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ABERDEEN CITY COUNCIL

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HOUSING AND ENVIRONMENT COMMITTEE: 13 April 2010

CORPORATE DIRECTOR            Pete Leonard

TITLE OF REPORT                 Aberdeen City Waste Strategy 2010-2025

REPORT NUMBER:                 H&E/10/005

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### **1. PURPOSE OF REPORT**

The purpose of the report is to seek adoption of Aberdeen City Waste Strategy.

### **2. RECOMMENDATION(S)**

1. That committee approves Aberdeen City Waste Strategy attached at Appendix 1 and refers the report to the Corporate Policy and Performance Committee for adoption.

### **3. FINANCIAL IMPLICATIONS**

Waste management costs have significantly increased in recent years with the introduction of additional recycling collection services and landfill tax payments increasing annually. Future costs will increase with the landfill tax set to increase: the £3.4 million cost to Aberdeen City Council for landfill tax in 2007/8 will increase to approximately £7.2 million in 2013/14 unless changes are made. The existing waste strategy is no longer fit for purpose and therefore a new Strategy is required to deliver major residual treatment infrastructure at lower cost than landfill. In addition, the adoption of more cost-effective collection systems proposed in the strategy will also lead to benefits for the Council.

The Strategy proposes new facilities, which will require major capital investment through the existing Waste Management Services Contract, expected capital cost and funding mechanisms are as follows:

**Table 1. Aberdeen City Council Capital Infrastructure for Waste Strategy**

<b>Facility</b>	<b>Estimated capital cost (£)</b>	<b>Potential Funding Mechanisms</b>
<b>Materials Recycling Facility</b>	4-6 million	By existing contractor (SITA UK Limited)
<b>Organic Waste Treatment</b>	2-4 million	By existing contractor
<b>2 New Recycling Centres</b>	1-2 million	By existing contractor or Council funds
<b>Residual (including Energy from Waste) Treatment</b>	20-60 million	By existing contractor or via a new procurement (finance method to be determined)

There is no capital support available from the Scottish Government. The appropriate funding mechanisms for residual treatment will be determined following the adoption of the Strategy and specification of the preferred treatment method but may be via prudential borrowing, private sector finance or a combination of sources of funding.

Revenue impact from implementation of the Strategy is difficult to assess across the life of the strategy, however, it is clear from the cost of increase in landfill tax that alternative treatment methods for residual waste and organic waste will become cost comparable within 2-3 years and less expensive thereafter. Furthermore, the reduction in recycling collection costs follows the introduction of commingled collections will close the current gap between recycling cost and landfill and result in cost savings in the medium term.

#### **4. SERVICE & COMMUNITY IMPACT**

The Waste Strategy addresses waste management challenges over a 15 year timeframe; it is difficult therefore to determine all impacts on the waste management service over this period. The major short term proposal in the strategy that affects current service delivery (the introduction of commingled recycling collection) has already been adopted by the Council through the Transformation Strategy for Waste Management Services.

Community impacts from the strategy are judged to be favourable. The provision of additional recycling services has been called for by members of the community, especially those in multi-occupancy properties.

#### **5. OTHER IMPLICATIONS**

This strategy is subject to the requirements of Strategic Environmental Assessment (SEA) regulation. A SEA Scoping exercise has been completed and the full SEA will be subject to public consultation at the same time as this Strategy is published.

## **6. REPORT**

The Aberdeen City Waste Strategy is attached at Appendix 1.

### **6.1 ONE PAGE STRATEGY**

The Aberdeen City Waste Strategy 2010-2025 provides a statement of the key outcomes for all waste management in the city for the next fifteen years and provides a framework for the development of the next generation of waste infrastructure and services.

Aberdeen has made significant strides in managing waste more sustainably in the last decade, especially in the areas of municipal, construction and demolition waste but much remains to be achieved.

The Strategy has been developed through analysis of the drivers affecting waste management behaviour and practice. Subsequently, a process is followed of identifying key themes, goals, objectives and targets.

#### **Key Themes**

- Waste is a Resource not a Problem
- Gain value from at all stages of treatment
- Our resource, our solution
- The Proximity Principle
- The Waste Hierarchy
- Pragmatic, value for money but challenging

#### **Targets**

- Target 1      Municipal waste growth will be eliminated by 2015.
- Target 2      Source Segregated Municipal Waste Recycling and Organic Waste Treatment Targets are:  
45% by 2013  
50% by 2020  
56% by 2025
- Target 3      Introduce organic waste collection for all households and develop treatment facilities within the Aberdeen area by 2013.
- Target 4      Municipal Residual Waste Treatment capacity (including Energy from Waste) should not exceed 45% by 2020 and 40% by 2025.
- Target 5      No more than 5% of municipal waste should be landfilled by 2025.

#### **MSW Delivery**

- Develop commingled Materials Recycling Facility
- Develop organic waste treatment facilities in Aberdeen
- Develop residual treatment capacity in Aberdeen

## **6.2 Consultation Process**

The preparation of this was strategy has been thoroughly informed through consultation. An initial consultation on the key themes of the strategy was undertaken in early-2009. The results of this consultation were then built into the development of the draft Waste Strategy which was submitted to and approved by the Housing and Environment Committee meeting on 19 November 2009.

The draft Aberdeen City Waste Strategy was published for public consultation on 16 December 2009. The main means of communication was electronic either by direct mailing to established stakeholders and via the Aberdeen City Council website where an online consultation opportunity was established. A small number of hard copy versions of the strategy were printed and distributed where requested. Presentations were also made to community groups and professional bodies in Aberdeen during the consultation period.

The Consultation closed on 25 February 2010, although late responses were received and considered up to 5 March 2010. Respondents (see Appendix 2) ranged from individuals to community groups to government bodies, such as the Scottish Environmental Protection Agency (SEPA). No responses were received from elected members, MSPs, MPs or MEPs or the Scottish Government.

The main elements of the Waste Strategy remain in place following the consultation, however, changes have been incorporated. In particular, more emphasis has been placed on achieving the goals of waste prevention and increasing public engagement in the transition from managing waste as problem to using it as a resource. The role of education in achieving behaviour changes has been emphasised by consultees. None of the respondents stated opposition to the potential for energy from waste facilities in Aberdeen; responses in relation to this were confined to the need for careful site selection, appropriate capacity and the need to ensure value is gained through combined heat and power use.

In parallel with the publication of the draft Waste Strategy, the Strategic Environmental Assessment that accompanies it was also sent out for consultation. Responses were received from SEPA, Scottish Natural Heritage and Historic Scotland and changes made to the SEA as appropriate. No responses were received from elected members, MSPs, MPs or MEPs or the Scottish Government.

## **6.3 Waste Management Working Group**

The Waste Management Working Group met on 5 March 2010 and considered an update report on the consultation process which included details of the main response issues.

## **6.4 Implementation Plan**

An outline Waste Implementation Plan has been prepared and is attached as Appendix 3. This Plan is intended to provide a simple indication of the scope and timescale required for the implementation of elements relating to the Council's

activities. Upon adoption of the Strategy and resolution of operating structures within Housing and Environment, a this headline Implementation Plan will be expanded into a detailed work programme with associated resource implications will be prepared for submission to the Housing and Environment and Finance and Resources committees. In the interim, officers will continue to progress with the immediate actions required under the waste implementation plan.

## **7. REPORT AUTHOR DETAILS**

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## **8. BACKGROUND PAPERS**

### **Appendix 1. Aberdeen City Waste Strategy 2010-2025**

Note that two appendices to the Aberdeen City Waste Strategy have not been included in the report. A full copy of the Aberdeen City Waste Strategy, including appendices has been lodged in the Members Library.

### **Appendix 2. Outline Implementation Plan**

# ABERDEEN CITY WASTE STRATEGY 2010-2025

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## 1. FOREWORD

Waste Management: what does it mean to you? If I'd asked this question 10 years ago, you'd probably say 'Nothing, I don't really care as long as the scaffy makes it disappear every week'. In truth, we've been very successful at this 'magic' trick for many years but only at the expense of communities and the environment close to the landfill sites where we've dumped our waste.

Today, I'm pleased to say that the answer to the same question is increasingly more informed and considerate of the consequences of just filling the black bin and not making use of the recycling services becoming commonplace across the city. The cost of landfill, in financial, social and environmental terms is now causing us all to look again at the way we treat waste.

This is why the time is right to review Aberdeen City Council's Waste Strategy. We've made progress in recycling and composting; much more needs to be done both in providing additional services but also at an individual level. To reach the targets set in this strategy for preventing and recycling waste, a significant behavioural shift is required: everyone needs to understand the cost and benefits of their actions and change their behaviour to ensure we gain as much value from our waste as we can. The days of leaving a landfill legacy for future generations are over but only if we all take responsibility for the fate of our waste by individually making an effort to reduce waste then segregate materials for recycling and accept the need for carefully sited and appropriately sized waste treatment facilities in the city.

Waste should no longer be seen as a problem: there are means to get benefit from everything we throw away providing we take a little care in how we do this. This strategy provides a framework for encouraging waste reduction and then ensuring we get value from all our waste through recycling, composting or other organic treatment and finally by developing high efficiency combined heat and power production from the remaining mixed waste.

In this way, we can truly say that when it comes to waste we can, in what appears to be another magic trick, get something from nothing.

Councillor Aileen Malone  
Convener, Housing and Environment Committee  
Aberdeen City Council

## 2. CONSULTATION

The preparation of this was strategy has been thoroughly informed through consultation. An initial consultation on the key themes of the strategy was undertaken in early-2009<sup>1</sup>. The results of this consultation were then built into the development of the draft Waste Strategy which was submitted to and approved by the Housing and Environment Committee meeting on 19 November 2009.

The draft Aberdeen City Waste Strategy<sup>2</sup> was published for public consultation on 16 December 2009. The main means of communication was electronic either by direct mailing to established stakeholders and via the Aberdeen City Council website where an online consultation opportunity was established. A small number of hard copy versions of the strategy were printed and distributed where requested. Presentations were also made to community groups and professional bodies in Aberdeen during the consultation period.

The Consultation closed on 25 February 2010, although late responses were received and considered up to 5 March 2010. Respondents ranged from individuals to community groups to government bodies, such as the Scottish Environmental Protection Agency (SEPA).

Many helpful suggestions and comments were received through the consultation; many of these have been incorporated into the final strategy. Many respondents wish to see more effective work on communication of the need to reduce, reuse and recycle. None of the respondents stated opposition to the potential for energy from waste facilities in Aberdeen; responses in relation to this were confined to the need for careful site selection, appropriate capacity and the need to ensure value is gained through combined heat and power use.

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<sup>1</sup> Aberdeen City Council (2009) "Aberdeen City Waste Strategy – Key Themes Consultation"

<sup>2</sup> Aberdeen City Council (2009) "draft Aberdeen City Waste Strategy 2010-2025 Consultation"



### **3. ONE PAGE STRATEGY**

The Aberdeen City Waste Strategy 2010-2025 provides a statement of the key outcomes for all waste management in the city for the next fifteen years and provides a framework for the development of the next generation of waste infrastructure and services.

Aberdeen has made significant strides in managing waste more sustainably in the last decade, especially in the areas of municipal, construction and demolition waste but much remains to be achieved.

The Strategy has been developed through analysis of the drivers affecting waste management behaviour and practice. Subsequently, a process is followed of identifying key themes, goals, objectives and targets.

#### **Key Themes**

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#### **Municipal Solid Waste Delivery**

- Develop commingled Materials Recycling Facility
- Develop organic waste treatment facilities in Aberdeen
- Develop residual treatment capacity in Aberdeen

## **4. SETTING THE SCENE**

### **4.1 Background to the strategy**

#### **4.1.1 The purpose of the strategy**

The purpose of the Aberdeen City Waste Strategy is to provide a definitive statement on the future requirements for waste management policy, infrastructure and services for the city.

*“The purpose of the Aberdeen City Waste Strategy is to provide a definitive statement on the future requirements for waste management in the city.”*

The Aberdeen City Waste Strategy sets out a clear set of themes, aims and objectives that move the basis of waste management in the city from a disposal-based activity to a system that reflects the waste hierarchy and treats waste as a resource. The Strategy is intended to enable the delivery of measures required to achieve the themes, aims and objectives with particular emphasis on setting out a clear framework for those elements of the hierarchy of waste actions that the city can most directly affect, namely the collections, treatment and disposal of waste produced in the city.

#### **4.1.2 How Was the Waste Management Strategy Developed?**

The Aberdeen City Waste Strategy has been developed by Aberdeen City Council following a review of the existing strategy and the current and anticipated regional, national and international regulatory and policy environment. Following this review, a series of key themes were developed through public consultation in early-2009<sup>3</sup> and these underpin development of the strategy. A draft Aberdeen City Waste Strategy<sup>4</sup> was published for consultation in December 2009. The views expressed in this consultation have been reviewed and have contributed to the development of the Aberdeen City Waste Strategy.

#### **4.1.3 Why Review the Waste Management Strategy?**

The existing Aberdeen City Waste Strategy was published in 2001, since that date there has been a series of major policy changes in Scotland, the UK and Europe. Most recently, the agreement of EU Directive 2008/98/EC on Waste (The Waste Framework Directive)<sup>5</sup> and the development of the Scottish Government’s Zero Waste Plan<sup>6</sup> have enshrined high recycling rates and the need for efficient use of energy generated from waste into our guiding policies. As a result, the existing Strategy is no longer fit for purpose.

#### **4.1.4 What Does the Aberdeen City Waste Strategy Include?**

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<sup>3</sup> Aberdeen City Council (2009) “Aberdeen City Waste Strategy – Key Themes Consultation”

<sup>4</sup> Aberdeen City Council (2009) “draft Aberdeen City Waste Strategy 2010-2025 Consultation”

<sup>5</sup> [EU \(2008\) Directive 2008/98/EC on waste](#)

<sup>6</sup> Scottish Government (2009) “Scotland’s Zero Waste Plan: Consultation”

The Aberdeen City Waste Strategy covers the arrangements for the sustainable management of Municipal Solid Waste controlled by Aberdeen City Council and it is the framework for addressing prevention, reuse, recycling and recovery in line with the waste hierarchy. It covers collection, treatment and disposal of municipal solid waste.

#### **Municipal Solid Waste (MSW)**

**Waste that falls under the control of a local authority and includes: all waste collected from households, all household waste taken to recycling banks or household recycling centres, wastes from street cleaning, litter, bulky waste collections, fly-tipped waste and waste produced by commercial premises that is collected by, or on behalf of, Aberdeen City Council.**

In addition, the Aberdeen City Waste Strategy deals with issues arising from the management of non-municipal waste with particular emphasis on the scale of other waste sources and their growing influence. Therefore Aberdeen City Council has identified areas within this strategy where it can assist and if possible build synergies between municipal and non-municipal waste. In addition, the Aberdeen City Waste Strategy identifies the planning system as a major means of achieving infrastructure delivery for all wastes produced in the city.

#### **4.1.5 Strategic Environmental Assessment**

A Strategic Environmental Assessment (SEA) is being produced in parallel with the development of Aberdeen City Waste Strategy. The initial scoping of the SEA was completed in summer-2009<sup>7</sup>, the findings of which have informed both the strategy development and the production of the Environmental Report. A draft Environmental Report<sup>8</sup> was available for public consultation between 16<sup>th</sup> December 2009 and 22<sup>nd</sup> February 2010 and the final report completed in April 2010..

##### Strategic Environmental Assessment

“SEA is a process to ensure that significant environmental effects arising from policies, plans and programmes are identified, assessed, mitigated, communicated to decision-makers, monitored and that opportunities for public involvement are provided.

SEA has become an important instrument to help to achieve sustainable development in public planning and policy making.”<sup>9</sup>

#### **4.2 What has already been achieved?**

##### **4.2.1 Introduction**

Aberdeen City Council has come a long way since recycling first started to emerge as a major issue in the late 1990s and early 2000s. The recycling rate

<sup>7</sup> Aberdeen City Council (2009) “Aberdeen City Waste Strategy – Scoping Report”

<sup>8</sup> Aberdeen City Council (2009) “Aberdeen City Waste Strategy 2010-2025 - draft Environmental Report”

<sup>9</sup> Strategic Environmental Assessment Information Service, [www.sea-info.net](http://www.sea-info.net)

for Aberdeen City was approximately 4% in 2000/01, there were very few recycling points, no material was collected for composting and a single paper salvage recycling scheme in operation. Aberdeen City landfilled (without methane capture) 119,068 tonnes of MSW in the same year.<sup>10</sup>

With the emergence of European legislation and increased environmental awareness, the situation in Scotland and the UK as a whole, began to change. Recycling points and kerbside collection services started to appear and soon it became a standard service for many. Those without such facilities started to expect them and pressure was and is put on councils to provide or expand recycling collections. The shift in attitudes both from the public and politicians has created numerous challenges for Local Authorities and has had a huge impact on the way we as a nation view our waste and how we should deal with it. This change can only be viewed as positive.

#### **4.2.2 How Much and What Types of Waste are Produced in Aberdeen?**

In 2007/08 Aberdeen produced 138,459 tonnes of MSW. Of this waste, 107,658 (78.8%) tonnes was landfilled, 19,527 was recycled (14.1%) and 11,274 (8.1%) was composted. This gave us a total recycling and composting rate of 22.2% for 2007/08.<sup>11</sup>

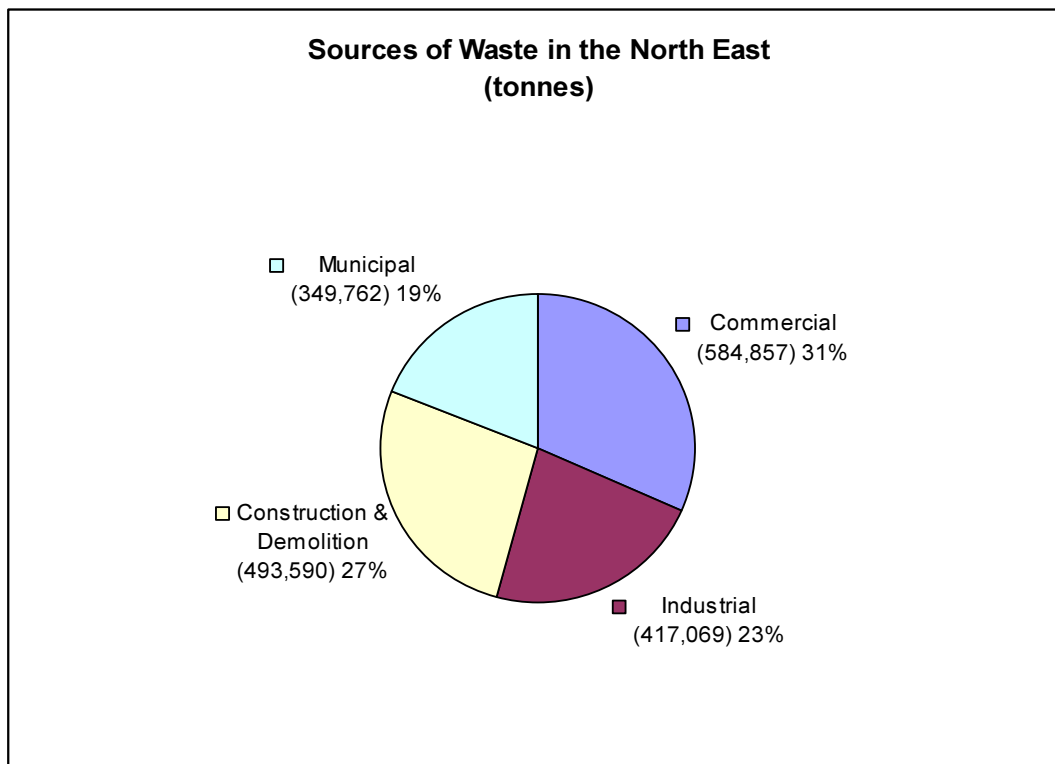
“In 2007/08, Aberdeen landfilled 107,658 tonnes of MSW”

There is also a significant amount of commercial and industrial waste produced in and around the Aberdeen area. This waste, although not the responsibility of the council in terms of EU targets, also has an impact on the environment through its production, recycling and disposal.

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<sup>10</sup> Data taken and derived from [SEPA \(2001\) Local Authority Waste Arisings Survey 2000/01 – Results for Aberdeen City](#)

<sup>11</sup> Data from [SEPA \(2008\) WasteDataFlow Annual Report 2007/08 – Results for Aberdeen City Council](#)



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The chart below illustrates the sources of waste for Scotland as a whole:

<sup>12</sup> Data taken and derived from:

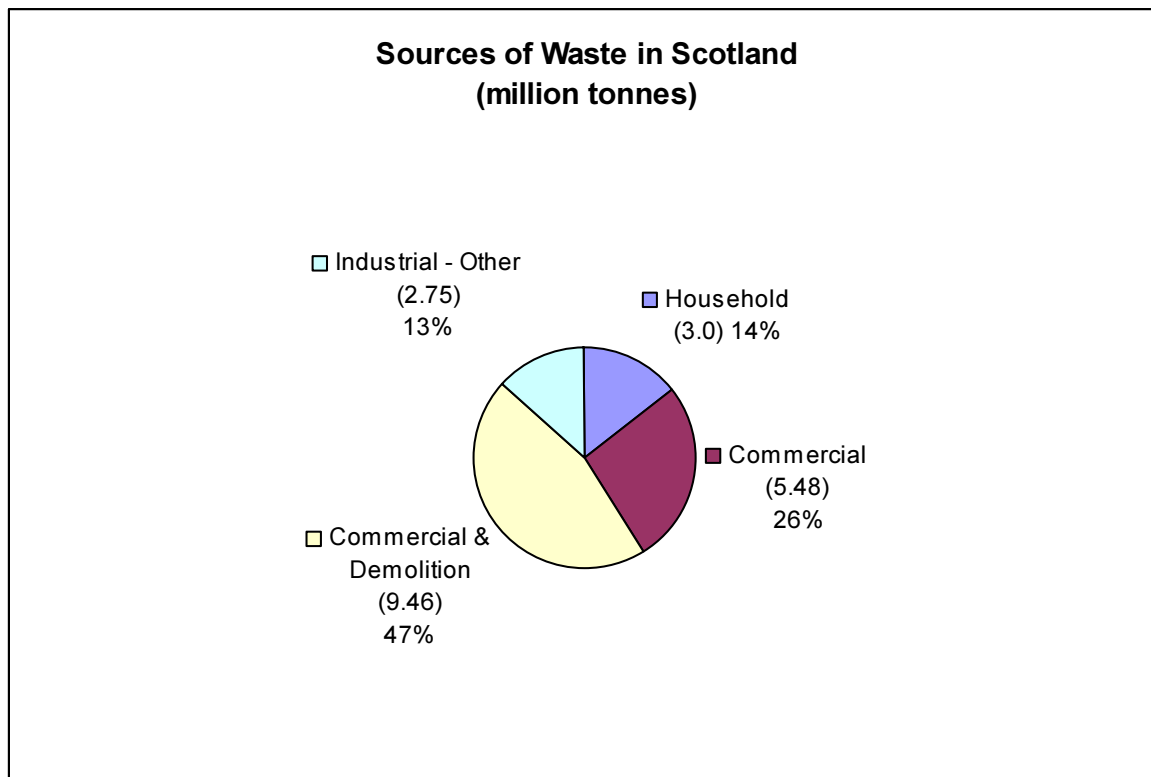
[SEPA \(2008\) Commercial & Demolition Waste Data 2006](#)

[SEPA \(2009\) Business Waste Survey Report 2006 – version 2](#)

[SEPA \(2007\) WasteDataFlow Annual Report 2006/07 – Aberdeen City Council](#)

[SEPA \(2007\) WasteDataFlow Annual Report 2006/07 – Aberdeenshire Council](#)

[SEPA \(2007\) WasteDataFlow Annual Report 2006/07 – Moray Council](#)



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The charts above clearly show that Municipal waste accounts for a relatively small percentage of waste arisings. To have a real impact, it is critical that any strategy takes into account management of other wastes and not just MSW.

#### Waste Data

Regarding the Business Waste Survey Reports, SEPA states on its website, that “it is important to note that the estimates in the reports are subject to large confidence intervals and the results therefore are indicative only” and regarding Construction and Demolition reports “It is important to note that these reports show waste managed, not waste arising, as some of the waste may be double-counted if it passes through more than one facility.”<sup>14</sup>

*We can be confident about the accuracy of municipal waste data since all local authorities are legally required to provide information to SEPA. However, data for commercial, industrial, construction and demolition waste are poor since there is currently no statutory obligation for businesses to provide data on the wastes they produce.*

#### 4.2.3. Current Municipal Waste Recycling Facilities in Aberdeen

Aberdeen City Council currently operates a fortnightly, kerbside collection of dry recycling from over 75,000 properties (approximately 70% of households in the city). Those eligible for the service use a box and bag system to recycle: paper, cardboard, glass bottles and jars, food and drinks cans, and plastic bottles.

<sup>13</sup> Data taken and derived from [SEPA \(2007\) Waste Data Digest 9](#)

<sup>14</sup> SEPA [www.sepa.org.uk](http://www.sepa.org.uk)

There is also a fortnightly, kerbside collection of food and garden waste from over 51,000 properties (approximately 47% of households in the city).

For those properties where the Council is unable to offer a kerbside collection there is a range of other recycling opportunities available:

On-street paper recycling, where recycling banks are located alongside on-street general refuse bins, is now available in the following locations:

Urquhart Road  
Rosemount  
Ashvale, and  
Torry

There are plans to expand provision of this service into further areas of the city.

We also operate a network of 49 Recycling Points and have introduced communal facilities to several sheltered, council, private and social housing developments. Further communal paper recycling services will be introduced in 2010/11.

#### **4.2.4 Current Waste Prevention Initiatives**

Aberdeen City Council actively participates in many national waste prevention campaigns co-ordinated by groups such as the [Waste and Resources Action Programme \(WRAP\)](#) and the Scottish Waste Awareness Group. These include the 'Love Food Hate Waste' campaign aimed at the prevention of food waste.

The Council also supports local initiatives such as the Creative Waste Exchange and Grampian Real Nappy Project, run by [AberdeenForward](#). These schemes aim to cut the amount of waste going to landfill and, in the case of the Creative Waste Exchange, provide low cost materials to community groups and schools.

##### **Social Enterprises**

###### **Case Study – AberdeenForward**

"Aberdeen Forward is an environmental charity and social enterprise working in the field of sustainable development. We develop and manage environmental projects which include the Real Nappy Project, Master Composter and the City based Community Composting initiative.

Additional funding has allowed us to set up a community composting project in Aberdeenshire and we also run the Creative Waste Exchange.

The Exchange takes materials from local businesses which are destined for landfill." Lynn Smith, Chief Executive, AberdeenForward

Many of the Recycling Points located throughout the city have both recycling and textile banks. The textile banks are operated by the charities and allow clothes that are still in good condition to be prepared for reuse rather than them ending up in landfill.

The Council's Waste Aware Team actively promote all of these facilities and initiatives as well as providing advice on how to reduce and reuse waste as well as recycling it. The Team provides talks to schools, community groups, residents' associations and hold information stalls in a variety of locations across the city.

#### 4.2.5 Municipal Composting and Recycling Performance

There has been a significant improvement in Aberdeen's recycling and composting performance over the last 5 years with the introduction of kerbside recycling collections in 2004, the extension of garden waste collections after a trial in 2002 and combined food and garden waste collection in 2009.

In 2000/01 we recycled and composted just 4,905 tonnes of our MSW – only 4% of MSW collected. After the introduction of the kerbside recycling and garden waste collections, this figure rose to 25,516 tonnes (19%) in 2005/06. Our most recent figure of 31,801 tonnes (22.2%) from 2007/08 shows that we are still improving.

**Table 1. Municipal Waste Arisings 2005/06** <sup>15</sup>

Source of Waste	Landfill	Recycled	Composted	Total arisings
Household	99,457	15,602	8,825	123,902
Commercial	8,648	1,089	-	9,773
<b>Total</b>	108,160 (80.9%)	16,691 (12.4%)	8,825 (6.6%)	133,676

**Table 2. Municipal Waste Arisings 2007/08** <sup>16</sup>

Source of Waste	Landfill	Recycled	Composted	Total arisings
Household	100,026	18,705	10,423	129,154
Commercial	7,632	821	851	9,304
<b>Total</b>	107,658 (78.8%)	19,527 (14.1%)	11,274 (8.1%)	138,459

Clear progress has been made but Aberdeen City Council's recycling and composting rate remains one of the lowest local authority rates in Scotland.

#### 4.2.6 Municipal Waste Commitments

<sup>15</sup> Data taken and derived from [SEPA \(2006\) WasteDataFlow Annual Report 2005/06 – Aberdeen City Council](#)

<sup>16</sup> Data taken and derived from [SEPA \(2008\) WasteDataFlow Annual Report 2007/08 – Aberdeen City Council](#)



There are a number of services Aberdeen City Council has committed to introduce or expand within the city that will enable more of the population to recycle and will make facilities more easily accessible:

- Expand on-street paper recycling facilities and provide communal facilities for more sheltered, social, private and council housing developments.
- Introduce alternate weekly collections of residual (black wheeled bin) waste for approximately 70% of the city in March 2010.
- Develop a commingled Materials Recycling Facility and waste transfer station within the city and introduce commingled recycling collections.
- With the Materials Recycling Facility in place, the on-street bins will be converted to accept a wide range of materials for recycling.<sup>17</sup>

#### **4.2.7 Non-Municipal Waste Facilities**

Non-municipal waste, meaning waste not collected by the city council, e.g. produced and collected by businesses, is collected by a small number of private companies with varying facilities for sorting, treating and onward transport. There is only one significant sorting facility for non-municipal mixed wastes within the city and two transfer stations with capacity to manage segregated wastes for recycling.

There are three facilities for the management of scrap metals in the city but no private landfills or waste treatment plants for non-municipal wastes.

### **5. THE CHALLENGES WE FACE**

#### **5.1 Drivers for change**

There is a wide variety of influences that will drive changes in waste management in the Strategy period. Further details of the major drivers for change can be found in Appendix 1.

These drivers can be split into five categories:

- Regulatory issues
  - Waste Framework Directive – introduced a target of 50% MSW recycling and composting by 2020
  - Climate Change (Scotland) Act 2009 – reduce Scotland's emissions of greenhouse gases by at least 80% by 2050
- Financial
  - Landfill Tax – tax paid on all active wastes sent to landfill. Currently £40 per tonne rising by £8 every April to a maximum of £72 per tonne in 2013
  - Landfill Allowances Scheme (Scotland) – introduced to achieve the Biodegradable Municipal Waste (BMW) reduction targets set out by the Landfill Directive. Each Local Authority in Scotland is set a limit

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<sup>17</sup> [Aberdeen City Council \(2008\) A Strategy for Transforming Waste Management Services](#)

on the amount of biodegradable material that it can Landfill. Each authority is liable to a penalty of £150/tonne of BMW landfilled above this limit.

- National and local waste policies
  - Single Outcome Agreement – 40% of Aberdeen City’s waste should be recycled or composted by 2011.
  - Aberdeen City and Shire Structure Plan – target to landfill no more than 54,000 tonnes of Biodegradable Municipal Waste by 2020
  - Vibrant, Dynamic and Forward Looking – 40% of Aberdeen City’s household waste to be recycled by 2010
  - National Waste Management Plan – currently being revised by the Scottish Government but likely to introduce the following targets for recycling and composting of MSW:
    - 40% by 2010
    - 50% by 2013
    - 60% by 2020
    - 70% by 2025
  
- Energy drivers
  - The Scottish Government’s Renewables Action Plan – identifies bioenergy as an important source of renewable energy and that Energy from Waste can contribute to energy targets, now and in the long term.
  - Scotland’s Renewable Heat Strategy: Recommendations to Scottish Ministers, Renewable Heat Group Report 2008 – Recommends that dumping of waste biomass to landfill be prohibited in order to promote it’s use for energy production and that the Scottish Government prevents combustion of any form of waste without recovery of heat via Combined Heat and Power (CHP) or district heating.

- Deliverability, practicality and cost.

In addition to regulatory and policy environment within which the Aberdeen City Waste Strategy has been developed, there are other significant drivers that require consideration; these drivers are less tangible than specific legislation or targets but have a very important impact on the ability to deliver the outcomes outlined in the Strategy.

The Aberdeen City Waste Strategy sets the framework within which solutions for waste management will be determined. The Strategy must therefore strike a balance between theoretically optimal outcomes, aspiration that drives innovation and the ability to achieve the outcomes. Reliance on theoretical tools such as Life Cycle Analysis without the application of ‘real world’ filters may lead to targets that are unachievable. Real world considerations include:

- The absence of behavioural change drivers (for example, making transparent to householders the cost of their actions)
- The availability of technologies that achieve outcomes
- The variable socio-economic and living conditions of householders

- The relative cost of waste management systems

The Aberdeen City Waste Strategy has been produced taking into account the impact of these drivers. It is inevitable that further drivers will come into play during the Strategy life: wherever possible these anticipated changes have been built into the Strategy.

## **6. OUR APPROACH IN RESPONDING TO THE CHALLENGES**

### **Themes, Goals, Objectives and Targets**

The Aberdeen City Waste Strategy has been developed from a basis of establishing key principles that guide the development of policy. By identifying the key themes, a series of goals can be developed that establish the broad outcomes of the strategy. A further expansion of these goals allows the definition of more detailed objectives and where appropriate targets can then be set to define outcomes and establish a basis for measurement of success.

#### **6.1 Themes**

It has been established that there are many, often conflicting, drivers influencing waste management policy. It is important therefore for the Aberdeen City Waste Strategy to establish the underlying principles that determine the interpretation and implementation of drivers. All subsequent policy development can then be seen in the context of these principles.

##### **6.1.1 Waste is a Resource not a Problem**

In his foreword to the Scottish Government's 'Scotland's zero waste plan: consultation' (2009), Richard Lochhead MSP, Cabinet Secretary for Rural Affairs and the Environment states that 'adopting Zero Waste converts waste from an end into a means – a resource, not a problem.'<sup>18</sup> Whilst there is, and will continue to be, much debate of the merits and definition of 'Zero Waste', the importance of treating waste as something that can be a benefit rather than a burden to society is a key theme in the Aberdeen City Waste Strategy.

*"Richard Lochhead MSP, Cabinet Secretary for Rural Affairs and the Environment states that 'adopting Zero Waste converts waste from an end into a means – a resource, not a problem'."*

In an environment where raw materials are becoming increasingly scarce and more expensive and where significant energy and environmental impact has been invested in the production of the goods we discard, simply disposing of these materials to landfill is a significant lost opportunity.

##### **6.1.2 Gain value from waste at all stages of treatment**

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<sup>18</sup> Scottish Government (2009) "Scotland's Zero Waste Plan: Consultation"

A complementary theme to that of regarding waste as a resource is the principle of designing a waste management system that generates value from all our waste. This theme applies across many sectors of waste production but is especially relevant for municipal waste and commercial & industrial wastes with similarities to municipal waste.

Value can be defined in economic, resource use and environmental terms. Where the financial cost of recovering a material is lower than that of disposing it, value can be generated for our community. In resource use terms, value can be defined as deriving a product from waste that is at least as useful as its 'natural' counterpart, thereby displacing the use of virgin resources. Environmental value can be achieved in two ways. Firstly, through either the reuse or recycling of a material such that the energy use embedded in the production of the material is greater than the energy used to prepare for reuse or recycle the material. Secondly, the generation of energy from the biomass element of the waste stream that displaces the use of fossil fuels.

In simple terms, value can be derived in two forms – as a material resource (for example, recycling) or an energy resource (energy from waste).

Production of mixed waste compost-like output that can only be used to restore formally degraded land (for example, landfill sites) will not be considered to generate value unless it can be demonstrated that this material does not compromise future land use in any way.

### **6.1.3 Our resource, our solution**

Once the principle that waste is a resource is accepted, it is logical that Aberdeen city should develop solutions that lead to the value embedded in the resource being enjoyed by the city.

### **6.1.4 The Proximity Principle**

#### The Proximity Principle

"The proximity and self-sufficiency principles require waste to be dealt with as close as possible to where it is produced"<sup>19</sup>

Ensuring that the city benefits from the value embedded in waste is complementary with the 'proximity principle', whereby waste should be treated as close to the point of generation as possible. There are a number of strands supporting this principle:

- Community responsibility. A community that produces waste should take the responsibility for dealing with the consequences of waste production.
- Sustainability. Minimising unnecessary transport emissions.
- Economic value. Value is lost through transportation (for example fuel costs or inability to benefit from heat recovered through energy from waste).

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<sup>19</sup> [Scottish Government \(2003\) National Waste Plan](#)

### 6.1.5 The Waste Hierarchy

The Waste Hierarchy is a well established guide for prioritising waste management decision making and should be adopted provided to do so can be demonstrated to be the Best Practicable Environmental Option. The presumption is that waste and resource management practices should progressively move up the hierarchy, however, different elements of society have differing abilities to enable this progression.

An example is the ability to achieve waste prevention, which is the optimal solution. Prevention can be heavily influenced by product manufacturers through intelligent and robust design, who in turn can be influenced by national, European and international regulations that set the standards for production and sale of goods. Conversely, the ability of Local Authorities to achieve waste prevention is limited to lobbying and educational activities; these are important activities but are limited in impact in comparison. Recognising the complexity of this network of influences is essential to developing an approach that drives the city's waste practices up the hierarchy.

#### The Waste Hierarchy

<b>Prevention</b>
<b>Preparing for Reuse</b>
<b>Recycling</b>
<b>Other Recovery e.g. Energy Recovery</b>
<b>Disposal</b>

### 6.1.6 Pragmatic, value for money but challenging

It is essential that the Aberdeen City Waste Strategy filters all options for waste management through a series of 'real life' criteria:

- Best Practicable Environmental Option. A strategy based around theoretical or abstract outcomes is likely to fail or at best lead to unanticipated, adverse outcomes. A balance must be struck between the achievable and the aspirational. Applying Best Practicable Environmental Options analysis will allow considered assessment of where the balance is to be struck.

#### **Best Practicable Environmental Option (BPEO)**

“The BPEO procedure establishes, for a given set of objectives, the option that provides the most benefit or least damage to the environment as a whole, at acceptable cost, in the long term as well as in the short term”<sup>20</sup>

- **Value for Money.** The Aberdeen City Waste Strategy must take account of the potential costs of delivery of its objectives. Failure to do so may result in the failure of the Strategy.
- **Be Challenging.** Accepting that the status quo will remain in respect of ability to deliver outcomes may lead to a lack of innovation or ‘lock in’ sub-optimal solutions. The balance between challenging and unachievable must be struck carefully.

## **6.2 Goals**

Following on from the establishment of the key themes for the Aberdeen City Waste Strategy, it is appropriate to lay out the main practical waste management Goals of the strategy.

### **6.2.1 Minimise Waste Production**

In accordance with the waste hierarchy, the Aberdeen City Waste Strategy has as its underpinning priority the need to reduce the amount of waste produced by the city.

### **6.2.2 Minimise landfill**

Also in accordance with the waste hierarchy, the Aberdeen City Waste Strategy ensures that landfill is an option of last resort and is appropriate for a very small proportion of the waste stream.

### **6.2.3 Maximise recycling/organic waste treatment**

Segregation of wastes to allow for reuse, recycling and organic waste treatment linked to the production of valuable secondary products is an essential first step in the waste handling chain.

### **6.2.4 Recover Value from Other Wastes**

Solutions for the remaining, residual element of the waste stream should be determined in accordance with the themes of value generation and Best Practicable Environmental Option.

### **6.2.5 Local Solutions Wherever Practicable**

Solutions for waste treatment close to the point of arising are preferred. It is recognised that recycling markets are global and the availability of reprocessing facilities may require proximity issues be a lower priority, however, steps are to

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<sup>20</sup> Royal Commission on Environmental Pollution (1988) 12<sup>th</sup> Report – Best Practicable Environmental Option

be taken to encourage local reprocessing. In the case of residual waste, it is possible for the city to develop treatment facilities that deliver benefit back to the city.

### **Residual Waste**

Residual waste is the waste left over after recycling and composting collections.

#### **6.2.6 People, Partnership and Planning**

Creating an environment where everyone takes responsibility for their actions and contributes to better waste management solutions is essential to long term success. Developing partnerships with diverse community and business groups will be required to deliver sustainable solutions with local benefit. A strong, informed spatial planning system underpinned by community collaboration is required for the development of essential infrastructure.

#### **6.2.7 Minimise Adverse Impacts**

All solutions should seek to minimise unwelcome effects on communities, land, water and air within the context of developing Best Practicable Environmental Options.

#### **6.2.8 Deliverable and Best-Value Outcomes**

Environmental and sustainable aspirations must be balanced with a pragmatic approach that delivers improvement. Making best use of existing resources and delivering efficient, cost effective services maximises value for Aberdeen.

### **6.3 Objectives**

The Aberdeen City Waste Strategy sets the following objectives that implement the Themes and Goals already established. The Aberdeen City Council will take a lead role in delivery of these objectives, however, many other bodies both within and outwith the city will be required to contribute to the success of the Aberdeen City Waste Strategy.

#### **Minimise Waste Production**

**Objective 1:** Work together with all waste producers to reduce the amount of waste produced per person within the city by actively promoting waste prevention, reduction and re-use activities.

**Objective 2:** Work together with Scottish Government and others to reduce the amount of waste produced per person within the city by actively promoting producer responsibility schemes, eco-design and full life-cycle costing in product pricing.

**Objective 3:** Facilitate, promote and encourage the reduction, re-use and recycling of non-municipal waste through partnership arrangements to reduce the amount of waste sent to landfill.

### **Minimise Landfill**

**Objective 4:** Drive the management of waste up the waste hierarchy. Where waste is produced it should be viewed as a resource to be put to good use – landfill disposal should be eliminated as far as practicably possible

Also related: Objective 3

### **Maximise Recycling/Organic Waste Treatment**

**Objective 5:** Maximise value generated from municipal and non-municipal waste management activities in the city through recycling, organic waste treatment and energy recovery.

**Objective 6:** Explore new or expanded recycling/processing facilities that seek synergy with commercial waste and other similar waste streams within the city or region

### **Recover Value from Other Wastes**

**Objective 7:** Ensure that residual waste is treated as a resource recovering both energy and value where possible at every stage.

**Objective 8:** Ensure, as far as practicable, that the outputs from residual waste treatment facilities are put to beneficial use.

**Objective 9:** Work to establish a commercial environment that facilitates the expansion of district heating infrastructure.

Also related: Objective 4, and 5

### **Local Solutions Wherever Practicable**

**Objective 10:** Minimise the city's environmental impact in line with the principles of proximity, self sufficiency, and the polluter pays principle

**Objective 11:** Ensure transport of waste is minimised within the parameters of the Best Practicable Environmental Option

**Objective 12:** Work locally to promote, develop and stimulate sustainable recycling and composting initiatives consistent with green procurement codes.

### **People, Partnership and Planning**



**Objective 13:** Ensure waste and environmental services are designed to accommodate planned development in the city whilst minimising adverse environmental impacts

**Objective 14:** Deliver sufficient waste infrastructure capacity to meet the strategy objectives

**Objective 15:** Influence local and regional land use planning processes to ensure waste infrastructure requirements are met.

**Objective 16:** Ensure land use planning processes facilitate the delivery of district heating and/or combined heat and power provision from energy from waste facilities.

**Objective 17:** Actively seek opportunities to work with local authorities and other partners to deliver cost effective joint waste management solutions

**Objective 18:** Work together to share best practice and manage waste performance to drive continuous improvement.

**Objective 19:** Actively seek to influence the local, regional, and national waste agendas and take an active role in representative bodies

Also related: Objectives 1, 2, 3, and 6,

### **Minimise Adverse Impacts**

**Objective 20:** Enhance the quality of life in Aberdeen by protecting communities from adverse impacts and encouraging individuals to take responsibility for their waste and the way it is dealt with

Also relevant: Objectives 9, 10, 11 and 13

### **Deliverable and Best Value Outcomes**

**Objective 21:** Achieve efficient use of resources and deliver high quality services that represent value for money.

Also relevant: Objective 11

## **6.4 Targets**

The role of targets in the Aberdeen City Waste Strategy is to establish the framework within which waste management infrastructure and systems are developed. By establishing targets, infrastructure capacity can be determined. The number and type of facilities required to handle various municipal waste streams will be limited and so a balance must be struck between providing flexibility through developing excess capacity and running the risk of having insufficient capacity. It is important to recognise therefore that the targets, whilst

set on the basis of the data currently available and the foreseeable changes in the waste management environment, will inevitably be overtaken by events further through the life of the Strategy.

#### **6.4.1 Municipal Waste Targets**

Targets have been established for municipal waste which reflect the Themes, Goals and Objectives of the Aberdeen City Waste Strategy but also take account of the range of national and international policies and regulations affecting waste management in Aberdeen.

#### **6.4.2 Waste Growth**

Historically, waste growth has been linked to economic growth: when the economy is healthy, waste growth increases. In recent years, this link has shown signs of being broken. The Aberdeen City Waste Strategy sets the following target for waste growth:

**Target 1. Municipal waste growth will be eliminated by 2015.**

#### **6.4.3 Recycling and Organic Waste Treatment**

Targets for recycling have been established by both the Scottish Government and the European Union. Recycling includes the composting or anaerobic digestion of organic waste, providing the solid residue is of high quality and put to beneficial use. Particular emphasis is placed on the source segregation of recyclable materials and organic wastes and this is reflected in the following target.

**Target 2. Source Segregated Municipal Waste Recycling and Organic Waste Treatment will be:**

**45% by 2013**

**50% by 2020**

**56% by 2025**

**Target 3. Introduce organic waste collection for all households and develop treatment facilities within the Aberdeen area by 2013.**

Aberdeen City Council is not yet convinced that higher levels of source segregated recycling can be achieved in the city within the timeframes outlined due to the absence of important drivers such as enhanced producer responsibility legislation or direct and variable charging for waste. Furthermore, the decision to recover more recyclables from the residual waste stream should be determined by Best Practicable Environmental Option Analysis.

#### **6.4.4 Residual Treatment**

Residual waste treatment can be achieved by a wide variety of mechanical, biological and thermal processes. Determination of the solution or solutions required for the residual waste element of the waste stream will be achieved through Best Practicable Environmental Option analysis and consideration of the potential options against the Themes, Goals and Objectives set out above. In particular the need to derive value from waste is a key criterion.

**Target 4. Municipal Residual Waste Treatment capacity (including Energy from Waste) should not exceed 45% by 2020 and 40% by 2025.**

#### **6.4.5 Disposal**

Landfill of waste, even in sites where methane capture and conversion to electricity is in use, is the option of last resort. It is recognised that there will be a requirement for some materials to go to landfill but that this need only be a very small proportion of the waste stream. The minimum amount of waste should be sent to landfill at the earliest opportunity.

**Target 5. No more than 5% of municipal waste should be landfilled by 2025.**

### **7. OUR APPROACH TO DELIVERY**

This part of the Strategy outlines the major activities that will be required to deliver the Objectives and Targets. Where these activities affect the City Council, they will be expanded into an Implementation Plan. It is recognised that Waste and Resource Management is a rapidly changing policy area and that drivers will change during the life of the Strategy; the Strategy will be reviewed on a maximum of five-yearly basis to ensure it continues to be fit-for-purpose.

As the author of the report and the body with responsibility for the management of municipal waste, Aberdeen City Council is in a position to have significant influence on the delivery of the Aberdeen City Waste Strategy. By virtue of the wide variety of stakeholders involved in the non-municipal waste sector, identifying responsible bodies for the delivery of actions is more problematic. Likewise, the actions are by necessity less prescribed and more aspirational. Aberdeen City Council will, however, provide support and encouragement to non-municipal waste stakeholders to achieve the goals and objectives of the Aberdeen City Waste Strategy.

#### **7.1 Communication**

The move from treating waste as a problem to using it as a resource requires widespread changes in attitude and behaviour. This change will only be achieved through extensive communication of the issues and engagement with members of public, businesses and policy-making bodies.

##### **7.1.1 Engagement and Consultation**

Within the city, Aberdeen City Council will seek opportunities to engage with individuals and community groups to identify ways to maximise benefit from and minimise impact of changes required to waste infrastructure and services.

### **7.1.2 Influencing Policy Development**

Many of the drivers affecting waste management arise from outwith Aberdeen. The Council has an important role to play in influencing regional, national and international policy making. The interests of Aberdeen must be promoted to ensure that policy is developed that meets our needs and enables change.

### **7.1.3 Behaviour Change**

A major factor affecting the successful diversion of waste from landfill and the movement of waste up the hierarchy, will be the level of awareness of householders of the costs and benefits of their waste management behaviour. This applies at two levels, firstly in the purchasing and disposal habits of householders which determine the form that waste is presented for treatment and secondly, the awareness that substantial infrastructure for handling and treating waste is required within the city and that this will inevitably lead to challenging land-use decisions.

Education and awareness-raising are essential activities in supporting services, by maximising participation in beneficial activities but also in attacking waste at source. Effective communication on waste prevention will affect consumer behaviour and reduce unnecessary waste production.

## **7.2 Municipal Solid Waste**

### **7.2.1 Resources for Delivery**

The cost of waste management is one of the fastest growing elements of Aberdeen City Council's budget. Additional cost is driven by two main activities, firstly, the progressive addition of new and comparatively expensive waste collections across the city and secondly, the rapidly increasing cost of landfilling waste. Against this backdrop there are continuing and extreme limits on financial resources that are available to the City Council. Consequently, this strategy document must be viewed in the light of these limited financial resources, both capital and revenue, that are available to deliver service improvements. The City Council recognises the challenge it faces in attracting new resources from Government, the private sector, landfill tax credits and other directions. In particular the Council calls on the Scottish Government to provide mechanisms and resources to enable local partnerships to deliver their strategies. Funding sources external to the partnership will be pursued wherever possible.

### **7.2.2 Key Priorities**

Over recent years the City Council has seen significant improvements in its recycling and composting performance. The aims of the Council in meeting its targets and legislative obligations are to introduce new kerbside collection

arrangements, expand collection of recyclables to the whole city and to actively pursue the procurement of alternative technologies for the treatment of residual waste.

*“The Council aims to expand collection of recyclables to the whole city.”*

Any further improvement will need to be focused on achieving additional behavioural change, for example, through differential charging schemes. Changes in residual waste composition in future will also open up opportunities to move waste management up the hierarchy, for example by increasing the range of materials collected for recycling.

### **7.2.3 Waste Prevention**

As the first step of the waste hierarchy, waste prevention is the most important step in waste management. Preventing waste reduces energy use and resource depletion. There is a clear financial benefit to the householder from the reduced requirement for waste collection, treatment and disposal.

There are two main activity streams required by the city to achieve waste prevention.

1. Influence national and international policy and regulation to minimise waste production. Aberdeen City Council has led the way in Scotland in lobbying the Scottish Government to introduce a beverage container deposit/return scheme thereby reducing material use and attaching a value to waste. By clearly identifying the value of the container to the person discarding it, behavioural change is much more likely to be achieved. The Council will continue to encourage the implementation of powers to introduce a deposit/return scheme in Scotland as provided for in the Climate Change Act 2009<sup>21</sup>.

In addition, through the Confederation of Scottish Local Authorities Aberdeen City Council can influence the development of UK and European legislation: the Council will take all opportunities to contribute to waste prevention policy.

2. Communication and awareness raising will continue to be an important strand of work and the City Council will continue to work with Zero Waste Scotland who co-ordinate national waste communication campaigns, delivered at the local level by Waste Aware Aberdeen.

### **7.2.4 Reuse**

In addition to contributing to lobbying efforts to ensure that products are designed for re-use at a national and international level, Aberdeen City Council will continue to support reuse projects within the city and seek out new opportunities to expand reuse. Where sufficient space is available, future Recycling Centres in the city will be designed with a reuse/resale area. The Council will seek to support community-based reuse activities.

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<sup>21</sup> Scottish Government (2009) Climate Change (Scotland) Act

## 7.2.5 Recycling

The next theme within the strategy and the waste hierarchy is to recycle and compost or anaerobically digest waste. The Council will work to reduce the amount of waste sent to landfill by maximising recycling and composting/anaerobic digestion.

Cost effective collection of dry recyclables is an important step towards embedding recycling as a core activity both for the householder and the Council. By reducing the net cost of collection and management of recyclate, the financial case for more recycling is easier to make. By increasing participation and capture of recyclate, the costs of collection are further reduced as the operation becomes more efficient.

*“Cost effective collection of dry recyclables is an important step towards embedding recycling as a core activity for the householder”*

The next step to achieving the outcome of higher recycling is to develop a major Materials Recycling Facility that is capable of handling commingled recyclables. This will enable a move to providing a wheeled bin collection of recyclables for at least 70% of city householders. In addition, by collecting commingled recyclables, provision of a full range of recycling to the remaining 30% of households in multi-occupancy properties will be significantly easier to provide.

The specification and operation of the Materials Recycling Facility is a key element of this process. The utilization of the most advanced mechanical sorting equipment is essential to ensure that high quality products are produced and that consistent markets at good value are available.

Aberdeen City Council will develop a minimum of two new Recycling Centres in Aberdeen capable of achieving very high levels of recycling. Such sites have dual benefit in increasing recycling rates and by achieving behaviour change through by visiting sites where almost all waste can be segregated and put to beneficial use.

## 7.2.6 Organic Waste Collection and Treatment

Early investigation into the long term management of organic wastes is also required. Current arrangements, which require significant transport of commingled food and garden wastes to In-vessel Composting, do not comply with the proximity principle theme. Furthermore, the current collection system provides a service to only 50% of households in the city. Development of a new facility in Aberdeen is required for organic waste; the preferred technology will be defined following an investigation of the best means of collection. Options to be considered will be open windrow composting, in-vessel composting and anaerobic digestion with methane capture and Combined Heat and Power generation.

Anaerobic Digestion (AD)

“Anaerobic Digestion (AD) is the process where plant and animal material (biomass) is converted into useful products by micro-organisms in the absence of air. Biomass is put inside sealed tanks and naturally occurring micro-organisms digest it, releasing methane that can be used to provide heat and power. This means AD can help reduce fossil fuel use and reduce greenhouse gas emissions. The material left over at the end of the process is rich in nutrients so it can be used as fertiliser.

Almost any biomass can be processed in AD; food waste, energy crops, slurry, crop residues, etc. AD can accept waste from our homes, supermarkets, industry and farms, meaning less waste goes to landfill. However, woody biomass cannot be used in AD because the micro-organisms can't breakdown the lignin, the compound that gives wood its strength.”<sup>22</sup>

### 7.2.7 Residual Treatment

Following prevention, reuse, recycling and organic waste treatment measures, a solution must be found for mixed, residual municipal waste.

In accordance with the Themes, Goals and Objectives, Aberdeen City Council will seek a solution that generates value from residual waste. Any facility should be located in or close to the city to allow benefits to be delivered to the citizens of Aberdeen and be deliverable, practical and cost-effective.

Any decision on the method or methods used to treat residual waste will be determined by Best Practicable Environmental Option analysis as shaped by the Themes, Goals and Objectives. Options considered will include generation of combined heat and power from waste and should take account of SEPA's Thermal Treatment of Waste Guidelines<sup>23</sup>. Such analysis will consider all available technologies including incineration, gasification and pyrolysis of waste. Land-use planning considerations for the delivery of residual treatment facilities are outlined below. Any facility that is developed will comply with the EU Waste Incineration Directive.<sup>24</sup>

#### Combined Heat and Power (CHP)

“Combined Heat and Power is the simultaneous generation of usable heat and power (usually electricity) in a single process CHP is a highly efficient way to use both fossil and renewable fuels and can therefore make a significant contribution to the UK's sustainable energy goals, bringing environmental, economic, social and energy security benefits.”<sup>25</sup>

In terms of waste treatment technologies, CHP can be achieved either through combustion of waste or biological treatment.

### 7.2.8 Disposal

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<sup>22</sup> Anaerobic Digestion, [www.biogas-info.co.uk](http://www.biogas-info.co.uk)

<sup>23</sup> SEPA(2009) “Thermal Treatment of Waste Guidelines” <http://www.sepa.org.uk>

<sup>24</sup> EU (2000) “Directive 2000/76/EC on the Incineration of Waste”

<sup>25</sup> Combined Heat and Power Association <http://www.chpa.co.uk>

Landfill is the option of last resort. The remaining permitted landfill for active wastes within Aberdeen will close in 2011. No further landfill sites are proposed in Aberdeen. Short to medium term landfill requirements will be fulfilled through the export of waste elsewhere in Scotland. Aberdeen City Council accepts landfill is an undesirable activity producing adverse environmental and social consequences from the emission of methane gas (with a greenhouse gas effect 23 times greater than carbon dioxide), the potential for leachate run-off, contamination of soils and reduced potential for future land-use. It is imperative that alternatives to landfill are developed as soon as possible. In the medium to long term, it may be necessary to landfill very small quantities of the city's municipal waste including unrecyclable or recoverable products from residual treatment activities.

### **7.2.9 Aberdeen City Council Internal Waste Management**

Aberdeen City Council has a programme in place for reducing waste arisings and moving waste handling up the hierarchy. Commitments to annual reductions of specific materials have been made and are reviewed annually.

Strategic goals of Internal waste management include:

- The introduction of a wide range of recycling services in all Council offices and schools
- Maximise the diversion from landfill of organic waste from grounds services
- Minimise the disposal of wastes arising from highways, construction and demolition activities of the Council

### **7.2.10 Aberdeen City Council Waste Collection Service**

The collection of waste by Aberdeen City Council makes a significant contribution to the Council's transport emissions. Measures will be taken to improve vehicle efficiency including:

- Investigation and adoption, where appropriate, of the use of alternative low-carbon fuels such as biodiesel for waste collection vehicles
- Ensure vehicle routing is optimised to minimise the distance covered by waste collection vehicles
- Encourage the use of fuel efficient driving techniques
- Ensure that newly procured vehicles accord with European standards including fuel efficiency
- Locate treatment facilities within the city to minimise transport impact

#### **Bio-diesel – case study**

Aberdeen City Council is currently trialling the use of bio-diesel in two vans. If the trial proves successful then the council will consider running more of the fleet on this type of fuel. The bio-diesel comes from a local company which collects used cooking oil from residents and businesses, including schools. This oil is then turned into bio-diesel for use as fuel in



vehicles. Not only is the bio-diesel a cheaper alternative to traditional diesel, but by using it we're helping to improve our fuel efficiency, reduce our reliance on fossil fuels, and find a use for old cooking oil. This is a great example of local, "closed-loop" recycling.

### **7.3 Non-municipal Waste**

Aberdeen City Council does not have responsibility for the management of non-municipal waste but as has been demonstrated elsewhere in the Strategy, these wastes account for the large majority of all waste produced in Aberdeen. Accordingly, the Strategy seeks to ensure that measures are put in place that allow the development of more sustainable solutions for non-municipal waste management in the city. Aberdeen City Council will seek opportunities to work with business waste organisations such as the Business Environment Partnership and the National Industrial Symbiosis Programme to encourage and facilitate more beneficial waste management outcomes.

#### **7.3.1 Trade Waste Collection Services**

Aberdeen City Council provides Trade Waste Collection services when requested. These services include separate collection of paper and glass bottles. Within the constraints of resource allocation, the Council will seek to provide wider recycling collection services whilst ensuring that trade waste customers disposing of residual wastes will be charged the full cost of collection and disposal that the Council incurs. The Council will also seek to introduce food and catering waste collection, should resources allow.

Within the constraints of legislation, the Council will introduce charging mechanisms that favour recycling over general waste collection.

#### **7.3.2 Commercial and Industrial Wastes**

A large proportion of adverse environmental impacts from non-municipal wastes arise from the commercial and industrial sector where wastes are similar in nature to household wastes. Large proportions of commercial waste arisings are either paper/card products or organic waste from restaurant/catering establishments. Aberdeen City Council will facilitate increased collection of these segregated wastes by seeking to develop additional capacity in its proposed recycling, organic and residual waste treatment facilities in the city. By so doing, local outlets for these materials can be developed at competitive market rates. The spatial planning system should also facilitate the development of treatment infrastructure for commercial and industrial wastes.

#### **7.3.3 Construction and Demolition Waste**

The construction and demolition industries produce approximately half of all wastes in Scotland with reduced amounts being disposed of to landfill in recent years. Aberdeen City Council promotes improved waste management within this sector; the Council's Sustainable Building Code, requires all developments to be covered by a Site Waste Management Plan that seeks to identify opportunities

for recycling and landfill diversion. The revised Waste Framework Directive identifies a target of 70% recycling for construction and demolition by 2020. Aberdeen City Council will work with the sector to achieve this target.

The Council will continue to lobby for the adoption of challenging waste prevention and recycling targets in future developments through intelligent design standards, good operational management practices and, where appropriate, through the development control system.

#### **7.4 Community/Third Sector**

Aberdeen City Council has a wide range of relationships with Community and Third Sector Enterprises, most notably a long-standing relationship with Aberdeen Forward delivering waste and sustainability related projects. Such relationships are to be valued and continued where resources allow. The Council remains open to new opportunities to develop waste management projects that move waste up the hierarchy.

#### **7.5 Planning**

Aberdeen City Council has a statutory duty to develop land-use management plans and is the Planning Authority determining planning applications within the city boundary. As such, the Council has an important role to play in facilitating the provision of waste management infrastructure.

One of the main problems in identifying sites for waste facilities is determining need. Ideally, capacity assessments should be carried out firstly in the Strategic Development Plan (formerly the Structure Plan) to determine regional requirements and secondly in the Local Development Plan, which determines the number, size and range of facilities required for all sectors, including non-municipal waste.

##### **7.5.1 Aberdeen City and Shire Structure Plan <sup>26</sup>**

The Structure Plan identifies the need for Supplementary Planning Guidance on the location of regionally important waste infrastructure. It is important that this is developed in the near term. Location criteria for siting of waste infrastructure must take into account the opportunity to utilise heat generated from Energy from Waste facilities if this is identified as the Best Practicable Environmental Option.

##### **7.5.2 Aberdeen City Local Development Plan <sup>27</sup>**

The Aberdeen City Local Development Plan process has recently commenced with Waste Management identified as one of the main issues for the new Plan.

Given the importance of having an up to date development plan framework, if it is not possible to carry out a full needs assessment for the Local Development Plan

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<sup>26</sup> [Aberdeen City and Shire Strategic Development Planning Authority \(2009\) Aberdeen City and Shire Structure Plan](#)

<sup>27</sup> [Aberdeen City Council \(2009\) Aberdeen Local Development Plan – Main Issues Report](#)

in time, then it should identify the known requirement at that time (through for instance, those facilities identified in the Aberdeen City Waste Strategy). In such cases it may be possible to identify any further requirements of the needs assessment in supplementary planning guidance, provided the Local Development Plan says that this is what will happen.

The Plan should also ensure that suitable waste storage facilities are included in all developments and that these facilities should allow for recycling storage in addition to residual waste. Supplementary Planning Guidance should be developed specifying the scale, type and location of waste storage facilities.

The Council developed a Sustainable Building Code<sup>28</sup> in 2008 for its own developments and this code includes requirements for sustainable waste management. The Local Development Plan should include similar requirements for all developments.

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<sup>28</sup> [Aberdeen City Council \(2008\) Sustainable Building Standards for Council Controlled Buildings and Developments](#)

## 8. Glossary

AD	Anaerobic Digestion
BMW	Biodegradable Municipal Waste
BPEO	Best Practicable Environmental Option
BREEAM	Building Research Establishment Environmental Assessment Method
CHP	Combined Heat and Power
Commingled Recyclables	Recyclable material collected in the same container, for example, glass, paper, plastics bottles and cans
EfW	Energy from Waste
EU	European Union
MSP	Member of the Scottish Parliament
MSW	Municipal Solid Waste
Organic Waste Treatment	Either composting or anaerobic digestion of food and garden waste
Recycling	The reprocessing of materials into new products
SEA	Strategic Environmental Assessment
SEPA	Scottish Environmental Protection Agency
SOA	Single Outcome Agreement
WRAP	Waste and Resources Action Programme

## 9. APPENDICIES

### Appendix 1. Drivers for Change

A full copy of this report including this appendix has been lodged in members' library.

### Appendix 2. Consultation Respondent List

A full copy of this report including this appendix has been lodged in members' library.

**Waste Strategy Document Ends.**

## Appendix 2 to Aberdeen City Waste Strategy Report

### Aberdeen City Council Waste Strategy Implementation Plan

Action	Objective	Target	Timescale										
			2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
<b>Engagement and Consultation</b>													
Influencing Policy Development	15,17,18,19	ALL											
Behaviour Change	1,2,3,10,12,18,20	1,2											
Review waste awareness, education and promotion activities	1,2,3,10,12	ALL											
<b>Recycling</b>													
Commingled Materials Recycling Facility in Altens	4,5,6,10,11,12,14,21	2											
Build two new Recycling Centres in Aberdeen	4,5,6,10,12,13,14,21	2											
Expand multi-occupancy Paper Recycling Service	4,5,10,12,20,21	2											
Introduce Alternate Week Collection of residual (black bin) waste	4,5,10,20,21	1,2											
Introduce Recycling Collection Services to Rural Properties	4,5,6,10,12,13,20,21	2,3											
Change household recycling collection from kerbside sort to mixed recyclables collection	5,10,11,12,20,21	2											
Change multi-occupancy paper recycling service to mixed recyclables	5,10,11,12,20,21	2											
Introduce Food waste collection services to all households	4,5,10,12,20,21	3											
Review range of recyclables collected	4,5,6,10,12,13,21	2											
<b>Organic Waste</b>													



