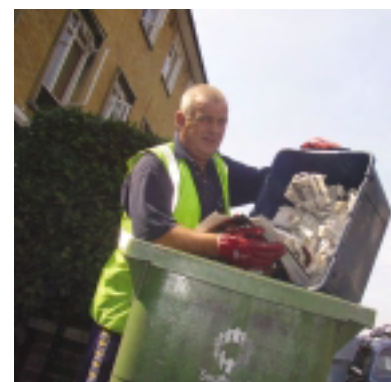


2. Policies and Plans

ENVIRONMENTAL POLICY

“Southwark Council has an ultimate goal of being socially, economically and ecologically sustainable. To this end, we aim to ensure the responsible and ethical management of all our activities. This policy covers the entirety of the environmental impacts that Southwark either directly causes, or can influence in the provision of its Waste Management Services and activities. We ensure that our social, environmental, sustainable and economic principles are integral to our management procedures and practised consistently throughout our operations.

Specifically, Southwark Council is committed to ensuring that wastes arising in Southwark is managed in a way that minimises the impact on the environment, engages with and supports community involvement and the local economy, and minimises the need to transport wastes and materials. This will be achieved by dealing with wastes locally and in a sustainable manner, encouraging innovation and seeking the involvement of all stakeholders to assist in reducing the rate of growth of waste.”



2.1 Targets

As a minimum Southwark Council will meet the following targets:

2.1.1 Recycling & Recovery

These targets incorporate Southwark’s requirements under the Best Value Statutory Performance Standards for 2003/04 and 2005/06, the aspirational targets for recovery in Waste Strategy 2000 and all those laid out in the Mayor of London’s Strategy:

Table 2.1: Southwark Strategy Targets

Year	Recycling/Composting Target Household Waste	Recovery of value Target Municipal Solid Waste
2003/04	10%	35%
2004/05	14%	37.5%
2005/06	18%	40%
2010/11	30%	45%
2015/16	40%	67%
2020/2	50%	75%



2.1.2 Landfill Directive

Southwark will:

- By 2010 reduce the biodegradable waste landfilled to 75% of that produced in 1995
- By 2013 reduce the biodegradable waste landfilled to 50% of that produced in 1995
- By 2020 reduce the biodegradable waste landfilled to 35% of that produced in 1995

2.2 Plans and Policies

The Council's strategic policies address the major themes underpinning Southwark's commitment to sustainable waste management.

2.2.1 Vision

Policy 1

Southwark Council will strive to provide an efficient, sustainable and cost-effective operation for the collection and management of all controlled waste arising within the Borough through its continued commitment to the principles of sustainable development, Best Value and the waste hierarchy.

Policy 2

Southwark supports the concept of regional self-sufficiency and the proximity principle in respect of waste management facilities and wastes produced within the Borough.

2.2.2 Waste Education and Awareness

Policy 3

Southwark will develop and deliver a waste education, awareness and reduction programme, focusing on all aspects of sustainable waste management e.g. waste minimisation, reuse, recycling and composting, and treatment.

Policy 4

Southwark will investigate opportunities to work in partnership with neighbouring authorities in delivering joint programmes of waste awareness, education, promotion and publicity.

2.2.3 Waste Minimisation and Reuse

Policy 5

The Council will seek to reduce the rate of household waste growth to below 3% by 2006 and to 2% thereafter.

Policy 6

Southwark will encourage and strengthen partnerships with the community and voluntary sectors and investigate opportunities for external funding to generate community based waste minimisation and recycling/composting initiatives.



Policy 7

The Council will undertake regular waste analyses of:

- **Reuse and Recycling Facilities**
- **Bring Banks Facilities**
- **Household Collections**
- **Other collections (e.g. bulky, commercial, etc.)**

This will be in order to provide baseline data in order to measure the effectiveness of waste minimisation initiatives.

Policy 8

The Council will continue to promote home composting and will make available subsidised home composting bins to all households with gardens and schools.

Policy 9

Southwark will seek to implement initiatives that maximise the reuse of goods and materials before they enter the waste stream. The Council will seek to forge partnerships with community groups and charities in the implementation of such initiatives.

Policy 10

The Council will investigate opportunities for maximising the diversion of bulky household materials collected through the Council's bulky collection service for reuse by those in need in the community.



2.2.4 Recycling & Composting

Policy 11

Southwark will increase the amount of household waste that it collects for recycling and composting.

Policy 12

Southwark will seek to redistribute and consolidate the existing bring bank facilities to ensure that the optimum coverage is achieved and the sites represent best practice. The Council has a target:

“To increase the number of bring bank facilities to 350 by 2005/06.”

Policy 13

The Council will actively encourage educational establishments to establish and make use of recycling facilities on-site.

Policy 14

In the short term Southwark will expand the kerbside recycling service to all street level properties in the Borough.

Policy 15 (a)

Southwark will expand the kerbside service to collect a minimum of two materials from the kerbside recycling service provided to street level properties in the short term and increase this to three materials in the medium to long term.

Policy 15 (b)

Southwark will introduce a recycling collection scheme for all non-street level properties to ensure universal participation in recycling.

Policy 16

Southwark will continue to review the range of materials collected through the existing kerbside collection systems, bring sites and the Council's Waste and Recycling Centre and introduce additional materials where appropriate.

Policy 17

Southwark Council will make full use of the powers given to them in the Waste Minimisation Act.

Policy 18

The Council will investigate the use of financial incentives to encourage waste minimisation and participation in recycling and composting, and implement such incentives where appropriate.

Policy 19

Southwark will investigate the potential to recycle street cleansing wastes.

2.2.5 Waste and Recycling Centres

Policy 20

Southwark will seek to increase the recycling rate achieved on the Council's CA Site in line with Best Practice.

Policy 21

Review the site layout at the Manor Place CA Site, and provide a full range of facilities for recycling and composting.

Policy 22

Continue to publicise the recycling facilities at the Manor Place Site and actively promote residents to deliver their green waste to the site for the purpose of composting.

Policy 23

Southwark will actively seek to minimise the amount of non-household waste being deposited at the site from commercial vehicles.

2.2.6 Residual Household Waste Collection

Policy 24

The Council will examine operational and financial mechanisms to encourage the reduction in residual waste.

Policy 25

Southwark will continue to seek ways of minimising the amount of unpaid commercial waste entering the household waste stream.



2.2.7 Commercial Waste Collection

Policy 26

Southwark will review the options for the future delivery of the commercial waste service and will develop a strategic business plan.

Policy 27

Southwark will investigate the opportunities to recycle collected commercial waste, and implement schemes as appropriate.

2.2.8 Waste Treatment & Disposal

Policy 28

Southwark will encourage the treatment of waste at the highest level of the waste hierarchy as is economically practicable.

Policy 28a

Southwark will seek to use new and emerging technologies, prior to considering use of incineration, subject to economic viability.

Policy 29

Southwark will seek to maximise the diversion of biodegradable waste from landfill disposal.

2.2.9 Getting Southwark's House in Order

Policy 30

Southwark is committed to its Green Procurement Policies and the Mayor's Green Procurement Code. The Council will explore practical opportunities for specifying and purchasing products made from recycled materials.

Policy 31

Southwark will establish a programme of waste minimisation, re-use, recycling of waste materials in respect of its own functions and the services it provides.

2.2.10 Enforcement

Policy 32

Southwark will seek to use its statutory powers to the full in order to ensure abuse of civic facilities and services is minimised.

Policy 33

Southwark will seek to use its statutory powers to the full in order to minimise and where possible prevent the illegal deposit of waste (fly-tipping) within the Council boundaries.



3. Bridging the Gap

3.1 Short Term Actions

3.1.1 What can we do?

Southwark has stretching targets to meet in the short term, culminating in a target of 18% recycling/composting by 2005/06. To achieve this level of performance, Southwark will need to more than triple its current efforts and gain access to capacity at recycling facilities to deal with volume of material it must collect. In the short term the Council will seek to achieve its statutory recycling rates of 10% in 2003/04 and 18% in 2005/06. Below are the steps that have been taken or are planned in order to seek to achieve our current targets.

- **Roll out of Recycling Services - Blue Box**

By offering convenient recycling services to more people, the amount of materials collected is almost certain to rise. By offering more people another option to the black bin, Southwark will improve its own recycling rate whilst reducing dependency on landfill. In July 2002, the Council's blue box paper recycling scheme was rolled out to approximately 50,000 street dwellings. The scheme is to be extended to include glass and cans in February 2004.

- **Estates and Bring Recycling**

Two hundred new Estate Based Recycling Sites are being introduced at a density of 1 per 350 dwellings. In addition, the Borough's existing sixty-six street bring sites have been reviewed and improved.

- **Developing the Infrastructure**

A former swimming baths on the site of the current waste transfer station (Manor Place Depot) is being renovated to become a bulking facility for materials collected through recycling activities in the Borough.

In 2002/03 recycling at the Manor Place Depot Reuse and Recycling site was less than 20%. The Council has improved this figure to over 50% through refurbishment and redesign of the existing site to provide a major reuse and recycling centre for the Borough. This has included measures to encourage people to use the segregated drop off areas rather than the residual disposal points and a greater range of segregated material services.

- **Schools Recycling**

Paper recycling through our blue box scheme has been introduced into over 75% of schools in the Borough with complete coverage expected during 2003/04.

- **Organic Waste**

A pilot scheme for the collection of garden waste was undertaken in summer 2003 and it is intended to run a seasonal Borough wide service from April 2004. Parks and gardens waste is being diverted through Manor Place Depot and sent for reprocessing.

A subsidised home composting scheme is in place for all residents.

It is proposed to build an anaerobic digestion plant for kitchen waste within one of the Boroughs parks.



- **Education and Community Interaction**

“Southwark Slimes” - a short video featuring a family who don’t recycle has been produced - it aims to highlight why people should recycle and what Southwark is doing to encourage participation in recycling initiatives from all sections of the community.

The post of Education and Promotions Officer (Funded from Landfill Tax Credits) has been created within a new Sustainable Waste Team. This team will take forward the Council’s recycling and waste minimisation education programme.

A bespoke publicity campaign is planned for January 2004. The campaign will focus on why, what and how to recycle and will use different types of media to get the message across including, bus backs, tube stations and videos running on buses through the Borough.

- **Street Cleaning waste and bulky household waste**

Bulky materials contribute a significant proportion of Southwark’s waste stream, the majority of which are landfilled. A significant proportion of this is recoverable, either through re-use schemes or dismantling and recovery of materials. Southwark will seek to maximise the recovery of this waste stream through re-use schemes and the recovery of materials at Manor Place Depot. In doing so Southwark will share knowledge and benchmark with other authorities, which have completed similar programmes.

Bulky household waste collected from estates is currently being separated at Manor Place Depot as a trial with a view to ensuring all recyclable materials may be extracted prior to disposal. Street cleaners have been given reusable sacks to collect cans and bottles during their operations.

- **Providing Infrastructure for the Medium to Long Term**

The actions identified may reach short term recycling targets but they will ultimately fail to meet Southwark’s own stretch targets of 50% recycling and do not address the treatment and diversion requirements of the Landfill Directive. To do so will require significant capital investment and high ongoing operational costs. To be able to invest and afford these services, the Council will need to consider entering into a long-term partnership. To this end the Council will review the costs and affordability of medium/long-term options and look at the options for procuring long term contracts in order to encourage investment.

3.1.2 Contract Strategy

Several contractual options are available to the Council as a Unitary Authority. The following scenarios have been considered:

1. One contract for each facility, for example, a contract for each MRF and composting facility.
2. Separate contracts for each element of service provision: one contract for refuse collection, one contract for recycling systems, one contract for treatment and one contract for landfill.
3. One single integrated contract, which includes all the key elements of service provision.



In weighing up the risks and benefits of the above and to ensure the Council is able to provide sustainable environmental services in the long term, it has been identified that there is a need for an integrated contract, which levers in external finance to provide a waste management facility within the Borough.

Two procurement options are available to achieve this – a Private Finance Initiative or a Public Private Partnership.

- **Integrated contract with private sector (PPP)**

A PPP contract will allow Southwark to lever in external private sector finance to build a new waste management facility, whilst retaining ownership of targets and strategic direction. In letting a PPP contract, Southwark would be able to transfer much of the responsibility for meeting targets and the performance of the contract to a single contractor. It would also allow Southwark to develop an output specification, allowing the contractor to specify how it will be delivered. This method should encourage innovation, with contractors offering different solutions the council may not have otherwise considered.

Whilst this may seem attractive there is one major disadvantage, the council would be in a long-term contract, which may not be as flexible as a number of medium term contracts. It is therefore vital that if this route is chosen the council carefully considers the solutions proposed and includes an element of regular reviews and flexibility in the contract.

- **Integrated contract with financial assistance (PFI)**

It has already been established that Southwark will require the provision of a major capital facility to process waste in order to meet long-term targets. In addition to leveraging in private sector finance as under PPP, PFI provides credit support from the Government for the revenue payments to the contractor. The PFI waste contract is basically the same as under traditional contracts, the contractor agrees to take the waste and deal with it to an agreed specification in return for a charge (gate fee per tonne) for an agreed period relating to the investment required.

While this may seem attractive, approval of PFI credits from DEFRA is a long and complex process, and there is no guarantee of being successful. In addition, PFI brings much closer contract scrutiny, and higher performance requirements.

For Southwark, the key test as to whether to proceed with a PFI contract will be either the identification of very significant affordability issues or very ambitious recycling plans.

Expert advice suggests that because Southwark is a unitary London Borough, with a considerable proportion of high/medium rise dwellings, coupled with stretched recycling and recovery targets, it is considered likely that an application to DEFRA would be successful. The PFI route would offer a significant funding opportunity that PPP on its own does not offer.



3.2 Medium Term Actions

3.2.1 What are the Options?

A number of potential solutions to the problems faced by Southwark can be delivered through the procurement of a PFI or PPP contract. These range from do-nothing and hoping the problem goes away, to the use of high-tech facilities and state of the art collection and sorting systems. Some of these will obviously fail to meet the targets set by Southwark, some will meet them, while others will exceed them. It is important that Southwark chooses a solution, which meets the targets set, is both flexible and robust and is at an affordable price.

The following options have been selected from reviewing what Councils elsewhere have been procuring, what is being offered currently by the market and what is considered to be innovative ways of solving Southwark's waste problem. A summary is provided below; however, full details are contained within Annex 1 of this Strategy.

Table 3.1: Description of Options

Option No.	Key Elements
Option 1	<ul style="list-style-type: none"> • Continuation of existing kerbside scheme • Continuation of existing bring bank scheme • All residual waste sent to landfill or waste to energy plant
Option 2	<ul style="list-style-type: none"> • Continuation of existing kerbside paper collection • Increase number of bring sites to 350 • All residual waste sent to landfill • Garden waste collected from street properties composted in a windrow • Intensive education and waste minimisation programme introduced and education facility built
Option 3	<ul style="list-style-type: none"> • Continuation of existing kerbside paper collection • Increase number of bring sites to 350 • All residual waste sent to landfill • Putrescible kitchen and garden waste collected from street properties composted in an in-vessel composter • Intensive education and waste minimisation programme introduced and education facility built
Option 4	<ul style="list-style-type: none"> • Kerbside collection expanded to include all dry recyclables • Increase number of bring sites to 350 • Material collected at kerbside sent to clean MRF • All residual waste sent to landfill • Putrescible kitchen and garden waste collected from street properties composted in an in-vessel composter • Intensive education and waste minimisation programme introduced and education facility built





- Option 5
- Kerbside collection expanded to include all dry recyclables
 - Increase number of bring sites to 350
 - Material collected at kerbside sent to clean MRF
 - All residual waste sent to dirty MRF and the residuals to landfill
 - Putrescible kitchen and garden waste collected from street properties composted in an in-vessel composter
 - Intensive education and waste minimisation programme introduced and education facility built
-
- Option 6
- Kerbside collection expanded to include all dry recyclables from street and medium/high rise properties
 - Increase number of bring sites to 350
 - Material collected at kerbside sent to clean MRF
 - All residual waste sent to landfill
 - Putrescible kitchen and garden waste collected from street properties composted in an in-vessel composter
 - Intensive education and waste minimisation programme introduced and education facility built
-
- Option 7
- Kerbside collection expanded to include all recyclables from street properties
 - Increase number of bring sites to 350
 - Material collected at kerbside sent to clean MRF
 - Medium/high rise properties issued with survival bags
 - All residual waste sent to separation Plant
 - Putrescible kitchen and garden waste collected from street properties composted in an in-vessel composter
 - Waste from medium/high rise properties sent to separation plant
 - Intensive education and waste minimisation programme introduced and education facility built
-
- Option 8
- Kerbside collection expanded to include all recyclables from street properties
 - Increase number of bring sites to 350
 - Material collected at kerbside sent to clean MRF
 - Medium/high rise properties issued with survival bags
 - All residual waste sent to the separation plant
 - Recovery and recycling of bulky and fly-tipped waste maximised
 - Putrescible kitchen and garden waste collected from street properties composted in an in-vessel composter
 - Waste from medium/high rise properties sent to separation plant
 - Intensive education and waste minimisation programme introduced and education facility built
-

Option 9

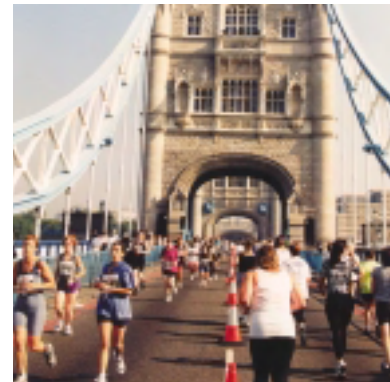
- Kerbside collection expanded to include all recyclables from street properties
 - Increase number of bring sites to 350
 - Material collected at kerbside sent to clean MRF
 - Medium/high rise properties issued with survival bags
 - Recovery and recycling of bulky and fly-tipped waste maximised
 - All residual waste sent to a Mechanical Biological Treatment plant
 - Putrescible kitchen and garden waste collected from street properties composted in an in-vessel composter
 - Waste from medium/high rise properties sent to separation plant
 - Intensive education and waste minimisation programme introduced and education facility built
-

Option 9(a)

- Kerbside collection expanded to include all recyclables from street properties
 - Increase number of bring sites to 350
 - Material collected at kerbside sent to clean MRF
 - Medium/high rise properties issued with survival bags
 - Recovery and recycling of bulky and fly-tipped waste maximised
 - All residual waste sent to a Mechanical Biological Treatment plant with outputs to Existing Energy from Waste plant
 - Putrescible kitchen and garden waste collected from street properties composted in an in-vessel composter
 - Waste from medium/high rise properties sent to separation plant
 - Intensive education and waste minimisation programme introduced and education facility built
-

Option 10

- Kerbside collection expanded to include all recyclables from street properties
 - Increase number of bring sites to 350
 - Material collected at kerbside sent to clean MRF
 - Medium/high rise properties issued with survival bags
 - Recovery and recycling of bulky and fly-tipped waste maximised.
 - All residual waste sent to an Energy from Waste plant
 - Putrescible kitchen and garden waste collected from street properties composted in an in-vessel composter
 - Waste from medium/high rise properties sent to separation plant
 - Intensive education and waste minimisation programme introduced and education facility built
-



Option 10(a)

- Kerbside collection expanded to include all recyclables from street properties
 - Increase number of bring sites to 350
 - Material collected at kerbside sent to clean MRF
 - Medium/high rise properties issued with survival bags
 - Recovery and recycling of bulky and fly-tipped waste maximised
 - All residual waste sent to Existing Energy from Waste plant
 - Putrescible kitchen and garden waste collected from street properties composted in an in-vessel composter
 - Waste from medium/high rise properties sent to separation plant
 - Intensive education and waste minimisation programme introduced and education facility built
-

Option 11

- Kerbside collection expanded to include all recyclables from street properties
 - Increase number of bring sites to 350
 - Material collected at kerbside sent to clean MRF
 - Medium/high rise properties issued with survival bags
 - Recovery and recycling of bulky and fly-tipped waste maximised
 - All residual waste sent to a Anaerobic Digestion plant
 - Putrescible kitchen and garden waste collected from street properties composted in an in-vessel composter
 - Waste from medium/high rise properties sent to separation plant
 - Intensive education and waste minimisation programme introduced and education facility built
-

Option 12

- Kerbside collection expanded to include all recyclables from street properties
 - Increase number of bring sites to 350
 - Material collected at kerbside sent to clean MRF
 - Medium/high rise properties issued with survival bags
 - Recovery and recycling of bulky and fly-tipped waste maximised
 - All residual waste sent to a Gasification / Pyrolysis plant
 - Putrescible kitchen and garden waste collected from street properties composted in an in-vessel composter
 - Waste from medium/high rise properties sent to separation plant
 - Intensive education and waste minimisation programme introduced and education facility built
-



3.2.2 Evaluation

Each of these options carry technical and financial risks, which the Council has assessed in order to determine which options best suit Southwark’s position. To this end the following criteria were applied, and each option scored accordingly to provide a “Top Four”:

1. Does it meet Southwark’s Policies and Targets? – comparison with aims and targets in section 2.
2. Public acceptability? – based on recent precedent and surveys, what are people more likely to accept (for example, residents are known to often reject the idea of building new incinerators near them).
3. Financial Performance? – in terms of outline capital and operating costs, how do the options compare with one another.
4. Environmental Impacts? – what are the environmental impacts of each option in terms of emission, quality of life and resources use. With all waste management options the hierarchical approach was taken with landfill scoring worst.
5. Does it provide a universal service? – simply, does the option offer a service to all residents of the council?



The initial options appraisal process was intended as a scoping exercise that examined the likely performance of combinations of services and technologies in terms of recycling, recovery and landfill diversion requirements but also in terms of estimating potential costs. These performance and financial estimates were based on either industry standards prevailing at this time or indicative information gathered from service and technology suppliers and relevant research where available.

Figure 3.1: Evaluation Matrix of the 15 Options for Southwark

SOUTHWARK WASTE MANAGEMENT - STRATEGIC OPTIONS APPRAISAL

Evaluation Criteria	Weighting	1	2	3	4	5	6	7	8	9	9a	10	10a	11	12
a Does it meet Southwark’s Policies and Targets?	20%	1	2	2	2	2	3	3	4	7	8	8	7	8	7
b Public acceptability?	20%	5	7	7	7	6	7	8	8	8	6	4	5	8	6
c Financial Performance?	20%	5	3	3	4	3	4	1	2	1	2	5	8	1	1
d Environmental Impacts?	20%	2	3	4	5	5	5	5	6	9	10	7	8	9	8
e Does it provide a universal service (i.e.to all Southwark residents)	20%	0	2	2	4	4	5	5	7	7	7	7	7	7	7
	100%	13	17	18	22	20	24	22	27	32	33	31	35	33	29

- | | | | |
|---|-----------------------------|----|-----------------------------|
| 0 | Fails to meet all | 6 | Meets criteria (within +5%) |
| 1 | Partially meets criteria | 7 | Exceeds criteria |
| 2 | Partially meets criteria | 8 | Exceeds criteria |
| 3 | Partially meets criteria | 9 | Exceeds criteria |
| 4 | Meets criteria (within -5%) | 10 | Exceeds criteria |
| 5 | Meets criteria | | |

3.2.3 The “Top 4” Performing Options

From the options scoped in the above exercise the following scored highest:

OPTION	DESCRIPTION
Option 10(a)	<ul style="list-style-type: none"> Maximised recycling, with in-vessel composting of kitchen and garden waste. Survival bags for medium/high rise properties, with all residual waste being sent for recovery in an existing waste to energy plant.
Option 11	<ul style="list-style-type: none"> Maximised recycling, with in-vessel composting of kitchen and garden waste. Survival bags for medium/high rise properties, with all residual waste being sent to an anaerobic digestion plant to recover additional material with landfill of all residuals.
Option 9(a)	<ul style="list-style-type: none"> Maximised recycling, with in-vessel composting of kitchen and garden waste. Survival bags for medium/high rise properties, with all residual waste being sent to an MBT plant to recover additional material followed by recovery in an existing waste to energy plant.
Option 9	<ul style="list-style-type: none"> Maximised recycling, with in-vessel composting of kitchen and garden waste. Survival bags for medium/high rise properties, with all residual waste being sent to an MBT plant to recover additional material followed by landfill of residual fractions

The overall purpose of this stage is to look at a wider range of solutions (14) and seek to identify the most likely to meet the specific needs of Southwark before a more in depth evaluation is undertaken.

It is intended to take the above four options and option 1 (“do-nothing”) and review both service and financial performance in more detail in order to establish the best option for Southwark. A key component of this assessment will be a full BPEO assessment (Section 3.3).

3.3 BPEO assessment

The main purpose of this appraisal is to provide rational information on which the main environmental impacts associated with each of the selected options could be examined and considered for the purpose of BPEO determination¹.

3.3.1 WISARD Assessment

An analysis of the environmental impacts arising from each of the disposal options was carried out using WISARD (Waste Integrated Systems and Assessment for Recovery and Disposal), a life-cycle assessment (LCA) tool developed by the Environment Agency to assist Local Authorities with their assessments. The model evaluates the environmental burdens and impacts of waste management operations.

Within WISARD a user develops various waste scenarios, utilising the compositional data from surveys (Section 1) and the calculated waste arisings and flows (Section 1.3).

WISARD utilises the “avoided burden” methodology for calculating environmental burdens. For example, for recycling activities, credits are given by calculating the energy and raw materials associated with the production of that product had the recycling not been performed. Credits are also assigned to those options that generate power, as this energy production is off-set against the requirement for fossil fuels (primarily coal for electricity generation).

¹ Royal Commission on Environmental Pollution: 12th Report: Best Practicable Environmental Option (1988). HMSO London Feb. 1988. ISBN --1312-5



WISARD has been used to assess the environmental burden against the following impacts typically regarded as significant with regard to waste management practices:

- **Global Warming Impacts;**
- **Air Acidification;**
- **Natural Resource Use;**
- **Dioxins.**

Global Warming Impacts

The global warming potential of a waste management system is dominated by the generation of carbon dioxide and methane emissions. Methane is a much more potent greenhouse gas compared to carbon dioxide and consequently is a significant consideration in waste management options (in general terms, landfill gas comprises between 40-65% methane). Thus, the global warming potential of each scenario is linked to the methane emissions, which is dependant upon the amount of biodegradable waste disposed of to landfill.

Acidification

The four main gases that contribute to acidification include: sulphur dioxide (SO₂), nitrogen oxides (NO_x), hydrogen chloride (HCL) and hydrogen fluoride (HF). Where the global warming potentials indicate global warming effects as CO₂ equivalents, the acidification potential indicates acidification effects as SO₂ equivalents. In WISARD the acidification potentials have also been calculated assuming that where there is a net energy recovery, emissions have been offset against the avoided acid gases generated from the coal fired power.

Depletion of non-renewable resources

Our world has a finite supply of resources in terms of minerals and fossil fuels. The rate at which these resources are consumed is important when assessing the sustainability of any activity. Recycling of metals and plastic preserves both the mineralogical value of the item, as well as its intrinsic energy content (i.e. the energy consumed in production of the material).

Energy from Waste Facilities produce electricity and heat that is assumed would otherwise be generated from a fossil fuel, thereby conserving that resource. Thus those options that can optimise recycling and energy recovery from the waste stream are the most sustainable in terms of resource use.

Dioxins and Furans

Dioxins and furans are highly toxic, being thought to be carcinogenic at low exposure levels. Their formation can arise from various industrial as well as natural activities, for example from most combustion processes (power generation, forest fires) and as by-products of many chemical processes and metal smelting, for example, steel manufacture.

As dioxins are so widespread in the environment, in many of the materials we use, handle and eat, they are consequently present in waste as it is collected and so they will be transferred to all downstream operations. Dioxins have been measured in compost, landfill gas and leachate, gases and residues from recycling, as well as the more commonly cited waste combustion gases and ashes.





The environmental impacts of dioxins are not so much dependant on the absolute emissions, but on the pathway to humans and the potential to cause harm to health. Whilst dioxins, released into the air from waste combustion sources, can affect humans from absorption through the lungs or from deposition onto the skin, the major route is from deposition onto vegetation, which is then eaten by grazing animals.

3.4 Framework for Long Term Actions

There are no definite long-term actions in this Strategy at this time. Long-term actions will only become apparent from decisions taken in terms of medium term actions. However, a framework is set out below.

3.4.1 Running and Reviewing the Service

The future costs and legislative environment for waste management is not certain and this coupled with ever changing technological solutions will mean that Southwark requires a flexible service. Southwark will review, on an annual basis, its contracts to ensure that they meet all legislative requirements and to ensure any commitment made does not preclude the achievement of statutory or aspirational goals, to include value for money, recycling, composting and diversion of materials and environmental impact. This shall be achieved through market testing and benchmarking with other local authorities.

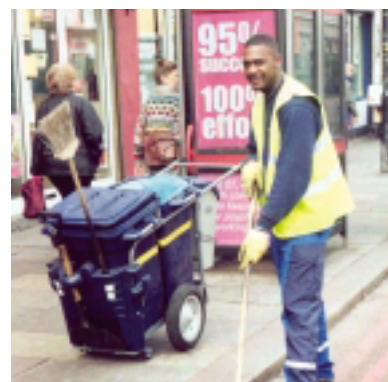
3.4.2 Strategy Review Process

New legislation is likely to be brought in and existing legislation is likely to be altered and/ or superseded. As such this Strategy will remain a dynamic document, being reviewed every year in the context of a significant 5-year review. As part of the 5-year review, the Council will undertake market testing and benchmarking to ensure that the targets, policies and aims it has set itself are at least comparable with similar authorities. Southwark will aim to set targets and achieve above average levels of service where at all possible and stay at the forefront of waste manage practice and service performance.

4. Glossary & Acronyms

4.1 Acronyms

- ABPR : Animal By-Products Regulations
- AD : Anaerobic Digestion
- ALCO : Association of London Cleansing Officers
- AR : Accredited Reprocessor
- ASSURE : Association for Sustainable Use and Recovery of Resources
- AV : Abandoned Vehicle(s)
- BAT : Best Available Technique
- BMW : Biodegradable Municipal Waste
- BOO : Build Own Operate
- BPEO : Best Practicable Environmental Option
- BPPO : Best Practicable Planning Option
- BVPI : Best Value Performance Indicator
- BVPP : Best Value Performance Plan
- CA : Reuse and Recycling (site)
- 4 C's : Challenge, Compare, Consult, Compete
- C&D : Construction & Demolition (e.g. C&D waste)
- CFC : Chlorofluorocarbon
- CHP : Combined Heat and Power
- CIPFA : Chartered Institute of Public Finance and Accountancy
- CIWM : Chartered Institution of Wastes Management
- CWR : Controlled Waste Regulations (1992)
- DBFO: Design Build Finance Operate
- DEFRA : Department for Environment, Food and Rural Affairs
- DSO : Direct Service Organisation
- DTI : Department of Trade and Industry
- DTLR : Department for Transport, Local Government & the Regions
- EA : Environment Agency
- EB : Environmental Body
- EFW : Energy from Waste
- ELV : End of Life Vehicle
- EPA : Environmental Protection Act (1990)
- ESA : Environmental Services Association
- EWC : European Waste Catalogue
- HDPE : High Density Polyethylene
- HHW : Household Hazardous Waste
- HSE : Health & Safety Executive
- HW : Household Waste
- HWD : Hazardous Waste Directive (91/689/EEC)
- HWRC : Household Waste Recycling Centre
- IPC : Integrated Pollution Control
- IPP : Integrated Product Policy
- IPPC : Integrated Pollution Prevention and Control
- IVC : In Vessel Composting
- LA : Local Authority
- LAPC : Local Air Pollution Control
- LARAC : Local Authority Recycling Advisory Committee
- LCA : Life Cycle Analysis/Assessment
- LDPE : Low Density Polyethylene
- LGA : Local Government Association
- LTCS : Landfill Tax Credit Scheme
- LFD : Landfill Directive
- LFG : Landfill Gas
- MBT : Mechanical ~ Biological Treatment (systems)
- MRF : Materials Recovery Facility
- MCDA : Multi Criteria Decision Analysis
- MSW : Municipal Solid Waste
- NAWDO : National Association of Waste Disposal Officers
- NHHWF : National Household Hazardous Waste Forum
- Nwai : National Waste Awareness Initiative
- ODS : Ozone Depleting Substance (e.g. refrigerants)
- PCB : Polychlorinated Biphenyl (s)
- PET : Polyethylene Terephthalate
- PFI : Private Finance Initiative
- PIU : Performance and Innovation Unit
- PP : Proximity Principle
- PPC : Pollution Prevention and Control (concerning Regulations 2000)
- PPE : Personal Protective Equipment
- PPG : Planning Policy Guidance note (e.g. PPG 10 for waste management)
- PPP : Public Private Partnership
- PR : Producer Responsibility
- PRN : Packaging Recovery Note
- PS : Polystyrene
- PSA : Public Service Agreement
- PVC : Polyvinyl chloride
- RCV : Refuse Collection Vehicle
- RDF : Refuse Derived Fuel
- REMADE : Recycled Market Development
- SWENs : Special Waste Explanatory Notes
- UA: Unitary Authority
- UDP : Unitary Development Plan
- WAMITAB : Waste Management Industry Training & Advisory Board
- WCA : Waste Collection Authority
- WDA : Waste Disposal Authority
- WEEE : Waste Electrical and Electronic Equipment
- WFD : Waste Framework Directive
- WISARD : Waste Integrated Systems Assessment for Recovery and Disposal
- WLP : Waste Local Plan
- WML : Waste Management Licence
- WRAP : Waste and Resources Action Programme



4.2 Glossary

Aggregates – sand and gravel and crushed rock used by the construction industry.

Anaerobic digestion - a process where biodegradable material is encouraged to break down in the absence of oxygen. Material is placed into an enclosed vessel and in controlled conditions the waste breaks down into *digestate* and *biogas*.

Basel Convention – the 1989 United Nations Basel Convention on the control of transboundary movements of hazardous wastes and their disposal provides a framework for a global system of controls on international movements of hazardous and certain other wastes.

Best Practicable Environmental Option (BPEO) – a BPEO is the outcome of a systematic and consultative decision-making procedure which emphasises the protection and conservation of the environment across land, air and water. The BPEO procedure establishes, for a given set of objectives, the option that provides the most benefits or the least damage to the environment as a whole, at acceptable cost, in the long term as well as in the short term.

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

Biological Treatment - Any biological process that changes the properties of waste (e.g. *anaerobic digestion*, *composting*). Biological treatment includes *landspreading* activities that are *licensed*.

Bring (drop-off) Recycling - Recycling schemes where the public bring material for recycling to centralised collection points (e.g. bottle and can banks) at Reuse and Recycling sites, supermarket car parks and similar locations.

Central composting - large-scale schemes which handle kitchen and garden waste from households and which may also accept suitable waste from parks and gardens.

Reuse and Recycling waste - a sub-group of household waste, normally delivered by the public direct to sites provided by the local authority. Consists generally of bulky items such as beds, cookers and garden waste as well as recyclables.

Clinical waste - waste arising from medical, nursing, dental, veterinary, pharmaceutical or similar practices, which may present risks of infection.

Combined Heat and Power - a highly fuel efficient technology which produces electricity and heat from a single facility.

Commercial waste - waste arising from premises which are used wholly or mainly for trade, business, sport, recreation or entertainment, excluding

municipal and industrial waste.

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

Composting - an aerobic, biological process in which organic wastes, such as garden and kitchen waste are converted into a stable granular material which can be applied to land to improve soil structure and enrich the nutrient content of the soil.

Construction and demolition waste - arises from the construction, repair, maintenance and demolition of buildings and structures. It mostly includes brick, concrete, hardcore, subsoil and topsoil, but it can also contain quantities of timber, metal, plastics and (occasionally) special (hazardous) waste materials.

Controlled waste - comprised of household, industrial, commercial and clinical waste which require a waste management licence for treatment, transfer or disposal. The main exempted categories comprise mine, quarry and farm wastes. Radioactive and explosive wastes are controlled by other legislation and procedures.

Duty of Care - applies to anyone who imports, produces, carries, keeps, treats or disposes of waste. Everyone subject to the duty of care has a legal obligation to comply with it and there are severe penalties for failing to do so. The Duty of Care does not apply to waste collection from households.

EC Directive - a European Community legal instruction, which is binding on all Member States, but must be implemented through the legislation of national governments within a prescribed timescale.

Energy recovery from waste - includes a number of established and emerging technologies, though most energy recovery is through incineration technologies. Many wastes are combustible, with relatively high calorific values - this energy can be recovered through (for instance) incineration with electricity generation.

Environment Agency - established in April 1996, combining the functions of former local waste regulation authorities, the National Rivers Authority and Her Majesty's Inspectorate of Pollution. Intended to promote a more integrated approach to waste management and consistency in waste regulation. The Agency also conducts national surveys of waste arisings and waste facilities.

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.



Hazardous waste - see special waste

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

Household waste - this includes waste from household collection rounds, waste from services such as street sweepings, bulky waste collection, litter collection, hazardous household waste collection and separate garden waste collection, waste from Reuse and Recycling sites and wastes separately collected for recycling or composting through bring or drop-off schemes, kerbside schemes and at Reuse and Recycling sites.

In-vessel composting - composting in an enclosed vessel or drum with a controlled internal environment, mechanical mixing, and aeration.

Incineration - is the controlled burning of waste, either to reduce its volume, or its toxicity. Energy recovery from incineration can be made by utilising the calorific value of paper, plastic, etc to produce heat or power. Current flue-gas emission standards are very high. Ash residues still tend to be disposed of to landfill.

Industrial waste - waste from any factory and from any premises occupied by an industry.

Inert waste - waste which, when deposited into a waste disposal site, does not undergo any significant physical, chemical or biological transformations and which complies with the criteria set out in Annex III of the EC Directive on the Landfill of Waste.

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

Integrated Planning Pollution and Control (IPPC) - is designed to prevent or, where that is not possible, to reduce pollution from a range of industrial and other installations, including some waste management facilities, by means of integrated permitting processes based on the application of *best available techniques*.

Kerbside collection - any regular collection of recyclables from premises, including collections from commercial or industrial premises as well as from households. Excludes collection services delivered on demand.

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

Landfill sites - are areas of land in which waste is deposited. Landfill sites are often located in disused quarries or mines. In areas where there are limited, or no ready-made voids, the practice of *landraising* is sometimes carried out, where some or all of the waste is deposited above ground, and the landscape is contoured.

Landspreading - is the spreading of certain types of waste onto agricultural land for soil conditioning purposes. Sewage sludge and wastes from the food, brewery and paper pulp industries can be used for this purpose.

Licensed site - a waste disposal or treatment facility which is licensed under the Environmental Protection Act for that function.

Life cycle assessment - can provide a basis for making strategic decisions on the ways in which particular wastes in a given set of circumstances can be most effectively managed, in line with the principles of Best Practicable Environmental Option, the waste hierarchy and the proximity principle.

Materials Recovery Facility - A Materials Recycling (or Reclamation) Facility or MRF is a facility where waste is received and materials which can be recycled are separated from residual waste. There are 2 main types of MRF, Clean MRF and Dirty MRF.

(Clean) Materials Recovery Facility - accepts co-mingled recyclables, such as that which may be collected on a kerbside collection. The materials are separated into individual waste streams. This can be done manually - operatives 'pick' the recyclable material as it passes on a conveyor, or automatically - a variety of magnets, eddy separators and optical sensors automatically separate the mixed recyclable materials.

(Dirty) Materials Recovery Facility - accepts raw refuse, such as that collected on standard refuse rounds, and removes some recyclable items from the waste. The fact that the waste has not been 'source separated' as in a clean MRF means that the recyclable material is often contaminated and picking it from the mixed waste is a difficult process.

Mechanical/ Biological Treatment (MBT) - is an overarching term referring to a number of processes that treat residual waste before disposal. The aim of MBT is to minimise the environmental impacts of end disposal and to gain some further value from the waste through the recovery of materials and, in some cases, energy.

The possible permutations of MBT treatment are numerous. The main technologies are based on either "splitting" or "stabilisation". In "splitting", a derived fraction of material is treated biologically. In "stabilisation" the entire waste is subjected to biological treatment with subsequent splitting of the mass of stabilised material to produce compostable/recyclable material, refuse derived fuel (RDF) and residues for landfilling.

Minimisation - see reduction

Municipal waste - this includes household waste and any other wastes collected by a Waste Collection Authority, or its agents, such as municipal parks and gardens waste, beach cleansing waste, commercial or industrial waste, and waste resulting from the clearance of fly-tipped materials.





Planning Policy Guidance Notes (PPGs) and Mineral Planning Guidance Notes (MPGs) -

Government Policy Statements on a variety of planning issues, including waste planning issues, to be taken as material considerations, where relevant, in deciding planning applications

Producer responsibility - is about producers and others involved in the distribution and sale of goods taking greater responsibility for those goods at the end of the products life.

Proximity principle - suggests that waste should generally be disposed of as near to its place of production as possible.

Recycling - involves the reprocessing of wastes, either into the same product or a different one. Many non-hazardous industrial wastes such as paper, glass, cardboard, plastics and scrap metals can be recycled. Special wastes such as solvents can also be recycled by specialist companies, or by in-house equipment.

Reduction - achieving as much waste reduction as possible is a priority action. Reduction can be accomplished within a manufacturing process involving the review of production processes to optimise utilisation of raw (and secondary) materials and recirculation processes. It can be cost effective, both in terms of lower disposal costs, reduced demand for raw materials and energy costs. It can be carried out by householders through actions such as home composting, re-using products and buying goods with reduced packaging.

Re-use - can be practiced by the commercial sector with the use of products designed to be used a number of times, such as re-usable packaging. Householders can purchase products that use refillable containers, or re-use plastic bags. The processes contribute to sustainable development and can save raw materials, energy and transport costs.

Self-sufficiency - dealing with wastes within the region or country where they arise.

Separate collection - kerbside schemes where materials for recycling are collected either by a different vehicle or at a different time to the ordinary household waste collection.

Special waste - is defined by the Control of Pollution (Special Wastes) Regulations 1980 as any controlled waste that contains any of the substances listed in Schedule 1 to the Regulations, or is dangerous to life, or has a combustion flashpoint of 21°C or less, or is a medical product as defined by the Medicines Act 1968.

Survival Bags - a collection system allowing dry recyclables to be collected in distinctive, coloured, stronger sacks, which are transported and compacted along with residual waste. The 'survival bags' are subsequently separated from the refuse sacks at a separation plant. This system is particularly suited to collections from medium and high-rise buildings where waste is disposed of in communal bins.

Sustainable development - development which is sustainable is that which can meet the needs

of the present without compromising the ability of future generations to meet their own needs.

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

Treatment - involves the chemical or biological processing of certain types of waste for the purposes of rendering them harmless, reducing volumes before landfilling, or recycling certain wastes.

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

Waste - is the wide ranging term encompassing most unwanted materials and is defined by the Environmental Protection Act 1990. Waste includes any scrap material, effluent or unwanted surplus substance or article which requires to be disposed of because it is broken, worn out, contaminated or otherwise spoiled. Explosives and radioactive wastes are excluded.

Waste arisings - the amount of waste generated in a given locality over a given period of time.

Waste Collection Authority - a local authority charged with the collection of waste from each household in its area on a regular basis. Can also collect, if requested, commercial and industrial wastes from the private sector.

Waste Disposal Authority - a local authority charged with providing disposal sites to which it directs the Waste Collection Authorities for the disposal of their controlled waste, and with providing Reuse and Recycling facilities.

Waste hierarchy - suggests that: the most effective environmental solution may often be to reduce the amount of waste generated - reduction; where further *reduction* is not practicable, products and materials can sometimes be used again, either for the same or a different purpose - re-use; failing that, value should be recovered from waste, through *recycling, composting or energy recovery from waste*; only if none of the above offer an appropriate solution should waste be disposed.

Waste management industry - the businesses (and not-for-profit organisations) involved in the collection, management and disposal of waste.

Waste management licensing - licences are required by anyone who proposes to deposit, recover or dispose of waste. The licensing system is separate from, but complementary to, the land use planning system. The purpose of a licence and the conditions attached to it is to ensure that the waste operation which it authorises is carried out in a way which protects the environment and human health.

Waste transfer station - a site to which waste is delivered for sorting prior to transfer to another place for recycling, treatment or disposal.

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