

COUNCIL OF THE ISLES OF SCILLY

WRAP ROT034-021

HEADLINE WASTE STRATEGY DOCUMENT:

SUBMISSION BY SLR CONSULTING

APRIL 2009

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solutions for today's environment

Executive Summary

The Isles of Scilly is an archipelago 28 miles from Cornwall, comprising over 200 islands and rocks. There are five inhabited islands; St Mary's, Tresco, St Martin's, St Agnes and Bryher. The way in which waste is managed across the islands is rather unique compared to the rest of mainland England and this reflects the distinctive challenges faced by the island community of the Isles of Scilly.

The aim has been to develop a strategy to deal with the solid waste that is produced on the islands. This strategy explains more about the plans to reduce and manage waste in a manner that is more efficient and sustainable and that will ultimately bring benefit to the community and the environment of the Isles of Scilly.

Waste is a problem because it:

- Takes up landfill space on the **Isles of Scilly**;
- Creates **greenhouse gases** and contributes to **climate change**;
- Can cause **pollution** if not properly managed;
- **Costs** the Council taxpayer money;
- **Uses up natural resources** that with careful thought can be used again;
- Creates a **lasting problem** for future generations; and
- Will **cost** much more in the future.

But there are things that can be done about it, such as:

- Trying to **reduce** the waste that is produced;
- **Re-using** things like bags, bottles and furniture that would otherwise be thrown away;
- Collecting materials like cans, paper and glass so they can be **recycled** into new products; and

- **Treating** what is left over after reducing, re-use and recycling as much as possible.

What is the Strategy?

The strategy is about all the solid waste produced on the islands by residents and businesses and how it is to be managed now and in the future. Whilst legislative drivers are centered on the need to meet minimum environmental regulation targets it's wider remit has the intention of:

- **Sustainability:** achieving **sustainable management of all waste** arising on the Isles of Scilly through emphasis on the **reduction, re-use, recycling and recovery of waste**; and
- **Working together:** developing effective **co-operation and joint working** between residents, the Isles of Scilly Council and businesses to maximise the benefits of waste minimisation and increased recycling and recovery.

The strategy that has been developed looks to plan for the future up to the year 2028, however it is recognised that interim reviews will be necessary.

What is the current position?

The total waste arisings for the Isles of Scilly over the period 2007/08 were approximately 3,100 tonnes (including commercial waste). The reported tonnages represent the best estimate¹ for waste arisings that are either collected on St Mary's or brought over from the off-Islands (Bryher, St Martins and St Agnes) to be sorted for recycling or for disposal in the existing incinerator at Moorwell. An unknown proportion of municipal waste is also managed by individual producers either through recycling initiatives such as the use of green cone organic waste bins, off-Island glass crushing and also small scale controlled burning of domestic waste.

¹ Although the reported figures represent the best estimate of waste currently managed on the Islands there is no mechanism for verifying this figure due to there being no weighbridge in place for the audit period

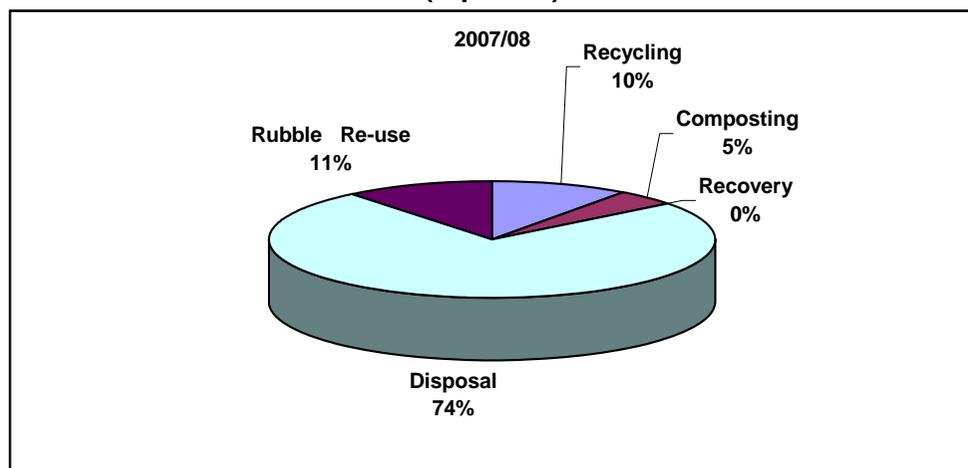
According to estimated figures recycling and composting increased by 3% between 2006/07 and 2007/08. Total recycling and composting for 2007/08 has been estimated at 15%². Reported waste management methods for 2007/08 are summarised in Figure ES1, indicating that currently value is recovered from approximately one quarter of the reported waste stream.

By recycling more of the waste stream the Isles of Scilly Council can help to reduce potentially negative impacts on the local environment by reducing landfill burdens and using up fewer natural resources from the use of virgin materials.

What is the overall strategy to meet these challenges?

- Communicating ideas and seeking a solution for the future;
- Creating a waste implementation plan to communicate these ideas;
- Reducing the amount of waste produced;
- Recycling as much as practicably possible;
- Treating what is left over in the most sustainable way; and
- Working together for everyone's benefit.

Figure ES1: Isle of Scilly Municipal Waste Management in 2007/08 (reported)



Why is there a need for change?

The amount of waste that is produced each year has been **increasing**, although the ability to treat more waste is limited and landfill space available is rapidly **decreasing**. By continuing to rely on incineration and landfill as the principal disposal routes for waste there remains an ongoing risk of creating more pollution

² Excluding re-use of rubble

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1 INTRODUCTION

In September 2008 the Waste & Resources Action Programme (WRAP) working with Defra³ commissioned SLR Consulting Limited (SLR) to provide waste strategy support to the Council of the Isles of Scilly. The objectives of the project can be summarised as follows:

- To develop a long term, holistic strategy for waste management that is legislation compliant and future-proofed over a reasonable period;
- To conduct an options appraisal and assess the impacts and opportunities of each; and
- To develop an Implementation Plan (costs, timetable and funding).

1.1 Purpose of the Strategy

In line with Government guidance⁴ this document provides a framework for strategic decisions to be taken on the management of waste on the Isles of Scilly. The strategy has been developed for the medium to long term target year of 2028 in accordance with the national Waste Strategy 2007 targets and requirements as defined within the tender brief. It adopts a focused short term approach and sets out recommendations for future development of the strategy in a manner that is flexible and can accommodate further changes in legislative requirements and funding availability.

The Isles of Scilly Council recognises the need to adopt a more sustainable approach to the future management of waste in an attempt to co-ordinate and improve existing recycling, minimisation activities and treatment of waste. Key to achieving a greater understanding about waste minimisation, recycling and treatment, is the ability to measure improvement. Measuring improvement is only possible once a baseline of current waste flow data is

established across the islands. The baseline waste audit report⁵ provides the baseline data which informs the waste forecasts presented in the strategy.

This Strategy has also been prepared in response to an overriding requirement for the Isles of Scilly to be compliant with existing and emerging environmental legislation relating to waste management activities. Further legislation affecting environmental safety and performance of waste management is currently being consulted upon and if implemented it is essential that systems are in place which provide a sound basis for ensuring compliance both now and into the future.

Finally, the Isles of Scilly Council's commitment to adopting a more sustainable waste management policy also recognises that any strategy adopted both now and in the future has to be affordable and reflect value for money. Therefore, cost and other associated impacts are considered when comparing the options for future management of the Council's waste.

1.2 Key Strategic Waste Management Targets

The need for Councils in England to assess their current waste arising and address the strategic direction of waste management practices going forward is largely driven by the Waste Strategy for England 2007⁶. The national strategy sets targets and identifies associated actions for local authorities and the producers of industrial and commercial wastes. These include specific targets for waste minimisation, recycling and composting and will inform the proposed minimisation and recycling objectives that form part of the Isles of Scilly waste strategy.

³ Department for the Environment, Food and Rural Affairs

⁴ A Practice Guide for the Development of Municipal Waste Management (Defra, November 2008)

⁵ Available as a supporting document to this Headline Waste Strategy Document

⁶ Defra Waste Strategy for England 2007 (<http://www.defra.gov.uk/environment/waste/strategy/>)

The requirement for this review of current waste management activities on the Isles of Scilly has been stimulated by the impending powers of the Environment Agency to further regulate waste management activities on the islands and the overarching desire to move the management of waste up the waste hierarchy (see Figure 1-1 below).

To move the management of waste away from the more traditional disposal methods will require a number of changes to current waste management practices across the islands. Although part of the strategy will focus upon the collection and disposal of waste produced on the islands there is also a need to manage waste produced from a top down perspective. A step change in the attitude to waste minimisation and re-use will also be required from the Council and islanders in order to maximise the overall benefit to the local environment.

**Figure 1-1
Waste Management Hierarchy**



1.3 Structure of the Waste Management Strategy

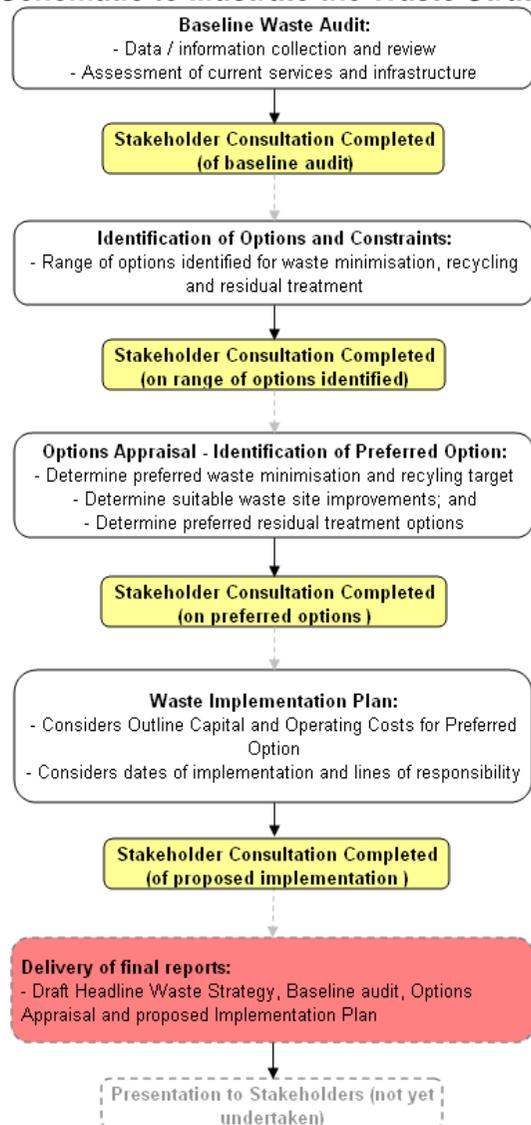
This Waste Management Strategy has been structured in such a way as to provide an easy reference point and understanding of the Isles of Scilly's overarching strategic direction of travel with regard to the management of waste. This Headline Strategy Document provides a clear and succinct statement of the key objectives and targets for the Council to the year 2028. It provides a brief summary of:

- key waste streams produced on the islands;
- current waste management practices;
- the range of waste management options assessed; and
- implementation of the preferred option.

Figure 1-2 below shows each of the Waste Strategy stages as they have been addressed. More detailed descriptions of the waste audit and options assessment process are provided in the supporting Technical Appendices;

- Baseline Waste Audit;
- Waste Management Options Assessment; and
- Waste Implementation Plan

Figure 1-2: Schematic to Illustrate the Waste Strategy Process



2 DEMOGRAPHIC OVERVIEW

2.1 Outline of the Isles of Scilly

The Isles of Scilly is an archipelago 28 miles off the south-western tip of Cornwall, comprising over 200 islands and rocks. There are five inhabited islands: St Mary's, Treasco, St Martin's, St Agnes and Bryher. Table 2-1 below provides a summary of Isles of Scilly demographics.

**Table 2-1
Isles of Scilly Demographic Statistics**

Category	St Mary's	St Martins	Bryher	St Agnes	Tresco	Total
Population ¹	1,666	142	80	85	180	2,153
Households ²	918	65	43	36	74	1,168
Tourist visits ³						105,000

1. As provided in the Isle of Scilly Sustainable Community Strategy (2007)

2. Individual number of households do not amount to the total as new dwellings have appeared on the Council register but not accounted for within demographic data

3. Tourist season from March to October (Isle of Scilly Council)

2.1.1 Population

The Isles of Scilly have a resident population of just over 2,150. The total number of residents has been relatively stable over the past 100 years; however the islands have experienced a notable demographic change, with an increase in retired and elderly people and a decline in younger people with families.

2.1.2 Housing

The total number of households on the islands is 1,168 with the majority of these being on St Mary's, although there are communities present on each of the inhabited 'off-Islands'. Provision of affordable housing is one of the challenges the islands are facing, which is compounded by the acutely finite supply of land for provision of new housing. The Local Plan (adopted in November 2005) proposes 30 new homes on St Mary's, 3 on St Agnes, 5 on Bryher, 7 on Treasco and 5 on St Martin's over the next 10 years.

2.1.3 Tourist visits

Visitors to the islands during the tourist season (March to October) increase the population considerably and in 2006 visitors to the islands were in excess of 100,000, equating to 49 visitors per resident. The total number of official tourist beds on the islands is just over 2,600 (including campsites), although this number is estimated to increase by an additional 5-10% when accounting for accommodation not listed with the tourist board. During 2007/08 the number of 'yacht nights' on St Mary's was recorded to be approximately 3,000.

2.1.4 Ownership status

The Duchy of Cornwall has owned the freehold of much of the land on the Isles of Scilly, and nearly a third of the residential buildings, since the 14th Century. The Duchy is working with the Housing Association to provide 18 new affordable homes on St Mary's and the off-Islands, and also currently allocates 20 of its houses for key workers on the islands.

The whole of the Island of Treasco is currently operated as a commercial entity and has a 900 year lease from the Duchy.

2.1.5 Economy

Tourism dominates the economy on the islands. The other key income stream has traditionally been derived from horticulture. The temperate climate on the islands extends the growing season and ability to produce more exotic flowers, although increasing international competition has resulted in a decline in the industry locally. Fishing provides full-time income for a handful of residents. The Council is the largest employer across the islands, currently with a staff complement of 205.

The cost of living on the islands is considerably higher compared to mainland UK, with foodstuffs approximately 20% more expensive and building costs up to 50% higher. The major contributing factor is the high cost of transport both to and from the mainland and also between islands.

2.1.6 Status as a Unitary Authority

The Council of the Isles of Scilly is one of the smallest Unitary Authorities in England and responsible for delivering a broad range of services including planning, education, housing, fire and rescue, water and sewerage services, and waste. The Council also operate the airport on St Mary's.

2.1.7 Environmental sensitivity

The whole of the Isles of Scilly has been designated as an Area of Outstanding Natural Beauty (AONB) and there is a management plan that sets out a strategy for conserving and enhancing this special environment. The islands in their entirety are also designated as a Conservation Area and Heritage Coast. Scilly also contains both a Special Area of Conservation (SAC) and a Special Protection Area (SPA).

2.2 Key Development Framework Documents

In order to preserve and manage the biodiversity of the islands, whilst also ensuring economic and social sustainability, there are a number of key development framework documents governing planning, environment, social development and sustainability. A summary of these key documents is presented below in Table 2-2.

Table 2-2
Isle of Scilly Key Development Framework Documents

Document Name	Brief Description and Implications for Future Waste Management
The Isles of Scilly Local Plan: A 2020 Vision (Adopted November 2005)	<p>Provides the framework for tackling important issues on Scilly including;</p> <ul style="list-style-type: none"> • Affordable housing; • Employment; • Social care; • Infrastructure; and • Waste <p>Implications for waste:</p> <ul style="list-style-type: none"> • Increased housing likely to impact overall waste arisings and service requirements; • Environmental and sustainability impacts will need to be identified when considering future waste management options; • New landfills for waste disposal will not be permitted unless on a very small scale basis; and • The recent upgrades to the island quaysides will impact the way waste can be moved around the islands and to the mainland.
The Isles of Scilly Sustainable Community Strategy 2007-2010	<p>The strategy strives to achieve a strong, sustainable and dynamic island community. The strategy centres around the following priorities;</p> <ul style="list-style-type: none"> • Providing excellent services for children, young

	<p>people and families;</p> <ul style="list-style-type: none">• Promoting healthy and inclusive communities, endeavouring to work towards meeting the housing needs of every generation;• Promoting economic vitality;• Protecting the outstanding natural environment; and• Meeting the local transport and local infrastructure needs of the community.
The Isles of Scilly Best Value Performance and Corporate Plan 2007-08	<p>Following consultation on the Community Strategy the results have helped to inform and shape the objectives presented in this document. The areas covered in the document closely follow the priorities noted above.</p>
Local Area Agreement (Indicator NI191)	<p>Details provided in Indicator NI191 include a number of waste related activities and resource requirements to deliver programmed reductions in waste generation per head of population; measures include:</p> <ul style="list-style-type: none">• New weighbridge to be operational by 2008/09;• Expand use of in-vessel composter (2008/09);• Application under the Rural Development Programme for England for funding to support waste minimisation activities (2008/09);• Explore Convergence Funding to implement initiatives from the emerging Waste Strategy (2009/10);• Identify funding for a Waste Minimisation / Environmental Officer post (2008/09); and• Support for plastic bag free Scilly campaign (2008/09)

3 OVERVIEW OF WASTE MANAGEMENT SERVICES

3.1 Roles and Responsibilities

The Council of the Isles of Scilly has taken responsibility for the management of municipal waste arising on the Islands (with the exception of Tresco). The Council is somewhat unique within the context of the UK in that it is directly responsible for the management of key waste management operations and facilities on the main Island of St Mary's (in the rest of the UK legislation required Local Authorities to divest themselves of their in-house waste treatment and disposal operations some years ago). On the off-Islands, with the exception of Tresco, the Council has contracts or arrangements in place with locally based individuals for the collection and management of municipal waste.

The Island of Tresco is essentially operated as a commercial venture, and therefore all waste currently arising on the island is considered to be commercial waste. As such the Council is able to levy a charge for the management of any wastes that are transferred from the island to St Mary's for handling, treatment and disposal at the Moorwell site.

3.2 Waste Management – Headline Summary

3.2.1 *Current Waste Arisings (Reported)*

The total waste arisings reported to 'Waste Data Flow'⁷ for the Isles of Scilly for 2007/08 were approximately 3,100 tonnes (including commercial waste). Table 3-1 provides a breakdown of material types and tonnages. This reflects a slight decrease from the 2006/07 reported figures when total waste arisings were approximately 3,300 tonnes. The reported tonnages represent the waste arisings that are either collected on St Mary's or

brought over from the off-Islands (Bryher, St Martins and St Agnes) to be sorted for recycling or for disposal in the incinerator. Although the reported figures represent the best estimate of waste currently managed on the islands there is no mechanism for verifying this figure due to there being no weighbridge (the new weighbridge at Moorwell is expected to be in place by spring / summer 2009).

An unknown proportion of municipal waste is also managed by individual producers either through recycling initiatives such use of green cone organic waste bins, off-Island glass crushing and also small scale controlled burning of domestic waste. The amount of commercial waste currently being reported is also likely to be an underestimate due to hotels, restaurants and farms burning waste on site. Waste managed by individuals or businesses is not included within Council reported figures; this is discussed further in this section of the report.

⁷ WasteDataFlow is a central waste data collection database to collate Local Authority waste related information across the UK

Table 3-1
Isles of Scilly Waste Arisings 2006/07 and 2007/08 (reported)

Residual waste categories	2006/07	2007/08
	tpa	tpa
Collected Household Waste	1,754	1,714
Street Cleaning	6	6
CA site (residual)	6	6
Gulley emptyings	1	1
Highways	4	3
Grounds waste	2	2
Beach Cleaning	2	2
Commercial and Industrial	815	807
Sub total (excl commercial)	1,775	1,733
Total (incl commercial)	2,590	2,540

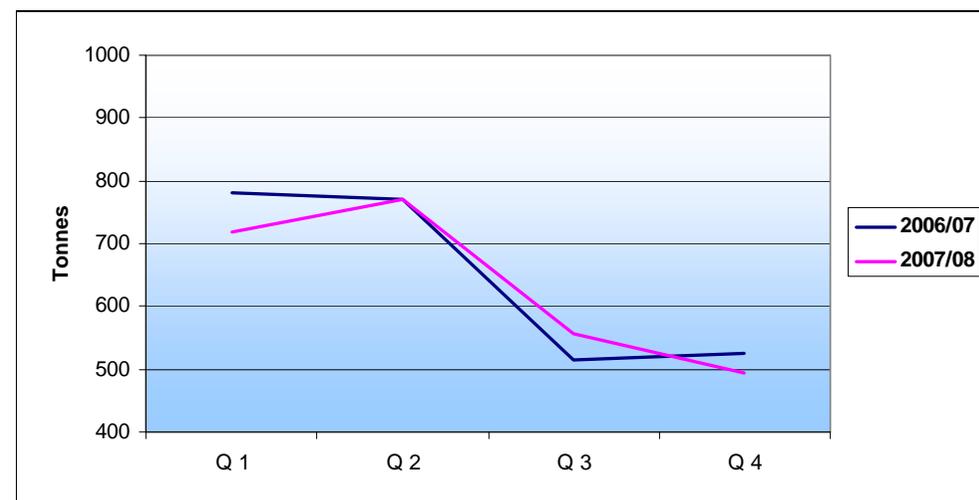
Recycling waste categories	2006/07	2007/08
	tpa	tpa
Green	83	89
Wood	91	91
Rubble	440	251
Scrap	94	97
Batteries (car)	2	2
Oil (min)	0.75	1
Glass	36	36
Food waste		16.5
Veg oil		0.6
Steel cans		3.5
Aluminum cans		0.4
Total	746.75	588
TOTAL WASTE (excl commercial)	2,522	2,321
TOTAL WASTE (incl commercial)	3,337	3,128

Table 3-2
Total Estimated Residual Waste to Incinerator 2006/07 and 2007/08

	april - jun	july - sept	oct - dec	jan - march	Total
	Q 1	Q 2	Q 3	Q 4	
2006/07	781	771	515	524	2,590
2007/08	718	770	558	494	2,540

Table 3-2 provides an estimate of residual waste managed through the incinerator over the past two years (2006/07 and 2007/08); the data is also presented quarterly to show seasonal differences and illustrated graphically in Figure 3-1 below. The data shows that an additional 200 tonnes of residual waste is managed by the incinerator on St Mary's during the first two quarters of the year (which also coincides with the tourist season).

Figure 3-1
Impacts of Seasonality on Residual Waste Arisings on Isles of Scilly



3.2.2 Recycling and recovery performance

Estimated recycling and composting figures for 2006/07 and 2007/08 are presented in Table 3-3; these are in line with Waste Data Flow reported figures. Currently there is no recovery of waste on the islands. According to estimated figures recycling and composting increased by 3% between 2006/07 and 2007/08.

Table 3-3

Waste Recycling, Composting and Recovery for 2006/07 and 2007/08

	Recycling	Composting	Recovery	Disposal	Rubble Re-use	Total
2006/07	9%	3%	0%	70%	17%	100%
2007/08	10%	5%	0%	75%	11%	100%

Note: Figures do not include commercial waste

The 2005/06 BVPI target for the Isles of Scilly was 24% recycling and composting and this figure has not been increased over the past 2 years⁸. To date the Isles of Scilly Council has not reported any BVPI targets for waste as they are unable to accurately quantify tonnages recycled and composted.

The Council has also been set Landfill Allowance Targets (LATS) for the disposal of biodegradable municipal waste to landfill. The targets are as follows;

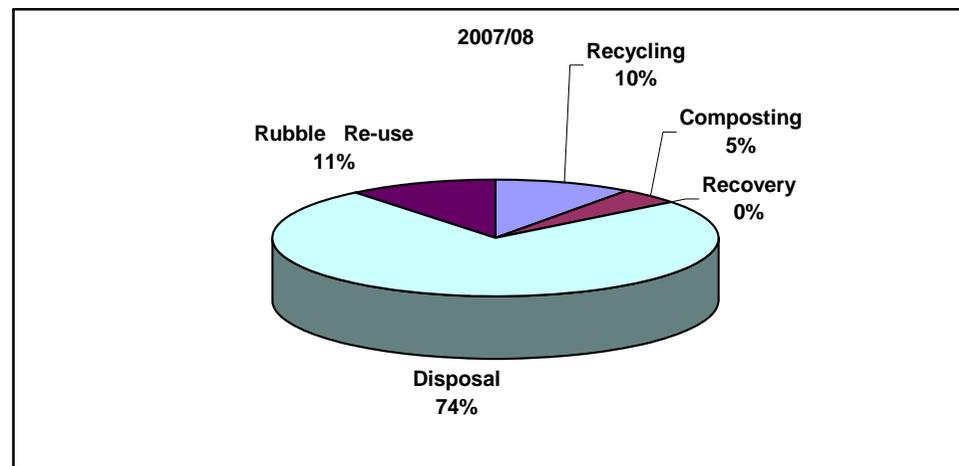
- by 2010 no more than 1,357 tonnes of biodegradable municipal waste (BMW) can be sent to landfill;
- by 2013 no more than 904 tonnes of BMW can be sent to landfill; and
- by 2020 no more than 633 tonnes of BMW can be sent to landfill.

⁸ Except in the case where local authority targets were below 20% in which case the targets have been increased to 20%.

With the absence of a weighbridge there is no accurate way to measure how much waste is currently being managed and disposed of at the Moorwell site or on any of the off-Islands.

Reported waste management methods for 2007/08 are summarised in Figure 3-2, indicating that currently value is recovered from approximately one quarter of the reported waste stream.

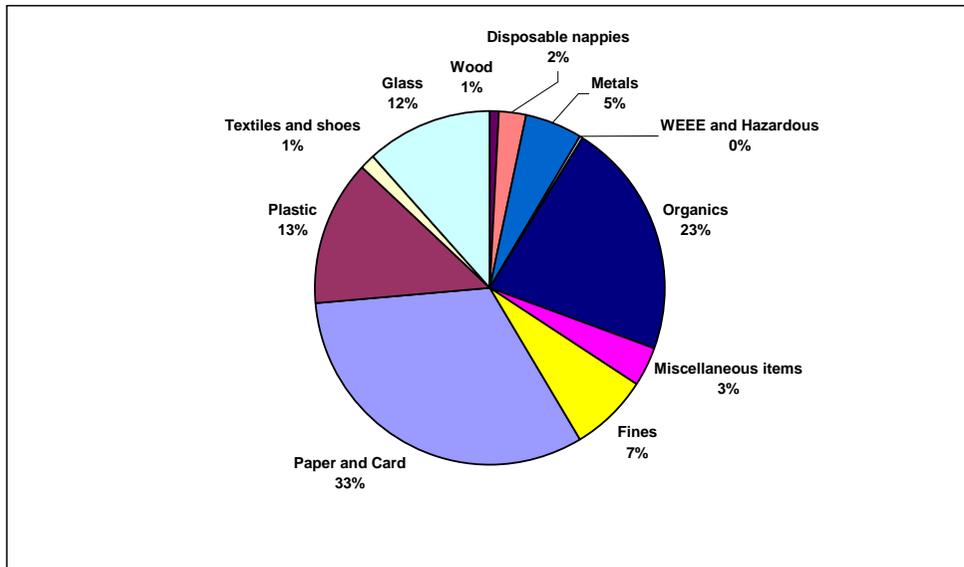
Figure 3-2
Isles of Scilly Municipal Waste Management in 2007/08 (reported)



3.2.3 Waste composition

A waste compositional analysis was commissioned by Rezolve Kernow in 2005, this involved sampling waste on one day during August of that year. The composition of residual waste as recorded at the time is summarised in Figure 3-3. This waste composition analysis is only three years old and therefore can be considered to be representative of mixed waste collected on the Island of St Mary's.

Figure 3-3
St Mary's Residual Waste Composition August 2005



Source: Isles of Scilly waste analysis, prepared for Rezolve Kernow, September 2005

3.2.4 Accuracy / reliability of data

Although reported figures exist for the last two years the absence of an operational weighbridge on St Mary's prevents accurate record keeping of waste quantities being managed at the Moorwell site. The site audits also highlighted the number of commercial customers depositing waste at the Moorwell site and it is highly likely that reported commercial waste arisings are underestimated.

As part of the waste audit stage of the project, meetings were held with the waste contractors from each of the off-Islands, and invoices / records

obtained from the Steamship Company and haulage firms to better understand current movements and quantities of waste.

3.2.5 Estimated total waste arisings

As discussed previously, a certain proportion of waste produced by inhabitants and businesses on the Isles of Scilly is managed at source.

Waste produced on the Island of Tresco is classed as commercial waste and the majority of waste is not currently managed by the Isles of Scilly Council, with the exception of plastics which are shipped to St Mary's for incineration. All mixed waste produced on the Island is currently managed through open burning, and a separate system is operated for the storage and landfill of organic waste (including food waste). Arrangements between the Isles of Scilly Council and Tresco Estates in future years may result in the shipment and management of some waste to St Mary's.

It is clear that a proportion of mixed waste is being burnt at source and therefore not currently managed on St Mary's or included within reported waste estimates.

Through discussions with the off-Island contractors it is anticipated that at least 1,300 tonnes of waste is currently managed on the off-Islands, of which just over 1,000 tonnes is either burnt or buried. These waste quantities are in addition to the reported waste arisings, as shown in Table 3-4.

Table 3-4
Isles of Scilly Estimated Additional Waste Arisings

	Tonnes per annum
Total reported waste tonnage ¹	3,128
Estimated total IOS waste tonnage ²	4,447
Total IOS tonnage to be managed ³	4,279

1. As reported to waste data flow
2. Total reported tonnage plus estimates waste arisings currently managed on islands
3. Total tonnage estimated to require management (recycling, recovery or disposal). Includes mixed waste and recyclables from Tresco, plastics and card currently burnt on St Martins (excludes, paper and card burnt on Bryher, Hell Bay hotel mixed waste and organics and organic waste from St Martins hotel)

Although domestic and commercial waste collections operate on the Island of St Mary's, a number of inhabitants and businesses elect to burn waste on their properties. The quantity of waste burnt by individuals on St Mary's is unknown and therefore the waste quantity estimates provided in Table 3-4 does not include this fraction.

A summary of the assumptions used and calculations prepared to estimate the additional quantities of waste arising on the Isles of Scilly, and that are not included in the Waste Data Flow returns, is provided in the Baseline Audit report.

3.2.6 Key initiatives

Waste minimisation, re-use and recycling on the Isles of Scilly are encouraged through the '**Scilly Waste**' project. '*Scilly Waste*' is a practical project aimed at reducing the impacts of waste on the islands. ReZolve Kernow, the Isles of Scilly Area of Outstanding Natural Beauty (AONB) team and the Council of the Isles of Scilly are working together to address the issue of waste.

The '*Scilly Waste*' project provides information, advice, encouragement and practical solutions to all members of the islands' society. Initiatives to reduce waste include:

- 'Shop Smart';
- Reusable shopping bags;
- Recycling glass;
- Composting - composters and green cones are available to residents;
- Real nappies; and
- Reducing junk mail.

Re-use on St Mary's is also encouraged through the periodic sale of unwanted clothes and household items in the town hall.

3.3 Overview of Movement of Waste Between Islands and to the Mainland

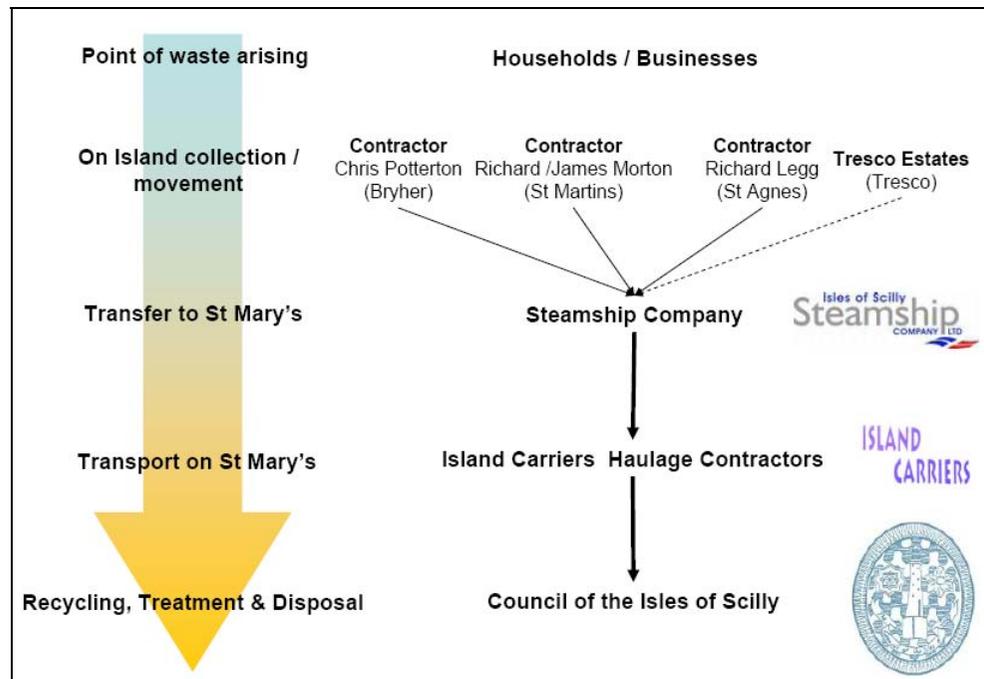
There are a number of organisations involved in the movement of waste between the off-Islands and St Mary's which include;

- Island contractors – responsible for management of waste sites and transport of waste to quay side on the off-Islands;
- Steamship Company – responsible for movement of waste between the off-Islands and St Mary's. The Steamship Company also ships certain recyclable materials and waste streams to the UK mainland for processing or disposal;

- Island Carriers – responsible for the movement of waste on St Mary’s from quayside to the Moorwell site; and
- Isles of Scilly Council – responsible for processing and disposal of waste at the Moorwell site.

A schematic of this process is provided below in Figure 3-4. Photographs illustrating key elements are provided in Figure 3-6.

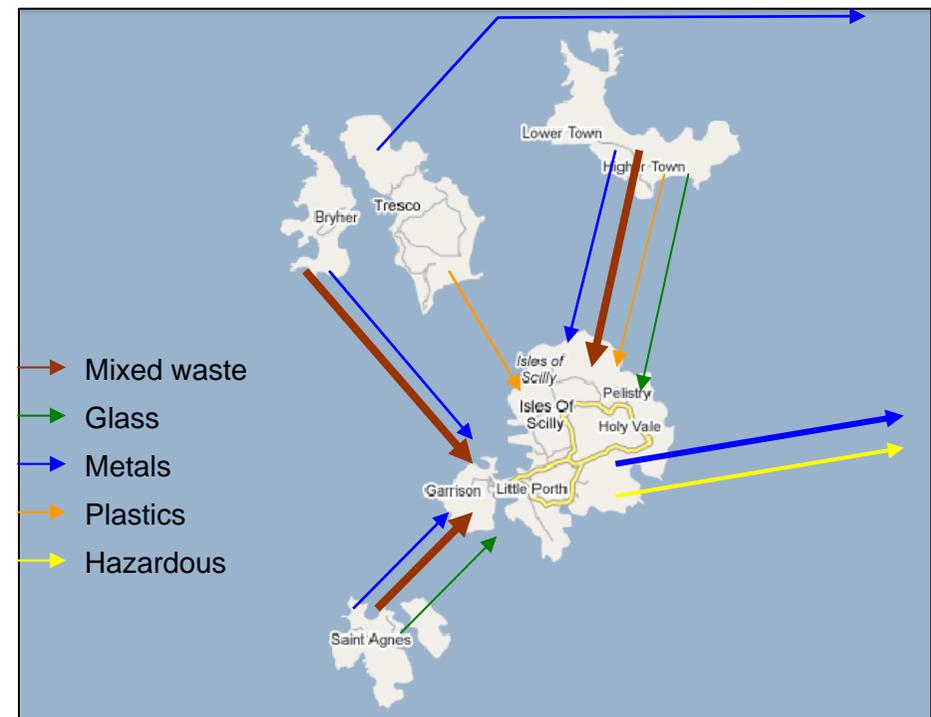
**Figure 3-4
Isles of Scilly Off-Island Waste Management**



At the present time waste arising on each of the off-Islands is managed through a combination of on Island systems and the transfer of materials to

St Mary’s for recycling, treatment or disposal via the facilities provided at the Moorwell site. Tresco is the only off-Island to ship any waste materials directly to the UK mainland. Wastes currently shipped to the mainland from St Mary’s include metals, WEEE, fly ash from the incinerator and cooking oil. The following simple schematic (Figure 3-5) illustrates waste movements between the islands and to the mainland, with colour coded arrows to identify the different material streams.

**Figure 3-5
Isles of Scilly Waste Flows**



Source: Base map from Google.com

**Figure 3-6
Movement of Waste from Off-Islands to St Mary's**

Waste collection and storage at off-Island Waste Sites (Photo of St Agnes waste site)



Waste moved to off-Island quays for collection by launch (Photo of St Martins quay)



Waste shipped from off-Islands to St Mary's via inter-island launch (Photo of Lioness Lady)



Waste lifted on to St Mary's quay using on vessel crane (Photo of St Mary's quay)



Waste transported by road from quay to Moorwell site (Photo of Island Carriers vehicle)



Waste sorted, re-processed or disposed of at St Mary's waste site (Photo of Moorwell site)



3.4 Funding Arrangements

As a very small Authority the tax raising ability of the Isles of Scilly is very limited. In the past the Isles of Scilly have received funding for a number of projects or initiatives which directly impact waste management (e.g. incinerator improvements) or have an indirect link with waste management on the Islands (development of the quays⁹). The following list identifies a number of previous sources of grant funding, although the list is not exhaustive:

- **Defra** – incinerator improvements, support in developing a waste management strategy;
- **European Union Objective 1 fund** – incinerator improvements;
- **South West of England RDA**; and
- **Department for Transport** – investment in quay and vessel development.

Other funding sources that are currently being accessed by way of active applications include:

- **Rural Development Programme for England** - application by Scilly Waste for funding for waste minimisation activities, 2008/09; and
- **European Convergence funding** - support for waste minimisation enterprise, 2008/09.

Going forward it is clear that any significant capital investment or increases in revenue costs are unlikely to be capable of being met through increases in local taxation alone. A key element of implementing a medium to long term sustainable waste management strategy that is fully legislation

compliant will therefore be to secure the necessary sources of external funding.

⁹ The Duchy, whilst not a direct source of funding has in the past assisted waste initiatives by the provision of land for recycling activities which they charge for at a concessionary rate, they have also made significant one off contributions to help with waste site clean up operations on the off islands.

4 OPTIONS ASSESSMENT

As part of the strategy to develop solutions for the long term¹⁰ management of waste produced on the Isles of Scilly, an appraisal was undertaken on a range of viable waste management options. This section summarises the options assessment methodology and outcomes for considering and evaluating waste management options for the islands.

As part of the Government's aim to develop sustainable waste management by driving waste up the 'waste hierarchy' of reduce, reuse, recycle and recover, DEFRA has prepared a 'Practice Guide for the Development of Municipal Waste Management Strategies'. The DEFRA guide highlights the need to evaluate options for future waste management through incorporating the assessment of social, economic and policy factors in addition to environmental criteria.

The following steps are generally accepted as fulfilling the requirements of an options appraisal process:

1. set overall goals for decision making for waste management, subsidiary objectives and the criteria against which all options will be measured;
2. identify all viable options;
3. assess the performance of these options against the criteria identified within Step 1;
4. value the performance scores for each option;
5. weighting - balance the different objectives or criteria against one another;

6. evaluate and rank the different options; and
7. sensitivity analysis - analyse how sensitive the results are to variations in the assumptions made or the data used.

The options assessment has where possible used Government guidance and adopted a three tier approach. The assessment has been modified as required to accommodate the unique circumstances of the islands so as not to be too restrictive, impractical or uneconomical whilst considering the scale of the environmental impact. Each of the waste management tiers have been assessed sequentially in order of the waste hierarchy.

4.1 Appraisal Methodology

To ensure a consistent approach in assessing each future long term option for the Isles of Scilly, an appraisal methodology has been used which is consistent with Government guidance. The four principal stages of this methodology can be summarised as follows:

- establishing sustainability objectives and indicators;
- identifying overall performance scores for each sustainability indicator;
- establishing a valued performance score for each sustainability indicator; and
- applying a weighting to each sustainability indicator to generate a final score

The performance of Options within each tier using the above methodology was assessed and is presented in detail in the Options Assessment final report which supports this Headline Strategy document. The report also identifies the preferred waste management option for the Isles of Scilly.

¹⁰ Whilst the Waste Management Strategy is primarily focused on a 10 year plan, for the purpose of this options assessment process, including residual treatment options, a 20 year strategy has been considered.

4.2 Waste Management Options

The options assessment process identifies the three key areas for consideration: waste minimisation and re-use, recycling (including waste movements) and residual treatment/disposal options.

The three tiers (minimisation, recycling and treatment) contain the six elements of the waste management system operating on the Isles of Scilly, namely:

- waste minimisation and re-use;
- off-Islands waste management;
- recycling / movements of waste;
- CA / transfer / processing site (St Mary's);
- residual treatment; and
- landfill.

Within each element the options have been assessed against a number of indicators. It is recognised that not all of these 'Indicators' will be considered to have equal importance or 'weight', and therefore it was necessary to undertake an element of consultation with stakeholders to seek views on how each of the 'Indicators' should be weighted in relation to each other. A more detailed explanation of the 'weightings' process undertaken by SLR is outlined in the supporting Options Assessment report.

The weightings exercise was conducted with co-operation from each of the following key stakeholders;

- Defra;
- Council of the Isles of Scilly;
- Environment Agency; and
- Government Office for the South West.

The combined weightings score was used to inform the options assessment process and final scores. The combined rankings for the weightings assessment list the following indicators in order of importance:

Ranking	Assessment Indicator
1	Identified risks and severity of risks
2	Cost
3	Potential for on-island use of materials
3	Compliance with EA policy
5	Conform with waste policy
5	Transport Issues
7	Visual / landscape detriment / improvement
7	Carbon footprint
9	Timescales for delivery
10	Landtake
11	Reliability of technology
11	Key partners required
11	Job creation

4.3 Performance of Options

The information presented in this report is a comparative assessment of options within each element of the waste management hierarchy using information collated during the waste management audit of the Isles of Scilly.

The options assessment used 13 criteria¹¹ which were scored using a combination of waste and financial modelling and technical and professional judgement. Scores have been developed as accurately as possible but should be viewed within the context of a comparative options assessment. For the purposes of the comparative assessment, costs were estimated against a common set of assumptions; a further and more detailed cost and survey exercise is necessary prior to implementation of the preferred option(s).

The purpose of appraising the performance of Options against the objectives and indicators¹² is to inform decision makers about their relative advantages and disadvantages. The appraisal undertaken in this process is systematic in scoring each option within the tier against each indicator, resulting in raw scores for each of the various options.

Analysis of the raw scores is sometimes difficult because of the use of different units for each sustainability criterion. Establishing 'valued' performance scores provides a possible solution to this problem. 'Valued' performance scores interpret overall performance scores on a scale of 0 to 1, where 0 is the worst performance, and 1 the best. This enables the discrepancy between scores to be retained, whilst allowing the performance of options against all criteria to be placed on a common scale.

It is unlikely that each assessment criterion is of equal significance. It is therefore necessary to apply additional weight to those criteria which are of greater importance. A weightings exercise has been undertaken for this

options assessment process and details of the weightings are presented above. The weighting of a particular criterion can significantly alter the final option ranking and it is these scores which have been used to select the preferred option in each category.

A summary of the final preferred solution for each of the options is presented in the following text and a full breakdown of each option, performance, valued and weighted scores is appended in the Options Assessment Report as part of the supporting documents to this Strategy..

The options assessment was undertaken prior to a Human Health and Environmental Risk Assessments of Landfill sites on the Isles of Scilly undertaken for the Environment Agency.¹³

4.3.1 Waste Minimisation

The preferred option will see a continuation of the existing waste minimisation schemes with the potential to expand the scheme to include food waste minimisation campaigns funded through organisations such as the Waste & Resources Action Programme (WRAP). Whilst other waste minimisation initiatives are also to be actively encouraged it has been noted that increasing some re-use schemes could perhaps increase the burdens of transportation to the mainland and any possible negative impacts will need to be identified and mitigated.

4.3.2 Recycling and Movements of Waste from Off Islands and All Islands

The options for improved recycling and management of waste were approached on two levels. One part of the assessment focuses on the management of waste on the Off-islands and the preferred option includes improvements to the central waste and recycling collection areas and also to reduce as much as possible open burning of commercial or unsuitable

¹¹ Listed in the above table

¹² Shown as Appendix x

¹³ Moorwell Landfill Site St Mary's, Isles of Scilly Human Health and Environmental Risk Assessment (SLR Consulting, March 2009).

wastes. The second part of this assessment tier focuses on increasing the overall recycling rate across the islands. Both the valued and weighted scores placed the “improved recycling and diversion (medium)” as the preferred option. Achieving medium levels of recycling, whilst a considerable cost option, scores highly in the potential to re-use and recycle materials on island and has greater chance of achieving EA policy and targets. Usually an options assessment such as this would have a strong preference to achieve the highest recycling rate, however the costs of implementing such a high recycling rate and the increased reliance on key stakeholders increases the risk of success and therefore high recycling does not score best in this particular assessment.

4.3.3 Waste Processing at Moorwell (Civic Amenity Site)

The options for non-residual waste management and processing at the Moorwell site include both significant clearance and improved design to allow better management of waste through the site. The main difference between the two options is whether the processed waste (where possible) as part of an Isles of Scilly closed loop system are recycled and / or re-used on island or whether the materials are sent directly to the mainland for reprocessing.

Both the valued and weighted scores show the preferred option to be shipment of all materials to the mainland. The main reason for this is that although the costs are higher to ship all recyclables to the mainland there is far less risk associated with reprocessing materials and finding suitable market outlets on the mainland. The first option (on-island management of materials) was also limited in its ability to manage and process materials such as metals, plastics and hazardous wastes. However, in the instances where materials such as wood and glass are already being re-used and recycled such examples of good practice will continue as long as a market is available.

4.3.4 Options for the Treatment of Residual Waste

Six options for the treatment of residual waste arisings from the Isles of Scilly were considered as part of the appraisal process¹⁴:

- a) maintain existing incinerator;
- b) upgrade existing incinerator;
- c) upgrade existing incinerator with option to have CHP;
- d) develop new incinerator with the option to have CHP;
- e) develop new non-incinerator technology; and
- f) ship all residual waste to the UK mainland for treatment / disposal.

The option to maintain the existing incinerator, whilst included in the assessment, is unlikely to be a long term solution due to the age and condition of the plant.

The appraisal highlighted option (d) Develop a new incinerator, as the preferred option. Whilst the capital costs are estimated to be greater for development of a new incinerator, due to the efficiencies gained the operating costs and onward treatment of outputs are less than for the other treatment options. Developing a new incinerator also carries the least element of risk and scores high on compliance with Environment Agency policy. A full breakdown of the assessment scores is presented in the Options Assessment Report for further reference.

4.3.5 Landfill Disposal of Waste

Part of the Moorwell site on St Mary's is used for the storage and/or disposal of a number of material types, including scrap metals, construction wastes, green wastes and bulky materials, and incinerator bottom ash (IBA). There is also a section of the landfill that is being used for the (temporary) storage of bagged residual waste pending transfer to the

¹⁴ A process audit of the waste management sites and incinerator was previously conducted as part of the strategy review

incinerator for final treatment. It has been acknowledged that the existing landfill would not be compliant with Environment Agency Environmental Permitting Regulations and therefore a number of options for the future management of residual treatment outputs have been considered as part of this options assessment.

The three options considered for landfill disposal of incinerator bottom ash (IBA) are:

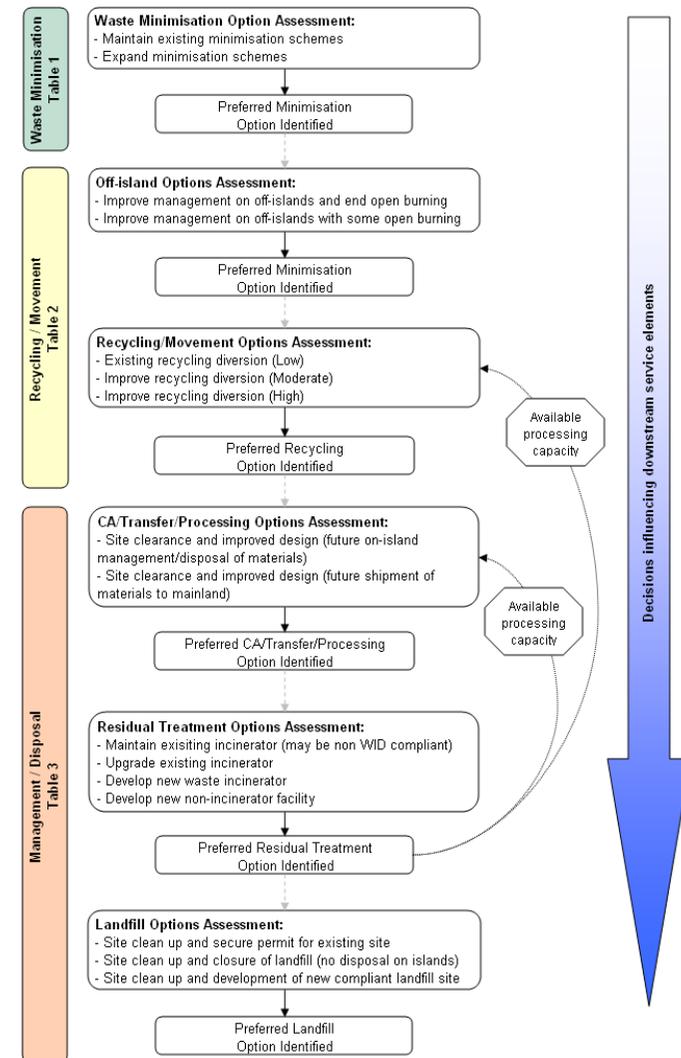
- a) clean up and secure a permit for the existing site;
- b) clean up and closure of the landfill (with the option to store IBA for re-use or shipment to the mainland); and
- c) clean up and development of a new compliant landfill site on St Marys.

The preferred option is to clean up the existing site, close the landfill and ship all outputs from residual treatment to the mainland for treatment or disposal. This option was the most economical of the three and presents the least amount of risk. There will however, be the option to create suitable storage for incinerator outputs until such time that they can be re-used or transported to the mainland.

4.4 Options Summary

The full options assessment process (see schematic in Figure 4-1) was subsequently consulted upon by the key stakeholders involved with the Waste Strategy development process and with their agreement the Implementation Plan has been prepared; a summary of this has been presented in Section 5.

Figure 4-1
Summary Options Assessment Schematic



5 WASTE IMPLEMENTATION PLAN

Having identified the preferred option for provision of the waste management service across the Isles of Scilly, the final stage of the strategy focuses on the development of an **Implementation Plan**. The Plan addresses a number of key issues:

- Service improvement requirements – what, by whom and by when;
- Infrastructure improvement / upgrade requirements – what, by whom and by when;
- Provision of new equipment or infrastructure – what, where, by whom and by when; and
- Staffing and resource requirements (including programme).

One of the key deliverables for the Municipal Waste Management Strategy (MWMS) is an Implementation Plan to aid compliance with Environment Agency Environmental Permits¹⁵, and to identify the future collection service requirements to divert recyclable and compostable materials where appropriate, and residual treatment capacity requirements for the Isles of Scilly.

The Implementation Plan has been developed based upon achieving the strategic recycling and recovery targets defined by the options development process (produced as a separate document) for the year 2027/28 (30% recycling and composting by 2014/15).

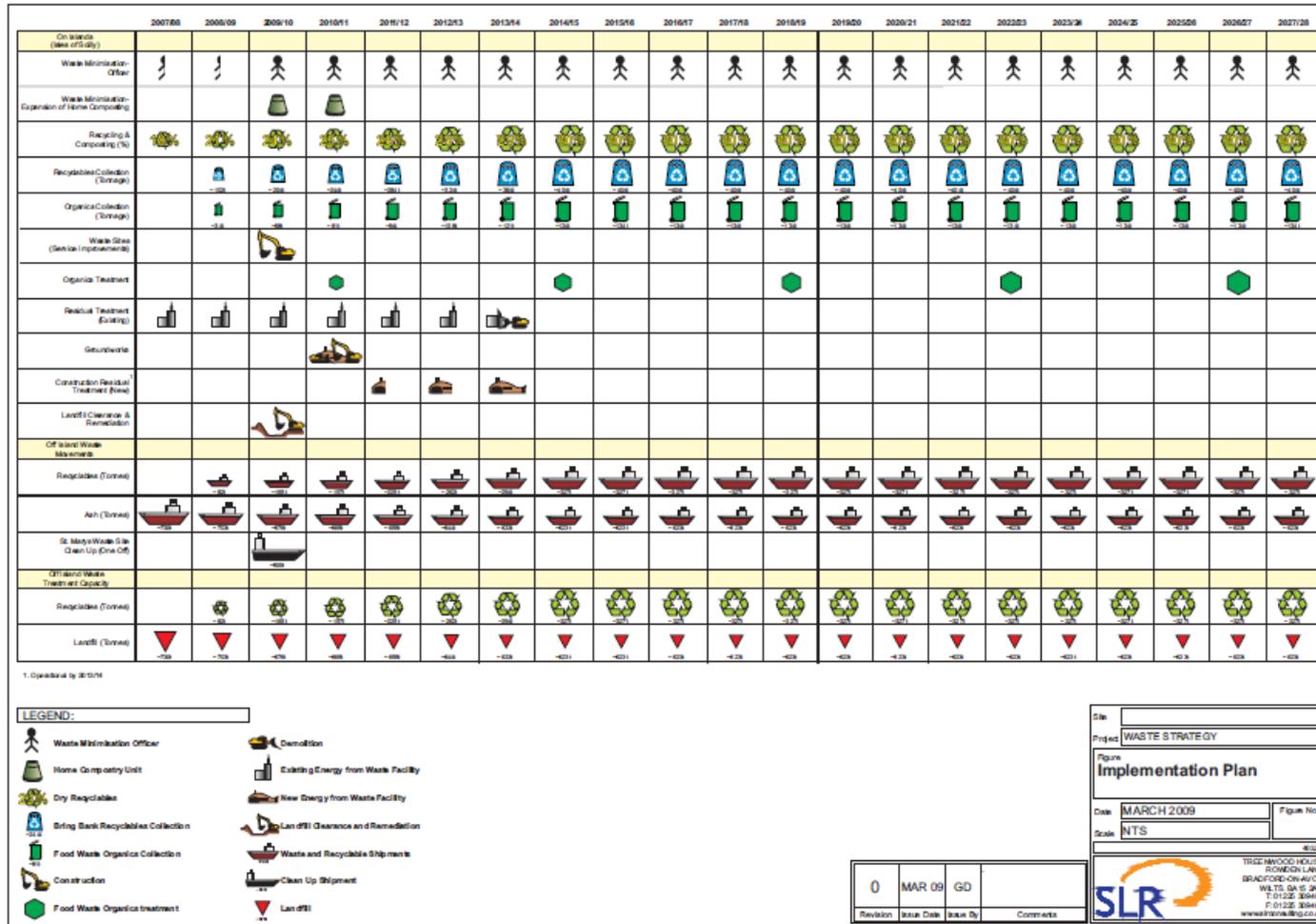
The report details the required delivery requirements for each waste management service area (i.e. collection, Bring Banks, downstream treatment and disposal infrastructure). The strategy assumes an average performance standard is met by the Isles of Scilly, although actual performance among the islands may vary depending on the final agreements made between each of the key stakeholders / contractors. A

summary of the key implementation milestones is illustrated below for each target year.

A key issue remains how implementation of the preferred strategy will be funded. This will not be achieved through increases in local taxation, and it is unlikely that sources of funding will easily be identified through the European Union. It is recommended therefore, that discussions be held with central Government (Defra) in order to ensure that the appropriate level of funding can be allocated in future years.

¹⁵ Where applicable

INSERT AS PDF (Tim – this has been updated following Sue’s comments)



6 SUMMARY

The Isles of Scilly waste management strategy has been produced in accordance with national guidance¹⁶ as a tool for managing waste in line with local sustainability needs and wider policy aspirations. The Headline Strategy has been developed to provide a clear and succinct statement of the key objectives and targets for the islands with regard to the management of waste. The key targets outlined within this strategy are:

- **Sustainability:** achieving **sustainable management of all solid waste** arising in the Isles of Scilly through emphasis on the **reduction, re-use, recycling and recovery of waste**; and
- **Working together:** developing effective **co-operation and joint working** between residents, the Isles of Scilly Council and businesses to maximise the benefits of waste minimisation and increased recycling and recovery.

This strategy, and its supporting documents, provides all necessary information on the key waste policy drivers, as well as the necessary actions required to improve current waste recycling and management practices to meet specified targets.

¹⁶ A Practice Guide for the Development of Municipal Waste Management Strategies (November 2005)

7 GLOSSARY

Composting – the controlled biological decomposition and stabilisation of organic substrates (e.g. green garden and kitchen waste), under conditions that are predominantly aerobic. It results in a final product that has sanitised and stabilised, is high in humic substances and is of such a quality that it can be used as a soil improver, as an ingredient in growing media, or blended to produce other marketable products (that meet recognised industry standards).

Controlled waste – comprises household, commercial, and industrial waste. The main exempted categories comprise of mine, quarry and farm wastes. Radioactive and explosive wastes are controlled by other legislation and procedures.

Hazardous wastes – the most harmful wastes to people and the environment, and defined according to properties listed in Annex III to Council Directive 91/689/EEC on hazardous waste.

Household waste – includes waste from household collection rounds, from services such as street sweepings, bulky waste collection, litter collection, hazardous household waste collection and separate garden waste collection. Also includes waste from civic amenity sites and source segregated wastes collected for recycling or composting through bring or drop-off schemes, kerbside schemes and at 'civic amenity sites'.

Incineration – is the controlled burning of waste, either to reduce its volume, or its toxicity. Energy recovery from incineration utilises the calorific value of the waste. Current flue-gas emission standards are very high. Ash residues still tend to be disposed of to landfill (although bottom ash can be recycled). See also energy from waste.

Landfill site – is defined in the Council Directive 1999/31/ec on the landfill of waste meaning "...a waste disposal site for the deposit of the waste onto

or into land...". The definition includes sites where the producer of the waste is landfilling at the place of production of the waste and any site established for over a year, where waste is temporarily stored. Landfill sites are often located in disused quarries or mines. In areas where there are limited, or no ready-made voids, the practice of land raising is sometimes carried out, where some or all of the waste is deposited above ground, and the landscape is contoured.

Municipal wastes – the Landfill (England and Wales) Regulations 2002 defines it as "...waste from households as well as other waste, which, because of its nature or composition, is similar to wastes from households." In Part Two of Waste Strategy 2000, municipal waste is defined as "...all waste under the control of local authorities or agents acting on their behalf" and is the definition used in the Waste Strategy for England and Wales.

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.

Renewable Resources – resources that will regenerate within human life scales, for example, trees.

Re-use – using a product again for the same or a different purpose. Furniture and some electrical goods are often capable of being re-used and many community and voluntary sector groups are actively involved in facilitating re-use of such items. It can be practiced by the commercial sector with the use of products designed to be used a number of times, such as re-useable 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.

Sustainable development – development that can meet the needs of the present without compromising the ability of future generations to meet their own needs.

Sustainable waste management – requires that waste management should be carried out in a way that does not place undue social, economic, or environmental burdens on either present or future generations and that ensures social equity, effective protection of the environment, the prudent use of natural resources and the maintenance of high and stable economic growth and employment. The aim is to de-couple waste production from economic growth.

Transfer – a waste transfer station is a facility to which waste is delivered for separation or bulking up before being removed for recovery and/or disposal (source: EA, SWMA).

Treatment – physical, thermal, chemical or biological processes, including sorting, that change the characteristics of the waste in order to reduce its volume and hazardous nature, facilitate its handling or enhance recovery.

Waste – is defined in Council Directive 75/442/EEC on waste as meaning “...any substance or object in the categories set out in Annex I which the holder discards or intends or is required to discard.” Annex I of the Directive lists 16 categories of waste, including ‘agricultural, household, office, commercial and shop discards’. Waste defined by the Directive is referred to as ‘Directive Waste’.

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