sites or areas of search for landfill.

#### Action 21

The objectives, targets and facilities required to implement the AWP will be taken fully into account in the development of Structure and Local Plan policy.

#### Action 22

Development Plans will ensure that forward supply of landfill will be available in the Tayside area for inert and non-hazardous wastes arising in Tayside. Consideration will also be given to other infrastructure needs to divert material from landfill when these have been determined.

## 5.7 Linking to the National Plan

The Area Waste Plans describe the activities, key infrastructure needs and targets for each of the eleven waste strategy areas in Scotland. The National Waste Plan for Scotland (NWP) presents the aggregation of these eleven Area Waste Plans and describes the necessary activities to ensure that waste arising in Scotland is managed in a sustainable manner. The National Waste Plan also sets out how Scotland will achieve the objectives of the Landfill Directive (99/31/EC). The future development of both the National Waste Plan and AWP are linked with actions being undertaken at both an area level and where appropriate at a national level. Together they provide the development programme to take forward the National Waste Strategy: Scotland at both a national and an area level.

## Annex 1 - Glossary

**Aerobic** A process taking place in the presence of air.

**Anaerobic** A process taking place in the absence of air.

**Anaerobic digestion** The anaerobic decomposition of biodegradable waste, by the action of micro-organisms under controlled conditions, in order to produce methane in the form of biogas and, as residue, a fiber fraction (digestate) and a liquid fraction (liquor).

**Avoidance** Strict Avoidance involves the complete prevention of waste generation by virtual elimination of hazardous substances or by reducing material or energy intensity in production, consumption and distribution, as defined by Organisation for Economic Co-operation and Development – Strategic Waste Prevention 2000. See Waste Prevention

**Best Value** Places a duty on local authorities to deliver services (including waste collection and waste disposal management) to clear standards – covering both cost and quality – by the most effective, economic and efficient means available.

**Biological treatment** The stabilisation of residual municipal waste, unsorted waste or any other biodegradable waste in order to reduce the fermentability and volume of the waste.

**Central composting** Large-scale schemes that process biodegradable material from the surrounding area in a centralised location.

**Commercial waste** Waste arising from premises which are used wholly or mainly for trade, business, sport, recreation or entertainment, excluding household and industrial waste. (As defined in Environmental Protection Act 1990 Section 75)

**Community sector** Including charities, campaign organisations and not-for-profit companies.

**Composting** The controlled biological decomposition and stabilisation of biodegradable materials (such as organic garden and kitchen wastes) under predominantly aerobic (oxygen-rich) conditions to produce a humus rich, sanitised and stabilised product that can be beneficial to soil.

**Controlled waste** Household, industrial and commercial waste or any such wastes that require a waste management licence for treatment, transfer or disposal (as defined by Environmental Protection Act 1990 Section 75).

**EC Directive** A European Community legal instruction which is binding on all Member States and must be implemented through the legislation of Member State governments within a prescribed timescale.

**Energy from waste** The recovery of energy value from waste by burning the waste directly, or by burning a fuel produced from the waste, such as refuse-derived fuel (gaseous or solid) or landfill gas.

**Gasification** Heating waste in a low-oxygen atmosphere at temperatures typically of 800 - 1400°C to give off a fuel gas. This technology was used to produce gas from coal, although it is relatively new process in its application to waste treatment

**Green Waste** 'Green and wood waste' means vegetable waste from gardens and parks, tree cuttings, branches, grass, leaves (with the exception of street sweepings), sawdust, woodchips and other wood waste not treated with heavy metals or organic compounds.

**Home composting** Compost can be made at home using a traditional compost heap, a purpose designed container or a wormery.

**Household waste** Waste from domestic properties including waste from caravans, residential homes and premises forming part of an educational establishment and part of a hospital or nursing home.

**Incineration** A combustion treatment process involving waste. This includes the incineration by thermal oxidation of wastes. The EU Directive on Incineration defines other processes such as gasification and pyrolysis as incineration in as far as the substances resulting from the treatment are subsequently incinerated.

**Industrial Waste** Waste from a factory (within the meaning of the Factories Act 1961) or from any premises used for or in connection with:

- Provision of public transport
- Public supply of gas, water, electricity or sewerage services
- Provision to the public of postal or communication services

**Inert waste** 'Waste that does not undergo any significant physical, chemical or biological transformations' as defined by the EU Landfill Directive (99/31/EEC).

**Integrated waste management** Involves a number of key elements, including: recognising each step in the waste management process as part of a whole; involving all key players in the decision-making process; and utilising a mixture of waste management options within the locally determined sustainable waste management system.

**In-Vessel composting** The composting of biodegradable material in a closed reactor where the composting process is accelerated by optimising air exchange, water content and temperature control.

**Kerbside segregated collection** Any regular collection of recyclables or compostable materials from premises. Excludes collection services delivered on demand.

**Land use planning** The Town and Country Planning system regulates development and use of land in the public interest and has an important role to play in achieving sustainable waste management.

**Landfill Directive** A key European Directive agreed in April 1999, aims to prevent or reduce as far as possible the negative effects of landfilling on the environment and human health. The main requirements of the directive include treatment of most wastes before landfilling; banning the co-disposal of hazardous and non-hazardous waste; banning certain wastes from landfill completely; and targets for the reduction of biodegradable municipal waste to landfill.

**Landfill sites** Areas of land in or on which waste is deposited.

**Materials recovery facility (MRF)** A facility to process wastes for the purpose of recovering useful materials using a variety of processes to separate out different materials, ranging from manual sorting to advanced mechanical separation techniques.

**Mixed waste processing facility** Any facility using one or more mechanical, biological or thermal processes to extract more than one useful product (recyclables and/or compost and/or fuel or energy and/or other recovered materials) from a mixed wastes stream. This covers a range of existing and emerging technologies, many of which are capable of treating either mixed waste (before or after source separation) or source segregated materials, thus offering flexibility.

**Packaging waste** Comprises waste arising from "all products made of any materials of any nature to be used for the containment, protection, handling, delivery and presentation of goods, from raw materials to processed goods, from the producer to the user or the consumer...."

**Pyrolysis** In this treatment, organic waste is heated in the absence of air at temperatures typically of 400 – 800°C. This produces a predominantly gaseous fuel product, occasionally some liquid fuel and a solid inert residue (mainly carbon). Pyrolysis can take different waste streams but generally requires a consistent feedstock. Pyrolysis does enable energy to be recovered from the waste.

**Recovery** Generating value from wastes from a wide variety of activities such as recycling, composting and energy recovery.

**Recyclables** Materials that are capable of being recycled.

**Recycling** Using waste materials in manufacturing other products of an identical or similar nature, as defined by Organisation for Economic Co-operation and Development – Strategic Waste Prevention 2000.

**Reduction at Source** Minimising use of toxic or harmful substances and/or minimising material or energy consumption, as defined by Organisation for Economic Co-operation and Development – Strategic Waste Prevention 2000. See Waste Prevention.

**Refuse Derived Fuel** A solid, liquid or gaseous fuel derived from waste which typically will be used as a fuel product on site or by a third party user.

**Reuse** Involves the multiple use of a product in its original form, for its original purpose or for an alternative, with or without reconditioning, as defined by Organisation for Economic Co-operation and Development – Strategic Waste Prevention 2000. See Waste Prevention.

**Source separation** Separation of materials for recycling or composting (e.g. paper, cans, glass, textiles, garden waste, household organics, plastic, steel, etc.) at the point of origin. The separation either takes place within the household (or business/institution) through the use of different containers, or parts of containers, for individual materials, or at street level when materials are sorted into the collection vehicle.

**Sustainable development** Development that meets the needs of the present without compromising the ability of future generations to meet their own needs. This definition can be extended to address waste and resources, i.e. development that recognises the need to limit the use of resources and production of waste to levels which do not damage the ability of natural ecosystems to remain stable and healthy. This will involve efficient use of resources including the reuse and recovery of wastes and a move from resources whose supply is finite to renewable.

**Thermal treatment** A broad generic term covering processes that involve the use of heat to treat waste. Incineration is the most common thermal treatment process. Pyrolysis and gasification are other high temperature processes but there are also low temperature processes used, for example, in technologies producing refuse derived fuel.

**Waste** Any substance or object in the categories set out in Annex 1 of the Waste Framework directive (91/156/EEC), which the holder discards or intends or is required to discard.

**Waste arisings** The amount of waste generated in a given locality over a given period of time.

**Waste hierarchy** Seeks to capture the desirability of different waste management options in descending order of preference, from avoidance, reduction and reusing waste, through recycling and composting, energy recovery and finally disposal. The concept is meant as a guide to thinking rather than a rigid rulebook.

**Waste minimisation** Preventing and/or reducing the generation of waste at the source: improving the quality of waste generated, such as reducing the hazard, and encouraging reuse, recycling and recovery, as defined by Organisation for Economic Co-operation and Development – Strategic Waste Prevention 2000.

**Waste prevention** Includes in descending order of preference: Strict Avoidance, Reduction at Source and Product Reuse, as defined by Organisation for Economic Co-operation and Development – Strategic Waste Prevention 2000. These terms are defined under the relevant headings.

**Waste transfer station** A site to which waste is delivered for sorting and/or bulking prior to transfer to another place for recycling, treatment or disposal.

**Windrow composting** An open-air method of composting in which biodegradable materials are placed in long piles, which are turned periodically to aid the composting process. The term originates from the farming practice of piling hay in rows so that it will dry out in the wind.

## Annex 2 - Action Plan

### Interpreting the Smart Action Matrix

This framework has been developed to set out the actions and targets in a consistent format for all area waste plans (AWPs). This matrix will also form the basis of the annual reporting format on the actions proposed in each Plan.

Title	Notes
No.	Action number: relates to action number within the main body of the AWP.
Action	What do you want to do? This is the main 'doing' element of the action.
Objective	Link to objectives of the AWP: all actions are related back to key objectives that underpin the content of the AWP. Actions may relate to more than one objective.
Target	Where do you want to be? The end point of what the action sets out to achieve. The point at which it can be said the action has been completed.
Indicator/ measurable	What to measure, how to measure it, and how to measure progress: In order to ensure national consistency in how actions are measured, the matrix provides some suggested measures for general action headings.
Timescale	Completion date or cycle: date at which target will be reached and action completed. Timescales can be revised at the annual review stage of the action plan. If an action is no longer applicable and/or target cannot be met, clear reasoning and steps to resolve must be given.
Responsibility	Who is going to undertake the action? Clear responsibility must be allocated to all actions for undertaking and monitoring progress. If this is not specified, actions are unlikely to be progressed.

Action	Objective (S.1.2)	Target	Indicator	Deadline	Resources
1 Using national methodology plan the strategic management of Tayside non-MSW wastes.	1,2,3	Produce local non-MSW plan	Approval by Tayside non-MSW forum.	November 2003	SEPA
2 Develop a data collection and management system for non-MSW waste streams.	1,2	Production of management system	Approval of management system by SEPA NWS Programme Management Group	November 2003	SEPA
3 Develop an AWP for Tayside that fully integrates all waste streams.	1,2,3	Production of fully integrated Tayside AWP	Approval by WSAG and SEPA	April 2007	SEPA, WSAG
4 Develop a waste analysis strategy for municipal solid wastes arising in Tayside.	3	Production of waste analysis strategy	Approval of strategy by WSAG	Produce strategy by March 2003	Tayside Local Authorities
5 A Tayside strategy for the prevention of household waste will be produced which will be informed by SEPA research.	1	Production of Tayside Waste Prevention Strategy	Approval of strategy by WSAG	October 2003	WSAG
6 Produce a household waste prevention guide to assist householders and other stakeholders.	8	Produce guide	Distribute guide to Tayside householders	October 2003	Tayside WSAG in partnership with SWAG and WAMI
7 To undertake a range of actions to ensure their respective organisations to reduce the amounts of waste they each produce. This will include the following actions: 1. Introducing staff training and awareness raising on waste management practice. 2. Local councils considering means of minimising wastes generated by their in house Direct Service and Direct Labour Operations, including building maintenance, street sweeping and roads maintenance.	8	1. Production of staff training package for each waste strategy area group member. 2. Produce a report.	1. Approval of training plan. Number of staff trained. 2. Approval of report by corporate management team of each partner organisation	1. November 2003 2. November 2003	Tayside WSAG members

cont.

Action	Objective (S.1.2)	Target	Indicator	Deadline	Resources
3. Examining procurement activities with a view to promoting waste minimisation, reuse and the purchase of recycled materials		3. Produce report	3. Approval of report by corporate management team of each partner organisation.	3. November 2003	
8 To investigate and report on the feasibility of reuse and refurbishment of MSW. This will include looking at further separation of civic amenity and bulky household wastes. This report will include a review of existing management and operational practices and ways in which these can be developed.	1,2,3, 4,5	Produce report	Approval by WSAG and partner organisations.	April 2003	The three Tayside local authorities in partnership with other stakeholders
9 To develop a strategy for the implementation of separate kerbside collection systems, for dry recycle.	1,2,3, 4,5	Produce strategy	Approval by WSAG and Tayside local authorities	April 2003	The Tayside WSAG in partnership with the three Tayside local authorities
10 To develop a compost strategy for the Tayside area which will determine the number of facilities required, the type of technology to be employed, the types of waste able to be composted, detail how the product will match market needs.	1,2,3, 4,5	Produce strategy	Approval by WSAG and Tayside local authorities	April 2004	Tayside WSAG in partnership with the three Tayside local authorities
11 To identify and report on markets for any compost that will be produced. Particular focus will be on securing sustainable markets in the Tayside area and the specification of product required by the customer.	1,2,3,5	Produce report	Approval by WSAG	March 2004	Tayside WSAG
12 To report on the feedstock wastes that are the most appropriate for combustion in the DERL energy-from-waste plant (EfW)	1,2,3	Produce report	Approval by DERL Board and WSAG	April 2003	DERL in partnership with the Tayside local authorities

Action	Objective (S.1.2)	Target	Indicator	Deadline	Resources
13	A Tayside education and awareness group will be established to promote the aims of the AWP with an initial focus on household waste. Members of the group will include SWAG, the three Tayside local authorities and SEPA.	Production of terms of reference for group	Approval of terms of reference	May 2003	SEPA, the three Tayside local authorities and SWAG
14	Establish and maintain a directory of waste management services. This will allow all residents of Tayside to identify what services are available to deal with differing waste materials in their locality. The Directory will also be available through each of the local authorities web sites.	Produce directory.	Distribute directory and make available on local authority websites	March 2003 updated as and when changes to services or infrastructure require.	Tayside local authorities
15	Facilitate and support the establishment and development of community based and operated waste management initiatives. Determine the type and level of support required by community groups through the organisation of a focus group.	Establish a community waste management forum Hold focus group	Approved terms of reference Report on conclusions of focus group	July 2003 May 2003	Tayside WSAG Tayside WSAG
16	Develop a strategy for the management of risk which may compromise the successful and timely implementation and delivery of the BPEO for MSW arising in Tayside	Produce risk matrix	Approved by WSAG	Initially produced by May 2003. Reviewed annually thereafter.	Tayside WSAG

Action	Objective (S.1.2)	Target	Indicator	Deadline	Resources
17 Produce a report considering the best means of delivering waste minimisation support to Tayside businesses.	1.5	Production of report identifying best means of delivering waste minimisation support to Tayside businesses.	Approval by WSAG	October 2003	WSAG, representatives from business community in Tayside
18 Establish a stakeholder group to develop strategies for moving the management of industrial and commercial wastes up the waste hierarchy.	1.5,6	Develop terms of reference for group Representation from all industrial sectors	Approve terms of reference Level of representation	September 2003	SEPA
19 Establish a comprehensive framework for monitoring the development and implementation of the AWP. This will take fully into account progress on the national monitoring framework.	3	Produce monitoring framework	Approval of monitoring framework by WSAG	September 2003	Tayside WSAG
20 Establish a multi-stakeholder group to monitor and report on the action plan, targets and indicators. This group will produce an annual public report	3	Develop terms of reference for group	Approval of terms of reference by WSAG	October 2003	Tayside WSAG
21 The objectives, targets and facilities required to implement the AWP will be taken fully into account in the development of structure and local plan policy.	4	Incorporate land use requirements into structure and local plans	Approval of structure and local plans	2006	Tayside local authorities
22 Development plans will ensure forward supply of landfill will be available in the Tayside area for inert and non-hazardous wastes arising in Tayside Consideration will also be given to other infrastructure needs to divert material from landfill when these have been determined.	4	10 year forward supply	Years of forward landfill supply with planning consent. Identify other infrastructure needs when determined	Annual review	Tayside local authorities, SEPA

## Annex 3 - Links to Other Policies, Legislation and Initiatives

The area waste plans (AWPs) are being developed in an environment where other areas of policy development, legislation and initiatives are likely to influence, or be influenced by, the National Waste Plan. During its implementation the National Waste Strategy seeks to integrate its activities with the policies, legislation and initiatives described in the following sections. These fall under three categories, namely:

1. Waste management - related policies, legislation and initiatives.
2. General policies, legislation and initiatives – of direct relevance to waste management.
3. Other policies, legislation and initiatives – of indirect relevance to waste management.

### 1 Waste Management-related Policies, Legislation and Initiatives

#### Awareness, Education and Cultural Change Programme

The Waste Aware Scotland Team (WAST) was established by SEPA to create a more positive waste culture in Scotland, using a waste education and awareness programme based on best practice from Scotland and around the world. Its specific aims are to establish a strategic framework for education and awareness initiatives in support of the National Waste Strategy: Scotland and where appropriate to support, facilitate and assist in the implementation of these education and awareness initiatives. The team is chaired by a representative from SEPA and draws its members from local authorities, commerce and industry, the waste management industry and consumer interests.

The process focus of the team will be on formal education, informal learning, professional education and training, public campaigns and information or advice services. The strategic behavioural and cultural change objectives of WAST will be achieved through a number of initiatives which will address all wastes including household, commercial and industrial. Initiatives already underway include the Scottish Waste Awareness Group (SWAG), which will plan and deliver a series of public awareness campaigns across Scotland as part of their Waste Aware Scotland programme to change public attitudes towards reduction, reuse and recycling.

Working closely with SEPA and WAST, SWAG is a resource for local authorities and the National Waste Strategy: Scotland to deliver local and national campaigns to the public through the Waste Strategy Area groups. SWAG has cross sector support from SEPA, local authorities, non-government organisations, recycling groups, consumer interests, private waste industry, Keep Scotland Beautiful, the media and the Scottish Executive, in particular their 'Do a Little Change a Lot' campaign.

#### SEPA's Regulatory Policy

SEPA's regulatory policy is aimed at meeting Objective 1 of Schedule 12 of the Environment Act 1995 and ensuring that waste is recovered or disposed of without endangering human health and without using processes or methods that could harm the environment. SEPA's regulatory policy therefore recognises the importance of ensuring that its regulatory functions are in line with the objectives of the National Waste Strategy process, and equally, that the AWPs are realistic concerning the contribution that regulation can make. There is also a need to ensure that each plan addresses forthcoming regulatory issues sufficiently. A full statement of SEPA's regulatory policies will be prepared for inclusion in the National Plan.

#### SEPA Waste Minimisation Programme

SEPA's Waste Minimisation Programme was launched in 1998 and became a permanent function in 2001. The overall aim is to demonstrate the benefits of waste minimisation to SEPA staff, commerce and industry. The programme works in partnership with external organisations to increase the amount of waste minimisation activity in Scotland by developing sector-based or geographical projects and links to SEPA's own internal environmental policy and the National Waste Strategy Scotland. It also contributes to the promotion of domestic waste minimisation to householders through working alongside the Scottish Waste Awareness Group,

To date SEPA has helped over 500 companies to reduce their waste through low cost measures through the external partnership network. This now equates to an across-the-board cost saving amongst Scottish businesses of at least £6 million through reductions in water use and emissions to land and air.

The programme seeks to provide a focal point for the dissemination of best practice in waste minimisation. A website ([www.sepa.org.uk/wastemin](http://www.sepa.org.uk/wastemin)) contains useful information on the benefits of waste minimisation, how to establish a waste minimisation programme, useful contacts and sources of help and listing of all the initiatives throughout Scotland. A practical video and leaflet is also available free of charge.

## 2 General Policies, Legislation and Initiatives (of direct relevance to waste management)

### Best Value

A duty of Best Value has been introduced to Scottish local government through the Local Government in Scotland Bill (introduced on 16 May 2002). Best Value means that local authorities will have to secure continuous improvement in the performance of all their functions. This improvement should be achieved while maintaining an appropriate balance between the quality of service delivered and cost of delivering the service. The intention is to embed a culture of quality and improvement in local government service delivery. Best Value is intended to focus local authorities on outcomes as well as the process, which may force them to ask themselves difficult questions – how should a service be delivered? How well do we deliver it? How well could others do it? How do we compare to others? This process requires a commitment to ongoing review and that an effective dialogue between local authorities, their staff and service users be created and maintained.

Whilst Best Value is a principle that can be applied widely across public sector services there are specific objectives in its application to waste management. These include aspects of collection, treatment and disposal of waste. The final structure and the necessary legislation for its application in Scotland are awaited. The services developed by local authorities as a result of the AWP will be developed and managed as part of the Best Value regime.

### Contaminated Land Issues

The AWP will address the management of contaminated soil arisings as part of the strategy for the management of non-MSW. The majority of contaminated land issues will be addressed either through the Planning and Development Control procedures, Part IIA of the EPA 1990 (Local Authorities), or the Control of Pollution Act 1974 (enforced by SEPA).

### Development Planning

The planning system guides the future development and use of land in the long-term public interest. The aim is to ensure that development and changes in land use occur in suitable locations and are sustainable. The statutory development plan for an area consists of the structure and local plan:

- The structure plan provides a long-term vision as part of an overview of an area's development requirements. It should identify the overall supply of land to meet the requirements of development and reflect and identify the priorities for the provision of infrastructure.
- Local plans set out the detailed policies and specific proposals for development and the use of land that guide day to day planning decisions.
- Additionally, where applicable, any development proposals or waste management proposals will need to take account of the planning framework prepared for each National Park, namely a National Park Plan and a local plan or plans, as required by the National Parks (Scotland) Act 2000. The National Park Plan will set the overall strategic vision and management context within which the local plans will set out detailed policies and proposals for the development and use of land within a National Park.

### **Local Agenda 21 and Environmental Strategies**

Whilst these plans are non-statutory, many local authorities will produce one or both. Local Agenda 21 strategies (LA21) arose out of the 1992 Rio Earth Summit and can be thought of as local plans for sustainable development. The Government challenged all authorities to produce such a statement by December 2000. Community plans and LA21s are very similar in nature. Thus many LA21 strategies have been combined with community plans or are seen as complementary processes. However, LA21 plans tend to be longer term and more global-to-local in approach than community plans.

Since the World Summit on Sustainable Development (WSSD) fresh impetus has been given to the LA21 process, which is now been termed 'Local Action 21' with a renewed focus on action.

Environmental strategies draw together local authority actions on environmental issues, from transport to purchasing, from waste management to environmental education. Subsequently the AWP forms a key component of the local authorities sustainable development agenda.

### **Local Government Bill**

The forthcoming Local Government Bill aims to provide a framework for the delivery of better, more responsive public services, giving councils more flexibility and responsibility to act within a sensible framework and to work in partnership with communities and other agencies.

The proposals fall into three main areas:

- Giving councils a general power to promote and improve the well-being of their area.
- Providing a statutory underpinning for community planning through a duty on councils and key community planning partners.
- Introducing a statutory duty of Best Value for local authorities.

The new powers will enable councils to act more flexibly and innovatively in promoting and improving the well-being of their area in partnership with communities and other agencies.

Councils will be required to facilitate a community planning process in their area and to consult and engage communities in that process. Other key public bodies, such as the NHS, local enterprise companies and police are under a statutory duty to participate in the community planning process. This is designed to promote more effective joint working between agencies in seeking to deliver the services people want. The emphasis should be on the needs of service users and the effective engagement of communities in the decisions that affect them.

A statutory duty of Best Value is to be placed on local authorities to pursue continuous improvement in performance in a way that maintains an appropriate balance between quality and cost.

The Bill will also be used as a vehicle for progressing a small number of miscellaneous provisions that relate to the role of local authorities, including a duty to prepare integrated waste management plans to replace the current recycling plans. Integrated waste management plans will include targets for individual local authorities to achieve as their contribution to their AWP and the National Waste Plan.

### **Public-Private Partnership**

One aim of government policy is to promote constructive working partnerships between the public and private sectors.

Using private capital and expertise in the provision of public infrastructure is not new. Joint working between the public and private sectors, in fields such as housing, economic development and regeneration, transport and municipal enterprises, has achieved a great deal over the years. The government is keen to build on this success, by extending successful approaches to delivering good value for money, and by developing new ones and PPP is one route by which local authorities may procure and fund the long term integrated waste management required to meet the AWP objectives.

### Private Finance Initiative

PPPs are about establishing arrangements, often using a legally binding contract that will bring benefits to both sectors. Such arrangements can include contractual relationships, management buy outs, externalisation of operational management and use of the private finance initiative (PFI). The PFI is a mechanism for improving value for money in partnership with the private sector and is often applied to large capital projects such as roads, hospitals, schools and prisons. The PFI has also been applied to a range of waste management facilities.

The costs of the various waste management options for MSW highlighted elsewhere in the plan indicate that there may be a need to explore PPPs to deliver certain aspects of the infrastructure and services required. It will be for individual councils to decide on the form that these arrangements take. The Scottish Executive have made clear that to secure any funding from the Strategic Waste Fund, all projects must accord with the local AWP, irrespective of whether they are financed using PPP, PFI or other traditional methods of financing.

### Renewables Obligation (Scotland)

The Scottish Executive has set out a policy on renewable energy, which aims to stimulate further the development of the renewable energy industry in Scotland. The Scottish Executive's objective is that by 2010 18% of electricity supplied in Scotland should be renewable energy, in other words generated from a renewable resource. The policy has five key aims:

- To assist the UK to meet national and international targets for the reduction of emissions, including greenhouse gases;
- To help provide secure, diverse, sustainable and competitive energy supplies;
- To stimulate development of new technologies needed for growth of the contribution from renewables in the longer term;
- To assist the UK renewables industry to become competitive in home and export markets and in doing so to provide employment;
- To make a contribution to rural development.

In line with the objective and aims, Renewables Obligation (Scotland) (ROS) obliges all licensed electricity suppliers in Scotland to demonstrate that they have supplied a specified proportion of electricity from renewable sources. This specified proportion will increase each year to help achieve the objective of 18% of electricity supplied from renewable sources by 2010.

The key renewable energy technologies include wind and wave power, solar energy, biomass production and energy from waste. The specific approach that the ROS takes on energy from waste as a renewable energy source is as follows:

Electricity generation from waste treatment is eligible under two categories, providing minimal content of fossil fuel derived waste.

#### (a) Generation from biomass.

Electricity that is generated directly from treatment of biomass is eligible under the order. Biomass, defined as above, must be verified to be contaminant free to at least 98% of its energy content as measured by monthly sampling.

#### (b) Mixed Waste generation

Electricity generation from mixed waste treatment is not directly eligible under the 2002 order. However, electricity that is generated from the liquid or gaseous product/s of an advanced conversion technology, where it is applied to mixed waste, is eligible under the order. The order defines an advanced conversion technology as "Gasification, pyrolysis or anaerobic digestion, or any combination thereof"

### Community Planning

This arose from the perception that public sector planning was fragmented and poorly co-ordinated at a local level, leading to duplication, waste and confusion. Hence since 1999, with councils taking a lead, organisations as diverse as Health Boards, local enterprise companies (LECs), Scottish Homes, SEPA, the police authority and Scottish Natural Heritage have come together to plan the future of the local area. These community plans are being finalised and should contain: a vision for the future of the area, an analysis of the main issues, an audit of current activities, an action plan for change and a review mechanism. Community plans can cover strategic issues and also be subdivided to tackle very local issues such as traffic, noise, graffiti and green space. As such, community plans offer an important means to have policies endorsed by a very wide range of sectors and stakeholders. The completed AWP will provide useful input to local authority community plans.

### Corporate Plans (Strategic Plans)

Most local authorities produce a corporate plan to cover either following year or three years. These are key documents as they translate the manifestos of the parties into policies and set out commitments on emerging government initiatives. Corporate plans usually present an analysis of the council position (with respect to demographics, economy, social issues, environmental issues, etc.) and the key policies and actions it intends to undertake. It may also contain an explanation of the internal processes of the council that are intended to implement the corporate plan. It is likely that local authority Corporate Plans will make reference to the agreed AWP.

### Economic Development Strategies

Most local authorities have economic development teams and will therefore produce strategies and action plans setting out what these teams intend to achieve. This will often be in addition to any LEC economic development strategy they are supporting. Typical issues covered include company support, trade development, company development, training and New Deal programs, physical enhancement, infrastructure improvements, tourism, links to social inclusion work, and in some cases environmental issues. The completed AWP, as agreed, may be used to inform the development of local authority economic development strategies.

### Education Department Plans

A wide variety of plans are required in education departments, including curriculum development plans and school development plans. A recent innovation is the need to produce Community Learning Strategies and Community Learning Plans to support the new Community Plans (see above). Community Learning seeks to involve the community education function and other key learning institutions in meeting key learning needs arising from other strategies. For example, the economic development strategy might identify a need for greater IT skills, which the Community Learning Strategy might try to address. Some education departments may also have environmental education plans. AWP typically have a significant public education and awareness component and the implementation of this may influence the development of local Community Learning Plans.

### **Housing Plans and Housing Management Plans**

These are statements by housing departments of the range and type of housing required for their area over a 3 or 5-year period, and the investment required to meet that need. Housing types cover both standard (council) housing and special needs housing. Housing Management Plans cover the service provided by the local authority: repairs and maintenance, estate management, tenant participation etc. Housing Management Plans may influence the nature of any future changes to the current household waste collection systems, required by the AWP.

### **Local Air Quality Plans**

The Environment Act 1995 requires local authorities to review their area and determine possible breaches that may occur to the National Air Quality strategy objectives for key pollutants. Local authorities that identify areas likely to breach these standards must produce a strategy to return the area to compliance, using mechanisms such as controls on development, low emission zones, traffic restrictions etc. Future waste management facilities and arrangements proposed by the completed AWP may have an impact on local air quality and the AWP proposals should be taken into account as part of the local air quality plans.

### **Local Biodiversity Action Plans**

Another plan to arise from the 1992 Rio Earth Summit, these plans seek to implement at a local level the UK Government's national Biodiversity Action Plans. Typically, a Local Biodiversity Action Plan (LBAP) will follow a defined process: an audit of existing flora, fauna and habitats, a prioritisation of these against key international, national and local criteria, followed by the development of action plans for the key species. The Tayside LBAP may inform the site location considerations for specific facilities required by the AWP.

### **Local Transport Strategies**

Local transport strategies are designed to bring together all the transport issues for the local authority area. They combine the statutory requirements of the Road Traffic Reduction Act and Road Safety Plans with analysis of the existing pattern of transport and traffic. They usually include plans for new roads and road improvements, bus, cycling, walking and rail projects and are a useful source of transport statistics. They may, and should, be linked to local air quality and planning strategies. The completed AWP may be used to inform the development of local transport strategies, particularly where new centralised waste processing facilities are planned.

### **Other Local Authority Corporate Policies**

Local authority Chief Executives or Corporate Services Departments typically produce a wide range of other policies. These cover plans for both urban regeneration, closely linked to social inclusion and rural regeneration, sometimes called Rural Development. Typically these plans use ring-fenced government money, together with Structural Funds, to promote community social and economic programmes such as training, community transport, credit unions, physical enhancements etc. Elements of the agreed AWP may be of relevance for inclusion in these Corporate Plans, where they impact regeneration and social inclusion.

## Annex 4 – Associated Reports

The following background publications underpin or provide background to the Tayside Area Waste Plan. They are available from your Waste Strategy Area Co-ordinator at the address below:

Report	Description	Availability
National Waste Strategy: Scotland 1999	Presents the national framework	SEPA web site at <a href="http://www.sepa.org.uk/nws">www.sepa.org.uk/nws</a> , or contact Tayside Waste strategy Area Coordinator at <a href="mailto:nws.Tayside@sepa.org.uk">nws.Tayside@sepa.org.uk</a> , or on 01738627989.
Strategic Waste Management Baseline Assessment May 2001	Presents data and information on waste arisings and disposals, and the existing waste management infrastructure within Tayside.	Contact Tayside Waste strategy Area Coordinator at <a href="mailto:nws.Tayside@sepa.org.uk">nws.Tayside@sepa.org.uk</a> , or on 01738627989.
Supporting Guidance For Area Waste Plans Sept 2000	Describes the area waste planning process.	SEPA web site at <a href="http://www.sepa.org.uk/nws">www.sepa.org.uk/nws</a> , or contact Tayside Waste Strategy Area Coordinator at <a href="mailto:nws.Tayside@sepa.org.uk">nws.Tayside@sepa.org.uk</a> , or on 01738627989.
Best Practicable Environmental Option Decision Making Guidance Sept 2000	Describes the process of determining the best practicable environmental option (BPEO) for waste streams.	SEPA web site at <a href="http://www.sepa.org.uk/nws">www.sepa.org.uk/nws</a> , or contact Tayside Waste Strategy Area Coordinator at <a href="mailto:nws.Tayside@sepa.org.uk">nws.Tayside@sepa.org.uk</a> , or on 01738627989.
Tayside Waste Issues Paper October 2001	Describes the short-listed municipal solid waste options	SEPA web site at <a href="http://www.sepa.org.uk/nws">www.sepa.org.uk/nws</a> , or contact Tayside Waste Strategy Area Coordinator at <a href="mailto:nws.Tayside@sepa.org.uk">nws.Tayside@sepa.org.uk</a> , or on 01738627989.
Tayside Background Assessment to the Best Practicable Environmental Option for Municipal Wastes Arising in Tayside	Presents the background assessments, which were used to determine the BPEO for Tayside municipal wastes.	Contact Tayside Waste strategy Area Coordinator at <a href="mailto:nws.Tayside@sepa.org.uk">nws.Tayside@sepa.org.uk</a> , or on 01738627989.

Report	Description	Availability
Tayside Draft Area Waste Plan April 2002	The draft version of this plan which also contains more detail on the process of determining BPEO	SEPA web site at <a href="http://www.sepa.org.uk/nws">www.sepa.org.uk/nws</a> , or contact Tayside Waste Strategy Area Coordinator at <a href="mailto:nws.Tayside@sepa.org.uk">nws.Tayside@sepa.org.uk</a> , or on 01738627989.
The National Plan for Scotland	Presents the national framework.	SEPA web site at <a href="http://www.sepa.org.uk/nws">www.sepa.org.uk/nws</a> , or contact Tayside Waste Strategy Area Coordinator at <a href="mailto:nws.Tayside@sepa.org.uk">nws.Tayside@sepa.org.uk</a> , or on 01738627989.
Tayside Waste Strategy Area Consultation Report	Presents the results of the consultations in Tayside on the area waste plan	Contact Tayside Waste strategy Area Coordinator at <a href="mailto:nws.Tayside@sepa.org.uk">nws.Tayside@sepa.org.uk</a> , or on 01738627989.

Waste Strategy Area Co-ordinator

SEPA

Perth Office

7 Whitefriars Crescent

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PH2 0PA

## Annex 5 - Contact Organisations and Links

### National Organisations

For enquiries and information on the National Waste Strategy: Scotland:

- visit: [www.sepa.org.uk/nws](http://www.sepa.org.uk/nws)
- email: [wasteaction@sepa.org.uk](mailto:wasteaction@sepa.org.uk)
- call the Waste Action information request line on: 0800 389 5270

#### Scottish Environment Protection Agency (SEPA)

Erskine Court  
Castle Business Park  
Stirling  
FK9 4TR  
Tel: 01786 457700  
Fax: 01786 446885  
[www.sepa.org.uk](http://www.sepa.org.uk)

#### SEPA Waste Minimisation Project (WaMI)

Clearwater House  
Heriot Watt Research Park  
Avenue North  
Riccarton  
Edinburgh  
EH14 4AP  
Tel: 0131 449 7296  
Fax: 0131 449 7277  
[www.sepa.org.uk/wastemin](http://www.sepa.org.uk/wastemin)

#### Scottish Executive

Waste Strategy Team  
SEPA Sponsorship and Waste Unit  
Area 1- J (North) Victoria Quay  
Edinburgh  
EH6 6QQ  
Tel: 0131 244 0243  
Fax: 0131 244 0245  
[www.scotland.gov.uk](http://www.scotland.gov.uk)

#### Convention of Scottish Local Authorities (CoSLA)

Rosebery House  
9 Haymarket Terrace  
Edinburgh  
EH12 5XZ  
Tel: 0131 474 9200  
Fax: 0131 474 9292

#### Recycling Advisory Group Scotland (RAGS)

233 Cowgate  
Edinburgh  
EH1 1NQ  
Tel: 0131 226 6666  
Fax: 0131 220 2263  
[ragdesk@rags.org.uk](mailto:ragdesk@rags.org.uk)  
[events@rags.org.uk](mailto:events@rags.org.uk)

#### ReMaDe Scotland

Caledonian Shanks Centre for  
Waste Management  
Glasgow Caledonian University  
3rd Floor Drummond House  
1 Hill Street  
Glasgow  
G3 6RN  
Tel: 0141 582 0450  
Fax: 0141 582 0451  
[www.remade.org.uk](http://www.remade.org.uk)

#### Scottish and Northern Ireland Forum for Environmental Research (SNIFFER)

11/13 Cumberland Street  
Edinburgh  
EH3 6RT  
Tel: 0131 557 2140  
Fax: 0131 652 3615

#### Scottish Environmental Services Association (SESA) c/o Shanks

A8 Edinburgh Road  
Coatbridge  
Lanarkshire  
ML5 4UG  
Shanks Switchboard  
Tel: 01236 433671  
[martin.king@shanks.co.uk](mailto:martin.king@shanks.co.uk)

#### Scottish Institute of Sustainable Technology Ltd (SiSTech)

Heriot-Watt University  
Riccarton  
Edinburgh  
EH14 4AS  
Tel: 0131 4518162  
Fax: 0131 4518150

#### Scottish Waste Awareness Group (SWAG)

7 Melville Terrace  
Stirling  
FK8 2ND  
Tel: 01786 471333  
[www.wascot.org.uk](http://www.wascot.org.uk)

#### Waste and Resources Action Programme (WRAP)

The Old Academy  
21 Horse Fair  
Banbury  
Oxon  
OX16 0AH  
Tel: 0800 100 2040  
Fax: 01295 819911  
[www.wrap.org.uk](http://www.wrap.org.uk)

#### WRAP Scottish Liaison Officer

Tel: 0131 244 7953

- 1 Orkney and Shetland
- 2 Western Isles
- 3 Highland
- 4 Moray, City of Aberdeen and Aberdeenshire
- 5 City of Dundee, Angus and Perth and Kinross
- 6 City of Stirling, Clackmannanshire and Falkirk
- 7 Fife
- 8 City of Edinburgh, West Lothian, Midlothian  
East Lothian and The Scottish Borders
- 9 North Ayrshire, East Ayrshire, South Ayrshire  
and Dumfries and Galloway
- 10 Inverclyde, Renfrewshire, East Renfrewshire,  
City of Glasgow, South Lanarkshire, North Lanarkshire,  
East Dunbartonshire and West Dunbartonshire
- 11 Argyll and Bute



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