**Agenda Item: 15**

# A PLAN FOR WASTE MANAGEMENT 2010

## Cabinet: 23 November 2010

## Resolution required

## Report of the Assistant Chief Executive

## REPORT SUMMARY

**How does the content of this report improve the quality of life of Borough Residents**
The Waste Management Plan will assist in focusing on a major environmental and financial issues for waste and will provide the most cost effective and sustainable methods for dealing with Surrey's waste.

**Purpose of Report**
The Surrey Joint Municipal Waste Management Strategy is a statutory document, originally produced in 2006 and adopted by all authorities in Surrey at the end of 2006 or early in 2007. It set out a 20 year plan for the management of household waste in Surrey. A review was agreed by the Surrey Waste Partnership because of new local and national targets, changes and impending changes in legislation and heightened public interest in the environment and waste related issues. Regard has also been had to what has been achieved in the original Strategy, as well as issues which are now out-of-date. Members will recall that details of this review were set-out in a report to Cabinet on 20 July 2010 this year. The review, including extensive consultation, has now been completed. This report describes the process of completing the review and seeks agreement from the Council to adopt the Revised Plan for Waste Management 2010.

**Key Issues**
Legislation and future costs of dealing with household waste.

**Financial Implications**
None at this stage

**Corporate Priority** A Cleaner and Greener Environment,

**Officer Recommendations**

**The Cabinet is asked to adopt the attached Plan or Strategy for implementation.**

**Report Author: Sandy Muirhead, Head of Sustainability and Leisure**

**MAIN**

## 1. BACKGROUND

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1.1 .In 2006, Spelthorne Borough Council, along with all Surrey authorities, adopted the current Joint Municipal Waste Management Strategy (JMWMS).It set out a plan for managing household waste in Surrey until 2026. Defra proposed five yearly reviews of JMWMS in its guidance. The EU waste Directive suggests six yearly. Surrey's JMWMS is about half-way through its first term, and Surrey Waste Partnership (SWP), representing all the Surrey authorities, agreed to an interim review because of refocusing of targets locally and new legislation about to be put in place. The JMWMS was subject to public consultation in 2006 and the revised Plan for Waste Management has also been carried-out with a public consultation exercise

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1.2 Surrey Waste Partnership (SWP) has been actively working on the revised Plan for Waste Management during this year. The process commenced in February, with the first draft proposals being considered officers. The Consultation Draft was agreed by the Waste Members' Group in April and reported to th is Council on the 20 July 2010. The public consultation closed mid-August. Waste officers and the relevant Members' Groups have been fully briefed throughout the process

1.3 Changes were proposed to the original Strategy because of: new legislation including both English law and EU Directives; new national targets, such as the National Waste Strategy 2007; new local targets, including the agreed Surrey target of 70% recycling by 2013/14, the move to anaerobic digestion for food waste, and the preference for advanced thermal treatment; the need for the inclusion of a waste reduction plan; and because of areas in the original JMWMS which have been achieved or are now out-of-date.

## 2. KEY ISSUES

2.1 Dialogue by Design was appointed by SWP to carry out public consultation. They were best placed to undertake this work, having previously carried out the 2006 consultation, worked with Surrey County Council on the County Minerals Plan, and being a recognised expert in this field, ensuring authenticity and reliability. As well as the consultation document leaflet, which was previously drawn to Members' attention, the consultation has included press releases and media interviews, a specially developed website as well as individual councils' websites, local displays, presentations to Local Committees and a Workshop for relevant organisations and individuals. Responses from the Consultation, including a formal response from this Council, have been considered. The vast majority of responses were supportive of the main directional shifts in the

responses, amounting to over 200 pages of typed responses, with several to each page. All the responses and the officer comment on each is available to view at www.surreywastepartnership.org.uk Most (72%) of the responses were received on-line. 21% used the form provided. 60% of respondents were aged 45 to 74, only 3% aged under 24This Council also responded as a formal consultee, and our response was covered in the 20 July Cabinet report. A full report outlining the consultation and the full analysis of the responses has been produced by Dialogue for Design and the report will be available in October 2010 at www.surreywastepartnership.org.uk. It needs to be reiterated that most comments received were supportive of the proposed direction of the Plan. Some were able to be understood but did not align with the proposed strategic or political, and a few comments were unable to be supported because of what they were proposing.

2.3 A complete copy of the final proposed version, incorporating the proposed changes, has been laid in the Members' Room for Members to insp ect. It is entitled 'A Plan for Waste Management'. It can also be viewed on the website referred to earlier

## 3. OPTIONS ANALYSIS

3.1 To adopt the revised Waste Management Plan for Surrey with changes as proposed in **Appendix 1**.

3.2 Not to adopt the plan, which would place us out of line with the Surrey Waste Partnership and not assist in dealing with the future of Spelthorne's domestic waste.

## 4. PROPOSALS

4.1 It is proposed that the Waste Management Plan is adopted, recognising it as the first revision to the statutory Joint Municipal Waste Management Strategy 2006 since its adoption. It is also recognised that there are compelling reasons for a revision at this time, creating an alignment with current and forthcoming legislation, national and local targets, different priorities and increased concern about environmental issues.

## 5. BENEFITS AND SUSTAINABILITY

5.1 Dealing with waste in Surrey in a more sustainable manner will reduce the need for landfill with its associated environmental problems. A focus on waste reduction and recycling will also reduce use of declining natural resources issues

## 6. FINANCIAL

**IMPLICATIONS** 6.1 None at this stage

## 7. LEGAL IMPLICATIONS / OTHER

9.1 The Plan will be implemented as soon as all authorities have adopted it (expected November 2010).

**Report Author: Dr Sandy Muirhead Head of Sustainability and Leisure 01784 446318**

**Background Papers:**

**Appendix 1 Proposals for change to the text of the Plan**
The additional changes to the Plan proposed as a result of the consultation are set-out in the following table:

| | |
|---|---|
| a) The target of 70% recycling by 2014 needs to be extended to a longer term | A paragraph will be added:<br>The 70% target is calculated from actions that the authority intend to carry out, in conjunction with waste collection authorities through the Joint Municipal Waste Strategy, as set out in the World Class Waste Solution policy. This is a challenging target requiring the implementation of invest to save policies by Surrey CC and a review of collection methods and policies by many of the waste collection authorities, and a greater level of partnership working between all twelve authorities. A great deal of work is required to achieve our target and resources are currently focused on meeting it. Progress against meeting the 2014 target, successes and difficulties met along the way, will influence the setting of longer term targets in the future. But at this stage, due to the speed of development and implementation of the strategy it is more appropriate to review the need for future targets as we approach 2014. Achievement of the 70% target |
| b) It is not clear how the 70% target will be achieved by the WCAs and the CRC performanc e. A breakdown of the contribution from the WCAs and | A section will be added: **Progress**<br><br>Recycling is an area that has seen significant progress since 2006, rising from an average of 27.9% (2005/6) to current levels of 48%. The recycling target within the original strategy was 60% by 2025. At current increases, Surrey is projected to reach 50% by the summer 2010.<br><br>**Current levels**<br>The 15 Community Recycling Centres (CRC) across Surrey also contribute to the recycling rate. Recent redevelopments and improvements to sites has seen performance rise to recycling at over 70%. The redevelopment programme continues with two further sites being developed in 2010/11. By the end of 2010/11 most of the 11 Waste Collection Authorities (WCAs) will have commenced food waste collection, which makes a major contribution to increased recycling levels.<br>**Future progress**<br>Current WCA action plans indicate that they can collectively<br>achieve a recycling rate of 60% and SCC's CRC deve lopment plan projects a recycling rate of 70% by 2013. This would lead<br>to an overall recycling rate of 63%, leaving a 7% 'inno |

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| | • Additional improvements to collection systems<br>• Improvements to the bring bank network<br>• Additional reuse of furniture and white goods<br>• Further exclusion of illegal commercial waste from the municipal stream.<br><br>Indicative combinations of recycling rates necessary to achieve an overall 70% rate are for example WCAs at 64% and CRCs at 87%.<br>A series of partnership projects are already underway to address the issues outlined above in order to bridge this innovation gap and achieve a |
| c) More needs to be done to encourage supermarkets to reduce the amount | The current section within the strategy regarding our approach to supermarkets will be enhanced.<br>In 2005, over 40 major retailers, brand owners, manufacturers and suppliers signed up to a voluntary agreement called the Courtauld Commitment to develop solutions across the whole supply chain to reduce both household packaging and food waste. These organisations worked with the Waste and Resources Action Programme (WRAP) to develop solutions across the whole supply chain, including innovative packaging formats, reducing the weight of packaging (e.g. bottles, cans and boxes), increasing the amount of recycled content in packaging, designing for recyclability, increasing the use of concentrates, refill and self-dispensing systems and collaborating on packaging design guidance. They are also working on solutions for reducing food waste through innovative packaging, in-store guidance, and the Love Food Hate Waste consumer campaign.<br>Earlier this year, 29 major retailers and brand owners signed up to Courtauld Commitment 2 to work with WRAP to meet three key targets:<br>•<br><br>Reduce the carbon impact of grocery packaging by 10%<br>• Reduce UK household food and drink waste by 4%<br>• Reduce waste in the grocery supply chain by 5%.<br>There is therefore a great deal of work going on regarding packaging reduction at a national level. The Surrey Waste Partnership looks to influence this |
| d) The target of 70% should be an aspirational target. Individual WCAs' current | It is agreed that because of current performance and the range of projects currently in place that the 70% target is achievable. However it is recognised that projects are also in place to establish ways to achieve the target. Therefore Policy 4 will be changed to:<br>"We will commit significant efforts and resources to achieve an aspirational household recycling and composting targets of 70% by 2013/14" |

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| dramatically and some are concerned regarding the speed of achieving | |
| the target<br>e) There has been considerable confusion within the responses regarding the Waste Plan, Minerals Plan, the Waste Strategy | The following section will be added to the strategy:<br>**1. *Role of SCC – waste disposal authority***<br>Surrey County Council is the Waste Disposal Authority (WDA) for Surrey. The WDA is responsible for disposing of municipal waste collected by district and borough councils and for providing community recycling centres (CRCs) for residents to take any household waste not otherwise collected by the district and borough councils. Recycling and disposal of<br>wastes from CRC's is also the responsibility of the W DA.<br>**2. *Role of SCC – Planning authority***<br>The County Council is also the Waste Planning Authority<br>(WPA) for Surrey. The WPA is responsible for developing a land-use plan for waste management facilities within Surrey. The land use plan for Surrey is called the Surrey Waste Plan and was adopted by the county council in 2007. The plan identifies land suitable for the development of waste management facilities to deal with all types of waste, including commercial, industrial and municipal wastes.<br>The WPA is also responsible for the determination of planning applications for new waste facilities within Surrey.<br>**3. *Role of district and boroughs***<br>The 11 district and borough councils in Surrey are Waste<br>Collection Authorities (WCAs), responsible for the collection of municipal wastes. WCAs are also responsible for the delivery of recycling and composting schemes based on the separation of suitable materials within the household waste stream. This is usually achieved through<br>'kerbside' waste collection schemes that operate in conjunction with the normal waste collection and are supplemented through the provision of convenient recycling facilities in places such as supermarkets, shopping centres and car parks. The residual waste collected is passed to the County Council for disposal. The waste collected for recycling can either be passed to the County Council or can be sent directly to recycling facilities for reprocessing, such as a paper |

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| | all waste arising in Surrey including commercial, industrial and household wastes. There was a full consultation on the Surrey Waste Plan prior to its adoption in 2008.<br>The **Plan for Waste Management** is our strategy to manage waste across the county. This plan was first published in 2007 and was called the Joint Municipal Waste Management Strategy. The new strategy will set revised targets for recycling, reducing waste and managing Surrey's waste in the most sustainable and cost-effective way.<br>The individual action plans set out how each authority |
| f) It was identified in the workshop that was held and also evident in some responses that there needed to be more information regarding the technologies | 1) Additional information will be added to Appendix C: Residual Waste Treatment Technologies. This will include a summary of the specific Batch Oxidation System technology gasification and the specific anaerobic digestion technology proposed by the WDA.<br>2) Additional Appendices will be added to provide |
| g) Has an equality impact assessme nt been carried | An Equality Impact Assessment will be carried out on the revised strategy. |
| h) The table on pg 22 which details each WCA information is out of date. Information on the Community Recycling Centres | The latest version will be added to replace the previous table. As this will require updating more regularly than the strategy, a version will be added to the website which will be updated regularly.<br>The CRC information will also be added to the table |
| i) There is not a target for household waste produced | This will be added and the target will be the relevant National Indicator (NI191 Residual household waste |

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| j) Action "With food waste collection, and wherever possible, we will seek to align collection arrangements and treatment methods" doesn't | Proposed change to action:<br>Wherever possible, we will seek to align collection arrangements. For example with food waste collections that are being introduced. |
| k) Areas of the Waste Reduction Programme in which respondents would like SWP to prioritise are:<br>1) bulky items; | These areas will be |
| l) Items that were identified for prioritising separate collection were: 1) plastics, and 2) drinks | These areas will be prioritized for further investigation into the feasibility of separate collections. |
| m) Role of districts and Boroughs in achieving recycling targets needs to be set-out | An additional Action will be incorporated as follows: "district and borough partners to develop affordable kerbside and bring site collection schemes designed to achieve or exceed recycling and composting rates |
| Changes agreed at the Surrey Waste Members' Meeting on the 28th of | |
| n) Reference needs to be made to safely at waste | Action 33 will be changed to include reference to this with the following additional words: "Safe, efficient and appropriate |

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| site | |
| o) Comment j) above remains with an unclear response. | The word “with” needs to be inserted after “For examp le” in the text. |
| p) The answer to comment b) above needs to be illustrated with a graphical representati on of the various contributio | A diagramme has been introduced on |

(Red highlights p26 & p30 ours)

Surrey Waste Partnership

# A Plan for Waste Management

Joint Municipal Waste Management Strategy

Revision # 1
September 2010

# Surrey Local Government Association

## Joint Municipal Waste Management Strategy and Joint Waste Prevention Plan

### Background
The current JMWMS was adopted by all Surrey Authorities in 2006 following a period of public consultation. Much has changed in the subsequent years and this revision seeks to address new directives, new legislation and new actions.

### Consultation
A Consultation Draft version of the Joint Municipal Waste Management Strategy (JMWMS) was issued in May 2006 and was designed to canvass the views of Surrey's residents, key stakeholders and the 12 waste authorities. This revision was similarly issued as a Consultation Draft to elicit a wide range of views which have been considered before the report is adopted.

For further information on waste management in Surrey please visit **www.surreywastepartnership.org.uk**


### Acknowledgements
The 2006 Strategy was produced on behalf of Department for Environment Food and Rural Affairs Direct Consultancy Support Local Authority Support Unit in partnership with Entec UK Ltd.

The Surrey Local Government Association (SLGA) represents the 12 authorities of Surrey: the County Council and the 11 district councils.

The SLGA has acknowledged the advice and assistance given in the preparation of this document by:
- SLGA Waste Members' Group
- SLGA Waste Officers' Group

and for their further work in preparing this first revision.

### 2006 Version published by
Surrey Local Government Association
Civic Offices, Gloucester Square, Woking, Surrey GU21 1YL
E-Mail slga@woking.gov.uk




### 2010 Revision published by
Surrey Waste Partnership (SWP), formally the SLGA Waste Members' Group.

# Contents

# 1. Introduction

## 1.1 Objectives of the Strategy

The Joint Municipal Waste Management Strategy (JMWMS) was produced by the Surrey Local Government Association (SLGA). This revised Plan for Waste Management has been produced by the Surrey Waste Partnership (SWP) on behalf of the SLGA. The SWP was formally the Waste Members Group of the SLGA. It constitutes a revision to the 20 year plan for the future of waste management in the County, covering the period running from 2006 until the year 2026. This represents the first revision.

This revised strategy presents a forward looking vision towards a more sustainable future for Surrey, consistent with the vision statement set out below.

**Vision Statement**
**To provide Surrey with a forward-looking Strategy for a more sustainable future.**

**The vision is for a County in which resources are used and managed efficiently so that by 2026:**

- **the amount of waste produced will continue to be reduced or reused**
- **materials reused, recycled or composted will exceed 70%**
- **the environment will be protected and enhanced for future generations**

## 1.2 Background

### Municipal Waste

The primary focus of this revised Strategy is the management of municipal waste, as defined below. This is the waste which the authorities comprising the SWP control and will continue to manage for the foreseeable future.

The municipal waste collected in Surrey comprises:

- Household waste collected directly from residents' households (residual waste, dry recyclables, organic waste, bulky waste and clinical waste);
- Household waste delivered to bring sites and Community Recycling Centres by residents (excluding soil and rubble);
- Other household waste collected by a waste collection authority, for example, schools waste or waste from a charity, street sweepings and litter collected by local authorities;
- Commercial and industrial waste collected by the district and borough councils

Local authorities have been set clear objectives and targets by government for the management of municipal waste.

These requirements exert a significant influence in finding the most appropriate way forward for Surrey.

### What are the SLGA and the Surrey Waste Partnership?

The SLGA represents the 12 authorities of Surrey: the County Council and the 11 district councils.

The SLGA provides a forum in which the individual authorities can work in partnership to improve services in Surrey. The Surrey Waste Partnership (SWP) is that vehicle for waste management.


### The Previous Strategy

In September 2003, the document '*Towards an Integrated Waste Management Strategy for Surrey*' was developed on behalf of the SLGA and issued for public consultation. It aimed to create coordinated waste management arrangements that would achieve the targets set by central Government at that time.

To take account of new objectives, changing targets and further Government guidance, a new and revised joint strategy was required. Published and adopted in 2006 this now requires further revision, which is contained in this version for 2010. This version builds on both the previous strategies where appropriate and represents a revised Joint Municipal Waste Management Strategy, produced by the SWP, for the SLGA.

## 1.3 Roles and Responsibilities

Progress towards the delivery of JMWMS targets and objectives established in this document will continue to require a collaborative contribution by district councils (the Waste Collection Authorities (WCAs)), the County Council (the Waste Disposal Authority – (WDA), and partners. It is therefore important to understand the roles and responsibilities of each authority.

### District Councils

There are 11 district councils in Surrey which are responsible for the collection of household wastes (Waste Collection Authorities).
These WCAs are also responsible for the delivery of recycling and composting schemes based on the separation of suitable materials within the household waste stream. This is usually achieved through 'kerbside' waste collection schemes that operate in conjunction with the normal waste collection and are supplemented through the provision of convenient recycling facilities in places such as supermarkets, shopping centres and car parks. The residual waste collected is passed to the County Council for disposal. The waste collected for recycling can either be passed to the County Council or can be sent directly to recycling facilities for reprocessing, such as a paper mill. The waste collected for composting can also be passed to the County Council or can be sent directly to composting facilities.

### Surrey County Council

The County Council has two distinct roles with regard to municipal waste.

First, it is the Waste Disposal Authority (WDA) for Surrey. This entails arranging for the acceptance of municipal waste collected by district councils and the provision of facilities for its subsequent treatment and disposal. The County Council also provides Community Recycling Centres (CRCs) for residents to deliver household waste not otherwise collected by the WCAs. Recycling and disposal of wastes from these sites is also the responsibility of the WDA.

The County Council is also the Waste Planning Authority for Surrey. This role involves the identification and allocation of land suitable for the development of waste management facilities. The process involves the production of a Waste Local Plan. The land use plan for Surrey is called the Surrey Waste Plan and was adopted by the county council in 2007. The plan identifies land suitable for the development of waste management facilities to deal with all types of waste, including commercial, industrial and municipal wastes. The Planning Authority is also responsible for the determination of planning applications for new waste facilities within Surrey.

### Strategies in context (National Waste Strategy, Surrey Waste Plan, JMWMS, Action plans)

The **Surrey Waste Plan** is a land-use plan produced by Surrey County Council in its role as Waste Planning Authority. It contains a list of sites and policies against which planning applications for waste management facilities will be judged. For example it identifies four sites in Surrey that are suitable for thermal waste technologies. The Surrey Waste Plan deals with all waste arising in Surrey including commercial, industrial and household wastes. There was a full consultation on the Surrey Waste Plan prior to its adoption in 2008.

This **Plan for Waste Management** is the Surrey Waste Partnership's strategy to manage waste across the county. This plan was first published in 2006 and was called the Joint Municipal Waste Management Strategy. This new strategy will set revised targets for reducing and recycling waste and managing Surrey's waste in the most sustainable and cost-effective way.

The individual action plans set out how each authority will deliver the strategy.

### The Environment Agency

The Environment Agency is responsible for the regulation of waste facilities in England and Wales. This is achieved through a system of consents, licences and permits that must be applied for by the waste facility operator.

Before a waste facility can begin operations it will usually need both a planning permission and either an Integrated Pollution Prevention and Control (IPPC) permit or waste management licence.

### The Waste Industry

The private sector waste management industry is a major provider of waste services nationally. This is achieved through gaining waste management contracts with local authorities or by developing facilities for use by industrial and commercial waste producers.

In September 1999, Surrey County Council entered into a contract with Surrey Waste Management Ltd (SWM) to provide waste management services for a period of 25 years. SWM is a wholly owned subsidiary of SITA

(UK) one of the largest waste management companies operating in the UK.

The contract requires SWM to operate the 15 CRCs and four waste transfer stations within the County. SWM is also contracted to provide treatment and disposal facilities to deal with the municipal waste delivered by the 11 district councils and collected by the CRCs within Surrey.

At Leatherhead, Guildford and Epsom, facilities with large bays have been constructed by SWM to provide local points where Surrey district councils can deliver recyclable materials collected from householders and recycling banks. A fourth facility has also been constructed at Shepperton which includes equipment to separate mixed recyclable materials.

Mole Valley District Council has worked with Grundon Waste Management Ltd to develop a Materials Recycling Facility (MRF) at Leatherhead.

### The Business Sector

The Environment Agency estimates that well over 1 million tonnes of commercial and industrial waste is produced in Surrey every year. The industry therefore has a key role to play in reducing waste and carbon produced in the County.

Businesses also have a key role to play in designing out waste during the production and consumption of their products. This includes the design of the product itself, using recycled materials during production, packaging and recyclability.

### Residents

Residents are able to reduce the amount of waste produced in the County and increase the amount recycled and composted through the choice of products they buy and consume and participation in reuse and recycling initiatives.

Residents and local communities have an important role to play in waste prevention and recycling. This influence can be exerted through exercising choice over the products consumed, participating in re-use and recycling initiatives and reducing the quantity of waste produced for disposal.

# 2. The Challenge Ahead

## 2.1 Current Waste Generation

Waste management practices continue to be varied throughout Surrey both in terms of what levels of recycling are being achieved and how these levels are being achieved. A summary of waste arisings by type can be seen in Table 2.1.

In 2008/9 568,745 tonnes of municipal waste was generated in Surrey. The extensive recycling schemes across the County were successful in recycling and composting 40.5% of household waste. Interim waste contracts with an out of County Energy from Waste (EfW) diverted 9.5% residual waste from landfill. The remaining 50% was sent for disposal to landfill in Surrey and other counties.

In the same year the 11 Waste Collection Authorities (WCAs) recycled or composted an average of 37% of the waste they collected (individual authorities ranging from 25% to 51%), and performance continues to rise. Details of each individual authority's waste arisings can be found in the separate Action Plans and at Table 3.4.1.

The Waste Disposal Authority recycled or composted 53.4% of the waste arriving at CRCs. The performance of individual sites was variable, ranging between 18% and 63%.

**Table 2.1 Total Municipal Waste Arisings 2008/09**

| Waste Types | Tonnes |
|---|---|
| **Household :** | |
| Recycling, Composting & Re-use (kerbside and bring banks) | 148,437 |
| Residual | 249,580 |
| Commercial/trade | 13,753 |
| Street cleanings | 13,726 |
| Fly tipping | 1,344 |
| **CRCs:** | |
| Recycling, Composting & Re-use | 74,294 |
| Rubble | 12,564 |
| Residual | 65,558 |
| **TOTAL** | 568,745 |

### Waste Composition

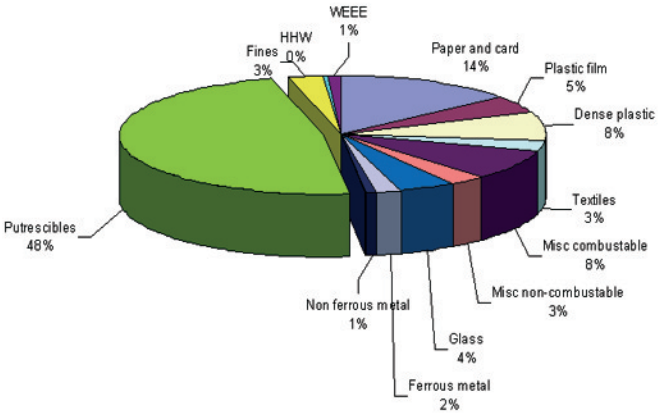
Waste composition is an important factor in determining what levels of recycling and composting can be achieved. Recycling can only take place on waste materials that are actually recyclable. Thus the recycling systems should reflect the materials that are present in the waste stream and that might easily be separated. The availability of markets must also be reflected in the choices that are made.

An analysis of household waste composition in Surrey was conducted during 2007/08. This detailed the materials that were present in the household waste stream including wastes collected by the districts. Waste taken to CRCs and street

sweepings were subject to analysis in a separate survey.

The key results of this are shown as the countywide composition of all Surrey's household waste in Figure 2.1.

**Figure 2.1 Household Waste Composition**




HHW: Household waste
WEEE: Waste Electrical and Electronic Equipment

## 2.2 Future Waste Trends

Trends in levels of household waste arising have been almost continuously upwards over the last 20 years. However, over the last 5 years the upward trend has reduced and the last 2 years have seen substantial reductions in household waste volumes. The trend in Surrey is consistent with the national picture. However there is a risk that the volumes will increase in the future. The more waste there is, the greater the number or size of facilities required to deal with it.

The Surrey Waste Partnership has developed a 4-year action plan that aims to reduce municipal waste by at least 30,000 tonnes by 2013/14.

Waste tonnages will continue to be closely monitored during the period and additional waste reduction projects will be developed as appropriate.

## 2.3 Drivers for Change

There are many pressing reasons for continuing to improve the way waste is managed in Surrey. There are clear environmental benefits associated with making fewer products, making products with fewer natural resources and reducing the amount of waste that needs to be transported and treated. There is also significant cost savings associated with this. Improved performance in the amount of waste being recycled has enabled Surrey authorities to increase their overall recycling, composting and reuse target for household waste to a world class level of 70%.
Continuing to send municipal waste to landfill is not sustainable, either in terms of the environmental impact or cost to the tax payer. Landfill represents a huge waste of natural resources that could be reused, recycled or composted, or used to produce energy. The rapid filling of landfill sites also means that Surrey needs alternative waste facilities to deal with its waste.

Policies set out in European and national waste legislation have a direct impact on the approach to waste management taken by local authorities in the UK. Supplementary Paper SR-2 describes in more detail the key current and proposed legislation and policies that need to be considered when making future decisions regarding the management of municipal waste arising in Surrey. These include:

**Landfill Directive:** requires an increasing amount of biodegradable municipal waste to be either pre-treated (to reduce its biodegradability) or managed by methods other than landfill. There are likely to be heavy penalties for

councils failing to meet Government targets.

**National Waste Strategy for England 2007 and Regional Waste Strategies**: require decisions on waste management systems to be based around issues such as sustainability and proximity as well as detailing a number of actions and mechanisms that will move waste management up the 'waste hierarchy', encouraging waste prevention, re-use, composting and recycling.

**Reuse, Recycling and composting targets:** statutory National Indicators set targets for measuring performance standards for reuse, recycling and composting.

| | |
|---|---|
| 2010 | 40% |
| 2015 | 45% |
| 2020 | 50% |

The SWP aims to exceed these targets and achieve a recycling, reuse and composting rate of 70% by 2013/14.

The EU Waste Directive will require 50% by 2020 and this will be transposed into law by late 2010. Authorities will need to collect paper, metals, glass and plastics as a minimum, with bio-waste collected separately.

**Recovery Targets**: municipal recovery targets to divert waste from landfill have been set for the region equivalent to:

| | |
|---|---|
| 2010 | 52% recovered |
| 2015 | 74% recovered |
| 2020 | 83% recovered |
| 2025 | 84% recovered |

**Producer responsibility:** requires more recycling and recovery of waste materials from specific types of goods (such as packaging), with the responsibility placed on the producer to achieve the improvements.

**Landfill Tax:** Landfill tax will increase at a rate of £8 per tonne per year from £48 in 2010/11 to £72 in 2013/14, giving a large incentive to use alternative waste management methods.

# 3. Meeting the Challenge

## 3.1 Waste hierarchy

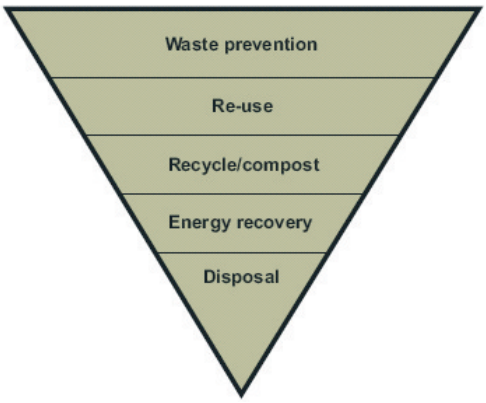
**Policy 1**

**We will work in partnership with each other and other stakeholders to promote sustainable waste and resources management in Surrey, and support national and regional policies for carbon reduction and mitigation as well as net self-sufficiency**

The Surrey Waste Partnership has adopted the waste hierarchy (see Figure 3.2.1) as outlined in the National Waste Strategy for England 2007.

The stages of the waste hierarchy are described by Figure 3.1.1 below.

**Figure 3.1.1 The Waste Hierarchy**




### The waste hierarchy

- The most effective environmental solution is often to reduce the generation of waste – prevention.
- Products and materials can sometimes be used again, for the same or different purpose – re-use.
- Resources can often be recovered from waste – recycle or compost.
- Value can also be recovered by generating energy from waste – energy recovery.
- Only if none of the above offer an appropriate solution should waste be disposed of.

**Actions A1, A2, A3, A4 & A5**

- **We will plan for net self-sufficiency for dealing with waste in Surrey, through the provision of waste management capacity equivalent to the amount of municipal waste arisings**
- **We will identify mechanisms for the implementation and monitoring of the Joint Municipal Waste Management Strategy**
- **We will develop mechanisms and opportunities for joint working between the authorities**
- **We will seek partnerships with the community and waste industry**
- **We will seek joint opportunities for external funding to implement the objectives of the Joint Municipal Waste Management Strategy, and review financial arrangements among the partners**

## 3.2 Partnership Working

**Policy 2**

**We will work in partnership to develop and deliver coordinated waste education and awareness programme, which focus on all aspects of sustainable waste management, in line with the priorities of the waste hierarchy**

This strategy seeks to enhance the partnership and levels of joint working between the Waste Collection Authorities and Waste Disposal Authority, to ensure that collection and waste management systems are complementary, and are made public in the most efficient and effective way.

There is increasing urgency to address the benefits of improved joint working. The partners will therefore explore avenues for increased joint working between authorities; further work is required to agree the best way to approach joint working.

A move towards more sustainable waste management will require additional resources to be invested in capital and revenue budgets. This will require all authorities to identify and pool funds. There are also access to external funding opportunities, for example funding from Defra and WRAP .

The community can provide valuable and sustainable waste management activities, particularly for the re-use of waste materials. These can complement the activities of local authorities and the waste industry, if properly coordinated. Community groups can often target niche markets at a local level which are otherwise difficult to access.

We acknowledge that the County of Surrey should aim to be self-sufficient in terms of managing the waste generated within its boundaries, where appropriate.

## 3.3 Waste Awareness and Prevention

**Policy 3**

**We will vigorously pursue the prevention of waste to achieve continued reduction in waste arisings, through common public messages, lobbying retailers and enforcement activities**

Research carried out by the County Council in 2009 found that there was no typical profile of a world class waste authority. However, this work did identify a set of common characteristics and activities that define world class, which include the need to focus attention on preventing waste from being created, in line with the waste hierarchy.

The Surrey Waste Partnership aims to reduce the amount of municipal waste produced in the County in line with the waste hierarchy. This includes both waste prevention and reuse activities to reduce the amount of waste materials requiring treatment and the exclusion of illegal commercial waste from the municipal stream.

**Action A11**
**We recognise waste prevention as the first stage of the waste hierarchy and will emphasise the need to reduce waste at source both domestically and commercially**

As discussed in section 2.2, the last two years have seen substantial reductions in household waste volumes. The Surrey Waste Partnership aims to reduce waste

arisings by at least an additional 30,000 tonnes by 2013/14.

**Action A12**
**We will seek to decouple waste volumes from economic activity and aim to reduce waste arisings by at least 30,000 tonnes by 2013/14**

The amount of waste produced in Surrey is dependent on a large number of factors that the Waste Partnership may or may not be able to influence, e.g. the development of internet shopping. Further, the impact of specific waste reduction initiatives can be difficult to measure against a backdrop of other variables. Resources and efforts in this area therefore need to be focused on:

- Issues that the Surrey Waste Partnership has the ability to control and influence
- Areas of work that can demonstrate a measurable impact on the amount of waste produced.

## Review of Options

A review aimed at identifying a world class waste reduction and reuse programme was carried out in conjunction with Waste and Resources Action Programme (WRAP) and the Business Resource Efficiency and Waste Centre for Local Authorities (BREW) who both advise local authorities on waste issues on behalf of government. This work included a review of the National Waste Strategy 2007.

In order to reduce municipal waste, the Surrey Waste Partnership believes that work is required with all sectors of the community, in line with national guidance.

The National Waste Strategy 2007 encourages local authorities to use their role as local community leaders to achieve a more integrated approach to resources and waste in their area.

In addition, Defra have created a framework for pro-environmental behaviour that segregates the population into seven key groups and identifies their social and cultural norms and different barriers and motivations to changing their behaviours. Change therefore requires a variety of approaches, which are encompassed in the Defra 4Es model of behaviour change, as shown in figure 3.3.1below.

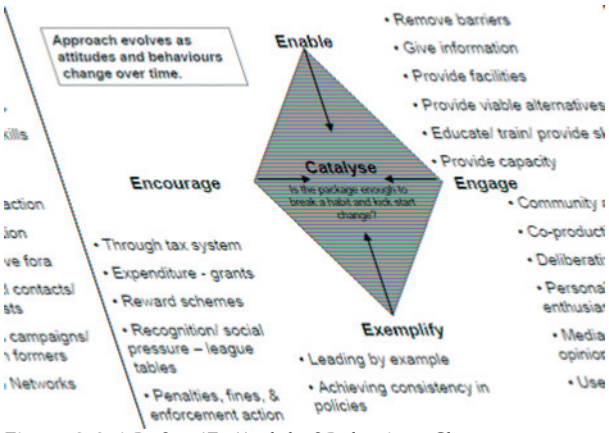



**Figure 3.3.1 Defra 4Es Model of Behaviour Change**

This framework suggests that different social groups require a different mix of approaches to change their behaviour, within the Enable, Engage, Encourage and Exemplify model outlined above. The approach taken to changing behaviours around each of these materials uses this best practice methodology.

Key audiences in Surrey are:

- Residents
- Businesses
- Schools and young people
- Community groups
- Surrey Waste Partnership member authorities
- Public sector partners

Whilst the impact of work with some of these audiences on waste behaviours can be difficult to quantify, they are nevertheless key components of a world class waste reduction and reuse programme.

### Approach

The world class waste reduction and reuse solution is to identify a work programme that fulfils the following criteria:

- Potential for significant tonnage reduction
- Ability to influence
- Ability to measure
- Targeted to specific audiences
- Strong return on investment

Detailed project plans have been developed for initial projects and will be revised as appropriate, dependent on outcomes and new sector developments. The plans will be reported annually as part of the JMWMS annual update and regularly monitored.

The Surrey Waste Partnership will promote this work using the partnership iconography where possible and will participate in national campaigns.

**Action A8**
**We will work towards promoting our waste related activities under an overarching message/logo, and participate in relevant national campaigns**

### Residents

Using the criteria outlined above, the Surrey Waste Partnership has identified a number of materials in the waste stream on which to focus attention with residents, which are:

- Food waste reduction
- Green waste reduction
- Reuse of bulky items such as furniture and white goods
- Reusable nappies
- Junk mail reduction

General attitudes towards each of these materials influence the quantity of waste materials produced. These are determined by a number of factors and are deeply embedded in social situations, institutional contexts and cultural norms. Creating new social norms around waste reduction and reuse therefore requires a comprehensive approach that segregates the population and identifies and addresses key motivations and barriers.

The public consultation, 17th May 2010 to 12th August 2010, revealed that residents wanted the Surrey Waste Partnership to continue to prioritise the areas of Bulky Items, Food Waste Reduction and Junk Mail Reduction as part of the Waste Reduction Programme.

### Food Waste Reduction

In the UK, WRAP estimates that 8.3 million tonnes of food is thrown away annually which costs the average family £680 per year. It also has significant environmental implications both in terms of its transportation, production and storage and once it has been disposed of in a landfill.

In Surrey, householders produce around 100,000 tonnes of food waste per year. In line with the waste hierarchy, there is an opportunity to help residents reduce the amount of food they waste which complements the collection of unavoidable food waste that will continue to be produced. This will yield significant environmental and financial savings in terms of avoided production and disposal and will help residents to save money.

WRAP have designed a national behaviour change campaign called 'Love Food Hate Waste'. The Surrey Waste Partnership will deliver this campaign locally in order to address this significant waste stream.

### Green waste reduction

There is an estimated 130,000 tonnes of compostable material in Surrey's waste stream and promotional initiatives continue to be employed to encourage residents to compost their garden and vegetable waste at home. This benefits residents' gardens and reduces the environmental and financial cost of transporting and treating this material.

The Surrey Waste Partnership is aware of the need to promote home composting to complement chargeable green waste collections (which are already implemented across the county) and green waste taken to CRCs.

**Action A17**
**We will continue to promote home composting and digesting as well as kerbside organic collections**

### Reuse of Bulky Items such as Furniture and White Goods

There are an estimated 3,000 tonnes of potentially reusable furniture and white goods in Surrey's household waste stream. There are a number of furniture reuse organisations in the county who collect some of these unwanted items and refurbish and distribute them to disadvantaged parts of the community. However, a large proportion of these items are currently going to landfill.

The Surrey Waste Partnership is working with these groups to help them increase the amount of furniture and white goods that are reused for the benefit of the local community.

**Action A15**
**We will support and encourage reuse events and centres to enable goods and materials to be reused, repaired and exchanged**

### Reusable Nappies

There are around 13,400 babies born in Surrey every year who will each require anything from 4,000 to 6,000 nappy changes. This results in over 15,000 tonnes of disposable nappy waste produced in Surrey every year.

The Surrey Waste Partnership aims to increase awareness of real nappies to encourage more parents to use real nappies for their children. This will be done via promotional campaigns and working with key groups such as Children's Centres and the National Childbirth Trust (NCT).

### Junk Mail Reduction

The National Waste Strategy for England 2007 estimates that direct marketing accounts for 550,000 tonnes of household waste per year. Of this, 181,500 tonnes is estimated to be addressed mail with the remaining 368,500 tonnes being unaddressed direct marketing material, through such means as the Mailing Preference Service.

If these figures are interpolated for Surrey, there are an estimated 4,100 tonnes of addressed and 8,500 tonnes of unaddressed mail in the County each year. Work therefore continues to reduce the amount of unwanted mail by enabling people to take more control of the mail that comes through their doors

### Businesses

A number of district councils collect waste from their business communities, which means that this waste is in the category of municipal waste.

There is an estimated 20,000 tonnes of commercial waste illegally entering the municipal waste stream via kerbside collections, bring sites and Community Recycling Centres. The Surrey Waste Partnership will continue to educate businesses regarding their waste management responsibilities, support them in reducing costs via waste reduction initiatives and increase recycling.

In addition to the provision of these services and facilities, the Surrey Waste Partnership will aim to divert illegally placed commercial waste from the domestic stream, forcing the producer to take responsibility.

**Action A13 & A25**

- **We will coordinate with appropriate authorities to enforce the exclusion of commercial waste from the household waste stream, and champion the principle that "the polluter should pay" in relation to creating and managing waste. At the same time we will support the prevention and recycling of commercial waste**
- **We will investigate opportunities to recycle commercial waste collected by authorities**

In 2005, over 40 major retailers, brand owners, manufacturers and suppliers signed up to a voluntary agreement called the Courtauld Commitment to develop solutions across the whole supply chain to reduce both household packaging and food waste. These organisations worked with the Waste and Resources Action Programme (WRAP) to develop solutions across the whole supply chain, including innovative packaging formats, reducing the weight of packaging (e.g. bottles, cans and boxes), increasing the amount of recycled content in packaging, designing for recyclability, increasing the use of concentrates, refill and self-dispensing systems and collaborating on packaging design guidance. They are also working on solutions for reducing food waste through innovative packaging, in-store guidance, and the Love Food Hate Waste consumer campaign.

In March 2010, twenty nine major retailers and brand owners signed up to Courtauld Commitment 2 to work with WRAP to meet three key targets:
• Reduce the carbon impact of grocery packaging by 10%
• Reduce UK household food and drink waste by 4%
• Reduce waste in the grocery supply chain by 5%.

There is therefore a great deal of work going on regarding packaging reduction at a national level. The Surrey Waste Partnership looks to influence this agenda through lobbying government and our relationship with both WRAP and a number of national retailers. The Partnership also has a role in ensuring that residents are aware of this work to show that all sectors of the community are working towards the same waste reduction goals.

**Action A14**
**We will lobby the manufacturing/retail sector and Government to tackle the issue of retail packaging waste**

### Schools and Young People

Schools in Surrey produce an estimated 5,500 tonnes of waste per year, some of which is collected by Surrey's district councils. There is significant waste reduction potential

that can lead to cost savings for both the schools themselves and the Waste Partnership.

In addition, it is widely accepted that children can be strong advocates for behavioural change at home, thereby impacting on the amount of waste produced by residents.

Work with schools and young people is therefore continuing to focus on both school operations and curriculum based educational resources for children.

**Action A9**
**We will have a coordinated action plan both to reduce waste and to educate children in waste prevention, collection and treatment issues and help schools deliver coordinated education campaigns**

### Community Initiatives

Bottom-up or community led behaviour change initiatives can complement council led initiatives and have been shown to be successful in Surrey and other parts of the country. Work will continue to support social innovation and enable initiatives outside the traditional waste management industry to flourish and deliver long term behaviour change.

**We will strengthen partnerships with community and volunteer groups that support waste prevention and reuse**

### Surrey Waste Partnership Member Authorities

In line with the 4Es model of behaviour change discussed above, the Surrey authorities recognise that their own working practices can have a significant effect on the amount of waste generated by their organisations as well as having a wider effect on behaviour change in the community. All authorities will continue to build on best practice in the county and improve in this area.

**Action A10**
**We will demonstrate our commitment to resources management by our corporate actions and procurement processes, in particular the use of sustainable and environmental products and materials**

### Public Sector Partners

The Corporate Area Assessment methodology makes it increasingly important for statutory bodies to work together and share expertise. In addition, Surrey's local authorities are keen to show community leadership in this area by supporting public sector partners.

Waste collected from these bodies by district councils is classified as municipal waste, which means that there is also a financial incentive for this engagement.

Significant work has been carried out with Surrey's NHS and further work with partners will continue.

## 3.4 Waste Collection, Recycling and Composting

The Waste Collection Authorities in Surrey are responsible for the collection of both residual and recyclable and compostable household waste from residents. Collected residual waste is either landfilled or sent for onward treatment whilst recyclable and compostable materials are sent for onward reprocessing. Each WCA operates their own collection system and collects varying types and

amounts of recyclable and compostable materials. Systems are designed to complement each other in order to maximize recycling and composting.

## Recycling and Composting Performance

**Policy 4**

**We will commit significant efforts and resources to achieve an aspirational household recycling and composting targets of 70% by 2013/14**

Recycling is an area that has seen significant progress since 2006, rising from an average of 27.9% (2005/6) to current levels of 48%. The recycling target within the original strategy was 60% by 2025. At current increases, Surrey is projected to reach 50% by the summer 2010.

The 15 Community Recycling Centres (CRC) across Surrey also contribute to the recycling rate. Recent redevelopments and improvements to sites has seen performance rise to recycling at over 70%. The redevelopment programme continues with two further sites being developed in 2010/11.

By the end of 2010/11 most of the 11 Waste Collection Authorities (WCAs) will have commenced food waste collection, which makes a major contribution to increased recycling levels.

## Future progress

Current WCA action plans indicate that they can collectively achieve a recycling rate of 60% and SCC's CRC development plan projects a recycling rate of 70% by 2013. This would lead to an overall recycling rate of 63%, leaving a 7% 'innovation gap".

It is proposed that bridging this gap can be achieved through:

- Targeted behaviour change campaigns to encourage further recycling
- Additional improvements to collection systems
- Improvements to the bring bank network
- Additional reuse of furniture and white goods
- Further exclusion of illegal commercial waste from the municipal stream.

Indicative combinations of recycling rates necessary to achieve an overall 70% rate are for example WCAs at 64% and CRCs at 87%.

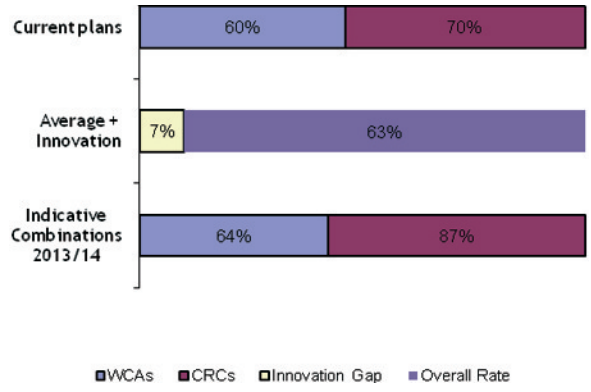



**Figure3.3.2 Indicative Breakdown of PerformanceRequired to Reach a 70% Recycling and Composting Rate by 2013/14**

A series of partnership projects are already underway to address the issues outlined above in order to bridge this innovation gap and achieve a 70% recycling rate by 2013.

**Action A18**
**We will commit significant efforts and resources to achieve or exceed overall household recycling and composting targets of 70% by 2013/14**

The 70% target is calculated from actions that the authority intend to

carry out, in conjunction with waste collection authorities through the Joint Municipal Waste Strategy, as set out in the World Class Waste Solution policy. This is a challenging target requiring the implementation of invest to save policies by Surrey CC and a review of collection methods and policies by many of the waste collection authorities, and a greater level of partnership working between all twelve authorities. A great deal of work is required to achieve our target and resources are currently focussed on meeting it.

Progress towards meeting the 2014 target, successes and difficulties met along the way, will influence the setting of longer term targets in the future. But at this stage, due to the speed of development and implementation of the strategy it is more appropriate to review the need for future targets as we approach 2014. Achievement of the 70% target in 2014 would put Surrey at the forefront of recycling achievement, and a further review will be essential in maintaining this position.

The waste prevention, publicity and recycling and composting measures described in this Strategy are designed to achieve very high targets, particularly when these are compared to the rate of 40.5% recycling and composting for Surrey achieved in 2008/09. The new targets meet those suggested in the regional waste strategy, and will remain the minimum targets of the partners, regardless of changing national goals. The partner Surrey authorities aspire to achieve a target of 70% recycling and composting by 2014, through the introduction and improvement of recycling and composting services, which would include kerbside collection schemes and bring sites.

The markets for materials are governed by the availability and location of reprocessing and treatment facilities. Most existing markets are out of county because of the current lack of reprocessing and treatment facilities within the county. Whilst it is the intention to develop new composting and bulking/ pre-processing facilities within the county some recyclable materials can only viably be reprocessed on a regional or national scale. This plan acknowledges the development of composting and bulking/ pre- processing facilities within the county to achieve net self-sufficiency. The SWP should also influence and support the development of appropriate regional/ national reprocessing facilities for recyclable materials.

**Action A20**
**We will collect a wide range of recyclable materials, consistent with the development of efficient and effective solutions considering collection, processing and materials value**

### District Collection Schemes

There are many ways to collect household waste.

The 11 authorities in Surrey regularly assess, consult and decide upon the most appropriate and best value collection options available to them. This results in a wide range of collection schemes being deployed by the authorities.

**Action A19**
**Borough and district partners to develop affordable kerbside and bring site collection schemes designed to achieve or exceed recycling and composting rates of 60% by 2013/14**

Table 3.4.1 shows the core frontline systems which the Collection Authorities deploy. Some of the systems are very similar in their operation or share some similarities, whether by using similar containers or by collecting similar materials. The collection systems will evolve over time as schemes are changed by the authorities in line with achieving diversion targets.

**Action A21**
**We will liaise with our partners before introducing or changing kerbside collection systems**

Research carried out by independent Consultants (as described further in Supplementary Report SR-4) has highlighted a variety of options for the future of collection schemes in Surrey.

This research identifies the materials which could be targeted by districts in order to achieve and exceed recycling, composting and reuse targets.

The research concludes that the probable optimum option for all Surrey Collection Authorities includes chargeable garden waste collections on a fortnightly basis and free food waste collections weekly. All authorities have now implemented chargeable garden waste collections. Five authorities have introduced weekly food waste collections with others at varying levels of considering implementing.

**Action A22**
**We will develop systems to collect both garden waste and food waste from householders by the year 2013**

Public consultation raised the desire for local authorities to collect a wider range of recyclable materials, particularly plastics. Improved collection of plastics may require significant operational changes to collection systems and work on market development.

The provision of alternate weekly collections (AWC) to replace weekly household residual collections is a measure which around 100 authorities in England are currently adopting including 8 out of the 11 authorities in Surrey.

Alternate weekly collections have been proved to encourage recycling and waste prevention at the kerbside. By restricting both the frequency and capacity of residual waste collections, recycling has been promoted as the core function of the kerbside collection service. This is a useful way to help achieve higher recycling levels and therefore meet statutory targets.

**We will continue to promote the use of alternate weekly collections and other suitable means to reduce household residual waste**

There are over 100,000 tonnes of food in Surrey's household waste. Biodegradable waste in landfill produces methane gas which is over 20 times more harmful to the environment than carbon dioxide.

The preferred method of dealing with food waste is to avoid its purchase, or to dispose of at home as discussed in section 3.2. However there will be a significant volume of food waste in any event

Evidence has shown that kerbside segregated food waste collections improve performance in three ways:

- Reduce the volume of waste by exposing the level of food wasted

- Divert food from landfill to recycling solutions
- Increase recycling of other products by reducing contamination and enabling complementary systems to be developed

Currently, five (out of eleven) WCAs have commenced food waste collection and three are in an advanced stage of consideration with three have the subject under consideration.

All WCAs who have commenced food waste collection are reporting recycling rates in the region of 53 to over 64%. All WCAs will need to be collecting food waste by 2013 for a 70% recycling rate to be achieved.

**Action A24**
**Wherever possible, we will seek to align collection arrangements. For example, with food waste collections that are being introduced.**

## Table 3.4.1 Summary of Surrey Collection Schemes (End of Year 2009/10)

| Authority Household Size? | Refuse Collection Tonnes pa? %? | Recycling Collection Tonnes pa? %? | What Collected? Banks? (Number) | Where to? | Food Waste | By Whom? Ends? |
|---|---|---|---|---|---|---|
| Elmbridge 54,124 | Fortnightly Bin 28,034 56 | Fortnightly Co-mingled 22,032 44 | Pa Ca Pl Gl Me Ga Te 6 | Grundon L'head | Split Body Dustcart | Veolia 2017 |
| Epsom & Ewell 29,983 | Fortnightly Bin 14,434 54 | Weekly Kerbside 12,304 46 | Ba Pa Ca Pl Te Gl Me Ga Ae Tet 10 | SWM L'head and Epsom | Pod Dustcart | In house ∞ |
| Guildford 55,602 | Fortnightly Bin 24,613 54.79 | Weekly Kerbside 20,306 45.21 | Ba Ae Pa Ca Pl Te Gl Me Ga Fo 39 | SWM Slyfield | Pod Kerbsider | In house ∞ |
| Mole Valley 36,529 | Fortnightly Bin 15,647 49.6 | Fortnightly Co-mingled 15,885 50.4 | Pa Ca Te Fo Tet 18 | Grundon L'head | Planned | Biffa 2016 |
| Reigate & Banstead 56,365 | Weekly Bin 30,099 62.6 | Weekly Kerbside 17,954 37.4 | Pa Ca Me Ga 40 | Earlswood Depot for bulking | Considering | In house ∞ |
| Runnymede 33,565 | Weekly Bin 20,736 75 | Weekly Kerbside 6,907 25 | Fo Pa Te Gl Me Ga 17 | Abitibi Depot Walton on Thames | 31 Jan 2011 | Refuse: In house ∞ Recycling: Abitibi Bowater End 2010 |
| Spelthorne 40,407 | Fortnightly Bin 21,341 66.5 | Fortnightly Co-mingled 10,731 33.5 | Pa Ca Pl Gl Me Ga 26 | Grundon Colnbrook | Considering | In house ∞ |
| Surrey Heath 34,800 | Fortnightly Bin 13,385 49.98 | Fortnightly Co-mingled 13,393 50.02 | Ae Fo Pa Ca Pl Te Gl Me Ga 43 | Camberley then Aldridge | Pod Dustcart | Biffa 2017 |
| Tandridge 34,713 | Weekly Back door bin 19,686 68.1 | Weekly Kerbside 9,239 31.9 | Pa Ca Pl Gl Me Ga 66 | Warren Lane Depot for bulking | Not planned | Biffa 10 2019 |
| Waverley 50,963 | Fortnightly Bin 23,402 62.6 | Fortnightly Kerbside 13,981 37.4 | Ae Pa Pl Gl Me Ga Tet Ca Fo Ba Te 25 | SWM Slyfield | Round one 6000 homes start 06/10 | Veolia 11 2012 |
| Woking 40,041 | Fortnightly Bin 17,849 55.15 | Fortnightly Co-mingled 14,515 44.85 | Pa Ca Pl Gl Te Me Fo Ba Ga 22 | Grundon L'head | Split Body Dustcart | Biffa 2017 |

Key Pa=Paper Ca=Card Pl=Plastic Bottles Gl=Glass Me=Metals Fo=Foil Ba=Batteries Ae=Aerosols Ga=Garden Te=Textiles Tet=Tetra Pak

In order for the Surrey authorities to target the most significant materials in the waste stream, it is recognised that studies will need to continue to be undertaken to identify the changing composition of the waste stream during the life of this Strategy. This will require monitoring of the residual waste stream, recycling stream including food waste and municipal wastes collected through the Community Recycling Centres.

**We will monitor waste arisings and composition in order to ensure continued service improvement**

### Additional Collection Services

All of the district councils in Surrey offer residents the facility to have bulky household waste items collected directly from their properties. However, collection methods differ between authorities as does the cost charged to the public. All districts require residents to pay for the collection of bulky household waste, with the amount and charging mechanism varying between authorities.

Some bulky items collected by the districts are currently recycled, but further investigation is required on a district-by-district basis to enhance opportunities for re-use or recycling (e g items such as furniture can often be recycled by appropriate organisations).

**We will investigate and support options for maximising the re-use and landfill diversion of bulky items**

Waste Electrical and Electronic Equipment (WEEE) recovery and recycling is being facilitated through the Community Recycling Centres.

### Recycling Facilities

The collection of dry-recyclable materials is recognised as a key contributor to landfill diversion in Surrey. Authorities will provide and continually improve the range of materials collected and the systems by which this is undertaken. In order for these materials to be processed, capacity is required which is large enough to satisfy the demands of this Strategy. The design and performance of these facilities will depend in part on the methods of collection and source segregation that WCAs plan to operate. The WDA is developing schemes to introduce bulking and pre-processing facilities at strategic locations, based at existing transfer stations across the county. The development of bulking and pre-processing facilities for recycling would have major carbon benefits which would derive from shorter journeys and waiting times. These benefits would assist in increasing recycling levels and avoiding the carbon cost of new manufacture.

**Action A29**
**The Waste Disposal Authority will continue to provide and develop appropriate facilities for bulking and baling dry recyclables**

### Composting Facilities

The collection of both garden and food waste is recognised as an important advancement in Surrey with authorities being required to collect these materials in order to achieve long-term recycling and landfill diversion targets.

Currently there are insufficient facilities in Surrey to treat all of the

collected green waste that is potentially available from the Districts, and there are no facilities which can accept food waste.

The WDA recognises the need for permanent composting and anaerobic digestion facilities, including those for the treatment of food waste, and is therefore committed to providing these. In the meantime, the WDA has provided interim arrangements for transporting garden and food waste to processing facilities outside Surrey. This interim solution is not sustainable and will only continue until facilities in Surrey have been developed. This supports Policy 1 in terms of net self-sufficiency in Surrey. The WDA is investigating opportunities for in county facilities for both food waste and garden waste processing.

Surrey County Council regards Anaerobic Digestion (AD) as the most appropriate technology for food waste. AD is an organic technology which breaks down food waste in the absence of oxygen to produce two by-products:

- A compost material which can be used on agricultural land
- A biogas which can be used to generate electricity or to power vehicles

A 40,000 tonne per year AD facility is proposed for Surrey at Charlton Lane, Shepperton, and composting facilities to treat 80,000 tonnes of green waste at other places still to be determined.

The co-location of facilities is preferred because of operational and environmental benefits. This will also assist in the reduction of traffic movements.

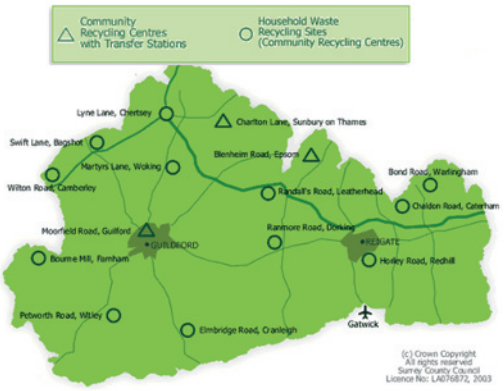
**Action A30 & A31**

- **The Waste Disposal Authority will provide and develop composting capacity for garden waste by 2013/14**
- **The Waste Disposal Authority will provide and develop compost and digester capacity for food waste by 2013/14 with preference for anaerobic digestion**

## Community Recycling Centres

Surrey County Council currently operates 15 Community Recycling Centres across the County.

In 2008/09, some 150,000 tonnes (or approximately 28%) of municipal waste was collected at Community Recycling Centres, with about 2.7 million visits made by the local community. About 53% of the material was recycled or composted. The performance of individual sites was variable, ranging between 18% and 63%. The best performing sites in the country achieved a rate in excess of 60%.




Progressive development of the sites and increased staffing levels from 2007 have seen recycling levels at the sites increase to 65% in Quarter 1 2009/10. Further improvements will

achieve a reuse, recycling and composting level in excess of 70% within four years by:

- Providing two new sites to replace limited facilities in Bagshot and Tandridge areas, and improving facilities at three existing sites (Witley, Woking, and Leatherhead)
- Preventing illegal trade use of CRCs by operating a Van Permit Scheme from early 2010
- Further improving recycling performance based on analysis of detailed recycling data systems, by targeting additional staffing at areas of comparatively low performance
- Extending opening hours where planning conditions permit to provide longer opening during summer periods when usage is highest. This will enable improved service to customers who will be assisted in segregating waste more effectively
- Collection of additional materials for recycling such as carpet and mattresses
- Improving capture of furniture for reuse by providing separate collection points

**The Waste Disposal Authority will improve the Community Recycling Centres provision, with the aim to achieve diversion rates of 70% by 2013/14**

## 3.5 Residual Waste Treatment

**Policy 5**
**We will adhere to the waste hierarchy, with residual waste treatment preferred to landfill. Recovery and disposal facilities will be delivered to ensure compliance with the Landfill Directive. We will restrict the use of landfill to 0% by 2013/14**

### The Need for Waste Treatment

An alternative approach to the management of municipal waste is needed in Surrey. This is being driven by sustainability and legislative requirements that seek to avoid waste being produced, encourage recycling and composting, treat the biodegradable fraction (under the Landfill Directive), and recover value from the waste stream prior to final landfill. The regional targets are to divert the majority of waste away from landfill. Restricting the use of landfill to only deal with less than 16% of arisings by 2025 will mean a massive shift from the 76% that was land filled in 2005.

Reduction in waste arising and increased recycling and composting rates will contribute to the diversion, however, alone, are unlikely to meet long term targets for diverting waste from landfill, and further treatment of the residual fraction will still be required. To meet longer term sustainability objectives will therefore require the introduction of new residual waste processing and treatment technologies into Surrey at one or a number of sites, and careful consideration of the transport impacts.

The sizing and role of any treatment technologies has to be carefully considered, to ensure that the partnership continues to focus on

achieving a 70% recycling, reuse and composting rate. This would mean that no more than 30% of waste arisings should be sent to a residual waste treatment. However, any failure to achieve 70% recycling and composting could lead to more waste being sent to landfill, representing a waste of natural resources and higher costs. By fixing the amount of residual waste treatment, any failure to achieve the recycling and composting targets would represent a waste of natural resources and higher costs. This underlines the need first to reduce the amount of waste created, and then dramatically improve the performance of the recycling and organic waste collection services and CRCs network.

### Original JMWMS Technology Review (2006)

The original supplementary report was produced to examine the relative performance of eight options to deal with residual waste, using a range of technical, sustainability and cost indicators (SR-5 Residual Waste Treatment). The options looked-at were:

- All residuals to landfill;
- Mechanical Biological Treatment to stabilise waste prior to landfill;
- Mechanical Biological Treatment to generate Secondary Recovered Fuel for third party facilities;
- Mechanical Biological Treatment to generate Secondary Recovered Fuel to take to a dedicated energy recovery facility;
- Anaerobic Digestion with gas capture and production of secondary Recovered Fuel to take to a dedicated energy recovery facility;
- Autoclave and production of Secondary Recovered Fuel to take to a dedicated energy recovery facility;
- Energy from Waste; and
- Advanced Thermal Treatment with some pre-sorting.

A short description of each technology is provided at Appendix C. In terms of the comparative environmental performance, the supplementary report confirms that those options that combine higher levels of recycling with further systems to meet and exceed the critical Landfill Directive targets, have a better overall impact than continuing to send all residual wastes to landfill. Options that continue to rely on landfill do not meet landfill diversion targets.

The model clearly illustrates that in spite of the uncertainties in predicting future waste management costs from 2010 until 2026, the costs will rise substantially over that period. This increase in cost will be driven mainly by the implementation of new treatment systems and the underlying growth in waste. The costs of doing nothing will be much higher however, and therefore investing now to change the way waste is managed will not only avoid damage to the environment, but also save money in the future.

The 2006 report stated that the relative performance of each of the remaining options may be subject to change in the future, as more information becomes available on newer technologies.

A subsequent analysis has now been carried out by the technology advisors to the WDA and outlined in the following section.

### The County Council Action Plan: World Class Waste Solutions, 2010

Surrey Waste Management holds a 25 year contract with Surrey County Council which commenced in September 1999.

In order to meet its recovery targets and move away from the reliance on landfill, SWM submitted planning applications to build two Energy from Waste (EfW) facilities in Surrey. Subsequently, a number of setbacks have occurred around the planning process. The most recent being a High Court decision in March 2009 to quash the planning approval for an EfW facility at Capel. There have also been increasingly difficult legal and financial issues relating to the delivery of EfW facilities within the remaining period of the existing Waste Disposal Project Agreement (WDPA), which expires in 2024.The County Council has decided to instruct SWM to withdraw the planning application for EfW at Trumps Farm and Capel.

Three factors have combined to present a major opportunity for the Council to address the imperatives for changes to the strategy for the management of residual waste:

- There has been a reduction in household waste nationally (5% in last year) but particularly in Surrey (10% in last year)
- There have been significant increases in recycling rates, –up 10% in last year with continuing increases projected. Recycling rates went up 5.6% between 2007/8 and 2008/9 (35.3% to 40.9%). These two factors and the new recycling and composting targets have resulted in the need for residual waste treatment to reduce from 270,000 tonnes to 160,000 tonnes
- New technologies have emerged which offer the prospect of lower cost and smaller scale operation

Throughout 2009 the County Council explored a number of solutions to treating the revised tonnage of residual waste and has sought approval from the Cabinet in February 2010 for the revised approach.

The new approach resulted from an options analysis that was carried out on all potentially deliverable options for residual waste treatment technologies and contractual delivery methods, using relevant advisors' input.

This exercise identified gasification technology, as the most beneficial overall solution, taking into account technology assessment legal risks and financial cost.

Mott MacDonald has provided an assessment of waste treatment technologies which concludes:

"EfW is still the proven technology for residual household waste, however there have been rapid developments in Advanced Thermal Treatment (ATT) (includes gasification) over the past three years which offer potential advantages of:

- Economic at lower capacities (and low visual impact)
- Recovery of energy eligible for Renewable Obligation Certificates (earning government grants)
- Immediate combustion of gases avoids production of noxious by-products

The new approach for management of Surrey's waste is to provide recycling, composting and residual waste treatment facilities within the county for the county to be net self-sufficient. The WDA will build upon its existing network of facilities and

provide new facilities to meet the waste management targets set out in this strategy. The WDA acknowledges that the development will be undertaken in a phased approach. Until the county achieves net self-sufficiency there will continue to be a need to export recyclables, organic and residual waste out of the County.

The WDA has identified a short term need (ie by 2013/14 or sooner) to provide 40,000tpa AD capacity for MSW food waste but a longer term need for AD in terms of timescale and quantity will be dependent upon the success of organic waste collection schemes in the County, organic waste reduction initiatives and commercial customer demands. This will be kept under review.

The WDA has identified a short term need (ie by 2013/14 or sooner) to provide 80,000 tpa IVC capacity for green waste. The longer term need for IVC in terms of timescale and quantity will be dependent upon the success of green waste collection schemes in the County, green waste reduction initiatives and commercial customer demands. This will be kept under review.

The WDA has identified a short term need (ie by 2013/14 or sooner) to provide 60,000 tpa capacity for residual waste but a longer term need to provide an additional 100,000 tpa capacity. The longer term need for residual waste treatment is based on a 70% recycling and composting target.

The WDA is investigating sites to develop the new facilities (which will be determined based upon the need at the time of review). These will be required countywide to provide a network of sites. Not all sites have been identified and this strategy annual report will report progress on this annually. The site that has been identified to date by the WDA is Charlton Lane, Shepperton. This is a major existing CRC, MRF and TS and plays a strategic role in managing waste from the northern parts of the county. It is available for redevelopment and can accommodate an AD, residual waste treatment facility whilst maintaining existing MRF and CRC capacity.

Before a waste facility can begin operations it will need both planning permission and an environmental permit. As part of this process, applicants must undertake a detailed Environmental Impact Assessment, test the suitability of the site and the technology, and also prove that they are using the 'Best Available Techniques', to prevent or reduce emissions, and to reduce the impact on the environment as a whole.

The expansion of the recycling and composting infrastructure and the facilities for treating residual waste will create employment opportunities in the County. Skilled workers will be required to build, operate and manage these facilities.

**Actions A33 & A34**

- **The Waste Disposal Authority will provide improved waste transfer stations and bulking facilities to reduce the haulage on transporting municipal waste. Safe, efficient and appropriate transportation is an important consideration**
- **Where there is no reasonable prospect that waste can be recycled or composted, the Waste Disposal Authority will develop new treatment facilities, including those to increase materials recovery and recover energy from waste; such as advanced thermal treatment for treating residual waste and anaerobic digestion with gas capture for food waste**

## 3.6 Landfill

The vast majority of existing waste management capacity in Surrey is at landfill sites. This reiterates the fact that most of Surrey's waste, be it household or industrial and commercial, currently goes to landfill for disposal.

Modern engineered landfill sites are designed to prevent pollution incidents and maximise capture of the gases emitted by decomposing waste.

Some years ago, landfill was generally the lowest cost option for waste disposal in the UK, but this is no longer the case. This disposal route is increasingly diminishing for a range of reasons:

- Legislative requirements for the diversion or pre-treatment of waste (e.g. targets for reducing biological municipal waste to landfill);

- Reduction in available void space as current rates of landfill outstrip rates at which additional void space receives planning permission; and

- Increasing costs due to reduction in void space, more onerous environmental standards for managing and restoring sites, and the landfill tax escalator.

The adopted *Surrey Waste Plan* (Surrey County Council, June 2009) indicated that there has been a shortfall in landfill void from 2007 onwards, with more residual waste being created than can be landfilled. At the time of publication the preparatory studies had been unable to identify preferred sites for possible new landfills. This shortage of landfill void is likely to add to the pressures to find alternative ways to deal with residual waste from both householders and local businesses.

The Landfill Tax is added onto the normal cost of landfill disposal, and is an incentive for councils and businesses to use more sustainable waste management techniques. Landfill tax rates will increase from £48 per tonne in 2010/11 to £72 per tonne in 2013/14, costing an extra £6m a year. In the long-term it will act to make landfill one of the most expensive options for managing our waste.

The cost of continuing to landfill waste, where current rates of disposal continue, is therefore unsustainable, not only from a legislative and environmental perspective, but also in terms of affordability.

## 3.7 Commercial Waste

It is in the interests of local authorities to reduce the amount of waste produced by businesses in their collection area as it is an element of the total material sent to landfill, even though this reduces the amount of commercial waste custom that may be realised by the authorities.

The Surrey Authorities recognise the benefit of investing time and resources in the reduction of commercial waste arisings through publicity and awareness campaigns, focused on local waste producers. Support is also required from national government which can have an influence, and ultimately impose mandatory restrictions, on commercial waste producers, especially national chains.

Of concern to local authorities is the illicit disposal of commercial waste in the domestic waste stream. This is a particular problem for authorities which collect commercial waste commingled with domestic waste, as

these streams are often hard to differentiate.

This domestically presented commercial waste can be reduced by stronger enforcement programmes, using the powers of the EPA 1990 and coordination with the Environmental Health departments of the authorities.

Awareness and publicity campaigning can also reduce this, as businesses are informed of the legality, and ultimate fines, for placing commercial waste in the domestic waste stream.

A composition study of commercial waste arisings conducted by Entec UK Ltd indicated that as much as 50% of businesses' waste for a large unitary authority could be recycled, with most of this being paper and cardboard. It would therefore appear to be beneficial to provide recycling services to commercial premises, charged at a rate to encourage recycling as an alternative to disposal.

Many businesses also dispose of equipment, furniture and other items whilst they are still usable or in a restorable condition, largely due to the purchase of new or more up to date equipment. Authorities could encourage re-use schemes from local businesses or even help to facilitate the setting up of re-use centres to divert items from the commercial waste collection system.

Local authorities recognise that they are not the only organisations able to create waste management facilities. The waste management industry and community sector organisations will also provide facilities and infrastructure and these organisations must be engaged with in delivering this Strategy.

In December 2009 the Government announced proposals to broaden the definition of municipal wastes to include much of the waste that is currently classified as commercial waste. This will mean that landfill diversion targets within the EU Directive will also apply to this type of waste. This will drive businesses to seek alternatives to landfill for their waste.

**Action A28**

- **We will investigate opportunities to recycle commercial waste collected by authorities, and to lobby the manufacturing/ retail sector and national Government, in particular to tackle the issue of retail packaging**

## 3.8 Other Municipal Wastes

The Surrey authorities are also responsible for the provision of other services which contribute to the total waste stream, including street sweeping and litter bins and collecting fly-tipped wastes and household clinical waste.

The provision of these services contributes a relatively low tonnage to the overall waste stream compared with other municipal wastes.

These services are constantly reviewed by the authorities to look at the feasibility of alternative treatment options.

Authorities across the UK, and some Surrey districts have implemented schemes for dealing with litter and litter bin waste in a more sustainable way. Schemes which could be adopted by the Surrey authorities include:

- The provision of specially designed litter bins for the segregation of recyclable materials;

- The extraction of recyclable materials from the co-mingled litter stream. The County Council holds composition study data for street sweepings and litter bin waste. This could be used to target specific materials in these waste streams; and

- Raising awareness among the public, specifically targeting litter bin waste.

Whilst contributing a relatively small component of the overall municipal waste stream, it is recognised that the diversion of these wastes could contribute to the overall performance of the Authorities.

### 3.9 Hazardous and Clinical Waste

Some of the Surrey authorities collect clinical waste from residents. Those authorities that provide clinical waste collection services undertake regular reviews both in terms of operation and cost, and make alterations as required. A major review of these established systems has therefore not been carried out for this Strategy.

The same is the case for those authorities which collect hazardous waste (generally at the Community Recycling Centres), where particular emphasis is placed on ensuring compliance with changing legislation.

# 4. Assessing the Strategy

## 4.1 Introduction

Sustainability Appraisal (SA) is a tool for appraising plans and policies to ensure they reflect sustainable development objectives (i.e. social, environmental and economic factors). The aim is to take account of the ways in which future waste development might affect the economy, environment and communities of Surrey.

The Sustainability Appraisal follows a series of stages in parallel with the preparation of the Surrey JMWMS.

A significant amount of work was carried out on the Sustainability Appraisal for the Surrey Waste Plan. This focuses on land-use issues. During this appraisal process this work was built upon, to avoid unnecessary duplication, and to integrate the Strategy with the Surrey Waste Plan.

In the future Surrey County Council may wish to adopt this revised Strategy as a Supplementary Planning Document within the Surrey Waste and Local Development Framework. It would then be an important (material) consideration in determining planning applications. In order for this to be a future option, the Sustainability Appraisal was carried out to fulfil a number of statutory requirements that require Sustainability Appraisals and Strategic Environmental Assessments for certain plans and programmes.

Two Sustainability Appraisal reports were produced by an independent consultancy, and are available on the web-site www.surreywaste.info.

- **Scoping Report:** The scoping stage includes setting the context and objectives, establishing the environmental, economic and social baseline and deciding on the scope of the appraisal. The information contained in the scoping report is used to inform the final Sustainability Report. It was sent to a range of people for consultation purposes to check its consistency with statutory requirements.

- **Sustainability Report:** This document reports on the detailed assessment of the likely significant effects of the JMWMS's emerging policies and alternative options. It also summarizes how the appraisal was undertaken and makes recommendations on mitigation and monitoring measures. It incorporates an Environmental Report as required by the European Directives.

## 4.2 Methodology

17 key Sustainability Objectives were selected to test how this strategy might affect the future sustainability of Surrey:

- O1: To safeguard the population's health;

- O2: To ensure equal access to services for all sections of the community in Surrey;

- O3: To reduce environmental crime, littering & fly tipping;

- O4: To increase the opportunities for the community to participate in and contribute to waste management decisions;

- O5: Making the best use of previously developed land and existing buildings; reducing land contamination and safeguarding soil quality and quantity;

- O6: To ensure air quality continues to improve;

- O7: Reducing emissions of greenhouse gases;

- O8: To conserve and enhance the biodiversity of Surrey;

- O9: To protect and, where appropriate, enhance local distinctiveness, the public realm and buildings and sites of historic interest;

- O10: To reduce road congestion and pollution levels by improving travel choice, and reducing the need for travel by car/lorry;

- O11: To reduce the global, social and environmental impact of consumption of resources by using sustainably and locally produced goods;

- O12: To reduce waste generation and disposal, and to achieve the sustainable management of waste;

- O13: To maintain and improve the quality of water resource management in Surrey and encourage sustainable water use;

- O14: To promote efficient use of energy and the use and generation of renewable energy;

- O15: To maintain sustainable levels of economic growth and a balanced and diverse economy;

- O16: To match jobs with the economically active workforce; and
- O17: To support facilities offering education, skills and lifelong learning in the community to meet local employment needs and encourage sustainable waste management.

The main policies and actions proposed in this Strategy (summarised in Appendix A), together with the eight options for residual waste treatment were then appraised against each objective in turn.

## 4.3 Results

The assessment of the JMWMS policies and actions shows that they perform reasonably well against the sustainability appraisal objectives. A number of 'no relationship' or 'uncertain' scores were identified due to the strategic nature of the policies and the fact that at this stage there is insufficient site or proposal specific information to merit a measurable score.

The policies remain substantially unchanged in this reviewed Strategy and therefore the review has not been subject to a repeat sustainability appraisal.

The detailed appraisal of the eight options for residual waste treatment (section 3.4, and report SR-5) has shown that all but one, the 'do nothing' landfill approach, display potential for meeting the key Landfill Directive targets up until 2026. The sustainability assessment indicated there is no clear preferred option. Separate technical and cost appraisals found wider differences.

The policies and actions brought forward to implement the JMWMS are not technology dependent, and the assessment did not assume any one choice of residual treatment.

No explicit long-term negative relationships were identified during the appraisal, and the policies (summarised in Table 4.3.1) clearly perform well against eight identified receptors, as shown in Table 4.3.2 (p34).

In the shorter term the continued use of landfill scored a negative score in terms of amenity impacts and transportation.

The SA has methodically assessed the policy impacts and given a number of recommendations towards ensuring more effective and sustainable outcomes. The SLGA has considered these and outlined its response, indicating where changes to this draft have been made.

The SA recommended changes which could be made to the content and wording of policies to make them more robust. These changes have either been made in this Strategy, or appropriate responses have been offered in the SA document.

Overall, it is considered that the JMWMS provides a robust framework from which to progress sustainable waste management within the County.

**Table 4.3.1 Key Strategic Policies**

| |
|---|
| **Policy 1** We will work in partnership with each other and other stakeholders in order to promote sustainable waste and resources management in Surrey, and support national and regional policies for carbon reduction and mitigation as well as net self-sufficiency |
| **Policy 2** We will work in partnership to develop and deliver a coordinated waste education and awareness programme, which focuses on all aspects of sustainable waste management, in line with the priorities of the waste hierarchy |
| **Policy 3** We will vigorously pursue the prevention of waste to achieve a continued reduction in residual waste, through common messages, lobbying retailers and enforcement activities |
| **Policy 4** We will commit significant efforts and resources to achieve and exceed household recycling and composting targets of 70% by 2013/14 |
| **Policy 5** We will adhere to the waste hierarchy, with residual waste treatment preferred to landfill. Recovery and disposal facilities will be delivered to ensure compliance with the Landfill Directive. We will restrict the use of landfill to 0% by 2013/14 |

**Table 4.3.2 Summary of Significant Policy Effects***

| |
|---|
| **Air** |
| The aim of self-sufficiency in Policy 1 will reduce the long term need for haulage of waste out of County, with resulting savings on vehicle emissions. Policies 2 and 3 are positive as they promote waste prevention, and with less waste to be disposed there will be a reduction in total emissions from waste management facilities. For Policy 5 the effect is dependent on the type of technology which will be selected for residual waste treatment and where it will be sited. This level of detail is not set out in the strategy. Effects on local air quality will, however, be mitigated through planning and environmental controls. |
| **Landscape and Soil** |
| The majority of the policies within the JMWMS have little relationship with the objectives relating to landscape and soil.<br>Policy 4 could have a local benefit on soil quality through the promotion of composting; this would also reduce the requirement for peat. The effects of all types of facilities from the implementation of policies 4 and 5 on the local landscape will need to be carefully considered as part of any planning applications. |
| **Biodiversity (Fauna and Flora)** |

Biodiversity can be affected by building on sensitive sites or increased road usage. From Policies 1, 3 and 4 it is clear that there is a need for more recycling, composting and treatment facilities in Surrey to manage its own waste arisings. However for Policy 5 the effects will be dependent on the location of new waste treatment facilities. This is not specified in the strategy: however it will be addressed through the Surrey Waste Plan. In addition these issues will need to be addressed in the Environmental Statement that is required for all major developments.

**Climatic factors**

Policy 1 promotes sustainable waste management, which seeks to reduce the reliance on landfill and therefore a reduction in greenhouse gas production. Policies 2, 3 and 4 will have a positive effect on climate factors as they encourage reduction, recycling and composting. This will result in less waste being sent to landfill and a reduced energy effect from producing and transporting virgin materials. Their effects relating to Policy 5 are uncertain as this is dependent on the type of technology, which will be used in the treatment of waste. If processes that would allow energy to be recovered in the form of electricity and/or heat were to be implemented, this would offset the need for fossil-fuel power stations, a major greenhouse gas producer.

**Cultural heritage including architectural and archaeological heritage**

Effects on cultural heritage were appraised to be uncertain in policies 1, 4 and 5. The move towards self-sufficiency will require new waste facilities for Surrey to become self-sufficient, but the effects on cultural heritage are dependent on the location of new waste treatment facilities. Construction on previously developed land (brown field sites) generally reduces the chances of disturbing cultural heritage. Any significant effects would be mitigated through planning controls.

**Human health**

The health benefits of policies 1, 2 and 3 are similar as for air issues, with less waste requiring transport and management and therefore less amenity impacts. In relation to Policy 5 potential odour, dust and noise effects are dependent on what type of technology will be selected for the treatment of waste and where such a facility will be located. This level of detail is not specified in the strategy. However any significant health effects would need to be mitigated through planning and environmental permitting controls.

**Material assets**

Material assets cover a wide range of provisions including natural resources and also features of the built environment. Effects on the built environment have already been assessed against the ‘cultural heritage’ objective which shows that the effects are uncertain for policies 1, 4 and 5. Waste reduction, recycling and composting will reduce the demand for raw materials, and save on natural resources. None of the policies have any clear relationship with the objective relating to water resources, although facilities will need to show how they re-use process water and prevent pollution instances.

**Population**

Population covers a wide range of effects on people. This includes effects on the natural and built environment and health. Issues of health and the natural and built environment are summarised above and are not considered here again. Policies 2 and 3 have a positive effect on providing equal access to services for all sections of the community as they are underpinned by actions to expand collection services and common and coordinated campaigns. Whether partnership working in Policy 1 will enable improved and equal access to services will largely depend on how the actions are carried out, and these factors need to be regularly considered.

**Economy**

The effect of Policy 1 is positive, as the emphasis placed on partnership working between local authorities and with the private sector and community should encourage the development of the local economy. By encouraging waste prevention and education initiatives Policies 4 and 5 should have a positive effect on opportunities for employment. Policy 4 has a positive effect on the economy through the promotion of recycling and composting and therefore the opportunities for new facilities, new technology developments and developing markets for recycled materials. The effect of Policy 5 is will depend on the nature of the residual treatment facilities selected.

*** List of receptors derived from the European SEA Directive Annex 1 (f)**

# 5. The Way Forward

## 5.1 Ongoing Review and Monitoring

This Strategy covers the period up to 2026, and it is certain that there will be changes which mean it has to be regularly updated.

Government guidance indicates that this Strategy should be fully reviewed at least every five years. We will also review the Strategy at other times, for example if there are major changes in local government structures or important new legislation is published. More recent guidance in relation to the EU Waste Directive recommends a 6-yearly revision with an interim review. This could be regarded as the first interim review being conducted some 3 years after the adoption of the strategy

It is also important that we report on progress made and obstacles encountered in implementing this Strategy. We will therefore publish an annual report, which will include a plan of action for the year ahead.

As part of the delivery of this Strategy we are also committed to looking at partnership working, as outlined in Chapter 3. This will mean that each partner is clear about their role in implementing this Strategy, and the timetables for when actions need to be completed.

**Actions A6 & A7**

- **We will compile and review an annual report on progress made and obstacles encountered, and publish a plan of action for the year ahead**
- **The Strategy will be reviewed in the light of any future local government re-organisation**

## 5.2 Summary Policies and Actions

The policies and actions proposed in this Strategy are all summarised in Appendix A.

These seek to address the key challenges facing Surrey over the next 20 years, and will lead to significant changes in the way our municipal waste is managed.

## 5.3 Action Plans

This Strategy adopts a more flexible 'action plan' approach to municipal wastes management. These are intended to set out the more detailed operational plans for improving performance towards the targets set by this Strategy.

The current Action Plans for your specific council, and the County as a whole, can be found on www.surreywaste.info or www.surreywastepartnership.org.uk. A number of new Action Plans will be developed over the coming years in order to implement the various policies and actions set out in this Strategy. These will include interim performance indicators and risk assessments as appropriate.

Each Action Plan will be updated regularly so that it is an active document. A corrections list is incorporated into each document to enable each partner to list their ongoing alterations to each plan.

## 5.4 Further information

A number of supplementary reports were produced for the 2006 strategy which provide more detailed information on particular options and issues. These reports are listed below and are available from the website www.surreywaste.info or www.surreywastepartnership.org.uk.

**2006 Supplementary Reports:**

**SR-1 Waste Growth:** This presents professional opinion of Entec on the possible future growth rates for municipal waste in the County of Surrey.

**SR-2 Legislation and Policy Overview**: This provides an overview of the current and proposed legislation that governs the waste management industry in the UK and may influence future strategic waste management decisions in the County of Surrey.

**SR-3 Waste Minimisation and Awareness:** This summarises the factors that influence waste minimisation in the UK. It discusses a variety of waste minimisation and awareness initiatives that could be used to increase public waste awareness and reduce municipal waste arisings in the County of Surrey.

**SR-4 Municipal Waste Collection:** This provides an introduction to the systems and methods which can be used to collect municipal waste.

**Modelling WCA Collection Systems Costs, Performance and Outputs:** This is research undertaken by Eunomia, and discussed further in SR-4.

**SR-5 Residual Waste Treatment:** This presents the results of the identification and assessment of eight options that could be used to treat future municipal residual waste arisings in the County of Surrey.

**SR-6 Waste Collection Authorities' Action Plans:** This presents the Waste Action Plan for each Waste Collection Authority in Surrey (the District and Borough Councils). It sets out their specific approaches to waste collection during the next few years.

**SR-7 Waste Disposal Authority Action Plan:** This presents the Action Plan for the County Council as Waste Disposal Authority. It sets out their specific approach to promoting waste minimisation, supporting the waste collection authorities, upgrading the CRCs, and developing new waste treatment facilities.

**SR-8 Consultation Report:** This records the public consultation process held in July 2006.

There are many other sources of information about waste and resources management. These range from very technical reports through to packs aimed at primary schools.

**SR-9 Technology assessment updated 2009:** Assessment by Mott MacDonald

Various contact details for other organisations are available on the website (**www.surreywaste.info**), or by contacting the SLGA using the details at the front of this document. The SLGA does not necessarily endorse all the views expressed by other parties.

# Appendix A
# Joint Municipal Waste Management Strategy - Policies and Actions

| **Overall Vision** |
|---|
| The vision is to provide Surrey with a forward-looking strategy for a more sustainable future<br><br>The vision is for a County in which resources are used and managed efficiently so that by 2026:<br><br>• the amount of waste produced will continue to be reduced or reused<br><br>• materials reused, recycled or composted will exceed 70%<br><br>• the environment will be protected and enhanced for future generations |

**Policy Actions (Numbers are for reference only)**

| | |
|---|---|
| **Policy 1**<br>We will work in partnership with each other and other stakeholders to promote sustainable waste and resources management in Surrey, and support national and regional policies for carbon reduction and mitigation as well as net self-sufficiency | A1 We will plan for net self-sufficiency for dealing with waste in Surrey, through the provision of waste management capacity equivalent to the amount of municipal waste arisings |
| | A2 We will identify mechanisms for the implementation and monitoring of the Joint Municipal Waste Management Strategy |
| | A3 We will develop mechanisms and opportunities for joint working between the authorities |
| | A4 We will seek partnerships with the community and waste industry |
| | A5 We will seek joint opportunities for external funding to implement the objectives of the Joint Municipal Waste Management Strategy, and review financial arrangement among the partners |
| | A6 We will compile and review an annual report on progress made and obstacles encountered, and publish Policy Actions (Numbers are for reference only) a plan of action for the year ahead |
| | A7 The Strategy will be reviewed in the light of any future local government re-organisation |

| | |
|---|---|
| **Policy 2**<br>We will work in partnership to develop and deliver a coordinated waste education and awareness programme, which focuses on all aspects of sustainable waste management, in line with the priorities of the waste hierarchy | A8 We will work towards promoting our waste related activities under an overarching message/logo, and participate in relevant national campaigns |
| | A9 We will have a coordinated action plan both to reduce waste and to educate children in waste prevention, collection and treatment issues and help schools deliver coordinated education campaigns |
| | A10 We will demonstrate our commitment to resources management by our corporate actions and procurement processes, in particular the use of sustainable and environmental products and materials |
| **Policy 3**<br>We will vigorously pursue the prevention of waste to achieve continued reduction in waste arisings, through common public messages, lobbying retailers and enforcement activities | A11 We recognise waste prevention as the first stage of the waste hierarchy and will emphasise the need to reduce waste at source both domestically and commercially |
| | A12 We will seek to decouple waste volumes from economic activity, and aim to reduce waste arisings by at least 30,000 tonnes by 2013/14 |
| | A13 We will coordinate with appropriate authorities to enforce the exclusion of commercial waste from the household waste stream, and champion the principle that "the polluter should pay" in relation to creating and managing waste. At the same time we will support the prevention and recycling of commercial waste |
| | A14 We will lobby the manufacturing industry/ retail sector and Government to tackle the issue of retail packaging waste |
| | A15 We will support and encourage reuse events and centres to enable goods and materials to be re-used, repaired and exchanged |
| | A16 We will strengthen partnerships with community and volunteer groups that support waste prevention and reuse |
| | A17 We will continue to promote home composting or digesting as well as kerbside organic collections |

| | |
|---|---|
| **Policy 4**<br>We will commit significant efforts and resources to achieve an aspirational household recycling and composting targets of 70% by 2013/14 | A18 We will commit significant efforts and resources to achieve or exceed overall household recycling and composting targets of 70% by 2013/14 |
| | A19 Borough and district partners to develop affordable kerbside and bring site collection schemes designed to achieve or exceed recycling and composting rates of 60% by 2013/14 |
| | A20 We will collect a wide range of recyclable materials, consistent with the development of efficient and effective solutions considering collection, processing and materials value |
| | A21 We will liaise with our partners before introducing or changing kerbside collection systems |
| | A22 We will develop systems to collect both garden waste and food waste from householders by the year 2013 |
| | A23 We will continue to promote the use of alternate weekly collections and other suitable means to reduce household residual waste |
| | A24 Wherever possible, we will seek to align collection arrangements. For example, with food waste collections that are being introduced |
| | A25We will investigate opportunities to recycle commercial waste collected by authorities |
| | A26 We will monitor waste arisings and composition in order to ensure continued service improvement |
| | A27 We will investigate and support options for maximising the re-use and landfill diversion of bulky items |
| | A28 We will investigate opportunities to recycle commercial waste collected by authorities, and to lobby the manufacturing/retail sector and national Government, in particular to tackle the issue of retail packaging |
| | A29 The Waste Disposal Authority will continue to provide and develop appropriate facilities for bulking and baling of dry recyclables |
| | A30 The Waste Disposal Authority will continue to provide and develop composting capacity for garden waste by 2013/14 |
| | A31 The Waste Disposal Authority will continue to provide and develop compost and digester capacity for food waste 2013/14 with preference for anaerobic digestion |
| | A32 The Waste Disposal Authority will improve the Community Recycling Centre provision with the aim to achieve diversion rates of at least 70% by 2013/14 |

| | |
|---|---|
| **Policy 5**<br>We will adhere to the waste hierarchy, with residual waste treatment preferred to landfill. Recovery and disposal facilities will be delivered to ensure compliance with the Landfill Directive. We will restrict the use of landfill to 0% by 2013 | A33 The Waste Disposal Authority will provide improved waste transfer stations and bulking facilities to reduce the haulage on transporting municipal waste. Safe, efficient and appropriate transportation is an important consideration<br><br>A34 Where there is no reasonable prospect that waste can be recycled or composted, the Waste Disposal Authority will develop new treatment facilities, including those to increase materials recovery and recover energy from waste; such as advanced thermal treatment for treating residual waste and anaerobic digestion with gas capture for food waste |

# Appendix B
# Glossary of Terms

**Anaerobic Digestion**
Anaerobic Digestion systems use natural processes to break down food wastes in the absence of oxygen to produce methane gas, which can be used as a fuel for the production of electricity.

**Biodegradable Waste**
This is waste that is able to decompose through the action of bacteria or other microbes, including materials such as paper, food waste and garden waste.

**Bring site**
A bring site or bring bank is a localised collection point for recyclables such as glass, paper, cans, etc.

**Bulky waste**
Waste is considered 'bulky' if it weighs more than 25kg or any item that does not fit into the householder's bin; or if no container is provided, a cylindrical receptacle of 750mm in diameter and 1m high.

**Central composting**
Large-scale schemes which turn food and garden waste from households into compost and which may also accept green park waste.

**Community Recycling Centres (CRC)**
Sites operated by either the Waste Disposal Authority (under the Environmental Protection Act 1990) or the local waste authority (under the Refuse Disposal (Amenity) Act 1978) where residents within a specified area can dispose of their household waste, in particularly bulky waste, free of charge.

**Clinical waste**
Clinical waste is generated by medical, nursing, dental, veterinary, pharmaceutical, premises and may present a risk of infection.

**Commercial waste**
Commercial waste arises from premises used for trade, business, sport, recreation or entertainment, but excluding municipal and industrial waste.

**Composting**
The degradation of organic wastes in the presence of oxygen to produce a fertiliser or soil conditioner. This can either be an enclosed process (in-vessel) or operated as an 'open windrow' process.

**Dry recyclables**
Materials such as paper, textiles and cans that can be collected through kerbside schemes or bring banks.

**The Environment Agency (England and Wales)**
The Environment Agency for England was formed by the Environment Act 1995 to regulate emissions of and pollutants to air, land and water. The Agency's main role in the management of waste is through its regulatory activities to protect the environment and human health.

**Fly-tipping**
The illegal deposit of waste on land.

**Gasification**
Gasification is the process whereby carbon based wastes are heated in the presence of air or steam to produce a solid, low in carbon and a gas. The technology is based on the reforming process that used to produce 'town gas' from coal in the early 1900s.

**Green waste**
Vegetation and plant waste from household gardens and public parks and gardens.

**Hazardous waste**
Defined in the Landfill Regulations as any waste defined in Article 1 (4) of Directive 91/689/EEC on hazardous waste.

**Household waste**
Waste from domestic properties including waste from CRCs, material collected for recycling and composting, plus waste from educational establishments, nursing and residential homes and street cleansing waste.

**Incineration**
This is the controlled burning of waste, either to reduce its volume or its toxicity, whose current emission standards are very high. Ash residues can either be recycled or land filled.

**Kerbside collection**
Any regular collection of recyclables from private households and from commercial or industrial premises. It excludes collection services requested on demand.

**Landfill sites**
Landfills are areas of land in which waste is deposited, which often consist of disused quarries. In areas where there are limited, or no ready-made voids, the waste is deposited above ground and the landscape is contoured. This is known as land raising.

**Material Reclamation Facility (MRF)**
A transfer station for the storage and segregation of recyclable materials. Also sometimes known as a Materials Recycling Facility or Materials Recovery Facility.

**Minimisation (prevention or reduction)**
Minimisation can be accomplished through reviewing the production processes so as to optimise utilisation of raw (and secondary) materials and recirculation processes. This may lower disposal costs and the usage for raw materials and energy. Also householders can reduce waste by reusing products and buying goods with reduced packaging.

**Municipal waste**
This includes all waste under the control of local authorities or agents acting on their behalf. It includes all household waste, street litter, waste delivered to council recycling points, municipal parks and garden wastes, council office waste, civic amenity site waste, and some commercial waste from shops and smaller trading estates where local authority waste collection agreements are in place.

**National Indicators (NIs)**
Effective from 1 April 2008, the NI is the only set of indicators on which central government will performance manage local government. It covers services delivered by local authorities alone and in partnership with other organisations.

**Polluter Pays**
Polluter Pays is about producers and others involved in the distribution and sale of goods taking greater responsibility for recovery of those goods at the end of the product's life.

**Proximity Principle**
Dealing with waste as near as practicable to its place of production.

**Putrescible**
Organic material with a tendency to decay, e.g. food waste.

**Pyrolysis**
During Pyrolysis organic waste is heated in the absence of air to produce a mixture of gaseous and/or liquid fuels and a solid, inert residue (mainly carbon).

**Recycling**
Recycling involves the reprocessing of waste material, either into the same

product or a different one. Many nonhazardous wastes such as paper, glass, cardboard, plastics and scrap metals can be recycled.

**Recovery**
Recovery is defined in Waste Strategy 2000 (see SR-2) as meaning obtaining value from waste through re-use; recycling; composting; other means of material recovery (such as anaerobic digestion); or energy recovery.

**Reduction** See 'minimisation'.

**Renewables Obligation Order Certificates (ROCs)**
These are certificates issued when electricity is generated from renewable sources. Under the Renewables Obligation Order Certificates (ROCs) 2002, only plants that generate electricity from biomass will be eligible although the biomass may be waste.

**Re-use**
The commercial sector can re-use products a number of times, such as re-usable packaging. Householders can buy refillable containers, or re-use plastic bags. Re-use contributes to sustainable development and can save raw materials, energy and transport costs.

**Separate collection**
Kerbside schemes where recyclables are collected separately to the ordinary household waste collection by a different vehicle/part of the vehicle or at a different time.

**Sustainable development**
Development which meets the needs of the present without compromising the ability of future generations to meet their own needs. Sustainable development, as defined by UK Government [Defra. Securing the Future: delivering UK sustainable development strategy, March 2005], is the integration of social, economic and environmental objectives.

**Sustainable waste management**
Using material resources efficiently, to cut down on the amount of waste we produce. Where waste is generated, dealing with it in a way that actively contributes to the economic, social and environmental goals of sustainable development.

**Treatment**
This involves the chemical or biological processing of certain types of waste to render them harmless, to reduce their volume before landfilling, or to recycle certain materials.

**Unitary Authority**
A local authority which has the responsibilities of both the Waste Collection and Waste Disposal Authorities.

**Waste arisings**
This is the amount of waste produced in a given area during a given period of time.

**Waste Hierarchy**
The Waste Hierarchy, introduced by the EU Waste Framework Directive, is an abstract framework that prioritises the options for waste management. It represents a sliding scale starting with the most sustainable option (reduction) and ending with the least sustainable option(disposal):

- reduction;
- re-use;
- recovery (i.e. recycling, composting and energy recovery); and
- disposal.

**Waste management industry**
This comprises businesses and not-for-profit organisations carrying out the collection, treatment and disposal of waste.

# Appendix C Residual Waste Treatment Technologies

**Mechanical Biological Treatment (MBT)** is a general term for treatment systems consisting of a mechanical sorting system with an adjacent biological treatment facility. Systems can vary in terms of the degree of mechanical sorting and the type of biological process applied. Consequently the materials sorted from the waste and the end products of the process can vary depending on the separation process employed. MBT is predominantly a volume- reducing process recovering recyclable materials from municipal waste and biologically treating the biodegradable component of the waste. Biological processes in use can be aerobic (composting or drying) or anaerobic (digestion) and produce a variety of end-products including stabilised biodegradable material, Secondary Recovered Fuel (SRF) - also termed Refuse Derived Fuel, as well as some recyclable materials.

**Mechanical Biological Treatment Example**: Several local authority contracts have been awarded for treatment options which include Mechanical Biological Treatment (MBT). Shanks operate an MBT plant in East London, using technology from Sistema Ecodeco, an Italian company. The majority of operational MBT plants are located in Europe and North America.

**Autoclaving**
Autoclaving (AC) is the process of sterilisation via a pressurised, high temperature steam process. It is sometimes called Mechanical Heat Treatment (MHT).

This helps sanitise and reduce residual MSW to a 'fibre' like material, with metals, plastics and glass partially cleaned for extraction as recyclables, but may melt some plastics making these more difficult to recycle. It is understood that a number of development projects and joint ventures are being created to generate useful markets for the fibre. At the moment the main expected use is as a Secondary Recovered Fuel (SRF). Typically, therefore AC in combination with mechanical treatment provides similar outputs to Mechanical Biological Treatment (MBT) processes.

**Examples**: Sterecycle currently operate a 100,000 tonne per year facility in Rotherham and has planning consent for a 200,000 tonne per year facility with combined heat and power plant in Cardiff.

**Energy from Waste via incineration**
Energy from Waste (EfW) via incineration is commonly taken to mean the processing of MSW by means of conventional combustion with no or minimal pre-processing of the residual waste stream, although is used for a range of technologies.

A number of different types of furnace are possible – the three principal types being grate-based combustion, kilns and fluidised beds. These processes convert about 25% of the input mass into a bottom ash
and 3% of the input mass into Air Pollution Control residues (APC), with some added treatment agents. The bottom ash from EfW via incineration is usually suitable for construction uses, with most new facilities having dedicated processing plants. If there are no markets then it has to be sent to landfill as an inert waste. The APC stream needs to be treated (often solidified) and is sent to hazardous landfill.

**Example**: There are numerous EfW via incineration facilities around the country, including many commissioned in recent years, or under construction (e.g. Colnbrook, Portsmouth, Isle of Man, Cleveland, Chineham in Hampshire). A rotating kiln incinerator was opened in 2005 in north Lincolnshire and processes 80,000tpa of municipal waste.

A fluidised bed facility of approximately 500,000tpa is operational at Allington in Kent and is currently being used for about 100,000 tonnes per year of Surrey's waste.

**Advanced Thermal Treatment**
Advanced Thermal Treatment (ATT) describes those technologies in which the various sub-processes that occur within conventional combustion are separated spatially, often with the intent of achieving a greater degree of control of the overall combustion process.

Use of advanced thermal treatments generally requires the pre-treatment of "raw MSW" into a more homogenous feedstock. This will generally require the removal of over-size items, removal of incombustible material and size reduction to an appropriate size for the particular technology.

Pyrolysis produces a char (solid residue) rich waste material which represents at least 40% by weight of the incoming waste stream and either has to be combusted in another process or sent to landfill.
Certain pyrolysis and gasification processes have been developed to produce a vitrified residue which is said to have a wider range of possible applications than bottom ash.

Gasification converts the bulk of the waste's carbon-containing material into gases by heating it in the controlled presence of oxygen. The products from this process form low to medium heating value fuel gases together with tars, char and ash. These products are ultimately dependent on the type of reactor as well as the waste, but most systems produce a raw gas suitable for direct firing in kilns or boilers.

Some suppliers of advanced thermal technologies promote the concept that they can extract the gasifier product gas and use it as a feedstock for processes producing materials such as hydrogen, methanol or ammonia. Whilst this is commonplace in the petro-chemical industry where the feedstock (crude oil) is homogenous, it is not yet a proven concept on waste pyrolysis-gasification processes.

In recent years technology has emerged that does not require pre treatment of waste. An example of this is a Batch Oxidation System Technology - the 'Planet Advantage' system operated by Ascot Environmental. In this technology, waste is placed in sealed gasification chambers and combusted under conditions where the oxygen supply is restricted, resulting in incomplete combustion. A gas is given off which is called synthesis gas (Syngas). The Syngas is then combusted in a secondary combustion chamber. Heat is generated which is carried by the exhaust gas through a boiler, where steam is generated. The steam is used to drive a turbine, which in turn drives a generator allowing production and export of electricity.

**Example**: Ascot Environmental has developed a batch oxidation gasifier in Dumfries, Scotland. This uses 'Planet Advantage' technology and has a capacity of 40,000 tonne per year. It is suitable for the treatment of raw unprocessed municipal waste.

Energos have constructed a 30,000 tonne per annum gasification plant on the Isle of Wight under Defra's new technology demonstrator programme. The plant uses technology developed in Norway. The company has several plants operating in other parts of Europe and is planning to develop further plants in the UK.

# Appendix D Technologies proposed by the Waste Disposal Authority

**Anaerobic Digestion**

The anaerobic digestion facility is designed to treat 40,000 tonnes per annum of food waste. The facility can be separated into five general areas; reception, separation, anaerobic digestion, liquor treatment, biogas handling and odour control. This section provides an overview of the five areas and reviews issues related to the control of emissions to the environment.

**1 Waste Reception Area**

Waste will be brought to site by a variety of vehicles which, will be weighed, logged and dispatched to the Biowaste reception area. Access will be via fast acting doors to contain the reception area. Air will be extracted from the reception area by forced ventilation to draw all odours generated through the odour control system and discharge the treated air to atmosphere.

The reception hall is designed to hold 1 days worth of organic material. This will also allow compliance with state veterinary requirements for Animal By-Products Category 3 material.

The reception area is partitioned from the separation area by a physical wall separating the 'dirty' (reception hall) and 'clean' (processing hall) areas for animal by- products. In addition this partitioning allows general odour extraction from the waste reception at a rate of 2-3 air changes per hour for improved odour control.

**2 Waste separation area**

The waste separation area contains the process equipment designed to separate organic material, (for anaerobic digestion) from unwanted packaging and contamination. Packaging and contaminants will be screened out and discharged to skips where they can be transported for further processing at another facility.

**3 Anaerobic digestion plant**

The anaerobic digesters convert organic material to biogas (methane and carbon dioxide) by the fermentation of organic material in the absence of oxygen. The minimum retention time of the digester is approximately 20 days and biogas is collected within the roof space, which is connected to the biogas system

The combined heat and power units are generators converting biogas into heat and power. Electricity is generated from the combustion of biogas with air and heat is recovered from the cooling jacket, oil lubrication system and flue gas.

Electricity from the CHP engines will be exported to the national grid whilst the heat from the process will be used within the anaerobic digestion plant to run the pasteurisation process.

**4 Liquor Treatment Plant**

The anaerobic digestion process converts organics to methane and carbon dioxide, but in the process will also convert nitrogen to ammonia. This ammonia will report to the dewatered liquor from the centrifuge and will require treatment prior to discharge from the site.

**5 Biogas System**

The biogas holder is a double membrane system and has 2 primary functions. Firstly the gasholder is a safety device acting as a volume buffer to the digester and hydrolysis tank. When liquid is pumped out of one of the tanks the gasholder provides biogas to replace the lost volume, hence maintaining system pressure. Similarly when biogas is produced within the digester the gasholder acts as a storage volume preventing an increase in gas pressure.

Secondly the gasholder acts as a buffer for biogas production and use. The combined heat and power plant uses biogas at a fixed rate (approximately 483$m^3$/hr), whereas biogas production may vary slightly above and below this figure. The gasholder acts as a buffer to allow the CHP to operate at a constant rate with varying gas production.

**Odour Control System**

Air extracted from the reception hall and processing hall by duty / standby extraction fans is pressurised before being passed through the bio filter vertically downwards and then discharged via a stack of 15m in height

**Gasification (using Batch Oxidation System technology)**

1 **Introduction**

Ascot Gasification process is designed to thermally treat waste and recover energy that would otherwise be lost to landfill.

The facility will receive up to 60,000 tonnes per annum of residual household waste

This material will be processed in Primary Gasification Chambers (PGCs), using a batch gasification process to produce a synthetic gas (syngas). This syngas is used to produce electricity through combustion in a secondary chamber and a steam generating boiler feeding a steam turbine.

The 60,000 tonne per annum facility will have three lines. Each line will comprise four batch PGCs, which are sequenced to feed a single Secondary Combustion Chamber (SCC) continuously. The exhausts from each SCC will be fed through a Waste Heat Boiler (WHB) which supplies the Steam Turbine System (STS) which then generates electricity. After the WHBs the flue gases pass through the Flue Gas Cleaning Plant (FGCP) and are emitted to atmosphere through a chimney with three internal ducts.

**2 The Gasification Process**

The following section outlines the processes used to generate energy from the waste input through gasification.

**2.1 PRIMARY GASIFICATION CHAMBER**

The gasification stage of the process occurs in the PGC, where the waste is thermally decomposed in an oxygen deficient atmosphere to produce a syngas. The syngas generated in the PGC flows through a nozzle and duct work to the SCC.

Each PGC comprises a refractory lined carbon steel box and includes the following:

- One top waste loading door;
- One front ash discharge door;
- One rear ash discharge door;
- Fans at the top and bottom of the PGC which are used to control the gasification of the waste.
- Gas oil ignition burners at the top of each chamber which are used to ignite the waste at the beginning of each sequence.

During its operation, each PGC goes through six distinct phases of operation. These are:

**Waste Loading Phase**

Waste is loaded into the PGC through the top loading door by a telehandler with a special loading bucket. The telehandler operator loads the PCG by:

- Selecting from the available waste types and ensure that the waste streams are mixed as far as is reasonably practical (e.g. blending of waste with low calorific values to minimise supplementary fuel requirements).
- Adding ‘heavy’ waste on top of lighter waste material to prevent damage to the PGC refractory base and improve filling of the chamber.

The top loading door is then closed in preparation for the Ignition and Gasification Phases of the process.

**Ignition Phase**

On commencement of the Ignition Phase of the process, the valve controlling the connection to the SCC

is opened, and air is blown through the bottom of the chamber.

The gas oil ignition burners are then started. The flame of the burners ignites the waste and run until the temperature of the discharge gas from the PGC reaches 200°C, which takes approximately 15 minutes. At this point the burners are shut down and the gasification process should have become self-sustaining. The temperature of the discharge gas continues to be monitored. If the temperature is in excess of 150°C at the end of the Ignition Phase (approximately 30 minutes) the PGC enters the Gasification Phase. If the temperature of the discharge gas is less than 150°C the Ignition Phase is repeated.

**Gasification Phase**

In the Gasification Phase, the waste in the PGC is thermally decomposed in an oxygen deficient atmosphere to produce a syngas gas. This decomposition begins at the top of the chamber in the material heated by the gas oil burners, and moves downwards through the waste as the Gasification Phase progresses.

The suction in the SCC pulls the syngas from the PGC into the SCC. The level of oxygen in the PGC is controlled automatically through varying the flow of air through the bottom of the chamber.

During the Gasification Phase the flow of air through the PGC is gradually increased, with a corresponding increase in temperature. When the temperature reaches 850°C, the Gasification Phase is complete and the PGC enters the Residual Carbon Reduction Phase.

**Residual Carbon Reduction Phase**

During the Residual Carbon Reduction Phase, additional air is passed through the PGC such that the process is no longer oxygen deficient but has excess oxygen. This allows combustion of the remaining carbon within the chamber. The flow of air through the PGC is controlled by both the bottom and top fans. As the amount of carbon remaining in the chamber reduces, the temperature falls. Once it falls below 700°C the PGC leaves the Residual Carbon Reduction Phase and enters the "Cool Down" Phase.

During the Residual Carbon Reduction Phase the flow of gas to the SCC remains. The gas passing through to the SCC contains excess oxygen which is used in the combustion of syngas from other PGCs.

**"Cool Down" Phase**

During the "Cool Down" Phase, air is blown through the PGC to cool the ash and PGC to a safe temperature that will permit the PGC to be opened and de-ashed.

Throughout this phase the flow of gas to the SCC remains. The gas passing through to the SCC contains excess oxygen which is used in the combustion of syngas from other PGCs.

At the end of the "Cool Down" Phase, both the under and over fans are switched off and the valve controlling the connection to the SCC is closed.

**"De-ashing" Phase**

"De-ashing" is accomplished through opening the front and rear discharge doors of the PGC. A telehandler with a special scraper tool is used to push the ash from the front discharge door through to the rear discharge door and then onto a conveyor running along the back of the PGCs. The conveyor discharges to the ash handling area of the facility, inside a contained building structure.

**Sequencing of the Primary gasification chambers (PGC)**

In order to maintain a continuous flow of syngas to the SCC, the operations of the four PGCs are sequenced.

**Emergency Quenching of the PGCs**

During an emergency shutdown of the gasification facility, controlled quenching of one or more PGCs may be necessary to stop gasification. Controlled quenching is achieved using four water quench nozzles located in each PGC.

## 2.2 SECONDARY COMBUSTION CHAMBER

Combustion of the syngas occurs in the SCC which is a refractory lined carbon steel cylindrical vessel. There is one SCC per line, each fed by four PGCs which have their own inlet nozzle into the combustion chamber. In normal sequential operation, the SCC will at any one time receive syngas from one PGC in the Gasification Phase and combustion air from the two PGCs in their Residual Carbon Reduction and "Cool Down" Phases.

Additional combustion air is supplied through an injection ring. Two gas oil burners are provided but are only required during start-up, shutdown and periods of input with low calorific value waste. Use of additional combustion air and the gas oil burners during combustion is controlled automatically to ensure that the flue gas exiting the SCC is maintained above
850$^{o}$C. Following the SCC, the flue gas enters the WHB.

**De-NOx Control in the SCC**

The control of nitrogen oxides exiting the SCC is provided by the following three systems:

- Staged Air combustion – staged combustion of the syngas in the SCC to reduce NOx formation.

- Flue Gas Recirculation – recirculating approximately 15% of the total flue gas flow from the outlet of the WHB to the SCC air injection ring, thereby reducing oxygen content in the SCC and minimising the potential for NOx formation.

- Urea Injection – injection of a urea liquid solution into the SCC which reacts with NOx gases to form nitrogen gas, vaporized water and carbon dioxide.

**Emergency Vent**

A refractory lined emergency vent stack is provided on the discharge of each SCC. These are located above the discharge end of the SCC and typically run through the main building roof to atmosphere. The emergency vent stack is only opened during limited periods when no waste gasification is occurring; or in the event of failure of the downstream flue gas processing equipment or when there is the potential that downstream flue gas equipment will be damaged.

## 2.3 WASTE HEAT RECOVERY

Flue gases from the SCC are fed to the WHB, which is designed to cool the flue gas exiting the SCCs and recover the heat as superheated steam for use in the steam turbine.

The WHB comprises evaporators, a steam drum, an Economiser, a two-stage Super Heater and a Blowdown Vessel.

**Electrical Generator**

The shafts of the three steam turbines are coupled through two gearboxes which drive the electrical generator. This generates electrical power at 11KV, which will be exported to the national grid, as well as supplying the power requirements of the EFW facility. It is anticipated that the total electrical generation for the facility will be approximately 3.6MWe, with a parasitic load of approximately 0.4MWe, leaving 3.2MWe available for consumption on other areas of the site or export to the grid.

**Condensing Plant**

The resultant low pressure steam from the steam turbines is fed into air condensing units. The condensate is collected and discharged to the De-aerator Vessel, to be used as feed water for the WHB.

**De-aerator and Make Up Water**

The De-aerator Vessel removes air and other dissolved gases from the water and provides a buffer for the boiler feed water. The boiler feed water is preheated to 125°C using a small steam off take from the back end of the STS.

Make up water is required to maintain the correct amount of water in the WHB and STS. This is taken from town's water or borehole water and pre-treated through filtration and reverse osmosis prior to entering the De-aerator Vessel.

**Back Up Generator**

The gasification facility uses a diesel generation package as a standby generator, which comprises a diesel engine and electrical generator contained within an ISO freight container. The diesel generator provides emergency power for the gasification facility, which may be necessary if the steam turbine is off-line and there is a failure of the national grid supply.

The diesel generator is rated to power the whole of the three stream gasification facility. The diesel generator is maintained in a permanent 'ready to start' state and as such, when required is capable of providing the full plant load within 30 seconds of grid failure.

## 2.4 FLUE GAS CLEANING

The flue gas exits the economiser at 180°C and then enters the FGCP.

The FGCP is a dry scrubbing system, which comprises a Reaction Tower (which doses sodium bicarbonate and powdered carbon), a Bag Filter, a Residue Bagging System, an Induced Draught Fan, a Continuous Emissions Monitoring System (CEMS) and a common multi-flue discharge Stack.

The flue gas cleaning plant is to be located in the main building, with the exception of the CEMS and stack. The stack and CEMS analyser are to be located adjacent to the north of the main building.

The purpose of the cleaning system is to remove residual ash, acid gas, dioxins and heavy metals from the flue gas, so that emissions to atmosphere are compliant with the Waste Incineration Directive.

**ABBREVIATIONS**

CEMS Continuous Emissions Monitoring System
FGCP Flue Gas Cleaning Plant
PGC Primary Gasification Chamber
SCC Secondary Combustion Chamber
STS Steam Turbine System
WHB Waste Heat Boiler

# Extract From The Minutes

## CABINET – 23 NOVEMBER 2010

### 1657. REVISION OF HACKNEY CARRIAGE AND PRIVATE HIRE LICENCE REQUIREMENTS POLICY

The Cabinet considered a report on revision of the hackney carriage and private hire requirements policy, following consultation, proposing to remove discounted licence fees for vehicles with swivel seats.

The options considered were in the main body of the report.

**RESOLVED** that Cabinet approves the proposed amendments to the Hackney Carriage and Private Hire Licence Requirements Policy with reference to the removal of the 50% dispensation for Private Hire or Hackney Carriage vehicles fitted with swivel seats.

### 1658. A PLAN FOR WASTE MANAGEMENT

The Cabinet considered a report on the completion of a review of the Surrey Joint Municipal Waste Management Strategy.

The options considered were in the main body of the report.

**RESOLVED** that Cabinet adopts the revised Surrey Waste Management Plan 2010, with the changes as proposed in Appendix 1 to the report of the Assistant Chief Executive.

### 1659. RE- LETTING OF ST MARTIN'S COURT HALL

The Cabinet considered an update report on the market testing exercise for St Martin's Court Hall and recommendations for its future use.

The options considered were in the main body of the report.

**RESOLVED** that Cabinet agrees to award a full repairing lease for fifteen years to The Kings Community Church for the annual sum of £17,500 per annum. The lease to include a break clause after two years of the term with a mutual rolling break of six months notice.

### 1660. REVENUE GRANTS

The Cabinet considered a report on recommendations for voluntary sector organisation funding for 2011/12.

The options considered were in the main body of the report.

**RESOLVED** that Cabinet agrees:

1. funding for the various organisations as set out in Appendix A to the report of the Assistant Chief Executive.
2. to receive a report on accommodation at the next Cabinet meeting.